

Zeitschrift: Entomologica Basiliensia
Herausgeber: Naturhistorisches Museum Basel, Entomologische Sammlungen
Band: 19 (1996)

Artikel: Taxonomic revision of the genus *Hydrovatus* Motschulsky (Coleoptera, Dytiscidae)
Autor: Biström, O.
Kapitel: 6.5.4: Species group 4 (sp.gr. confossus)
DOI: <https://doi.org/10.5169/seals-980453>

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. [Mehr erfahren](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. [En savoir plus](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. [Find out more](#)

Download PDF: 05.12.2025

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>

Pronotum: Ferrugineous, laterally slightly paler. Basally with vague minute darkened areas (Fig. 152). Punctuation fine, sparse, discal-ly on each side with narrow impunctate area. At pronotal margins with an irregular row of slightly coarser punctures. Submat, microsculptured (meshes distinct). Sides of pronotum somewhat rounded.

Elytra: Ferrugineous to pale ferrugineous, sometimes with vague colour pattern. Punctuation rather fine, somewhat sparse and somewhat irregularly distributed. Rows of punctures absent or very indistinct and mixed with adjacent punctures. Rather shiny, microsculptured (meshes distinct). Epipleura pale ferrugineous, with rather sparse, quite coarse punctuation, rather shiny although microsculptured.

Ventral side: Pale ferrugineous to ferrugineous. Rather finely to quite coarsely punctate. Abdomen basally with fine, rather sparse punctuation which towards apex almost disappears. Submat, distinctly microsculptured. Prosternal process laterally very finely margined, medial surface flat, finely punctate and distinctly microsculptured.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsi somewhat enlarged.

Male genitalia: Figs 155–157.

Female: Externally as male.

Distribution: USA: Florida (Fig. 137).

Biology: Unknown.

6.5.4. Species group 4 (sp.gr. *confossus*)

Hydrovatus vicinus Guignot

Figs 158–163, 179.

Hydrovatus vicinus GUIGNOT, 1958b:3 (orig. descr., faun.); BILARDO & ROCCHI, 1987:96 (disc.).

Type locality: Parc National Garamba, Zaire.

Type material studied: Holotype, m: Holotypus/Congo Belge PNG Miss. H. De Saeger II/gc/13s, 3.IX.1951 Rc. H. De Saeger, 2359/Coll. Mus. Congo (ex. coll. I.P.N.C.B.)/Guignot det., 1957 *Hydrovatus* (*Vathydrus*) *vicinus* n.sp. Holotype (MAC). – Paratypes: Same sampling data as holotype (1 ex. MAC, 1 ex. ISN). In all, 3 exx.

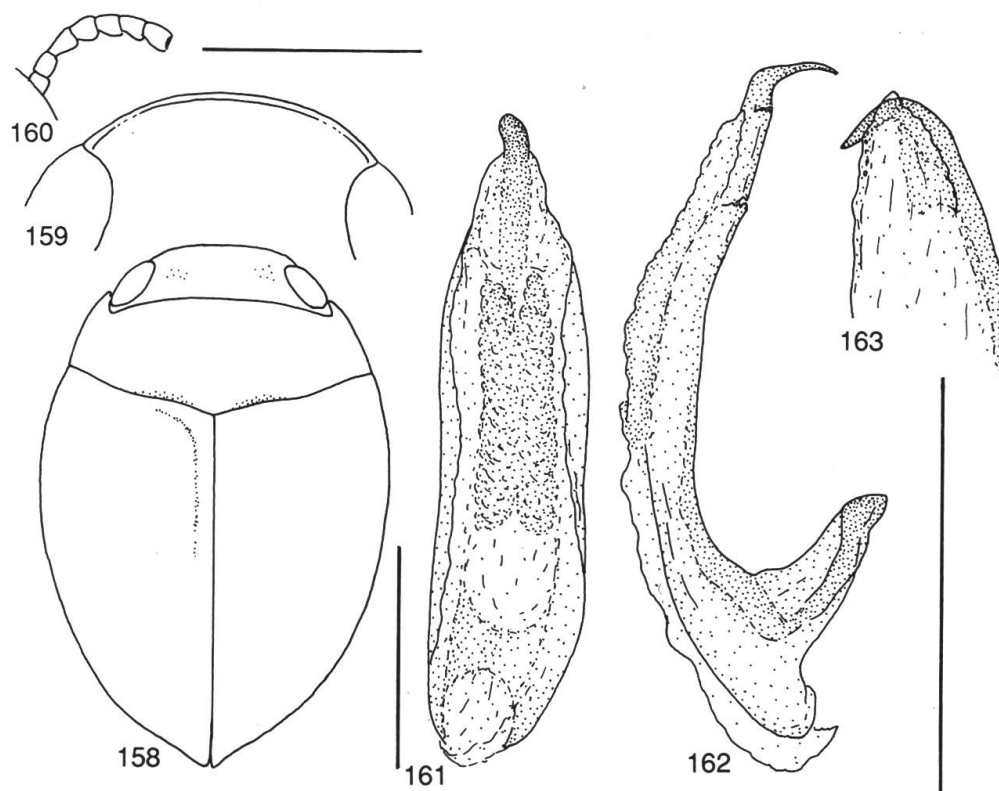
Diagnosis: Belongs to a complex of species (see below), which are very difficult to distinguish. *H. vicinus* is characterized by a small, quite globular body, by a frontal margin of head which reaches the eyes, and by a comparatively broad and medially almost parallel-sided penis. Correct determination requires comparison with type.

Length of body: 2.12–2.26 mm, breadth: 1.42–1.50 mm. Habitus (Fig. 158).

Head: Pale ferrugineous to ferrugineous. Punctuation hardly visible, irregularly distributed. Rather shiny, microsculptured (meshes distinct). Head frontally rounded, medially somewhat straightened. From eye to eye narrowly margined (Fig. 159). Frontally at eyes with rather shallow depressions. Antenna pale ferrugineous, probably slender (in male antennae broken, at most 7 basal segments left) (Fig. 160).

Pronotum: Pale ferrugineous to ferrugineous. Finely and rather densely punctate, laterally on each side with a narrow impunctate area. Rather shiny, finely microsculptured (meshes quite distinct). Sides of pronotum slightly rounded.

Elytra: Pale ferrugineous to ferrugineous, without distinct colour pattern. Rather finely and quite densely punctate. Laterally and apically punctuation finer and sparser. Only an indistinct lateral row



Figs 158–163: *Hydrovatus vicinus*. – 158, habitus. – 159, head, frontal aspect. – 160, antenna (apical segments missing). – 161, penis, dorsal aspect. – 162, penis, lateral aspect (apically partly broken and slightly bent backwards). – 163, apical part of paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

of punctures discernible. Rather shiny, microsculptured (meshes visible but weakly developed and partly rather indistinct). Epipleura pale ferrugineous, finely punctate (punctures concentrated in inner part of epipleuron), and finely microsculptured.

Ventral side: Pale ferrugineous to ferrugineous. Rather finely to fairly coarsely and quite densely punctate. Four apical sternites almost impunctate. Shiny, almost without microsculpture, abdomen with fine, indistinct reticulation. Prosternal process laterally finely margined, medial surface finely and sparsely punctate, slightly convex.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsi slightly enlarged.

Male genitalia: Figs 161–163. Apex of penis broken but not lost.

Female: Externally approximately as male.

Distribution: Zaire (Fig. 179).

Biology: Unknown.

Hydrovatus parvulus Régimbart

Figs 164–172, 179.

Hydrovatus parvulus RÉGIMBART, 1899a:373 (orig. descr., faun.); ZIMMERMANN, 1920a:35 (faun.); 1926:27 (faun.); GSCHWENDTNER, 1943:423 (descr.); GUIGNOT, 1945a:310, 311, 316 (disc., faun.); 1949:43 (disc.); 1954d:103 (disc.); 1954f:282 (disc.); 1959a:134 (faun.); BILARDO & PEDERZANI, 1978:102 (descr., faun.).

Hydrovatus noctivagus GUIGNOT, 1953a:144, 146 (orig. descr., faun.); 1959a:135, 140 (descr., faun.); 1961a:233 (faun.); BERTRAND & LEGROS, 1975:678 (faun.); BILARDO & ROCCHI, 1987:94, 95 (descr., faun., biol.); 1990:170, 179 (disc., faun.). **New synonym.**

Hydrovatus socors GUIGNOT, 1954f:282 (orig. descr., faun.); 1959a:135, 139 (descr., faun.); BERTRAND & LEGROS, 1975:678 (faun.); BILARDO & PEDERZANI, 1978:102 (descr., disc., faun.); PEDERZANI & ROCCHI, 1982:70 (faun.); BILARDO & ROCCHI, 1990:170 (faun.). **New synonym.**

H. ocnerus GUIGNOT, 1958b:3 (orig. descr., faun.); BILARDO & ROCCHI, 1987:96 (disc.). **New synonym.**

Type locality: Antongil, Madagascar.

Type material studied: *H. parvulus*: Lectotype, m, by present designation: Antongil (Mocq.)/m/co-type/Museum Paris 1960 coll. Guignot/*Hydrovatus parvulus* Rég. (MNHN). – Paralectotypes: Principally with same data as lectotype (4 exx. MNHN). Possible paralectotypes: B. Antongil Madag./*Hydrovatus pumilus* Rg. n.sp. type (3 exx. MCG). The name *H. pumilus* is probably a manuscript-name in this case; preoccupied by *H. pumilus* Sharp. – *H. noctivagus*: Holotype, m: Holotypus m/Coll. Mus. Congo Elisabethville (lum.) XI. 1951–II. 1952 Ch. Seydel/R. Det. V 6226/Dr. F. Guignot det. 1953 *Hydrovatus noctivagus* Guign. Type m (MAC). – Paratype: Principally with same data as holotype (1 ex. MAC). – *H. socors*: Holotype, m: Boma Tschoffen/m/Type/*Hydrovatus socors* Guign. Type m (MNHN). – Paratype: Gabon Libreville Coll. J. Primot/m/Paratype/*Hydrovatus socors* Paratype, Pointe du penis

cashe (1 ex. MNHN). – *H. ocnerus*: Holotype, m: Holotypus/Congo belge PNG Miss. H. De Saeger I/a/2, 9.I.1950 Rc. G. Demoulin, 153/Coll. Mus. Congo (ex coll. I.P.N.C.B.)/Dr. F. Guignot det., 1957 *Hydrovatus (Vathydrus) ocnerus* n.sp. Type (MAC). – Paratypes: Same data as holotype, but 21.VIII.1950, 153 (1 ex. MAC); same data as holotype, but Rc. H. De Saeger 30.III.1951, 1482 (2 exx. MAC); same data as preceding, but 19.II.1952, 3137 (1 ex. MAC); same data as preceding, but 23.VIII.1952, 3966 (1 ex. MAC); same data as preceding, but 6.II.1950, 247 (1 ex. MAC); same data as preceding, but 17.III.1950, 319 (1 ex. MAC); same data as preceding, but 10.VIII.1950, 752 (1 ex. MAC); same data as preceding, but 11.VIII.1950, 754 (1 ex. MAC); same data as preceding, but 21.VIII.1950, 765 (1 ex. MAC); same data as preceding, but 12.X.1950, 886 (1 ex. MAC); same data as preceding, but 25.VII.1952, 3858 (1 ex. MAC).

Additional material studied: Gambia: 3.5 km S Georgetown, hilltop at Sankuli Kunda, alt. ca 30 m, at light 18.30–20.15, 15.XI.1977, UTM 28PEK2593 (6 exx. LUZ, 2 exx. MZH). – Senegal: Mpak 11 km S Ziguinchor, at light 19.00–21.00 8.XI.1977 UTM 28PCJ6479 (1 ex. LUZ). – Guinea: Siguiri nr Niger VII.1969 (1 ex. TMB). – Ivory Coast: Kafolo, Como 28.IV.1988 (5 exx. MNS, 4 exx. MZH). – Ghana: N. Reg. Banda-Nkwanta 150 m/light trap 13–17.IX.1965 (1 ex. TMB). – Nigeria: Samaru/light trap 20.X.1969 (2 exx. TMB). – Cameroon: Rhinoceros Camp, Corup N.P. 19.XI.1988, muddy gravel in river (1 ex. coll. Foster). – Equatorial Guinea: Bata (2 exx. MCN). – Chad: Ft. Archambault Boungoul (Ba-kare) V. 1904 (14 exx. MNHN, 6 exx. MZH). – Ethiopia: 1 km W Jimma (1 ex. MAC). – Sudan: Riv. Post 21, app. 105 km S of L. No/28.V.–19.VI. 1954 (2 exx. BMNH, 1 ex. MZH); Bor, Bahr el Jebel/28.V.–19.VI.1954 (1 ex. BMNH); L. Shambe, shore 21.I. 1954 (1 ex. AMS); Shambe, B. el Jebel/28.V.–19.VI.1954 (4 exx. BMNH, 1 ex. MZH); Malakal Bahr el Abyad/28.V.–19.VI.1954 (1 ex. BMNH); L. at Minkamman 16.I. 1954 (2 exx. AMS). – Congo: Loudima Sagro Park/6., 7., 10.XII.1963 light collection (23 exx. TMB, 3 exx. MZH); Brazzaville/19.XII.1963 (1 ex. TMB); Brazzaville Orstom Park/22.XI.1963 light trap (1 ex. TMB); Lefinie Res. Mbeokala For./13.I.1964 sifted from fallen fruits (1 ex. TMB); Mt Fouari Res. nr Gabon/12.XII.1963 by lamplight (1 ex. TMB). – Tanzania: Morogoro 11–12.I.1974 (2 exx. MZH); Morogoro 8–9.I.1974 (1 ex. MZH). – Madagascar: Diego Suarez/*H. parvulus* Régb. det. Guignot (1 ex. MNHN); Maroansetra (2 exx. MNHN, 2 exx. MZH); Maroansetra Ambodivoangy III. 1958/*H. parvulus* Régb. det. Legros (2 exx. MNHN); B. Antongil (2 exx. MNHN, 1 ex. MZH); Mad.–Est Ankalampona 130 m Navana–Maroansetra III.1958 (2 exx. MNHN); Ankalampona 21.III. 1958 (1 ex. MNHN); Mad. or./*H. parvulus* Rég. det. Régimbart (1 ex. MCG). In all, 131 exx.

Diagnosis: A variable, widely distributed species, which may constitute a species complex: *H. parvulus* is characterized by a rather small-sized, somewhat elongated and almost unicoloured pale body, by a frontal margin of the head which does not reach the eyes, by unmodified male antenna (apical segments sometimes in the male slightly enlarged), by a quite broad penis with a continuously rounded penis apex and by generally discernible hairs ventrally on the penis. (See also *H. occidentalis* on p. 247).

Length of body: 1.82–2.36 mm, breadth: 1.10–1.36 mm. Habitus (Fig. 164).

Head: Pale ferrugineous to ferrugineous. With fine, sparse punctation, which is somewhat denser narrowly at eyes and in shallow frontal depressions. Rather shiny, microsculptured (meshes distinct). Head frontally finely margined, but margin disappears a short distance from eyes. Sometimes margin quite weakly developed. Frontal outline rounded, medially somewhat straightened (Figs 165–166). Antenna pale ferrugineous to ferrugineous, quite slender, not distinctly modified (sometimes segments 4 to 11 a little enlarged) (Figs 167–168).

Pronotum: Ferrugineous to pale ferrugineous to pale brown, basally in middle with vague darkened area. Punctation fine to very fine, fairly dense. Discally punctures sparser. Rather shiny, although microsculptured (sometimes submat) (meshes discernible). Sides of pronotum almost straight to slightly rounded.

Elytra: Ferrugineous to pale ferrugineous to pale brown, without distinct colour pattern. Rarely, vague, slightly darkened areas are exhibited. Rather finely and somewhat sparsely punctate. Laterally and apically punctures distinctly finer. Size of punctures variable, sometimes even very fine. Rows of punctures almost absent. Sometimes indistinct parts of discal and dorsolateral rows may be discerned. An indistinct, irregular lateral row of punctures often discernible. Rather shiny, very finely microsculptured (meshes often partly indistinct and hardly visible). Epipleura pale ferrugineous to ferrugineous to pale brown, finely and somewhat sparsely punctate (punctures concentrated to inner part of epipleuron), almost without microsculpture.

Ventral side: Ferrugineous to pale ferrugineous to pale brown. Punctation fairly coarse and fairly dense to rather sparse. Abdomen, except basally, with very fine, sparse punctures. Shiny, almost without microsculpture. Abdomen with fine reticulation. Prosternal process laterally finely margined, medial surface almost flat to slightly convex, with fine punctures.

Legs: Ferrugineous to pale ferrugineous. Pro- and mesotarsi rather slender.

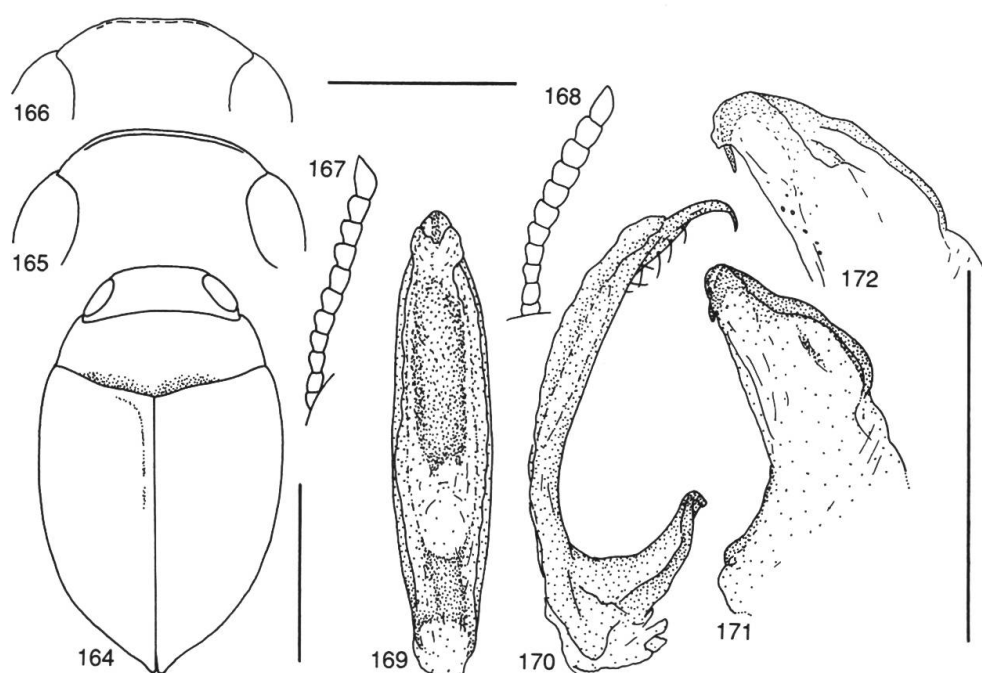
Male genitalia: Figs 169–172. Apical hook of paramere slightly variable.

Female: Externally almost similar to male. Rarely antenna a little more slender than in male.

Distribution: Gambia, Senegal, Guinea, Ivory Coast, Ghana, Nigeria, Cameroon, Equatorial Guinea, Chad, Gabon, Congo, Zaire,

Sudan, Ethiopia, Tanzania, Madagascar (Fig. 179). ZIMMERMANN (1926) gives also Kenya. BILARDO & ROCCHI (1987) report the junior synonym *H. noctivagus* from Botswana.

Biology: BILARDO & ROCCHI (1987) report the species (under the name *H. noctivagus*) from Botswana in a small river with almost standing water and with some *Salvinia* growth. In Cameroon the species has been sampled from muddy gravel in a river. Additionally the species has often been collected at light.



Figs 164–172: *Hydrovatus parvulus*. – 164, habitus. – 165–166, head, frontal aspect. – 167–168, antenna. – 169, penis, dorsal aspect. – 170, penis, lateral aspect. – 171–172, paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Synonymy: This widely distributed species exhibits some morphological variation, e.g. in body size, in the shape of male antenna, in appearance of elytral punctation and in micorsculpture of the dorsal aspect of the body. I am, however, not able to delimit certain morphs as good species, because of the frequent existence of intermediates. I have compared holotypes and lectotype of the four taxa involved and at least for the time being I consider them to belong to one, quite variable species. The name *H. parvulus*, which is the oldest available name, is also the valid name for the species.

Hydrovatus spadix Guignot

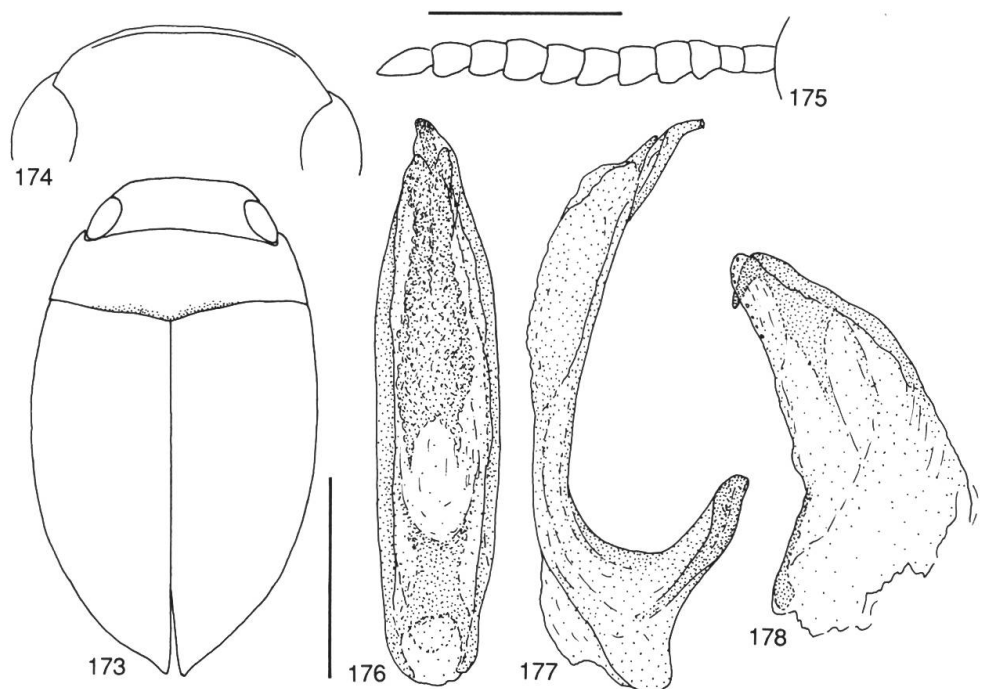
Figs 173–179.

Hydrovatus spadix GUIGNOT, 1948a:4 (orig. descr., faun.); 1959a:199, 202 (faun.); 1961a:235 (disc.); BILARDO & ROCCHI, 1990:181, 192 (descr., faun.).

Type locality: Elisabethville, Zaire.

Type material studied: Holotype, m: m/Elisabethville 19.XII.1938 H.J. Brdo, A la lumire/R. Mus. Hist. Nat. Belg. 1.6. 12.435/Det. Dr. Guignot *Hydrovatus spadix* Guign. n.sp. Type m (ISN). In all, 1 ex.

Diagnosis: Close to *H. parvulus*. The two species are distinguished by the male antenna, which is slightly longer and broader in *H. spadix*. Additionally the pronotum of *H. spadix* is medially almost impunctate. (See also *H. occidentalis* on p.).



Figs 173–178: *Hydrovatus spadix*. – 173, habitus. – 174, head, frontal aspect. – 175, antenna. – 176, penis, dorsal aspect. – 177, penis, lateral aspect (tip broken). – 178, paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Description: only important differences from description of *H. parvulus* are recognized)

Length of body: 2.32 mm, breadth: 1.36 mm. Habitus (Fig. 173).

Head: Almost impunctate. Punctures discernible only at eyes and in two shallow frontal depressions. Appearance of frontal part of

head as in Fig. 174. Antenna with slightly enlarged segments (Fig. 175).

Pronotum: At foremargin and basally with rather fine punctures, otherwise almost impunctate.

Ventral side: Abdomen almost impunctate, except s. Appearance of frontal part of head as in Fig. 174. Antenna with slightly enlarged segments (Fig. 175).

Pronotum: At foremargin and basally with rather fine punctures, otherwise almost impunctate.

Ventral side: Abdomen almost impunctate, except for a few rather fine basal punctures. Abdominal reticulation reduced, hardly visible.

Legs: Pro- and mesotarsus somewhat enlarged.

Male genitalia: Figs 176–178. Extreme tip of penis broken off and missing.

Female: Unknown.

Distribution: Zaire (Fig. 179).

Biology: Sampled at light.

Hydrovatus granosus Guignot

Figs 179–185.

Hydrovatus granosus GUIGNOT, 1958b:3 (orig. descr., faun.); BILARDO & ROCCHI, 1987:96 (disc.).

Hydrovatus similis BILARDO & ROCCHI, 1987:94, 95 (orig. descr., faun.); 1990:162, 170 (faun., biol.). **New synonym.**

Type locality: Parc National Garamba, Zaire.

Type material studied: *H. granosus*: Holotype, m: Holotype/Congo Belge PNG Miss. H. De Saeger II/gd/11, 4.X.1951 Rc. H. De Saeger, 2511/Guignot det. 1957 *Hydrovatus granosus* n.sp. Holotype (MAC). – Paratypes: Same data as holotype but labelled as paratype (1 ex. ISN); same but 15.IX.1951, 2425 (1 ex. MAC); same but 14.VI.1952, 3625 (1 ex. MAC); same but 24.VII.1952, 3816 (1 ex. ISN, 2 exx. MAC). – *H. similis*: Holotypem: Botswana Linyanti 4.10.82 A. Bilardo/Holotypus/*Hydrovatus similis* Bil. & Rocchi det. Bilardo (coll. Bilardo). – Principally with same data as holotype (1 ex. coll. Bilardo). In all, 9 exx.

Diagnosis: This species, too, belongs to a difficult group of species, morphologically resembling each other very much. *H. granosus* specimens are characterized by a small and globular body, by an unmodified male antenna, by the frontal margin of the head which disappears before reaching the eyes, by a quite robust parameral hook and by the dense hairtuft apically on the ventral aspect of the penis.

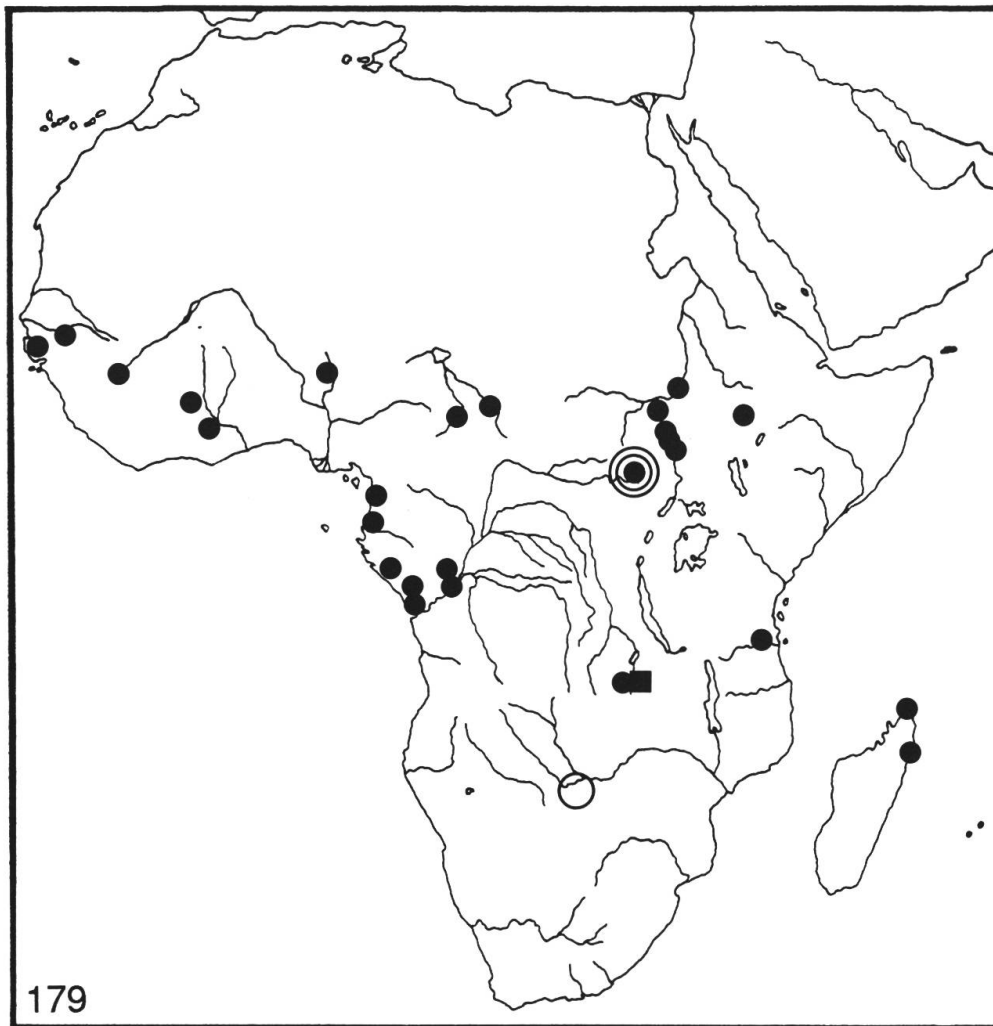


Fig. 179: Distribution of *Hydrovatus vicinus*, *H. pyrrus* and *H. fulvicollis* (big circle), *H. parvulus* (dot), *H. spadix* (square) and *H. granosus* (small circle). *H. fulvicollis* also known from S Sudan.

Length of body: 2.02–2.08 mm, breadth: 1.34–1.42 mm. Habitus (Fig. 180). In general, body microsculpture more weakly developed in specimens from Botswana.

Head: Blackish ferrugineous to ferrugineous. Fairly densely but indistinctly punctate, because of strongly developed microsculpture. Posteriorly reticulation becomes weaker but meshes still discernible. Microsculpture of head in specimens from Botswana more weakly developed, partly quite indistinct. Head frontally rounded, medially quite distinctly margined (Fig. 181). Frontally at eyes with wide but shallow and hardly visible depressions. Antenna pale ferrugineous, practically unmodified, apically a little enlarged (Fig. 182).

Pronotum: Blackish to dark ferrugineous. Laterally pronotum becomes gradually slightly paler and at slightly rounded sides pronotum ferrugineous. Rather finely and densely punctate. Discally on each side with narrow area with sparser punctures. Rather shiny, although microsculptured. Meshes of microsculpture laterally partly indistinct.

Elytra: Blackish to dark ferrugineous, palest laterally, without distinct colour pattern. Rather finely and somewhat sparsely punctate. Laterally and apically punctures somewhat finer. All three rows of punctures generally discernible, although irregular and indistinct. Particularly discal and dorsolateral rows of punctures hardly visible. Rather shiny, although very finely microsculptured. Laterally meshes of microsculpture weakly developed and partly obliterated. Epipleura blackish to ferrugineous, with a few rather fine punctures and slightly mat, finely microsculptured (in specimens from Botswana microsculpture indistinct).

Ventral side: Dark ferrugineous to ferrugineous. Punctuation fairly coarse to rather fine. Abdomen, except basally, almost impunctate. Shiny, almost without microsculpture. Abdomen slightly mat, very finely and indistinctly microsculptured. Prosternal process laterally finely and narrowly margined, medial surface almost flat and finely punctate.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsi slightly enlarged.

Male genitalia: Figs 183–185.

Female: Externally similar to male.

Distribution: Zaire, Botswana (Fig. 179). BILARDO & ROCCHI (1990) add Gabon.

Biology: Practically unknown. A note of a sampling locality of the species is given in BILARDO & ROCCHI (1990).

Synonymy: Although a small difference in appearance of the body microsculpture exists in *H. granosus* and *H. similis*, I find it not enough to justify a separation of two species. Thus *H. similis* is regarded as a junior synonym of *H. granosus* (valid name).

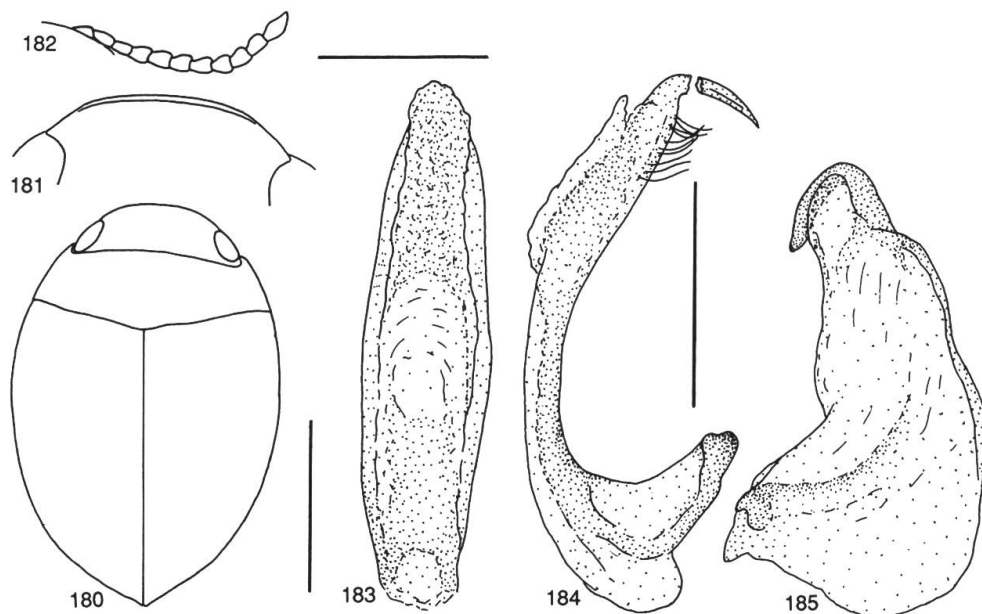
Hydrovatus pyrrus Guignot

Figs 179, 186–190.

Hydrovatus pyrrus GUIGNOT, 1958b:2 (orig. descr., faun.); BILARDO & ROCCHI, 1987:96 (disc.).

Type locality: Parc National Garamba, Zaire.

Type material studied: Holotype, m: Holotypus/Congo Belge PNG Miss. H. De Saeger II/hd/14s, 17.X.1951 Rc. H. De Saeger, 2644/Coll. Mus. Congo (ex coll.



Figs 180–185: *Hydrovatus granosus*. – 180, habitus. – 181, head, frontal aspect. – 182, antenna. – 183, penis, dorsal aspect. – 184, penis, lateral aspect. – 185, paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.3 mm, genitalia.

I.P.N.C.B.)/F. Guignot det., 1957 *Hydrovatus* (*Vathydrus*) *pyrrus* n.sp. Holotype (MAC). – Paratype: Same data as holotype but, II/gc/13s, 3.IX.1951, 2359 (1 ex. MAC, association with *H. pyrrus* uncertain; see under section Female below). In all, 2 exx.

Diagnosis: The specific status of this taxon is unclear. It resembles the previous species, but because the male antenna and penis in the holotype is seriously damaged I cannot give any exact features characterizing *H. pyrrus*. Therefore I simply refer to description and illustrations.

Length of body: 2.08 mm, breadth: 1.38 mm. Habitus (Fig. 186).

Head: Pale ferrugineous to ferrugineous. Finely and sparsely punctate, except at eyes and in quite shallow frontal depressions where punctures dense. Submat, microsculptured (meshes distinct). Head frontally rounded, finely and narrowly margined. Margin disappears before reaching eyes, very indistinct medially (Fig. 187). Antennae pale ferrugineous, broken from fifth segment.

Pronotum: Pale ferrugineous to ferrugineous, mediobasally with a vague darkened area. Rather finely and quite densely punctate. Discally on each side punctation sparser. Rather shiny, very finely microsculptured (meshes generally visible). Sides of pronotum slightly rounded.

Elytra: Pale ferrugineous to ferrugineous to brownish, without distinct colour pattern. Punctuation rather fine, somewhat sparse. Apically punctuation distinctly finer. Rows of punctures absent or indistinct. Only lateral row clearly discernible, although indistinct and mixed with adjacent punctures. Shiny, indistinctly microsculptured (meshes only partly visible). Epipleura pale ferrugineous, punctuation and microsculpture indistinct.

Ventral side: Pale ferrugineous to ferrugineous. Fairly coarsely and densely punctate. Abdomen basally with punctures, otherwise almost impunctate. Shiny, microsculpture indistinct. Prosternal process laterally distinctly margined, medial surface weakly convex.

Legs: Pale ferrugineous to ferrugineous. Protarsi missing. Mesotarsi slightly enlarged.

Male genitalia: Figs 188–190. Extreme tip and parts of base missing.

Female: The association of the female paratype (only female available) and the male holotype in one species is uncertain. Female deviates from male by a larger body (length 2.16 mm, breadth 1.48 mm), by finer elytral punctuation, and by sparser punctuation at eyes and in shallow frontal depressions of the head.

Distribution: Zaire (Fig. 179).

Biology: Unknown.

Hydrovatus fulvicollis Guignot

Figs 179, 191–196.

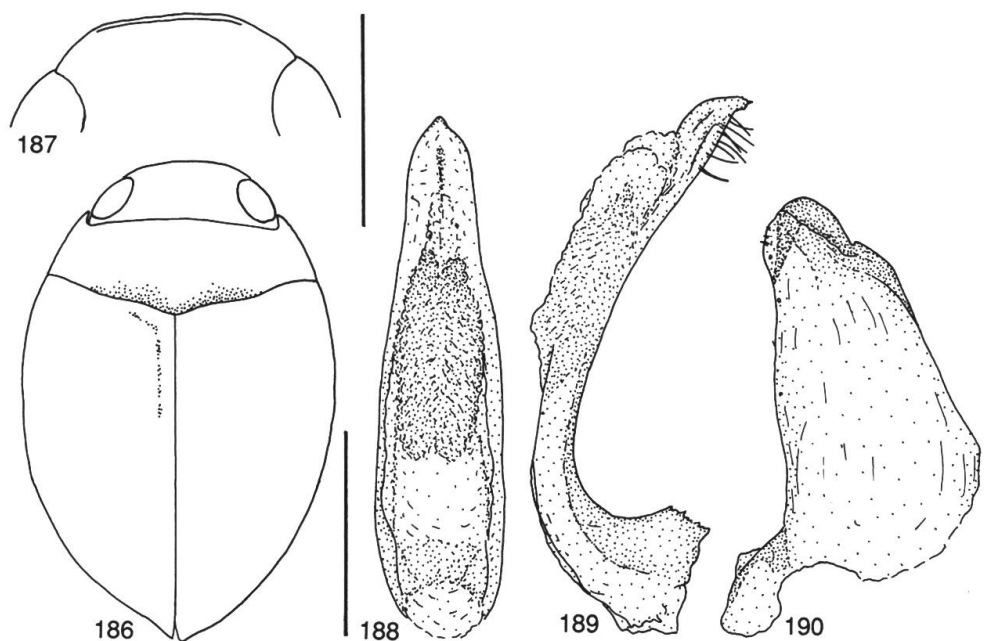
Hydrovatus fulvicollis GUIGNOT, 1958b:3 (orig. descr., faun.); 1958c:103 (disc.);
BILARDO & ROCCHI, 1987:96 (disc.).

Type locality: Parc National, Garamba, Zaire.

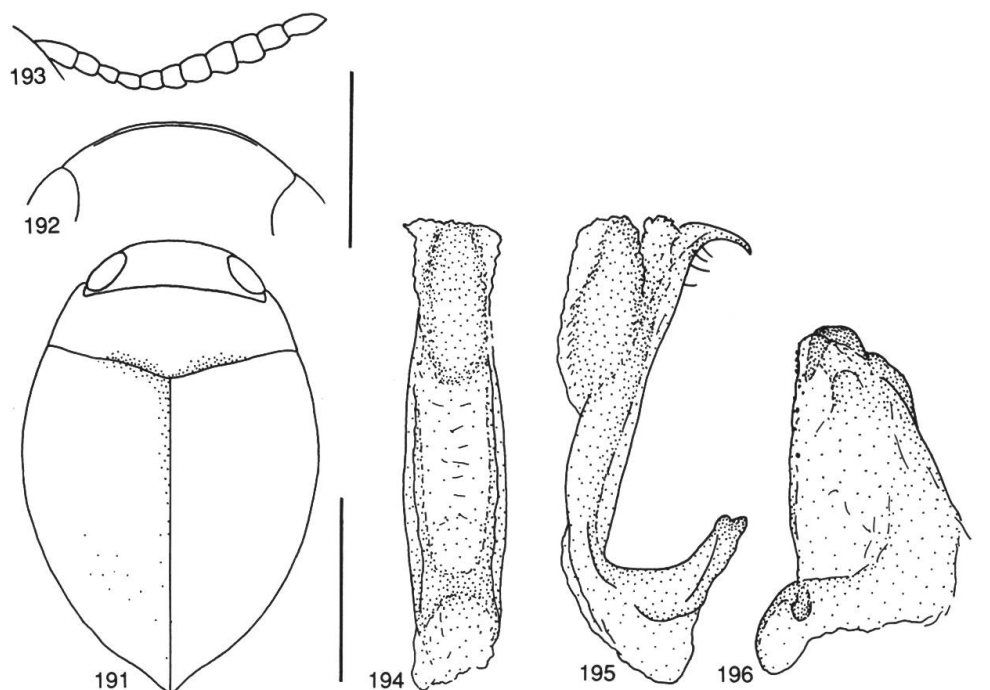
Type material studied: Holotype, m: Holotypus/Congo Belge PNG Miss. H. De Saeger II/gc/13s, 3.IX.1951 Rc. H. De Saeger, 2359/Coll. Mus. Congo (ex coll. I.P.N.C.B.)/F. Guignot det., 1958 *Hydrovatus* (*Vathydrus*) *fulvicollis* n.sp. Holotype, m (MAC). – Paratypes: Same data as holotype (1 ex. ISN, 1 ex. MAC); same as preceding but 17.X.1951, 2644 (1 ex. ISN); 20.V.1952, 3489 (1 ex. ISN); 22.VII.1952, 3812 (1 ex. ISN, 3 exx. MAC). One paratype kept in MAC labelled: PNG II/gd/11, 25.VII.1952, 3858) belongs to another *Hydrovatus* species.

Additional material studied: Sudan: Equatoria Nzara 22.IV.1986 (1 ex. coll. We-walka). In all, 11 exx.

Diagnosis: Close to the preceding species of this species group. *H. fulvicollis* is particularly characterized by the small sized globular body, by the frontal margin of the head which does not reach the eyes, by the distinctly but moderately enlarged male antennal seg-



Figs 186–190: *Hydrovatus pyrrus*. – 186, habitus. – 187, head, frontal aspect. – 188, penis, dorsal aspect. – 189, penis, lateral aspect (tip missing). – 190, paramere. Top left scale 0.5 mm, head; bottom left scale 1 mm, habitus; right scale 0.4 mm, genitalia.



Figs 191–196: *Hydrovatus fulvicollis*. – 191, habitus. – 192, head, frontal aspect. – 193, antenna. – 194, penis, dorsal aspect. – 195, penis, lateral aspect. – 196, paramere. Left top scale 0.5 mm, head and antenna; left bottom scale 1 mm, habitus; right scale 0.4 mm, genitalia.

ments 7–11, and by the ventral outline of the penis which is almost straight from base to curved apex.

Length of body: 2.10–2.18 mm, breadth: 1.42–1.48 mm. Habitus (Fig. 191).

Head: Pale ferrugineous to ferrugineous. Very finely and rather sparsely punctate. Punctuation irregularly distributed, densest in rather shallow frontal depressions and narrowly at eyes. Slightly mat, microsculptured (meshes distinct). Head frontally rounded. Medially for a quite long distance narrowly margined (Fig. 192). Antenna pale ferrugineous, segments 7–11 somewhat enlarged (Fig. 193).

Pronotum: Pale ferrugineous to ferrugineous, basally narrowly slightly darkened. Finely and somewhat sparsely punctate. Discally on each side punctuation somewhat sparser. Rather shiny, although microsculptured. Meshes of microsculpture comparatively small. Sides of pronotum slightly rounded.

Elytra: Ferrugineous to pale ferrugineous. At suture and basally narrowly darkened, but without distinct colour pattern. Rather finely but somewhat sparsely punctate. Apically punctuation finer. Only an irregular lateral row of punctures may be discerned. Rather shiny, microsculptured, but meshes almost obliterated, except apically (clearly discernible). Epipleura pale ferrugineous, with sparse but quite coarse punctures, and shiny although finely microsculptured.

Ventral side: Ferrugineous to pale ferrugineous. Fairly coarsely and densely punctate. Abdomen with hardly visible punctuation, except basally. Shiny, with only scattered indistinct microsculpture. Prosternal process laterally narrowly margined, medial surface somewhat convex, with very indistinct punctures.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsi quite slender.

Male genitalia: Figs 194–196.

Female: Antenna slender, apical segments not distinctly enlarged.

Distribution: Sudan, Zaire (Fig. 179).

Biology: Unknown.

Hydrovatus confossus Guignot

Figs 197–203, 207.

Hydrovatus confossus GUIGNOT, 1958b:4 (orig. descr., faun.).

Hydrovatus platycerus BILARDO & PEDERZANI, 1978:106, 107 (orig. descr., faun.);

PEDERZANI & ROCCHI, 1982:70 (faun.); BILARDO & ROCCHI, 1990:170 (faun.).

New synonym.

Type locality: Parc National, Garamba, Zaire.

Type material studied: *H. confossus*: Holotype, m: Holotypus/Congo Belge PNG Miss. H. De Saeger II/gd/10, 15.IX.1951 Rc. H. De Saeger 2425/Coll. Mus. Congo (ex coll. I.P.N.C.B.)/Guignot det., 1957 *Hydrovatus confossus* n.sp. Guign. Holotype (MAC). – Principally with same data as holotype but 10.III.1952, 3180 (1 ex. ISN); 30.VI.1952, 3721 (1 ex. ISN); 15.VII.1952, 3795 (2 exx. ISN); 17.VII.1952, 3806 (2 exx. ISN); 25.VII.1952, 3858 (3 exx. ISN); 28.VIII.1952, 3987 (14 exx. ISN); 8.VIII.1952, 3 924 (87 exx. ISN); 19.VIII.1952, 3956 (9 exx. ISN); 21.II.1952, 3143 (1 ex. MAC); 19.II.1952, 3137 (4 exx. MAC). Four paratypes kept in ISN and with same data as holotype but 22.VII.52, 3812 belong to *H. scholaeus* Guignot; one paratype kept in ISN and with same data as holotype but 28.VIII.52, 3987 belongs to *H. brevipilis* Guignot. One additional paratype with same data as holotype but 23.VIII.52, 3966 is broken but definitely does not belong to *H. confossus*. – *H. platycerus*: Gabon: Ntoun, St. 2 (in coll. Pederzani). Not available for study.

Additional material for study: Guinea Bissau: Cacheu: Bula 29.VII.1992 (1 ex. coll. Persson; uncertain record); 5 km W Bula 25.VII.1992 (1 ex. coll. Persson; uncertain record). – Benin: Parakou 7.VII.1989 (4 exx. coll. Vondel, 1 ex. MZH); Parakou 14.VII.1989 (1 ex. coll. Vondel). – Nigeria: Ibadan, at light 27.XI.1955 (3 exx. BMNH, 1 ex. MZH); Samaru/light trap 20.X.1969 (5 exx. TMB, 2 exx. MZH). – Cameroon: Bindiba, subd. Btar–Oya 19–22.VII.1949/running water, muddy over gravel (1 ex. BMNH, 1 ex. MZH); Ebolowa 1.IV.1912 (2 exx. MNB, 1 ex. MZH). – Congo: Voka Pr. Boko I. 1980/*H. platycerus* Bil. & Ped. det. Pederzani (1 ex. coll. Rocchi); Dimonika (Mayombe) XII.1980/*H. platycerus* det. Pederzani (1 ex. coll. Pederzani); Sibiti XI.1963 (1 ex. MNHN). – Zaire: Luebo 17.VIII.1921 (1 ex. ZSM); Albertville 20.X.1925 (1 ex. ZSM); PNG Napukumwe 8.VIII.1950 (1 ex. MNHN); PNG I/c/2, 30.XII.1949 (1 ex. MNHN); PNG Inimvud 20.V.1952, 3489 (4 exx. ISN, 1 ex. MAC); PNG II7gd/8, 10.IV.1952, 3316 (1 ex. MAC, 11 exx. ISN); PNG II7gd/11, 30.VI.1952, 3721 (1 ex. MAC); PNG I/gc/8, 10.VII.1952, 3766 (2 exx. MAC, 3 exx. ISN); PNG II/gd/11, 19.VIII.1952, 3956 (4 exx. ISN, 2 exx. MAC); PNG II/gd/11, 13.IX.1952, 4058 (1 ex. MAC); PNG II/fc/14, 4.VII.1952, 3736 (1 ex. ISN, 1 ex. MNHN); PNG II/hd/17, 13.X.1951, 2595 (1 ex. MNHN); PNG Mabanga 9'', 19.II.1952, 3137 (3 exx. MNHN, 4 exx. ISN); PNG Mabanga/8, 7.I.1952, 2996 (3 exx. ISN); PNG II/gc/10, 4.XII.1951, 2844 (5 exx. ISN); PNG II/hd/14s, 17.X.1951, 2644/*H. continentalis* Guign. det. Guignot 1957 (1 ex. MAC); PNG 12.IV.1952, 3322 (1 ex. ISN); PNG 8.VIII.1952, 3924 (65 exx. ISN); PNG 19.III.1952, 3199 (1 ex. ISN); PNG 5.VIII.1952, 3886 (1 ex. ISN); PNG 24.VI.1952, 3693 (1 ex. ISN); PNG II/fd/II, 26.VI.1951, 1982/*H. continentalis* Guign. det. Guignot 1957 (1 ex. MAC). Note! Some of the specimens from PNG are provided with different kinds of type labels; some of the specimens were intended to be the type material of a new species of Guignot, which never was described. – Sudan: Nyangwara, stream from hot springs 29.I.1954 (1 ex. AMS). – Uganda: Murchison N.P. Chobe 27.VII.1971 (1 ex. MCG); Kidepo N.P. 25–27.VII.1971 (1 ex. MCG). – Tanzania: Tanganyika (3 exx. ZSM). In all, 304 exx.

Diagnosis: Closest undoubtedly to *H. pescheti* and *H. postremus*. *H. confossus* is distinguished from those, two species particularly by the penis, which medially in dorsal view is almost parallel-sided, while in *H. pescheti* and *H. postremus*, the penis narrows quite distinctly towards the apex.

Length of body: 2.30–2.80 mm, breadth: 1.52–1.84 mm. Habitus (Fig. 197).

Head: Pale ferrugineous to ferrugineous to pale brown. With rather indistinct and irregularly distributed punctation. At eyes and in shallow frontal depressions with denser punctures. Rather shiny, although microsculptured (meshes distinct). Head frontally rounded, medially often straightened, narrowly margined (Fig. 198). Antenna pale ferrugineous, quite slender, medial segments comparatively robust but not distinctly modified. Slight variation observed (Figs 199–200).

Pronotum: Pale ferrugineous to ferrugineous to pale brown. Anteriorly often with a vague slightly darkened area. Mediobasally with a quite distinct blackish to dark ferrugineous area (Fig. 197). Rather finely and densely punctate. Discally on each side with a narrow almost impunctate area. Rather shiny, microsculptured. Basally in middle meshes of microsculpture sometimes reduced and partly obliterated. Sides of pronotum slightly rounded.

Elytra: Blackish to dark ferrugineous, with quite vague pale ferrugineous to ferrugineous to pale brown markings (Fig. 197). One specimen from Nigeria has almost unicoloured, blackish elytra. Rather finely to quite coarsely and densely punctate. Punctures quite evenly distributed. Apically and close to epipleura punctures slightly sparser. Without distinct rows of punctures (lateral row sometimes discernible). Shiny, without microsculpture except apically (with quite distinct reticulation). Rarely indistinct scattered reticulation can also be discerned elsewhere. Epipleura pale ferrugineous to pale brown, rather finely punctate and without microsculpture.

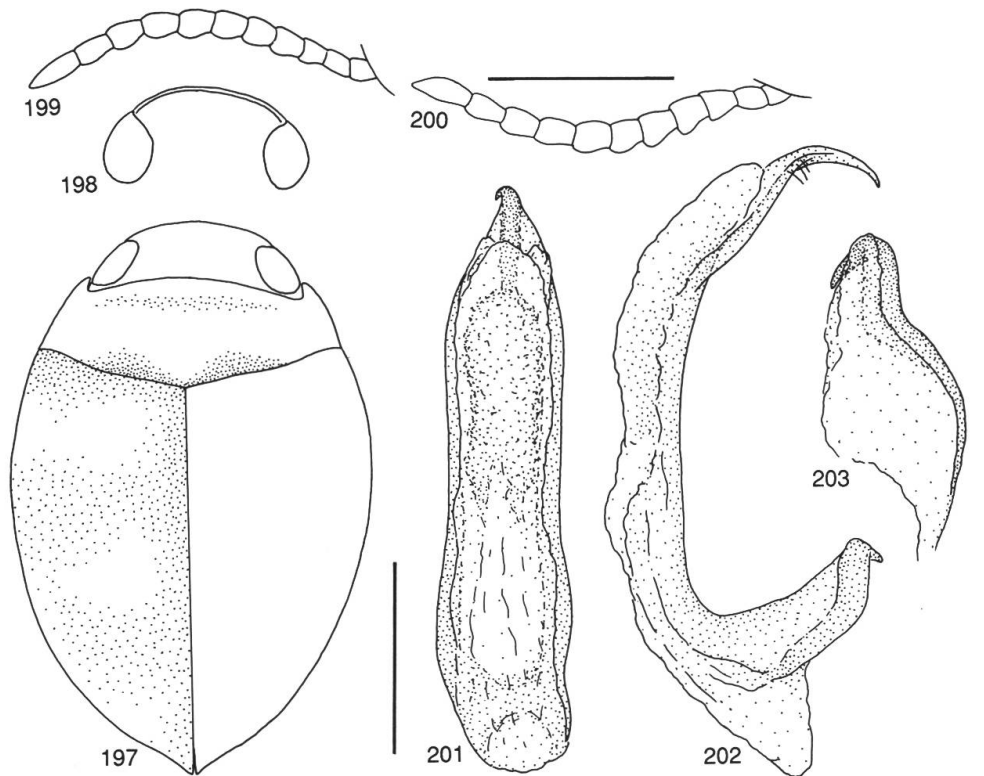
Ventral side: Ferrugineous to pale ferrugineous to pale brown. Fairly coarsely and densely punctate. Abdomen almost impunctate, except base, with quite dense punctures. Shiny, not microsculptured. Abdomen slightly mat, finely microsculptured. Prosternal process laterally finely margined, medial surface slightly uneven, punctate.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsi slender, indistinctly enlarged.

Male genitalia: Figs 201–203.

Female: Externally as male, antennae sometimes a little more slender.

Distribution: Benin, Nigeria, Cameroon, Sudan, Congo, Zaire, Uganda, Tanzania (Fig. 207). Holotype of *H. platycerus* is from Gabon (Bilardo & Pederzani 1978). Two uncertain records from



Figs 197–203: *Hydrovatus confossus*. – 197, habitus. – 198, head, frontal aspect. – 199–200, male antenna. – 201, penis, dorsal aspect. – 202, penis, lateral aspect. – 203, apical part of paramere. Horizontal scale 0.5 mm, antenna; left scale 1 mm, habitus and head; right scale 0.4 mm, genitalia.

Guinea Bissau (not mapped). Remark: The occurrence of *H. confossus* in Guinea Bissau has been verified later.

Biology: In Cameroon sampled in running water, with muddy gravel bottom. In Sudan captured in a stream from hot springs. Sometimes collected at light sampling.

Synonymy: The holotype of *H. confossus* has been examined, but the type of *H. platycerus* has not been available for study. I have, however, studied a male specimen determined as *H. platycerus* by Fernando Pederzani (identity of specimen verified by comparison with holotype). Minor differences seem to exist but do not justify in my opinion a separation into two different species. Thus I consider *H. platycerus* a junior synonym of *H. confossus* (valid name).

Hydrovatus duponti Régimbart

Figs 204–207.

Hydrovatus duponti RÉGIMBART, 1895b:106 (orig. descr., faun.); ZIMMERMANN, 1920a:33 (faun., list.); GUIGNOT, 1959a:149, 155 (descr., faun.).

Type locality: Madagascar.

Type material studied: Holotype, f: *duponti* Javet Madag./*Hydrovatus duponti* Rég. n.sp. type unique (MNHN). In all, 1 ex.

Diagnosis: The status of this species is unclear. Only a single female specimen exists of this species and I am not able to give any diagnostic features for it. On the basis of general morphology it is, however, clear that *H. duponti* is very close to *H. confossus* and *H. pescheti*. Synonymy, particularly with *H. confossus*, cannot be excluded.

Description (female): Only differences from description of *H. confossus* are recognized.

Length of body: 2.40 mm, breadth: 1.68 mm. Habitus (Fig. 204).

Head: Frontal aspect of head (Fig. 205). Antenna quite slender (Fig. 206).

Elytra: Blackish ferrugineous to dark ferrugineous, with vague ferrugineous to pale ferrugineous areas (Fig. 204).

Ventral side: Prosternal process laterally fairly distinctly margined, medial surface almost flat, with somewhat obscure punctation.

Male: Unknown.

Distribution: Madagascar. Exact location unknown – on map marked as central Madagascar (Fig. 207).

Biology: Unknown.

Hydrovatus pescheti Omer-Cooper

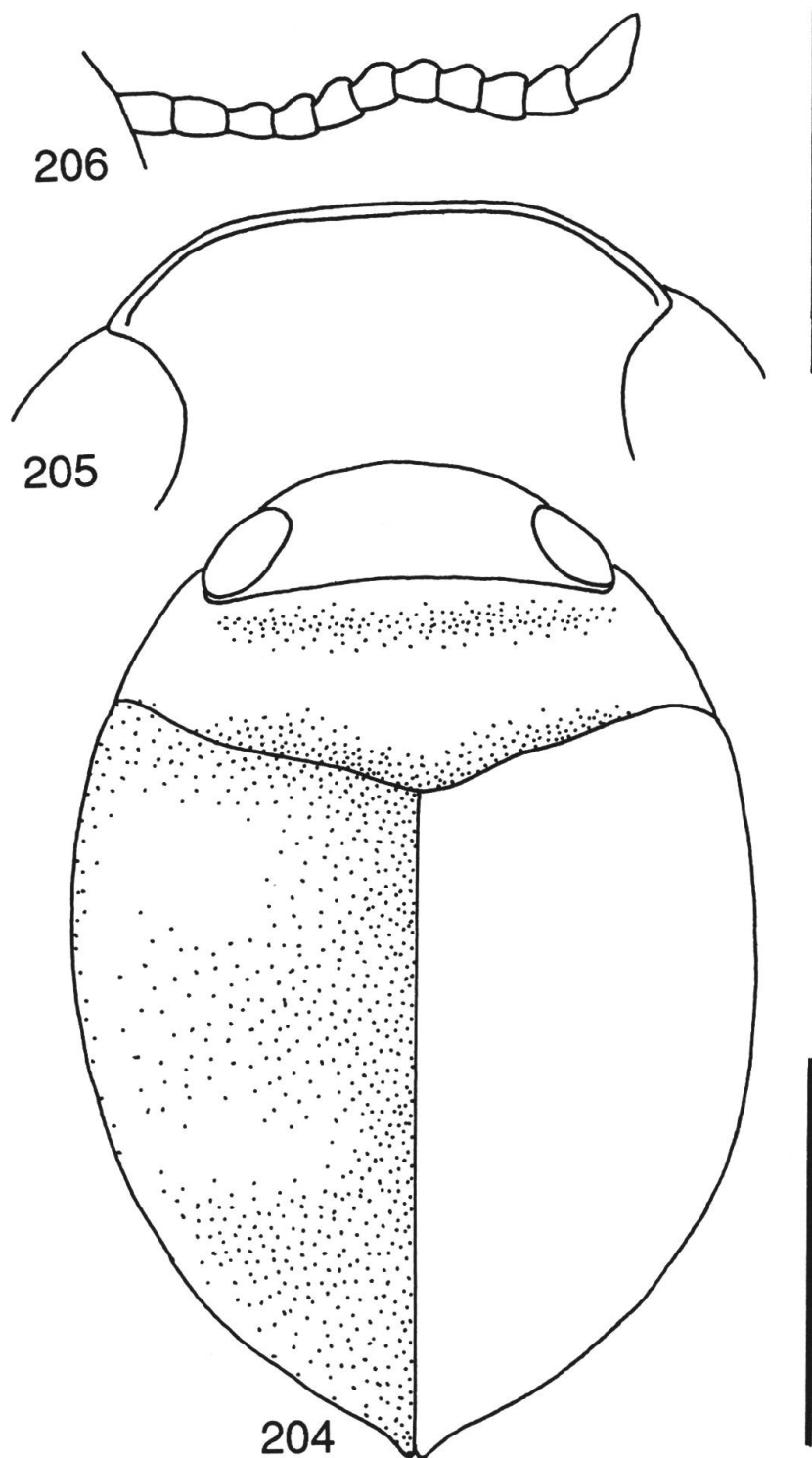
Figs 207–214.

Hydrovatus pescheti OMER-COOPER, 1931:761 (orig. descr., faun., biol.); GUIGNOT, 1945a:300, 304, 311 (descr., faun.); 1948c:8 (faun.); 1953c:144 (faun.); 1954b:14 (faun.); 1955c:181 (faun.); OMER-COOPER, 1957:29 (faun.); 1958:59 (faun., biol.); GUIGNOT, 1959a:149,153 (descr., faun.); 1959c:138 (faun.); 1961a:233 (faun.); 1962:296 (disc.); OMER-COOPER, 1965:99 (descr., faun.).

Type locality: Mt. Chilalu, Ethiopia.

Type material studied: Lectotype, m, by present designation: Cotype/Abyssinia 7000 ft. Mt. Chilalu 8.XI. 1926 J. Omer-Cooper/Brit. Mus. 1933–130/*Hydrovatus pescheti* O-C. Det. J. Omer-Cooper (BMNH). – Paralectotypes, f: Abyssinia: 7000 ft. Mt. Chilalu 8.XI.1926 J. Omer-Cooper/*H. pescheti* (1 ex. AMS); Type/Abyssinia: 5000 ft. Small Pond, Hora Shala 21.XI.1926 J. Omer-Cooper/*Hydrovatus pescheti* O-C. Det. J. Omer-Cooper (1 ex. BMNH).

Additional material studied: Ethiopia: Kaffa Pr., Jimma 1720 m, 23–29.IV.1972 (5 exx. MAC, 1 ex. MZH); Bahar Dar 8.X.1968/Lichtfang (5 exx. coll. Wewalka).



Figs 204–206: *Hydrovatus duponti*, female. – 204, habitus. – 205, head, frontal aspect. – 206, antenna. Top scale 0.5 mm, head and antenna; bottom scale 1 mm, habitus.

– Sudan: L. Shambe, pool in marsh 21.I.1954 (1 ex. AMS). – Uganda: Toro Lacs Vijongo 1904/*H. pescheti* O-C. det. Guignot (1 ex. MNHN, 1 ex. MZH); Ug. Central Riv. Kizoungou II.1909 (1 ex. MNHN). – Tanzania: Usa R. 3900 ft/light trap 15.XI.–31.XII.1965 (1 ex. TMB). – Zimbabwe: Wankie game res., water hole 3.IX.1948/*H. simoni* Régb. det. Omer-Cooper (12 exx. AMS); Wankie N.P. Pan MV–light trap XI.1961 (1 ex. BMNH). – South Africa: Trsvl R. Koop nr Nelspruit 1.XII.1948 (1 ex. AMS); P. Maritzburg 7.IV.1947 (1 ex. AMS); E.C. Pr. Mt Frere 8.V.1956/*H. pescheti* O-C. det. Omer-Cooper (4 exx. AMS); E.C. Pr. Lusikisiki (1 ex. AMS); E.C. Pr. Matatiele 3.V.1956 (1 ex. AMS); C. Pr. Humansdorp Storms Riv. 15.II.1947 (13 exx. AMS); Humansdorp Groot Riv. 19.II.1947 (1 ex. AMS); George Sinksa Bridge 28.VI.1947 (2 exx. AMS); S. Cape Harker-ville for. 34.04 S–23.10E/7.III.1976 E–Y 1321 light collection (1 ex. TMP); Zulul. Mtubatuba 24.IX.1947 (2 exx. AMS). – Swaziland: Mbabane/5.XII. 1948/*H. pescheti* O-C. det. Omer-Cooper (3 exx. AMS, 1 ex. TMP); Little Usutu Riv. nr. Bremersdorp 5.XII. 1948/*H. pescheti* O-C. det. Omer-Cooper (2 exx. AMS). – Uncertain determination: Zaire: Elisabethville, lum./*H. nepos* Guign. det. Guignot 1957 (2 exx. MAC). – Angola: Rocadas 30.III.1972/at light (5 exx. BMNH); Rocadas Riv. Cuenene 19–22.II.1972/at light (2 exx. BMNH); Chianga 21–24.III.1972/cut grass heaps (1 ex. BMNH). – Botswana: L. Ngami 12mi. NE Sehithwa 16–17.IV.1972 (1 ex. BMNH). In all, 76 exx.

Diagnosis: Close to *H. confossus*. Males of the species are often distinguished by the antenna which is slender in *H. pescheti*, while it is in *H. confossus* often slightly enlarged. Additionally the penis narrows gradually towards the apex in *H. pescheti* while the penis is almost parallel-sided for a long distance in *H. confossus*. See also the diagnosis of *H. postremus* below.

Description: (Only differences from description of *H. confossus* are recognized):

Length of body: 2.26–2.68 mm, breadth: 1.56–1.74 mm. Habitus (Fig. 208).

Head: Frontal aspect of head (Fig. 209). Antenna slender, not modified (Fig. 210).

Pronotum: Ferrugineous to pale ferrugineous to pale brown. Anteriorly and basally generally with quite broad but somewhat vague areas (Fig. 208).

Elytra: Blackish to dark brown to dark ferrugineous, with pale ferrugineous to pale brown, quite distinct but slightly variable markings (Fig. 208). Rarely dorsal colour pattern vague (specimens from Zimbabwe).

Ventral side: Prosternal process laterally finely margined, medial surface almost flat, distinctly punctate.

Legs: Pro- and mesotarsal claws quite long (Fig. 211).

Male genitalia: Figs 212–214. Genitalia of lectotype in permanent preparation. Tip of penis missing. Complementary illustration drawn from non-type material sampled in Ethiopia.

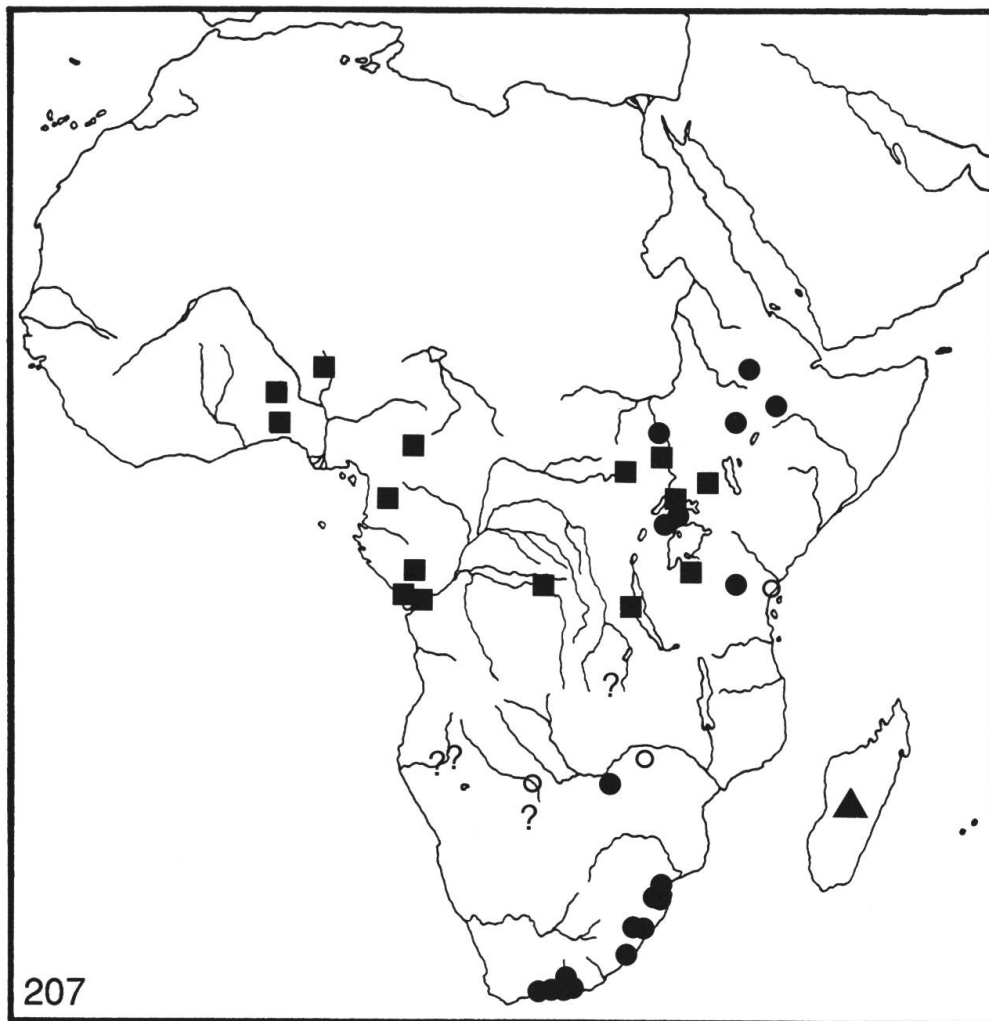
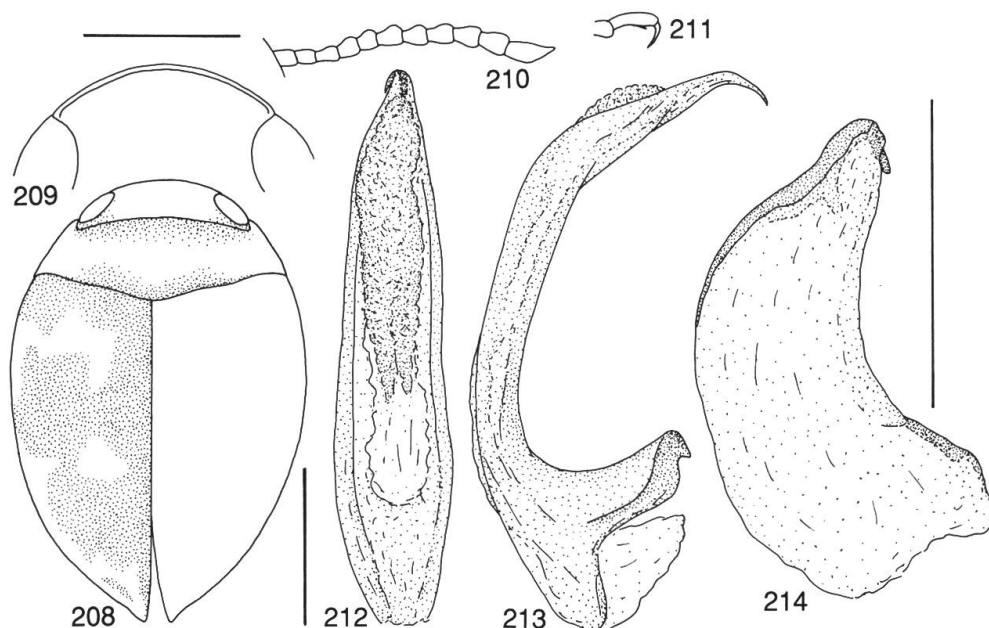


Fig. 207: Distribution of *Hydrovatus confossus* (square), *H. duponti* (triangle), *H. pescheti* (dot, ?) and *H. postremus* (circle).

Distribution: Ethiopia, Sudan, Uganda, Tanzania, Zimbabwe, Swaziland, South Africa. Uncertain records are Zaire, Angola, and Botswana. On the map these are marked with ? (Fig. 207). Additional literature records are Senegal (Guignot 1961a) and Zaire (many different citations, eg. OMER-COOPER 1957, GUIGNOT 1959a).

Biology: In Ethiopia collected at high altitudes (7000 ft. a.s.l.). In Sudan captured in a pool in a marsh. In Ethiopia and South Africa sampled at light collection and in Zimbabwe with a mercury vapour light trap. Additionally OMER-COOPER (1958) reports the species from a swiftly running river with pools among rocks and from spring waters with their mud red probably due to iron bacteria.



Figs 208–214: *Hydrovatus pescheti*. – 208, habitus. – 209, head, frontal aspect. – 210, antenna. – 211, male protarsal claw. – 212, penis, dorsal aspect. – 213, penis, lateral aspect. – 214, paramere. Horizontal scale 0.5 mm, head, antenna and claw; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Hydrovatus postremus Guignot

Figs 207, 215–220.

Hydrovatus postremus GUIGNOT, 1942:13 (orig. descr., faun.); 1945a:301, 304, 313 (descr., faun.); 1959a:149, 156 (descr., faun.).

Type locality: Tiwi, Kenya.

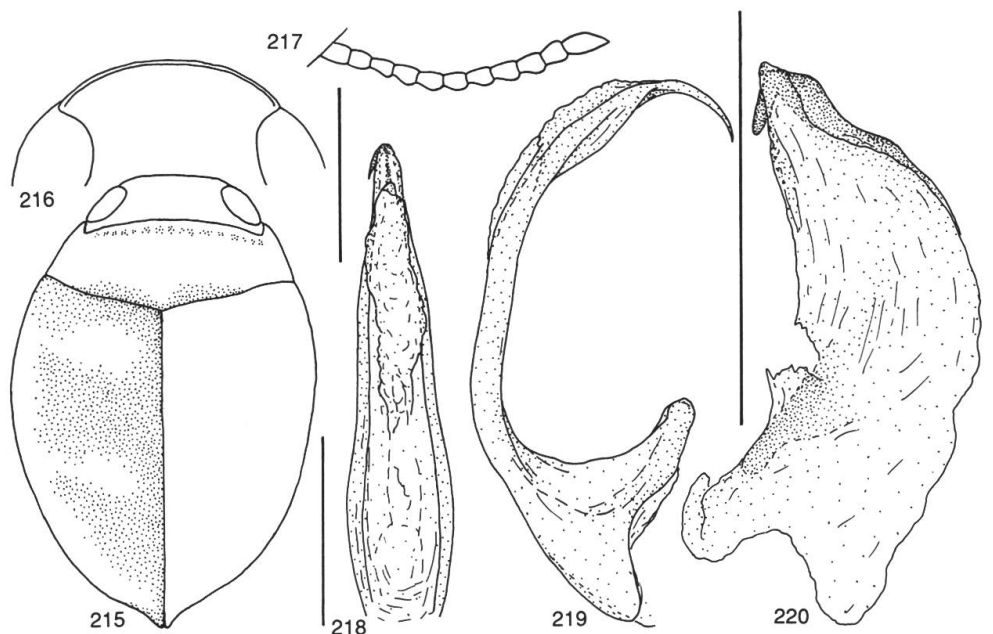
Type material studied: Holotype, m: Cote d'Afrique or. angl. Tiwi Alluaud & Jeannel Nov. 1911 St. 5/m/Type/Det. Dr. Guignot *Hydrovatus postremus* Guign. Type (MNHN).

Additional material studied: Zimbabwe: Zambesi Valley 30.15E/16.08S, 7 km SE Angwa Bridge 18.VI–19.IX. 1988 (3 exx. MZH, association with *H. postremus* uncertain). – Namibia: Tondoro Okavango 20–23.I. 1975 (1 ex. coll. Wewalka). In all, 5 exx.

Diagnosis: The status of this species needs further study. Very close to *H. pescheti* (synonymy cannot be excluded). *H. postremus* is generally distinguished from *H. pescheti* by the pronotum, which lacks a darkened anterior area and by the penis (curved apex longer in *H. postremus*).

Description: (Only differences with description of *H. confossus* are recognized):

Length of body: 2.26–2.32 mm, breadth: 1.52–1.56 mm (exx. from Zimbabwe 2.36–2.56 mm/1.58–1.64 mm). Habitus (Fig. 215). General colouration of body slightly darker in specimens from Zimbabwe than in holotype.



Figs 215–220: *Hydrovatus postremus*. – 215, habitus. – 216, head, frontal aspect. – 217, antenna. – 218, penis, dorsal aspect. – 219, penis, lateral aspect. – 220, paramere. Left top scale 0.5 mm, head and antenna; left bottom scale 1 mm, habitus; middle scale 0.5 mm, penis; right scale 0.4 mm, paramere. (Sizes of penis and paramere not compatible.)

Head: Frontal aspect of head (Fig. 216). Antenna (Fig. 217).

Elytra: Shiny, very finely and indistinctly microsculptured. Meshes weakly developed, partly almost obliterated. Apically with distinct reticulation.

Ventral side: Prosternal process laterally finely margined, medial surface flat, fairly densely punctate.

Male genitalia: Penis missing in holotype. Illustration of penis based on specimen from Zimbabwe (Figs 218–220).

Distribution: Kenya, Zimbabwe, Namibia (Fig. 207). Although the male is represented in material from Zimbabwe I regard this record as a little uncertain.

Biology: Unknown.

***Hydrovatus scholaeus* Guignot**

Figs 221–226, 233.

Hydrovatus scholaeus GUIGNOT, 1958b:4 (orig. descr., faun.); 1961a:235 (faun.).

Type locality: Parc National, Garamba, Zaire.

Type material studied: Holotypus, m: Congo Belge PNG, Miss. H. De Saeger II7gc/11, 30.III. 1951 Rc. H. De Saeger, 1482/Coll. Mus. Congo (ex coll. I.P.N.C.B.)/F. Guignot det., 1956 *Hydrovatus scholaeus* n.sp. Paratype (ex. also provided with

Guignot's red coloured type label) (MAC). – Paratypes: Same as holotype but 17.X.1951, 2644 (1 ex. MAC); 19.II.1952, 3137 (4 exx. MAC); 26.II.1952, 3156 (1 ex. MAC); 21.VI.1951, 1953 (1 ex. MAC); 10.III.1952, 3180 (1 ex. MAC); 28.IV.1952, 3403 (1 ex. MAC); 25.VII.1952, 3858 (1 ex. MAC); 14.IX.1952, 4099 (1 ex. MAC). Remark: Some part of the type material most probably belong to *H. confossus*, also recorded from PNG, Zaire.

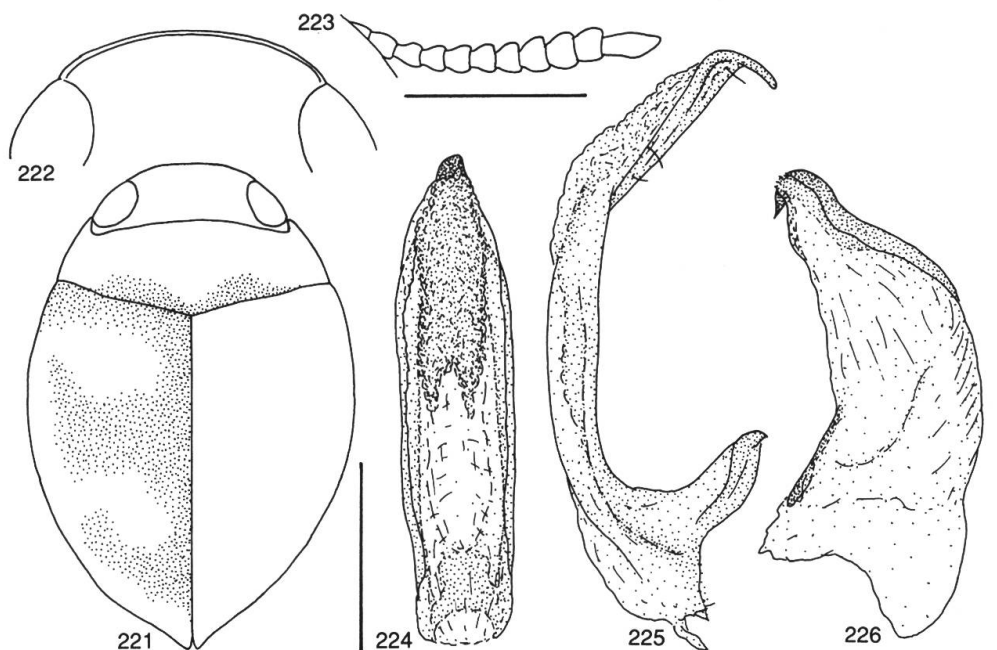
Additional material studied: Ivory Coast: Mankono II.1980 (1 ex. coll. Wewalka). – Zaire: PNG, Utukuru 22.VII.1952 (4 exx. ISN; labelled as paratypes of *H. confossus* Guignot). – Sudan: Equatoria Nzara 22.IV.1986 (2 exx. coll. Wewalka). In all, 19 exx.

Diagnosis: Also very close to *H. confossus*. The two species are distinguished by the differences in male antenna (in *H. scholaeus*, segments become somewhat broader towards the apex) and apical hook of the paramere (in *H. scholaeus* hook of peculiar shape).

Description: only differences from description of *H. confossus* are recognized.

Length of body: 2.32–2.44 mm, breadth: 1.56–1.66 mm. Habitus (Fig. 221).

Head: Frontal aspect of head in Fig. 222. Antenna pale ferrugineous. Segments towards apex somewhat enlarged, except for apical segment, which is slightly prolonged (Fig. 223).



Figs 221–226: *Hydrovatus scholaeus*. – 221, habitus. – 222, head, frontal aspect. – 223, antenna. – 224, penis, dorsal aspect. – 225, penis, lateral aspect. – 226, paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Elytra: Epipleura fairly coarsely punctate, not distinctly microsculptured.

Male genitalia: Figs 224–226.

Female: Antenna slender, almost evenly broad from base to apex.

Distribution: Ivory Coast, Sudan, Zaire (Fig. 233). GUIGNOT (1961a) gives additionally Senegal.

Biology: Unknown.

Hydrovatus brevipilis Guignot

Figs 227–233.

Hydrovatus brevipilis GUIGNOT, 1942:12 (orig. descr., faun.); 1943:85 (descr., faun.); 1953a:234 (faun.); OMER-COOPER, 1957:38, 39 (disc.); GUIGNOT, 1959a:149, 154 (descr., faun.); 1961a:233 (faun.); OMER-COOPER, 1963:169, 171 (descr., faun.); BILARDO & PEDERZANI, 1978:103 (descr., faun.); PEDERZANI & ROCCHI, 1982:70 (faun.); BILARDO & ROCCHI, 1990:160, 162, 170 (faun., biol.).

Type locality: Gao, Mali.

Type material studied: Holotype, m: Soudan Francais Gao/Museum Paris 12.1930–IV.1931 Ch. Alluaud & P.A. Chappuis/fType/Det. Dr. Guignot *Hydrovatus brevipilis* Guign. Type (MNHN). Obviously by mistake GUIGNOT (1942) referred to Say as the type locality of the species. Gao is given as type locality on the label pinned with the type as well as in Guignot 1959a).

Additional material studied: Gambia: Bathurst I. 1968 (2 exx. coll. Palm); R. Tanji 3 km SW Brufut at light 19.00–21.00, 28.II.1977 (1 ex. LUZ). – Senegal: 3 km SSW Toubakouta 10 km S Ziguinchor 4.III.1977 at light 19.00–22.00, UTM 28PCJ585782 (1 ex. LUZ); Mpake 11 km S Ziguinchor, at light 19.00–21.00, 8.XI.1977, UTM 28PCJ6479 (2 exx. LUZ); Parc. Nat. Niokolo Koba, Badi 15.VIII.–25.IX.1955/*H.* n.sp. prope *brevipilis* Guign. det. Guignot 1956 (1 ex. IFAN). – Guinea Bissau: Oio 2 km E Binar 21.VI.1992 (1 ex. coll. Persson). – Chad: Ft Archambault Bounghoul (Ba-kare) VI.,V.1904 (8 exx. MNHN, 4 exx. MZH). – Guinea: Matougouma 1–11.VII.1965 (1 ex. TMB). – Ivory Coast: Kafolo, Como 28.IV.1988 (2 exx. MNS, 1 ex. MZH); Mankono II. 1980 (1 ex. coll. Wewalka). – Ghana: Volta reg. Abuadi appr. 60 km S of Ho/singled 8.XII.1970 (1 ex. TMB). – Benin: 3 km S Parakou 5.VII.1989 (1 ex. coll. Vondel); Parakou 6.VII.1989 (1 ex. coll. Vondel); Parakou 11.VII.1989 (1 ex. coll. Vondel); Beterou W Parakou 21.V II.1989 (1 ex. coll. Vondel, 2 exx. coll. MZH); Onklou E Djougou 24.VII.1989 (1 ex. coll. Vondel). – Nigeria: L. Alo Maiduguri 27.IV.1963 (1 ex. AMS); Zaria pr. VI.1955 (1 ex. BMNH). – Gabon: Pt Gentil/*Hydrovatus* sp. det. Legros (1 ex. MNHN); Libreville/*H. flebilis* Guign. det. Guignot (1 ex. MNHN, 1 ex. MZH). – Zaire: Parc Nat. Garamba 29.III.1950 (1 ex. MNHN); PNG, 28.VIII.1952, 3987 (1 ex. ISN; labelled as paratype of *H. confossus* Guignot); PNG 26.VI.1952 (1 ex. ISN). – Sudan: Rumbek, rain pond s 19.IV.1954 (1 ex. AMS); SE of Yirol, mud ponds 16.I.1954 (3 exx. AMS); L. Shambe, shore 31.I.1954 (1 ex. AMS); Shambe Bahr el Jebel/28.V.–19.VI.1954 (1 ex. BMNH, 1 ex. MZH); Riv. Post 21 appr. 105 km of L. No/28.V.–19.VI.1954 (1 ex. BMNH). – Angola: Riv. Lac Calundo 105 km est Luso XII.1954 (1 ex. MNHN); R. Lac Calundo, sous pierres 28.XII.1954 (1 ex. MNHN). – Zimbabwe: Stream with lilies

betw. Salisbury and Bromley 12.XI.1948 (3 exx. AMS). – Namibia: Nyangana, Okavango 1–9.IV. 1988/*H. brevipilis* Guign. det. Wewalka 1989 (1 ex. ZFMB). In all, 56 exx.

Diagnosis: *H. brevipilis* is a distinct species, which is quite easily determined by examination of external features. The body is quite globular, often with a clearly discernible dorsal colour pattern. Elytral punctures are provided with a minute but clearly visible scale. Head frontally for a quite long distance almost straight. Male antenna with indistinctly enlarged segments. Also male genitalia provide useful characters for separation from similar species. Ventral outline of penis near the curved apex straight for quite a long distance.

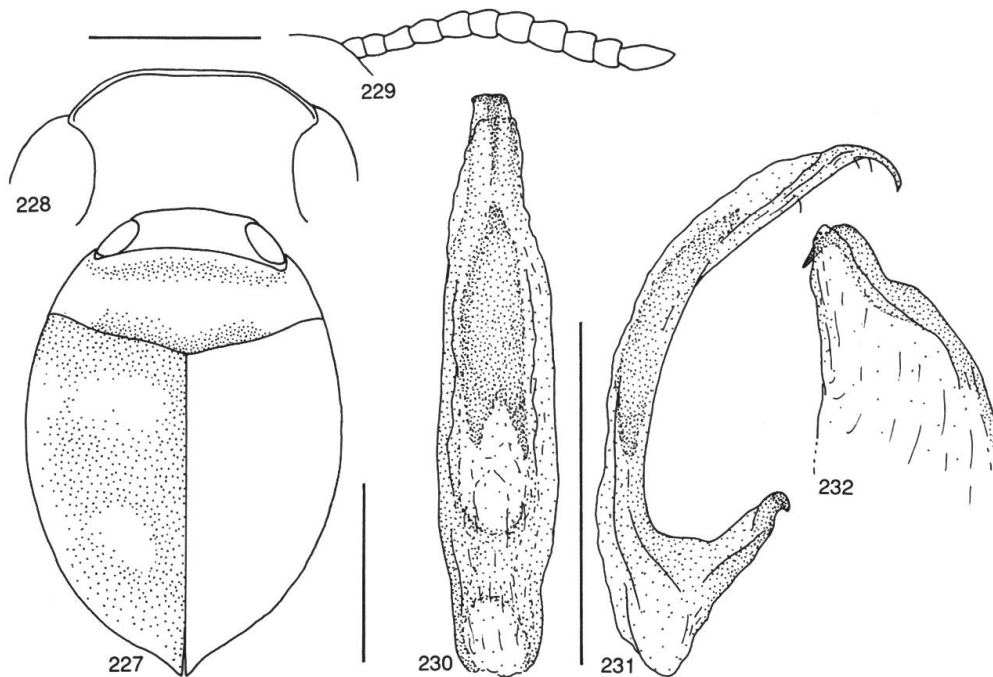
Length of body: 2.30–2.50 mm, breadth: 1.52–1.70 mm. Habitus (Fig. 227).

Head: Pale ferrugineous to ferrugineous to pale brownish. Punctuation very fine, rather indistinct, sparse and irregularly distributed. Submat, microsculptured (meshes distinct). Frontal depressions fairly distinct. Head frontally rounded, medially almost straight, from eye to eye narrowly margined (Fig. 228). Antenna pale ferrugineous to pale brown, quite slender. Narrows evenly in both directions from broadest segments (segments 7 and 8)(Fig. 229).

Pronotum: Pale ferrugineous to pale brown. Anteriorly and basally with somewhat vague, but distinctly darkened area. Punctuation rather fine to fine, somewhat sparse. Discally punctures slightly finer and also sparser. Slightly mat, microsculptured (meshes distinct). Sides of pronotum rounded.

Elytra: Blackish to dark ferrugineous, with vague paler areas (Fig. 227). Elytral colour pattern sometimes hardly visible. Punctuation rather fine to fairly coarse, quite dense, almost evenly distributed. Separate punctures provided with a minute scale. Apically punctures distinctly finer and sparser, partly rather indistinct. Rows of punctures indistinct or absent (mixed with adjacent punctures). Rather shiny, finely microsculptured (meshes discernible). Epipleura pale ferrugineous to ferrugineous, fairly distinctly punctate and microsculptured.

Ventral side: Dark ferrugineous to pale ferrugineous. Fairly coarsely and densely punctate. Abdomen, except basally with distinctly finer and sparser punctuation. Rather shiny, although microsculptured. Metathorax almost without reticulation. Prosternal process laterally finely margined, medial surface almost flat, with somewhat indistinct punctures.



Figs 227–232: *Hydrovatus brevipilis*. – 227, habitus. – 228, head, frontal aspect. – 229, antenna. – 230, penis, dorsal aspect. – 231, penis, lateral aspect. – 232, paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Legs: Pale ferrugineous to pale brownish. Pro- and mesotarsi only slightly enlarged.

Male genitalia: Figs 230–232.

Female: Antenna more slender, totally without enlarged segments.

Distribution: Gambia, Senegal, Guinea Bissau, Guinea, Ivory Coast, Ghana, Benin, Mali, Chad, Nigeria, Gabon, Zaire, Sudan, Angola, Zimbabwe, Namibia (Fig. 233). PEDERZANI & ROCCHI (1982) gives also Congo.

Biology: In Sudan sampled in a rain pond, and in Zimbabwe in a stream with water lilies. Also captured at light collection.

***Hydrovatus senegalensis* Régimbart**

Figs 233–240.

Hydrovatus senegalensis RÉGIMBART, 1895b:102 (orig. descr., faun.); ZIMMERMANN, 1920a:35 (faun., list.); BALFOUR-BROWNE, 1939:479 (faun.); GUIGNOT, 1945a:305 (disc.); BALFOUR-BROWNE, 1950:360 (faun.); GUIGNOT, 1952a:519 (faun.); 1956a:83 (faun.); 1956c:317, 319 (disc., faun.); 1958b:4 (disc.); OMER-COOPER, 1958:57, 59 (disc., faun., biol.); GUIGNOT, 1959a:149, 154 (descr., faun.); 1959c:138 (faun.); 1961a:233, 235 (disc., faun.); OMER-COOPER, 1963:174, 177 (descr., faun.); 1965:100 (descr., faun.); LEGROS, 1972:460 (faun.);

BILARDO & PEDERZANI, 1978:103, 106 (descr., disc., faun.); MEDLER, 1980:155 (faun., list.); FORGE, 1981:497 (descr., faun.); BILARDO & ROCCHI, 1987:96 (faun., biol.); PEDERZANI, 1988:106 (faun., biol.).

Type locality: Cap Vert, Senegal.

Type material studied: Lectotype, m, by present designation: Senegal Cap Vert/m/ Lectotype J. O-C. June 1960 (never published)/*H. senegalensis* Régb./Museum Paris coll. Maurice Rgimbart 1908/Type (MNHN). – Paralectotype: Same data as lectotype (1 ex. MNHN). Probable paralectotypes, but without any type labels, found in the unsorted material of MNHN: Senegal Cap Vert (1 ex. MNHN, 1 ex. MZH); Senegal Dr. Roussel (1 ex. MNHN).

Additional material studied: Gambia: Outside Aubuko Nat. Res. at waterworks at light 19.00–21.50, 22.XI.1977/*H. senegalensis* Régb. det. A. Nilsson (10 exx. LUZ). – Benin: Dahomey env. Porto Novo 1910 (1 ex. MNHN). – Nigeria: Stream 64 mi. from Bida on Jebba rd. 15.IV.1963 (1 ex. AMS). – Chad: Chad or Archipel Kouri (1 ex. MNHN). – Sudan: Nimule, duckweed ditch 4.II.1954 (5 exx. AMS); 1 mi. from Tali Post 14.I.1954 (1 ex. AMS); Aluakluak 14.V.1954 (1 ex. AMS). – Zaire: Kivu, Kavimvira (Uvira) lum. XII.1954, X.1955, I.1956 (9 exx. MAC); Kivu Sanghe Ruzizi, lum. XII.1951 (1 ex. MAC). – Tanzania: Rukwa Val. 26.XII.1961 (4 exx. AMS); Gomba Lichtfang (3 exx. MNB, 1 ex. MZH). – Malawi: Dally's Hotel nr. Ft. Johnstone, swamp 23.VIII.1948 (5 exx. AMS); Dambo/Ft. Johnstone 22–27.IX.1948 (8 exx. AMS). – Zambia: Luangwa Valley, Chibembe dint. 6.X.1984/alveo ris. caccia (2 exx. MCG, 1 ex. MZH). – Zimbabwe: Mudzi VII.1986 (5 exx. coll. Smith, 1 ex. MZH). – Mozambique: Umbuluzi Riv. nr Goba 4.XII.1948 (4 exx. AMS). – Botswana: Chobe distr. Savute Drift Camp 34S,24.04E, 29.XII.1988 (2 exx. CMNH). – Swaziland: Bremersdorp, stream with muddy pools 4.XII.1948/*H. simoni* Régb. det. Omer-Cooper (2 exx. AMS). In all, 73 exx.

Diagnosis: A distinct species, which is characterized by a combination of the following features: Elytral colour pattern generally quite distinct, male antenna slender except for the apical segment which is distinctly enlarged, and the paramere strongly concave at apical hook.

Length of body: 2.32–2.66 mm, breadth: 1.46–1.72 mm. Habitus (Fig. 234).

Head: Pale ferrugineous. Punctuation very fine, partly indistinct, and irregularly distributed. Submat, microsculptured (meshes distinct). Head frontally rounded, medially straightened. From eye to eye narrowly margined (Fig. 235). Frontally on each side with a rather shallow depression. Antenna pale ferrugineous, rather slender. Apical segment distinctly enlarged (Fig. 236).

Pronotum: Pale ferrugineous to ferrugineous. Anteriorly with a vague darkened area, basally with a fairly distinct blackish ferrugineous area. Punctuation fine to rather fine, somewhat sparse. Discally with still sparser and finer punctures. Rather shiny, microsculptured (meshes fairly distinct). Sides of pronotum slightly rounded.

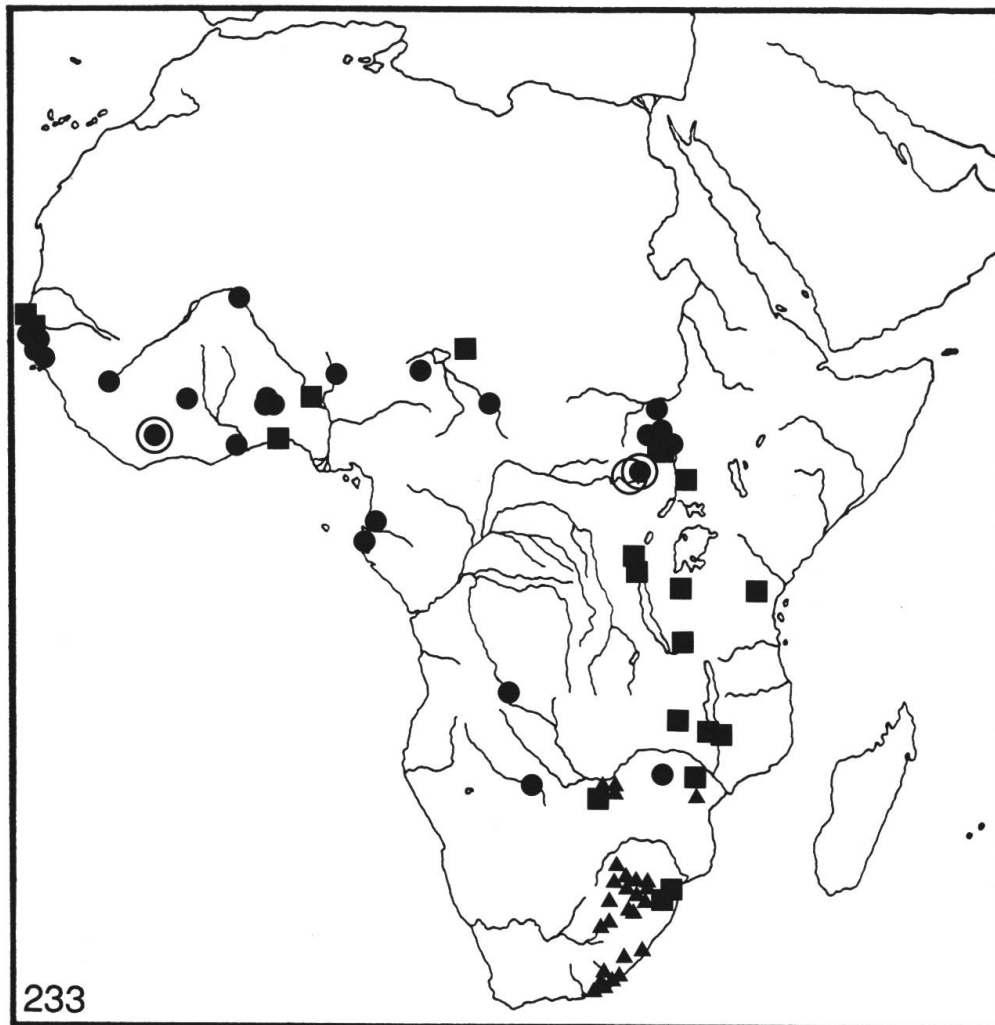


Fig. 233: Distribution of *Hydrovatus scholaeus* (circle), *H. brevipilis* (dot), *H. senegalensis* (square) and *H. flammulatus* (triangle).

Elytra: Blackish ferrugineous to dark ferrugineous, with quite distinct to somewhat vague pale ferrugineous markings (Fig. 234). Punctuation rather fine to fine, fairly dense. Apically punctures distinctly finer. Rows of punctures absent or very indistinct. Rather shiny, only partly microsculptured (meshes distinct apically). Epipleura pale ferrugineous, finely punctate and shiny.

Ventral side: Pale ferrugineous to ferrugineous. Punctuation fairly coarse to rather fine, fairly dense. Abdomen, except basally, almost impunctate. Shiny, microsculpture almost absent. Abdomen slightly mat, with fine microsculpture. Prosternal process laterally finely margined and at margins with a few punctures. Process medially with a distinct longitudinal keel.

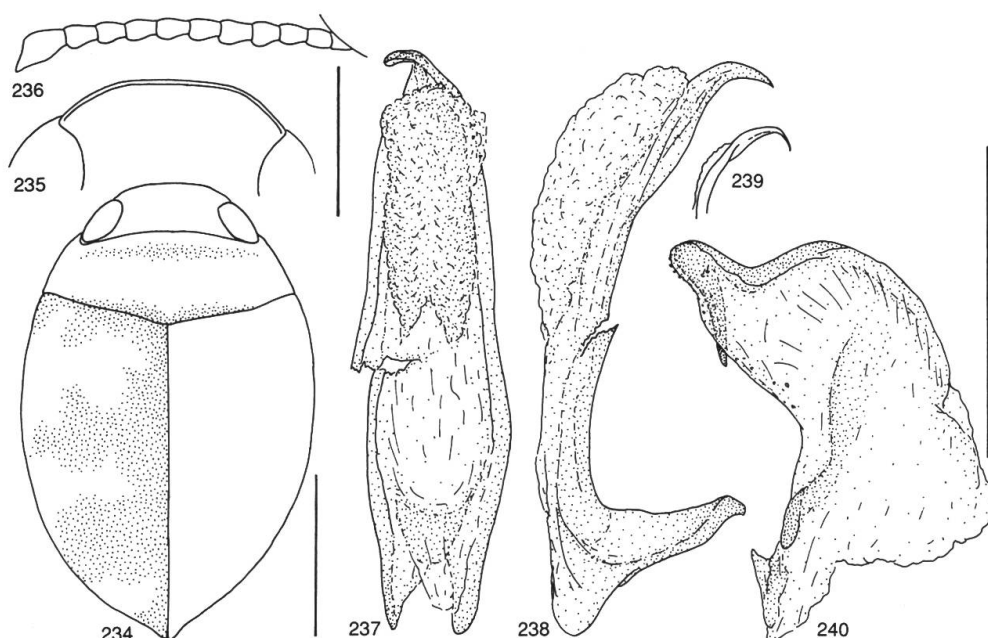
Legs: Pale ferrugineous. Pro- and mesotarsi rather slender.

Male genitalia: Figs 237–240. Tip of penis slightly variable. Accompanying illustration of penis drawn from a specimen from Benin (Fig. 239).

Female: Prosternal process distinctly convex but not keeled. Apical segment of antenna only a little broader than tenth segment.

Distribution: Gambia, Senegal, Benin, Nigeria, Chad, Sudan, Zaire, Tanzania, Malawi, Zambia, Zimbabwe, Mozambique, Botswana, Swaziland (Fig. 233). Additional literature-records are Kenya (BALFOUR-BROWNE, 1939), Mali (GUIGNOT, 1956a), and Ivory Coast (BILARDO & PEDERZANI, 1978).

Biology: In Sudan sampled in a ditch with duckweed. In Swaziland collected in a stream with muddy pools. Sometimes captured at light collection. In Zambia sampled in wide ponds with the shores mostly covered by grass and aquatic vegetation, partly shadowed by trees and shrubs. The bottom soil consisted of clay, sand and vegetal debris. Additionally the species is reported from standing water in quiet pools and coves, on rock and gravel of a rapid stream of a river. Vegetation were present in only few places, principally at the sides of isolated pools (PEDERZANI, 1988). See also BILARDO & ROCCHI (1987).



Figs 234–240: *Hydrovatus senegalensis*. – 234, habitus. – 235, head, frontal aspect. – 236, male antenna. – 237, penis, dorsal aspect. – 238, penis, lateral aspect. – 239, supplementary illustration of penis, lateral aspect. – 240, paramere. Left top scale 0.5 mm, head and antenna; left bottom scale, 1 mm, habitus; right scale 0.4 mm, genitalia (excl. Fig. 239).

Hydrovatus flammulatus Sharp

Figs 233, 241–246.

H. flammulatus SHARP, 1882a:322 (orig. descr., faun.); BRANDEN, 1885:26 (faun.); RÉGIMBART, 1895b:105 (descr., faun.); ZIMMERMANN, 1920a:33 (faun.); 1926:27 (faun., in part = *H. visendus* n.sp.); GSCHWENDTNER, 1934:93 (disc.); GUIGNOT, 1945a:311 (faun.); 1955a:28 (= *H. difficilis* Guignot = *H. gabonicus* Régimbart); OMER-COOPER, 1957:24 (descr., faun.); GUIGNOT, 1957:12 (disc.); 1959a:185, 187 (descr., faun.); 1959c:142 (descr., disc., faun.); FERREIRA, 1963:153 (faun., list.); OMER-COOPER, 1965:101 (descr., disc., faun.).

H. gravicornis OMER-COOPER, 1957:25 (orig. descr., faun.); 1962:296 (disc., faun.); 1963:178, 181 (descr., faun.); OMER-COOPER, 1965:101 (descr., faun.). **New synonymy.**

Type locality: Eastcourt, South Africa.

Type material studied: *H. flammulatus*: Holotype, f: Type/Eastcourt (? = Estcourt) S. Africa 27.3. 1875, 1123 *flammulatus*/Sharp Coll. 1905-313/*Hydrovatus flammulatus*, DS Type (BMNH). – *H. gravicornis*: Holotype, m: Holotype/Transvaal Nylstroom 8.1948 J.O.C./Type m/*H. gravicornis* O-C. (BMNH). – Paratypes: Paratype/Transvaal Belfast 29.11.1948 JOC/*Hydrovatus gravicornis* O-C. m J. Omer-Cooper (1 ex. ISN); TRSVL Middleburg 29.11.1948 JOC (1 ex. AMS, 1 ex. MAC); Trsvl Ermelo, gravel pits 8.12.1948/*Hydrovatus gravicornis* JOC f J. Omer-Cooper (1 ex. AMS, 1 ex. BMNH); Ermelo 12.1948 J. Omer-Cooper (1 ex. AMS); Trsvl Nylstroom 8.1948 J.O.C. (2 exx. AMS, 1 ex. TMP). The specimen kept in MAC is pinned together with a male genitalia preparation.

Additional material studied: Zimbabwe: Wankie N.P. Pan, MV light trap XI.1961 (10 exx. BMNH, 4 exx. MZH); Wankie N.P. Pan 23 mi. from Ngamo I.1960 (1 ex. BMNH); Wankie Game Res. IX.1948 waterhole (18 exx. AMS); Inyanga XI.1948 (2 exx. AMS). – South Africa: Trsvl, Pretoria 26.XI.1902/*H. n.sp.* det. Gschwendtner/*H. gravicornis* O-C. det. Omer-Cooper (1 ex. TMP); Vaal Riv. Bettage 20.XII.1920/*H. gravicornis* O-C. det. Omer-Cooper (1 ex. TMP); Pretoria distr. Roodeplaat/UV light 30.X.–10.XI.1960 (4 exx. TMP, 2 exx. MZH); Roodeplaat X.1960 (1 ex. TMP); S Trsvl, Robertsdrift Vaal Riv. 27.02E–29.02E/8.X. 1973 E-Y 190 sifted from flood debris (1 ex. TMP); Trsvl R. Nyl at Num Num 23.VIII.1948 (1 ex. AMS); Natal Ingogo R. 29.V.1959 (1 ex. AMS); Pietermaritzburg IV.1947 (1 ex. AMS); C. Prov. Matatiele 3.V.1956 (1 ex. AMS); E.C. Pr. Ft Beaufort 4.IX. (1 ex. AMS); C.Pr. Bathurst distr. Kleinemonde pond 6., 9.V.1956/*H. gravicornis* O-C. det. Omer-Cooper (2 exx. AMS); C. Pr. Albany distr. Grahamstown 10.III.1946 (2 exx. AMS); C.Pr. Albany distr. Pigott Bridge rd. 20.III.1939 (4 exx. AMS); E.C. Pr. Peddie 16.IX.1957 (8 exx. AMS); OFS Beginsel Vrede SE 2728 Da/9–15.II.1979 (1 ex. BNM, 1 ex. MZH); OFS Doornbult Hoopstad SE 2726Cc/4–5.III.1978 (2 exx. MZH, 3 exx. BNM); Deelfontein Bothaville SE 2726 Ba/13–17.XI.1978 (2 exx. BNM); same as preceding but 10–21.IV.1978 (1 ex. MZH); C.Pr. Bathurst distr. Kleinemonde 9.V.1954 (1 ex. AMS). In all, 88 exx.

Diagnosis: A distinct species, which is easily separated by examination of the male antenna. Two basal segments are slender, with segment three distinctly enlarged and the antenna broadest at segment four. From the fourth segment, the antenna narrows gradually towards the apical segment.

Length of body: 2.72–2.98 mm, breadth: 1.84–1.98 mm. Habitus (Fig. 241).

Head: Pale ferrugineous to ferrugineous. Finely and sparsely to rather sparsely punctate. Punctures quite irregularly distributed, densest in shallow frontal depressions and narrowly at eyes. Submat, microsculptured (meshes distinct). Head frontally rounded, medially somewhat straightened, narrowly margined (Fig. 242). Antenna pale ferrugineous, segments three to nine distinctly enlarged (Fig. 243).

Pronotum: Pale ferrugineous to ferrugineous, basally with vague brownish area. At anterior edge sometimes with slightly darkened area. With rather fine, somewhat sparse and slightly irregularly distributed punctation. Rather shiny, although microsculptured (meshes distinct). Basally in middle sometimes with hardly visible reticulation. Sides of pronotum almost straight to somewhat rounded.

Elytra: Blackish-brown to dark ferrugineous, with vague ferrugineous to pale ferrugineous areas (Fig. 241). Rather coarsely and densely punctate, apically and close to epipleura with distinctly finer punctation. Rows of punctures indistinct, mixed with adjacent punctures. Rather shiny, although microsculptured (meshes clearly visible). Sometimes elytral reticulation partly absent (visible apically and laterally). Epipleura pale ferrugineous, with a few coarse punctures, finely microsculptured.

Ventral side: Pale ferrugineous to ferrugineous. Fairly coarsely and densely punctate. Abdomen, except basally on each side, with distinctly sparser and finer punctation. Rather shiny, in scattered areas with indistinct reticulation. Abdomen with fine microsculpture, slightly mat. Prosternal process laterally broadly margined, medial surface slightly concave.

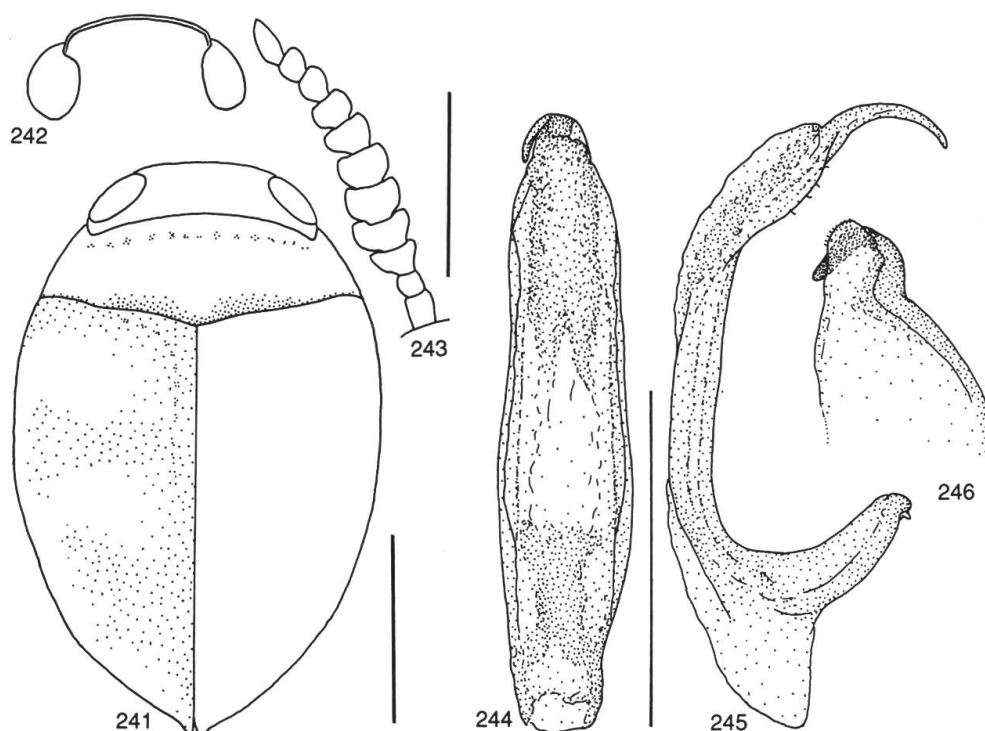
Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsi rather slender. Protarsal claws symmetric, somewhat prolonged.

Male genitalia: Figs 244–246.

Female: Antenna slender, segments not distinctly modified.

Distribution: Zimbabwe, South Africa (Fig. 233). FERREIRA (1963) gives also Mozambique and OMER-COOPER (1965) Lesotho under the name *H. gravicornis*. Additional literature-records from Tanzania, Rwanda–Urundi, and Zaire are considered unreliable and refer to other *Hydrovatus* species.

Biology: Unsufficiently known. Sampled in gravel pits, and once sifted from flood debris. Quite often captured at light collection.



Figs 241–246: *Hydrovatus flammulatus*. – 241, habitus. – 242, head, frontal aspect. – 243, male antenna. – 244, penis, dorsal aspect. – 245, penis, lateral aspect. – 246, apical part of paramere. Left top scale 0.5 mm, antenna; left bottom scale 1 mm, habitus and head; right scale 0.4 mm, genitalia.

Synonymy: The holotypes of both species involved have been examined, and despite the small difference in appearance of microsculpture on the elytra, I think it is a question of one species. The older name *H. flammulatus* is the valid name of this species.

***Hydrovatus aristidis* Leprieur**

Figs 247–253, 261.

Hydrovatus aristidis LEPRIEUR, 1879:LXXXII (orig. descr., faun.); SHARP, 1882a:325 (descr., faun.); BRANDEN, 1885:25 (faun.); RÉGIMBART, 1895b:99 (descr., faun.); JAKOBSON, 1905:418 (faun.); ZIMMERMANN, 1919:126 (faun.); 1920a:31 (faun., list.); WINKLER, 1924:218 (faun.); BEDEL, 1925:334 (disc., faun.); ZIMMERMANN, 1930:27, 28 (descr., faun.); GUIGNOT, 1943:85 (disc., faun.); 1955f:861 (faun.); 1959a:142, 144 (descr., faun.); 1961a:233 (faun.); BRUNEAU DE MIRÉ & LEGROS, 1963:844, 888 (faun., biol.); FRANCISCOLO, 1964:181 (disc.); LEGROS, 1972:459 (faun.); ALFIERI, 1976:31 (faun.); BRANCUCCI, 1984:230 (descr., faun.); WEWALKA, 1989:145 (faun., biol.).

Type locality: Egypt.

Type material studied: ? Holotype, m: Egypte Letourneux 1879/Museum Paris coll. Maurice Régimbart, 1908/*aristidis* Lepr. *antennatus* Shp i. litt. (MNHN). The status as holotype is unclear.

Additional material studied: Israel: Coastal area, Or Aquiva 5.VIII.1985/*H. aristidis* Lepr. det. Wewalka 1985 (1 ex. coll. Rocchi). – Egypt: Bahariya Oasis 4.IV.1989 (7 exx. coll. Balke); Cairo 17.VIII.1933/*H. aristidis* Lepr. det. Gschwendtner (1 ex. OLL); Egbet Mahl 14.VII.1925/*H. aristidis* Lepr. det. Alfieri (1 ex. OLL); Tourah 15.III.1918/*H. aristidis* Lepr. det. Alfieri (1 ex. OLL); Sidi Gabes (1 ex. MNHN); Kafr el Dwar (2 exx. MNHN); Choubra (2 exx. MNHN); Nefich (4 exx. MNHN); Egypte (2 exx. MCN, 1 ex. MNHN). – Gambia: 3.5 km S Georgetown, hilltop at Sankuli Kunda, alt. about 30 m, at light 18.30–20.15, 15.XI.1977 UTM 28PEK2593 (1 ex. LUZ). – Senegal: Mboro VIII.1971 (35 exx. MNHN, 12 exx. MZH); Sebikotane VIII.1971 (2 exx. MNHN); Sangalkam VIII.1971 (1 ex. MNHN). – Benin: 3 km S Parakou 5.VII.1989 (2 exx. coll. Vondel); 4 km S Parakou 10.VII.1989 (4 exx. coll. Vondel, 2 exx. MZH); Ganou Parakou 14.VII.1989 (4 exx. coll. Vondel); Parakou 11.VII.1989 (2 exx. coll. Vondel); Badkparou u Parakou 20.VII.1989 (4 exx. coll. Vondel). – Nigeria: Katsina rd. ca 37 mi. from Funtua 5.IV.1963, stream (10 exx. AMS); Katsina–Daurra rd 6.IV.1963 (3 exx. AMS). – Sudan: Malakal (1 ex. MZH); Senaar a. Bl. Nil, lux 21.X.1979 (1 ex. MNB). – Ethiopia: Jimma 18–20.II.1974 (1 ex. MZH); Ilubabor pr. Gambela X.1972/*H. aristidis* Lepr. det. Nilsson 1990 (1 ex. MAC). – Uganda: L. Albert Tonia 24.IV.1928 (1 ex. AMS). In all, 102 exx.

Diagnosis: Male specimens with intact, peculiarly modified, antennae cannot be confused with any other *Hydrovatus* species.

Description: only differences from description of *H. flammulatus* are recognized.

Length of body: 2.30–2.70 mm, breadth: 1.56–1.80 mm. Habitus (Fig. 247).

Head: Shape of frontal depressions somewhat longitudinal. Frontal outline of head somewhat uneven (Fig. 248). Antenna in Fig. 249.

Pronotum: Punctuation rather fine, quite dense. Laterally punctures sparser and more irregularly distributed. Discally on each side with a narrow, almost impunctate area. Rather shiny, although finely microsculptured (meshes fairly distinct).

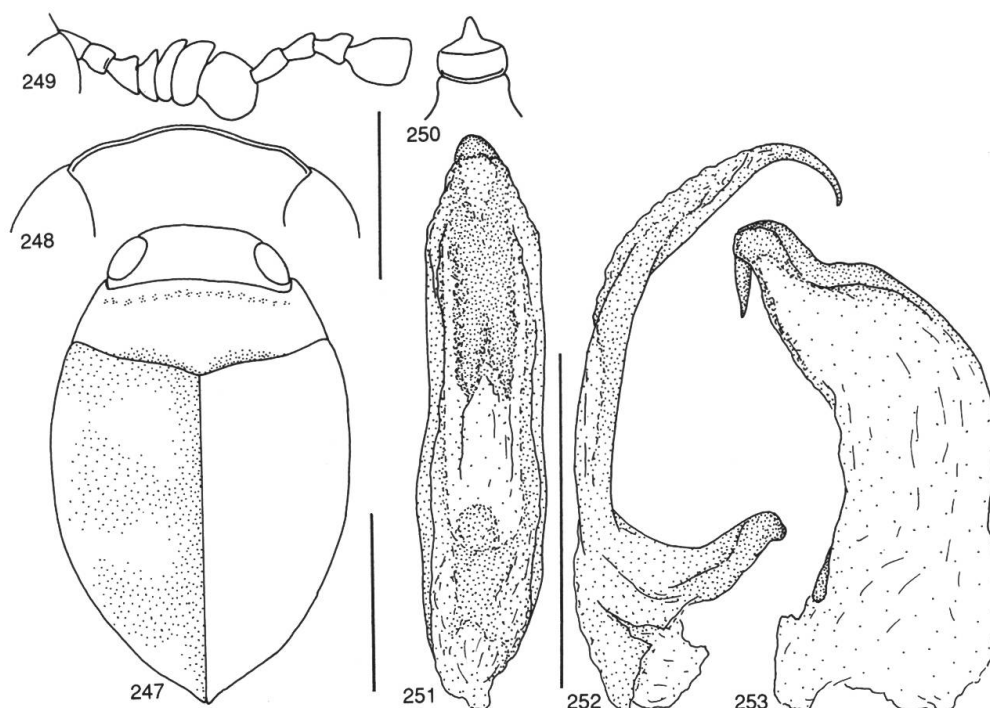
Elytra: Finely microsculptured, except broad frontal area at suture without reticulation. Epipleural punctuation fairly coarse, concentrated in inner part of epipleura.

Ventral side: Prosternal process laterally not margined, but with a medial transverse edge (Fig. 250).

Male genitalia: Figs 251–253.

Female: Ethiopian specimen with totally reticulated elytra. Incorrect association of this specimen cannot be excluded. Although several specimens exist from the same sample, the female of this species is difficult to associate with the correct male.

Distribution: Israel, Egypt, Gambia, Senegal, Benin, Nigeria, Sudan, Ethiopia, Uganda (Fig. 261). GUIGNOT (1943) also gives Ivory Coast and Mali and additionally Mauritania (GUIGNOT, 1955f).



Figs 247–253: *Hydrovatus aristidis*. – 247, habitus. – 248, head, frontal aspect. – 249, male antenna. – 250, prosternal process. – 251, penis, dorsal aspect. – 252, penis, lateral aspect. – 253, paramere. Left top scale 0.5 mm, head, antenna and process; left bottom scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Finally, BRUNEAU DE MIRÉ & LEGROS (1963) add Chad, and BRANCUCCI (1984) Saudi Arabia.

Biology: BRUNEAU DE MIRÉ & LEGROS (1963) report the species from artificial and temporary water bodies. In Israel the species has been collected from spring-fed pools with vegetation (WEWALKA, 1989). Sometimes sampled at light collection.

***Hydrovatus absonus* Guignot**

Figs 254–261.

Hydrovatus absonus GUIGNOT, 1948a:5 (orig. descr., faun.); 1953a:234 (faun.); 1953c:144 (faun.); 1959a:126, 133 (descr., faun.); 1961a:232 (disc.); BRUNEAU DE MIRÉ & LEGROS, 1963:852, 853 (disc., faun.); BILARDO & ROCCHI, 1987:98, 100 (descr., disc.); PEDERZANI, 1988:106 (faun., biol.); BILARDO & ROCCHI, 1990:180, 189 (descr., faun.).

Hydrovatus absonus borkuanus BRUNEAU DE MIRÉ & LEGROS, 1963:852, 888 (orig. descr., faun.). **New synonym.**

Type locality: Elisabethville, Zaire.

Type material studied: *H. absonus*: Holotype, m: Elisabethville 30.XII.1938 H.J. Brédo la lumière/R. Mus. Hist. Nat. Belg. I.G. 12.204/Det. Dr. Guignot *Hydrovatus absonus* Guign. Type m/Type/cf. Bull. Mus. Hist. Nat. Belg. XXIV, 12, pp. 5–6 (ISN).

– *Hydrovatus absonus borkuanus*: Holotype, m: Bedo 15 jan. 59/Tibesti zone du Borkou Bruneau de Miré/Type/*Hydrovatus* s.str. *absonus* Guignot ssp. *borkuanus* B. de Miré & Legros (MNHN). Paratypes: Same data as holotype (4 exx. MNHN).

Additional material studied: Sudan: Khartoum/*H. absonus borkuanus* Br. M. & Legros det. Wewalka 1985 (5 exx. coll. Wewalka). – Ethiopia: Bahar Dar 8.X.1968/*H. absonus* Guignot det. Wewalka 1971 (2 exx. coll. Wewalka). – Zaire: PNG 24.VI., 24.VII., 8.VIII., 19.VIII.1952 (6 exx. ISN). – Uganda: L. Nabugabo VII.–VIII.1962 (1 ex. BMNH). – Botswana: Chobe Riv. 8 km W Kasane 27–29.XII.1987 (4 exx. CMNH, 1 ex. MZH). In all, 25 exx.

Diagnosis: This species (and the next) is particularly characterized by the combination of the following features: Size of somewhat elongated body moderate, anterior margin of head weakly developed and does not reach eyes, dorsal aspect of body mat and densely microsculptured. Closest doubtlessly to *H. asemus*, below, from which *H. absonus* is distinguished only by the examination of the penis: Downwards projecting apex of the penis is evenly curved in *H. absonus*, while it is a little sinuate in *H. asemus*.

Length of body: 2.08–2.28 mm, breadth: 1.32–1.48 mm. Habitus (Fig. 254).

Head: Pale ferrugineous to ferrugineous to dark brownish (when dark coloured head anteriorly with vague pale area). Punctuation sparse, fine and somewhat unevenly distributed. Submat, microsculptured (meshes distinct). Head frontally rounded, very finely margined, and margin does not reach eyes (Fig. 255). At eyes with an indistinct depression. Antenna pale ferrugineous to pale brown, quite slender, not modified (Fig. 256).

Pronotum: Ferrugineous, basally with a vague slightly darkened area. Sometimes pronotum brownish to dark brownish and laterally with vague, broad, pale ferrugineous areas. Finely and sparsely punctate. At base and foremargin narrowly with quite coarse to fine and dense punctures. Submat, microsculptured (meshes distinct). Sides of pronotum slightly rounded.

Elytra: Ferrugineous to dark ferrugineous to dark brown (generally darker than head and pronotum). Without distinct colour pattern. Fairly coarsely and densely punctate. Submat, distinctly microsculptured (meshes distinct). Distinct rows of punctures absent. Epipleura ferrugineous to pale brown, with some punctures, and distinctly microsculptured, mat.

Ventral side: Ferrugineous to pale brown to dark brown. Quite coarsely to rather finely and somewhat sparsely punctate. Abdomen, except basally, almost impunctate. Submat, distinctly microsculptured.

red. Prosternal process laterally rather finely margined, medial surface almost flat and finely punctate.

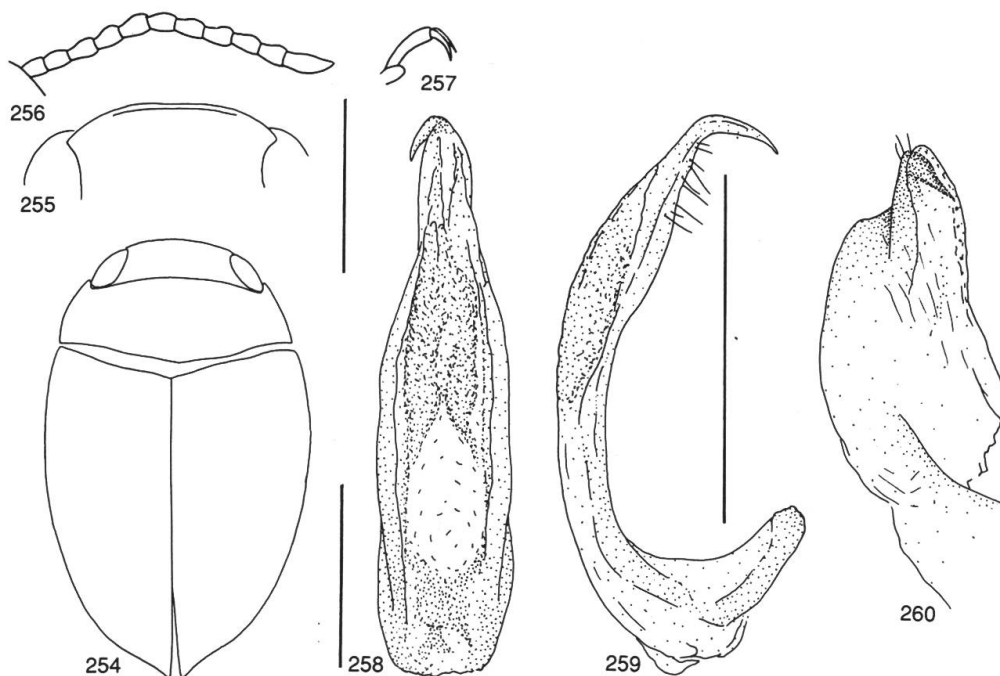
Legs: Pale ferrugineous to pale brown. Pro- and mesotarsus somewhat enlarged. Protarsal claws slightly prolonged (Fig. 257).

Male genitalia: Figs 258–260.

Female: Externally as male.

Distribution: Sudan, Ethiopia, Chad, Zaire, Uganda, Botswana (Fig. 261). Also recorded from Ivory Coast (BILARDO & ROCCHI, 1990). OMER-COOPER (1963) gives in addition, Malawi and South Africa, and PEDERZANI & ROCCHI (1982) Congo.

Biology: From Zambia PEDERZANI (1988) reports *H. absonus* to be collected from wide ponds with the shores mostly covered by grass and aquatic vegetation, partly shadowed by trees and shrubs with a bottom consisting of clay, sand and debris. Also from riverside marshes with herbaceous vegetation and reeds, and bottom of clay, sand and vegetal debris. Finally it is reported from standing water in quiet pools and coves, on rock and gravel of a rapid stream with scarce vegetation principally at the sides of isolate pools. See also BILARDO & ROCCHI (1987). Sometimes sampled at light collection.



Figs 254–260: *Hydrovatus absonus*. – 254, habitus. – 255, head, frontal aspect. – 256, male antenna. – 257, male protarsal claws. – 258, penis, dorsal aspect. – 259, penis, lateral aspect. – 260, apical part of paramere. Left top scale 0.5 mm, head, antenna and claws; left bottom scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Remark: A division in subspecies of *H. absonus* was introduced by BRUNEAU DE MIRÉ & LEGROS (1963): *H. absonus borkuanus*. I have examined the holotypes of both taxa involved, as well as some additional material of the species. At present I can see very little morphological evidence for separation of a subspecies in *H. absonus*.

Hydrovatus asemus n.sp.

Figs 261–268.

Type locality: Parc National, Garamba, Zaire.

Type material: Holotype, m: Holotypus/Congo Belge PNG Miss. H. De Saeger II/gd/11, 8.VIII.1952 H. De Saeger 3924/coll. Mus. Congo (ex coll. I.P.N.C.B.)/F. Guignot det. 1958 *H. s.str. asemus* n.sp. Holotype (MAC). – Paratypes: Same sampling data as holotype (10 exx. ISN, 3 exx. MZH); same as holotype but II/gd/11, 13.IX.1952 4058 (1 ex. MAC); II/ge/10, 4.XII.1951, 2844 (1 ex. MAC); II/gd/11,

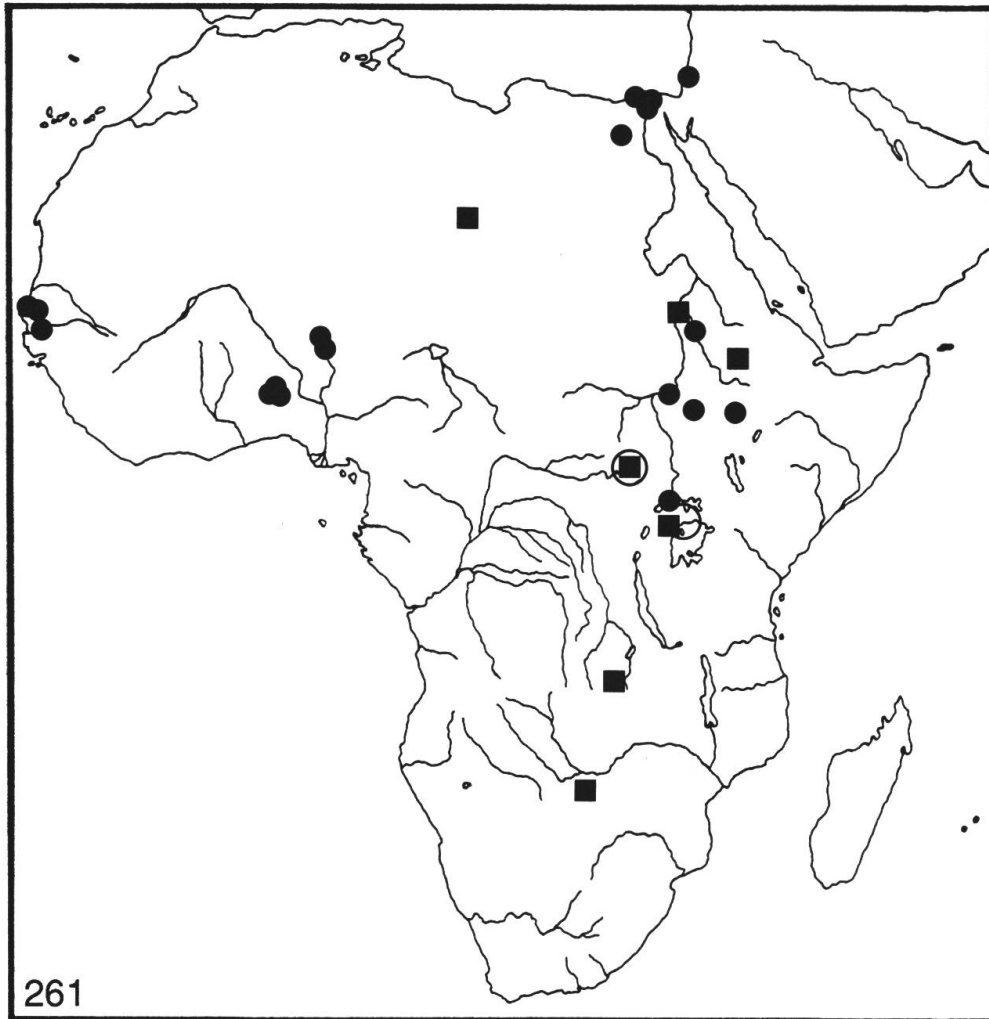


Fig. 261: Distribution of *Hydrovatus aristidis* (dot), *H. absonus* (square) and *H. asemus* (circle).

19.VIII.52, 3956 (2 exx. MAC, 8 exx. ISN); II7gd/4, 28.IV.1952, 3403 (1 ex. ISN); II/id/8, 17.XI.1951, 2772 (1 ex. ISN); II/gd/11, 30.VI.1952, 3721 (1 ex. ISN); Mabanga/8, 8.I. 1952, 2997 (5 exx. ISN, 1 ex. MZH); Pali “/8, 24.VII.1952, 3816 (7 exx. ISN, 1 ex. MZH); Holotypus/Congo Belge PNG Miss. H. De Saeger Mabanga/8, 7.I.1952 Rec. H. De Saeger 2996/coll. Mus. Congo (ex coll. I.P.N.C.B.)/F. Guignot det. 1958 *Hydrovatus* s.str. *lachnaeoides* n.sp. Holotype (1 ex. MAC); same as preceding but with paratype label (1 ex. ISN); (Due to some unknown confusion, Guignot obviously intended to describe two different species, the manuscript names of which are listed above. As far as I can see it is a question of one species, which is thus officially introduced here.); Paratypus/Cotype/Musee du Congo Uganda Kampala – X.1929 (Hopkins) (don Balfour–Browne)/Uganda Kampala X.1929 G.H.E. Hopkins/R. Dét. MM 3315/*Hydrovatus ugandae* mihi J. Balfour–Browne det. (1 ex. MAC). Also Balfour–Browne has recognized this species and even suggested a name for it – however the species was never described officially. In all, 47 exx.

Derivation of the name: One of the manuscript–names of Guignot is chosen as the name for the new species: *H. asemus*.

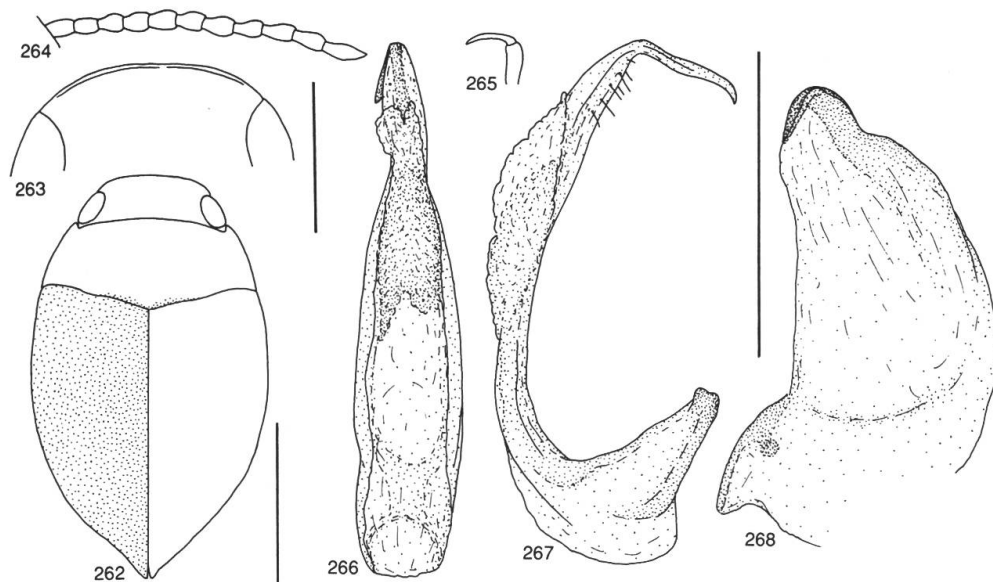
Diagnosis: See under the diagnosis of *H. absonus* above.

Description: only important differences to description of *H. absonus* are recognized.

Length of body: 2.04–2.30 mm, breadth: 1.26–1.40 mm. **Habitus** (Fig. 262).

Head: Frontal aspect of head (Fig. 263). **Antenna** (Fig. 264).

Legs: Male protarsal claw (Fig. 265).



Figs 262–268: *Hydrovatus asemus*. – 262, habitus. – 263, head, frontal aspect. – 264, antenna. – 265, male protarsal claw. – 266, penis, dorsal aspect. – 267, penis, lateral aspect. – 268, paramere. Left top scale 0.5 mm, head, antenna and claw; left bottom scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Male genitalia: Figs 266–268. Downwards curved apex of penis slightly sinuate.

Distribution: Uganda, Zaire (Fig. 261).

Biology: Unknown.

Hydrovatus abraeoides Régimbart

Figs 269–274, 287.

Hydrovatus abraeoides RÉGIMBART, SEVERIN, 1892:472 (list., no description).

Hydrovatus abraeoides RÉGIMBART, 1895b:111 (orig. descr., faun.); ZIMMERMANN, 1920a:31 (faun., list.); 1926:27 (descr., faun.); GSCHWENDTNER, 1930:197 (faun.); BALFOUR-BROWNE, 1939:481 (disc.); GSCHWENDTNER, 1943:422 (descr.); GUIGNOT, 1945a:311 (faun.); 1959a:190, 193 (descr., faun.); BILARDO & PEZANI, 1978:105 (descr., faun.); BILARDO & ROCCHI, 1990:161, 162, 170, 180, 189 (descr., disc., faun., biol.).

Hydrovatus lachnaeus GUIGNOT, 1958b:6 (orig. descr., faun.); 1961a:234 (disc.); OMER-COOPER, 1963:162, 167 (descr., faun.); 1965:94 (descr., faun.); PEDERZANI & ROCCHI, 1982:71 (faun.); BILARDO & ROCCHI, 1987:98 (faun., biol.); 1990:171, 180 (syn. with *H. abraeoides* Régimbart).

Hydrovatus metrius GUIGNOT, 1961a:232 (orig. descr., faun.). **New synonym.**

Type locality: Cap Lopez, Gabon.

Type material studied: *H. abraeoides*: Lectotype, m, by present designation: Cap Lopez/Museum Paris coll. Maurice Régimbart 1908/Type/*abraeoides* Rég. n.sp. (MNHN). – Paralectotype: 1200/Gabon Cap Lopez Mocquerys Coll. Régimbart/Gabon *Hydrovatus abraeoides* Rég. n.sp./Régimbart det. 1892: *Hydrovatus abraeoides* Rég./Type/cf. Mm. Soc. Ent. Belg. IV, 1895 p. 111/R. Mus. Hist. Nat. Belg. Mou-champs (1 ex. ISN). – *H. lachnaeus*: Holotype, m: Holotypus/Congo belge PNG Miss. H. De Saeger I/a/2 17.VII.1950 Réc. G. Demoulin. 702/Coll. Mus. Congo (ex I.P.N.C.B.)/Dr. F. Guignot., 1955 *Hydrovatus* s.str. *lachnaeus* n.sp. Type (MAC). Paratypes: Same data as holotype but 9.X.1950, 876 (1 ex. MNHN); 20.VII.1951 P. Schoemaker 2184 (1 ex. MAC); 26.VI.1951 H De Saeger 1982 (1 ex. MAC); 11.VII.1951, 2114 (1 ex. MNHN); 4.VIII.1951, 2209 (2 exx. MAC); 7.XII.1951, 2875 (1 ex. MAC). – *H. metrius*: Holotype, f: Mission IFAN au Parc National du Niokolo Koba Badi (Sénégal) 15.VIII.–25.IX.1955/IFAN 1956 II. 1956/Type/F. Guignot det., 1957 *Hydrovatus (Vathydrus) metrius* n.sp. Type f (MNHN).

Additional material studied: Gambia: Riv. Tanji 3 km SW Brufut, at light 19.00–21.00, 28.II.1977, UTM 28PCK087773 (2 exx. LUZ); Bathurst I. 1968 (3 exx. LUZ). – Senegal: Mpak 11 km S Ziguinchor, at light 19.00–21.00, 8.XI.1977, UTM 28PCJ6479 (1 ex. LUZ). – Ghana: N Reg. Damongo, Mole game res. 220 m/light trap 12.XI.1970 (1 ex. TMB). – Nigeria: Samaru/light trap 20.X.1969 (1 ex. TMB). – Gabon: Gabon Mocquerys (2 exx. MNHN, possibly they belong to type material of *H. abraeoides*); Ogoué Lambaren 1911 (4 exx. MNHN, 2 exx. MZH); Gabon/D. Régb. 91/*H. abraeoides* Régb. n.sp. (1 ex. MCG, belongs possibly to type material); Pt Gentil 12.VII.1957 (1 ex. AMS). – Zaire: Moanda 27.VIII.1920 (2 exx. ZSM). – Malawi: Livingstonia 27.X.1948 (1 ex. AMS); Livingstonia swamp, Dally's hotel nr Ft Johnstone 23.VIII.1948 (1 ex. AMS). – South Africa: Natal, Mtubatuba 12.VII.1947 (1 ex. AMS). In all, 34 exx.

Diagnosis: A quite distinct species characterized by a small, globular and distinctly microsculptured body, by the medially narrowly margined frontal aspect of the head, by a moderately sized apical hook of the paramere, and by a comparatively short downwards curved apex of penis.

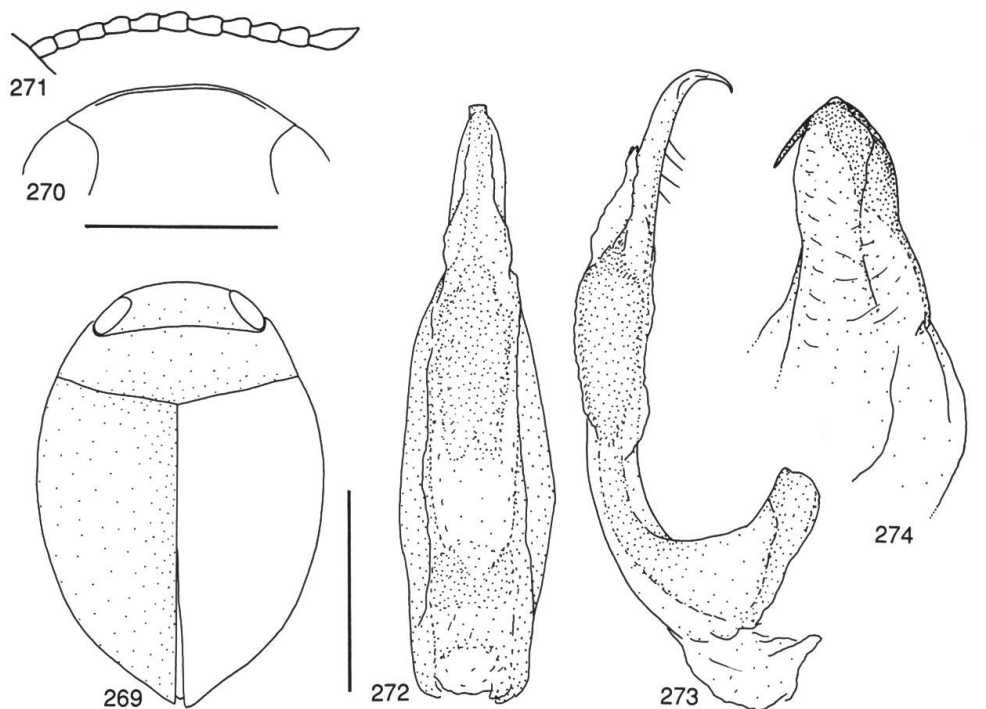
Description: only distinct differences from description of *H. absonus* recognized.

Length of body: 1.94–2.26 mm, breadth: 1.26–1.44 mm. Habitus (Fig. 269).

Head: Almost impunctate. A few scattered very fine punctures may be discerned. Frontal aspect of head in Fig. 270. Antenna in Fig. 271.

Pronotum: Finely and somewhat indistinctly although quite densely punctate. Discally on each side punctation finer and sparser. Sides of pronotum almost straight.

Elytra: Dark ferrugineous to dark brown, laterally elytra become gradually paler. Without distinct colour pattern. Rather finely and densely punctate. Punctures somewhat indistinct because of dense microsculpture. Epipleura pale ferrugineous, indistinctly punctate.



Figs 269–274: *Hydrovatus abraeoides*. – 269, habitus. – 270, head, frontal aspect. – 271, antenna. – 272, penis, dorsal aspect. – 273, penis, lateral aspect. – 274, paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Ventral side: Indistinctly punctate. Abdominal punctures almost absent. Prosternal process laterally fairly distinctly margined, medial surface flat and indistinctly punctate.

Legs: Pro- and mesotarsi quite broad.

Male genitalia: Figs 272–274.

Distribution: Gambia, Senegal, Ghana, Nigeria, Gabon, Zaire, Malawi, South Africa (Fig. 287). GUIGNOT (1959a) regards records from Sudan and Tanzania as uncertain.

Biology: Insufficiently known. Often sampled at light. See also BILARDO & ROCCHI (1990).

Synonymy: Type material of *H. abraeoides* and *H. metrius* have been compared, and although the holotype of *H. metrius* is a female, I am convinced that the two taxa actually belong to the same species. The name *H. abraeoides*, being the older, is the valid name of this species. Synonymy of *H. abraeoides* and *H. lachnaeus* follows BILARDO & ROCCHI (1990).

Hydrovatus piceus Guignot

Figs 275–280, 287.

Hydrovatus piceus GUIGNOT, 1961a:232 (orig. descr., faun.).

Type locality: Parc National du Niokolo-Koba, Badi, Senegal.

Type material studied: Holotype, m: Mission IFAN au Parc National du Niokolo-Koba Badi (Sngal) 15.VIII.–25.IX. 1955/Type/F. Guignot det., 1957 *Hydrovatus* (*Vathydrus*) *piceus* n.sp. Type m (MNHN). In all, 1 ex.

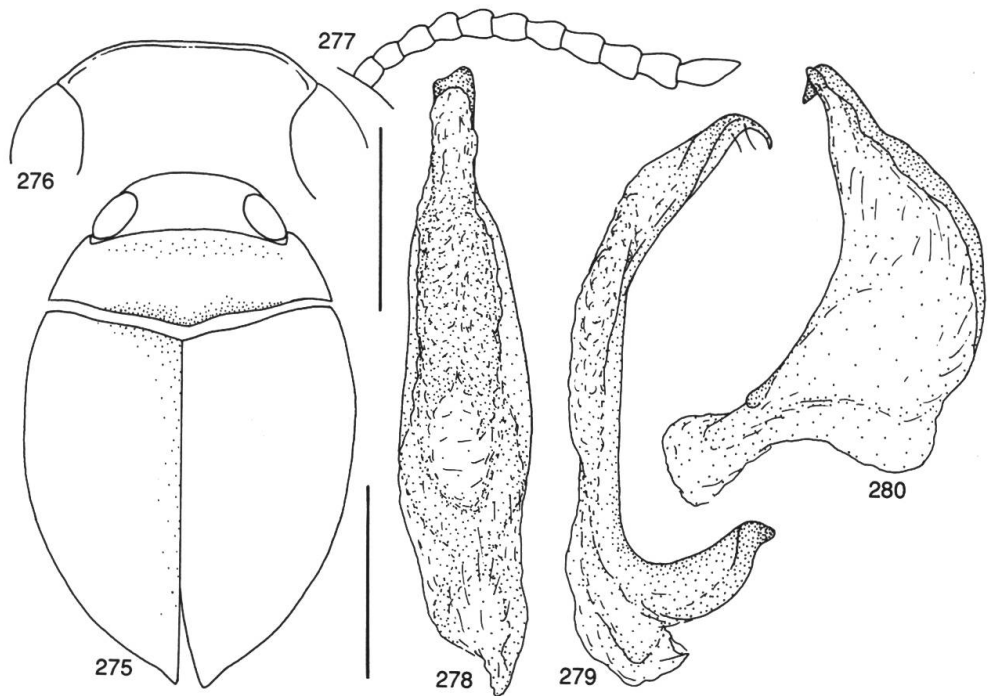
Diagnosis: *H. piceus*, of which only the holotype is known, is characterized by the quite minute apical hook of the paramere and the quite short downwards curved apex of penis.

Length of body: 2.42 mm, breadth: 1.60 mm. Habitus (Fig. 275).

Head: Ferruginous. Very finely and sparsely punctate. Punctures irregularly distributed. Densest in shallow frontal depressions and narrowly at eyes. Rather shiny, microsculptured (meshes distinct). Head frontally rounded, narrowly and finely margined (Fig. 276). Antenna pale ferruginous, rather slender, not distinctly modified (Fig. 277).

Pronotum: Ferruginous, frontally and basally with vague darkened areas. Punctuation rather fine to fine, quite dense. Discally punctures slightly finer and sparser. Rather shiny, microsculptured (meshes distinct). Sides of pronotum rounded.

Elytra: Dark ferruginous to ferruginous. At base and at suture darkened, but elytra without distinct colour pattern. Rather finely and fairly densely punctate. Punctures quite evenly distributed.



Figs 275–280: *Hydrovatus piceus*. – 275, habitus. – 276, head, frontal aspect. – 277, antenna. – 278, penis, dorsal aspect. – 279, penis, lateral aspect. – 280, paramere. Left top scale 0.5 mm, head and antenna; left bottom scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Rows of punctures almost absent (mixed with adjacent punctures). Rather shiny, microsculptured (meshes distinct to fairly distinct). Epipleura ferrugineous, indistinctly punctate and finely microsculptured.

Ventral side: Ferrugineous to pale ferrugineous. Fairly coarsely to rather finely and densely punctate. Abdomen, except basally, almost impunctate. Rather shiny, finely microsculptured. Metathorax and metacoxal plates with partly indistinct meshes of microsculpture. Prosternal process laterally finely margined, medial surface almost flat and rather indistinctly punctate.

Legs: Ferrugineous to pale ferrugineous. Protarsus somewhat enlarged, mesotarsus slender.

Male genitalia: Figs 278–280.

Female: Unknown.

Distribution: Senegal (Fig. 287).

Biology: Unknown.

Hydrovatus flebilis Guignot

Figs 281–287.

Hydrovatus flebilis GUIGNOT, 1945b:9 (orig. descr., faun.); 1945a:309 (descr., faun.); 1959a:134, 135 (descr., faun.); 1961b:933 (faun.); BERTRAND & LEGROS, 1975:678 (faun.); BILARDO, 1982a:445 (descr., faun.); PEDERZANI & ROCCHI, 1982:70 (faun.).

Type locality: Libreville, Gabon.

Type material studied: Holotype, m: Libreville Gabon 3. 1936 – Primot/m/*Hydrovatus flebilis* Guign. Type m/Type (MNHN). – Paratypes: Same data as holotype, but labelled Allotype (1 ex. MNHN); same data as holotype but dated 4. 1936 and labelled as paratype (1 ex. MNHN).

Additional material studied: Congo: Voka pr. Boko I. 1980/*H. flebilis* Guign. det. Rocchi 1983 (1 ex. coll. Rocchi). – Zaire Sankuru Andajka I. 1956 (1 ex. MAC). In all, 5 exx.

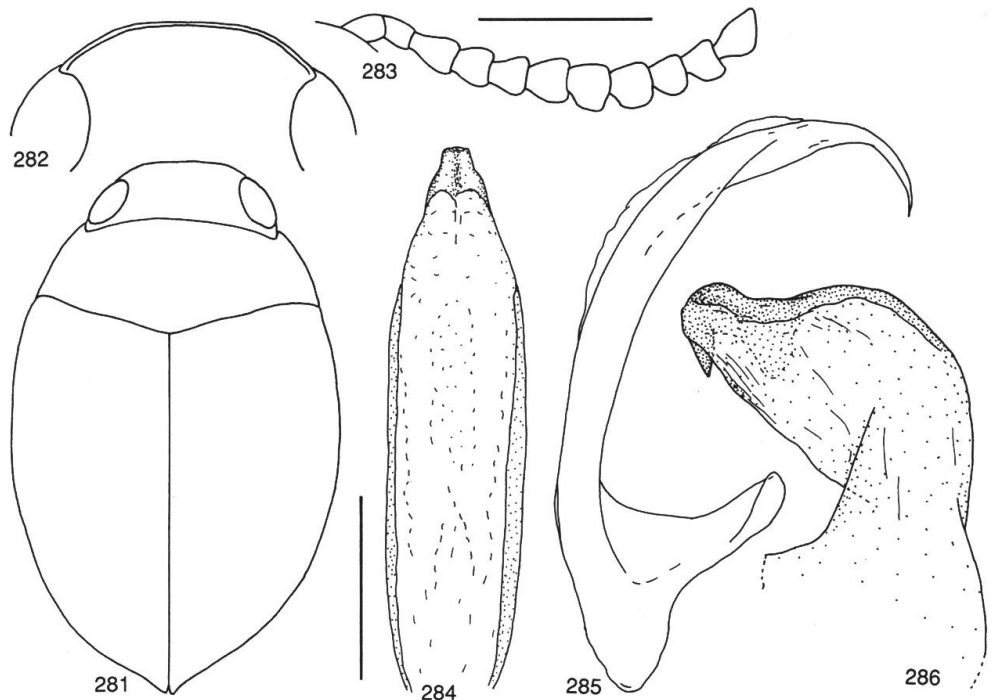
Diagnosis: *H. flebilis* belongs to the species with the downwards curved apex of penis rounded, and with almost evenly enlarged segments of the male antenna. From closely related species it is distinguished by more evenly broad segments of antenna (male), and by elytra without distinct colour pattern in combination with a strongly curved penis (lateral view). (See diagnosis of *H. megalocerus* and *H. visendus* below.)

Length of body 2.62–2.80 mm, breadth 1.66–1.88 mm. Habitus (Fig. 281).

Head: Dark ferrugineous to brownish. Frontally sometimes with vague pale ferrugineous to ferrugineous area. Punctuation fine to very fine, somewhat irregularly distributed. Sparsest at pronotum and densest narrowly at eyes and shallow frontal depressions. Submat, microsculptured (meshes distinct). Head frontally rounded, from eye to eye narrowly margined (Fig. 282). Antenna pale ferrugineous to ferrugineous, segments 3–11 distinctly enlarged, almost equally broad (Fig. 283).

Pronotum: Dark ferrugineous to ferrugineous, laterally with vague paler areas. Punctuation rather fine, fairly dense. Laterally on each side with rather narrow impunctate area. Submat, microsculptured (meshes distinct). Sides of pronotum rounded.

Elytra: Dark ferrugineous to ferrugineous to dark brown to brown. Without distinct colour pattern. Punctuation rather fine to fairly coarse, fairly dense. Punctures apically and narrowly at epipleura somewhat finer. Rows of punctures absent or very indistinct (mixed with adjacent punctures). Shiny, wide area without microsculpture. Laterally and apically reticulation clearly discernible. Epipleura ferrugineous, fairly distinctly punctate but microsculpture indistinct.



Figs 281–286: *Hydrovatus flebilis*. – 281, habitus. – 282, head, frontal aspect. – 283, male antenna. – 284, penis, dorsal aspect. – 285, penis, lateral aspect. – 286, paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right top scale 0.25 mm, penis; right bottom scale 0.4 mm, paramere. Illustrations of penis and paramere incompatible.

Ventral side: Ferrugineous to pale ferrugineous. Punctuation fairly coarse, somewhat sparse. Abdomen, except basal sternite, with distinctly finer punctuation (partly almost impunctate). Shiny, almost without microsculpture. Abdomen submat, with distinct transversely elongated reticulation. Prosternal process laterally quite distinctly margined, medial surface almost flat, with slightly obscure punctures.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsi rather slender.

Male genitalia: Figs 284–286. Penis in holotype broken, obviously lost. Illustration of penis based on non-type material.

Female: Antenna slender, not distinctly modified.

Distribution: Gabon, Congo, Zaire (Fig. 287).

Biology: Unknown.

Hydrovatus megalocerus Bilardo & Pederzani

Figs 287–294.

Hydrovatus megalocerus BILARDO & PEDERZANI, 1978:106, 107 (orig. descr., faun.); BILARDO, 1982a:445 (descr., faun.).

Type locality: Toumodi, Ivory Coast.

Type material: Holotype, m: Toumodi St. 9, Iv. Coast (coll. Pederzani, not available for study). – Paratypes: Côte d'Ivoire 11.VIII.1973 Bilardo & Pederzani/*H. megalocerus* Bil. & Ped./Paratypus (2 exx. MCM, 1 ex. coll. Bilardo); Côte d'Ivoire Bouak 12.VIII.1973 Bilardo & Pederzani/*H. megalocerus* Bil. & Ped./Paratypus (1 ex. MCM).

Additional material studied: Guinea: Sereidou, lux 4.IV.1975 (8 exx. MNB, 4 exx. MZH); Sereidou, lux 7–8.IV.1975 (9 exx. MNB, 2 exx. MZH); Sereidou, lux 18.IV.1975 (1 ex. MNB); Sereidou, lux 4.V.1975 (4 exx. MNB); Nzerekore (1 ex. MNB). – Ghana: Ashanti Kumasi 330 m/light trap 12.V.1967 (2 exx. TMB); Ashanti Juaben 340 m/water pond 19.II.1967 (1 ex. TMB); Ashanti Reg. Kwadaso 259 m/UV light trap

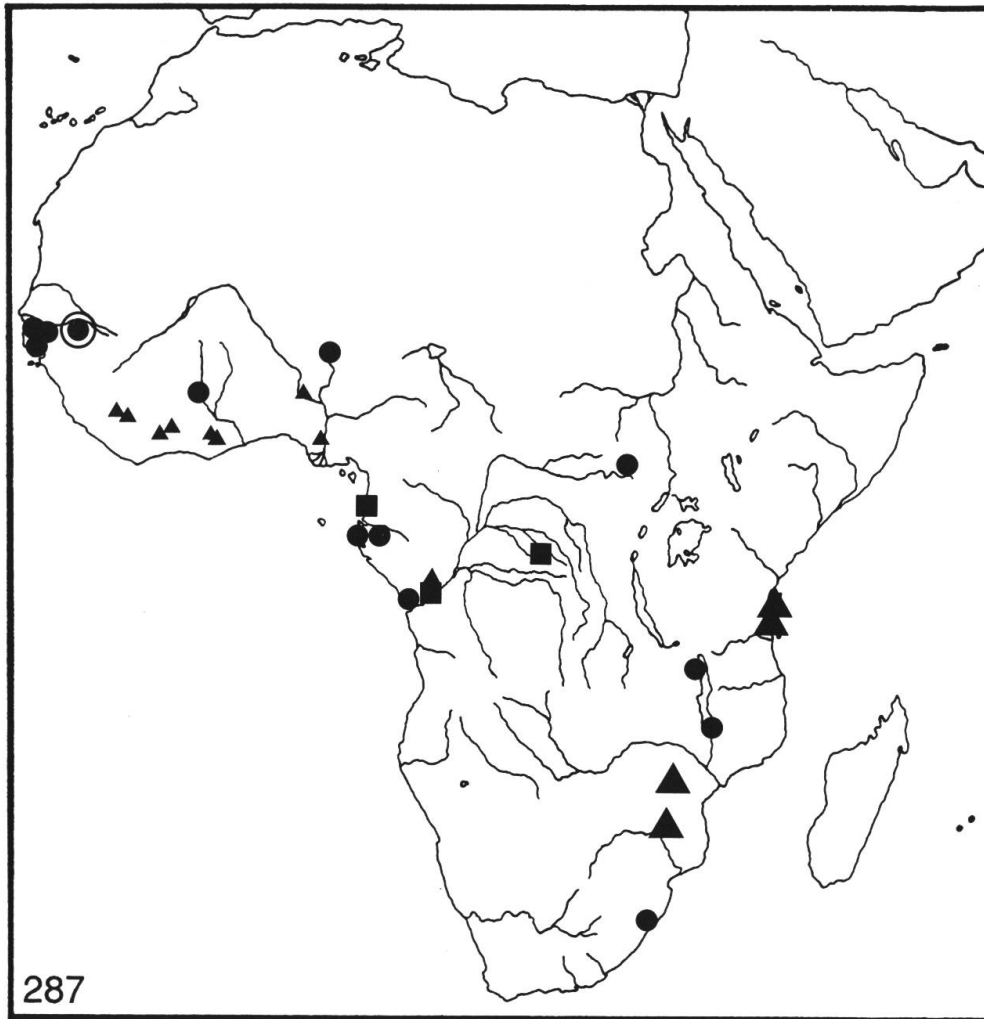


Fig. 287: Distribution of *Hydrovatus abraeoides* (dot), *H. piceus* (circle), *H. flebilis* (square), *H. megalocerus* (small triangle) and *H. visendus* (large triangle).

on field 26.V.1969 (1 ex. coll. Wewalka). – Nigeria: Stream 13 mi. from Benin on Enugo rd. 23.IV.1963 (2 exx. AMS); Stream 64 mi. from Bida on Jebba rd 15.IV.1963 (1 ex. AMS). – Congo: Kindamba Mya Settl./9.XI.1963 by lamplight (1 ex. TMB). In all, 41 exx.

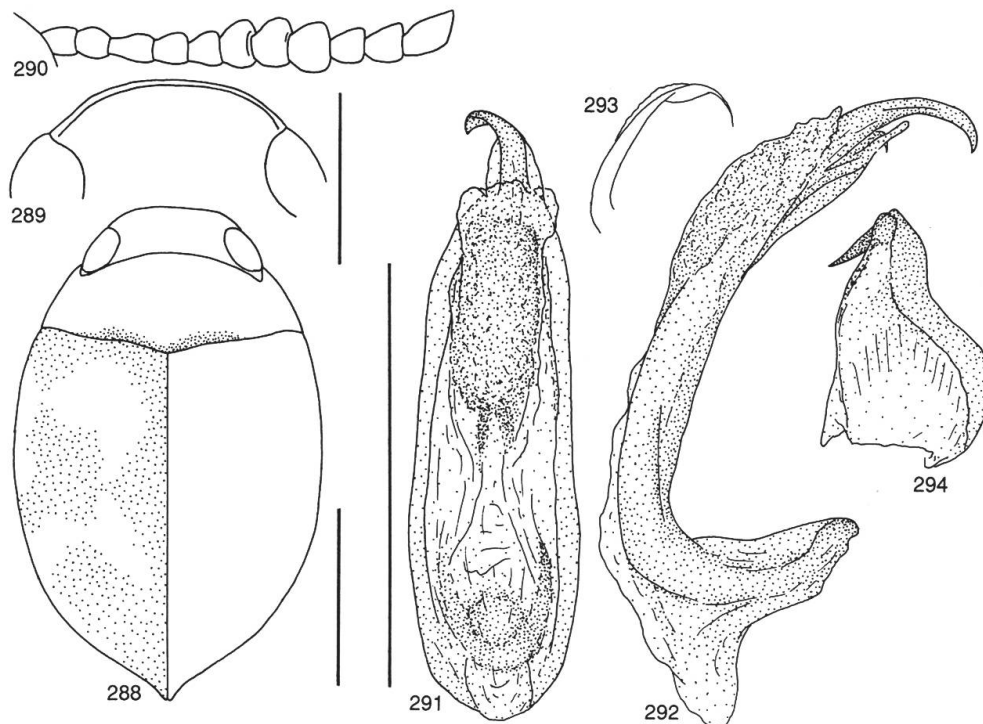
Diagnosis: Very close to *H. flebilis* above and *H. visendus* below. *H. megalocerus* is distinguished from *H. flebilis* by the more unevenly broad segments on the male antenna (eight segments distinctly broader than the ninth segment) and from *H. visendus* by a smaller body and by quite a slender third to fifth segments in the male antenna (see also diagnosis of *H. visendus* below).

Description: only important differences from description of *H. flebilis* recognized.

Length of body: 2.50–2.76 mm, breadth: 1.62–1.80 mm. Habitus (Fig. 288).

Head: Pale ferrugineous to ferrugineous. Frontal aspect of head (Fig. 289). Antenna modified (Fig. 290).

Elytra: Dark ferrugineous, with vague pale ferrugineous areas (Fig. 288). Elytral colour pattern somewhat variable; often quite indistinct.



Figs 288–294: *Hydrovatus megalocerus*. – 288, habitus. – 289, head, frontal aspect. – 290, male antenna. – 291, penis, dorsal aspect. – 292, penis, lateral aspect. – 293, supplementary illustration of penis. – 294, paramere. Left top scale 0.5 mm, head and antenna; left bottom scale 1 mm, habitus; right scale 0.5 mm, genitalia (excl. Fig. 293).

Male genitalia: Figs 291–294.

Female: Antenna slender, not distinctly modified.

Distribution: Guinea, Ghana, Ivory Coast, Nigeria, Congo (Fig. 287). BILARDO (1982) gives also Cameroon.

Biology: Practically unknown. Often sampled at light collection.

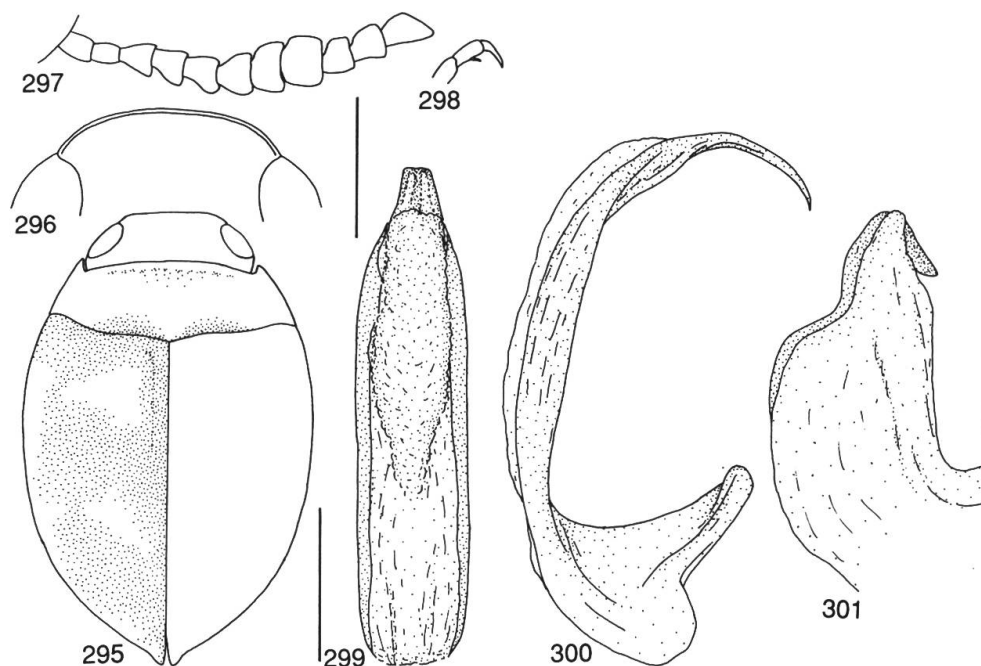
Hydrovatus visendus n.sp.

Figs 287, 295–301.

Type locality: Majinji Pan, Nuanetsi River, Zimbabwe.

Type material: Holotype, m: Type/S. Rhodesia Nuanetsi River, Majinji Pan IV–V.1961/M–V light trap/Rhodesian Schoolboys Expedition B.M. 1961–707/*Hydrovatus visendus* Type !/J. Balfour-Browne det. VIII.1963 (BMNH). – Paratypes: Same as holotype (3 exx. BMNH, 2 exx. MZH); S. Rhodesia Marandellas II. 1962 18,10S–31,36E J.S. Weir MV light B.M. 1963–18/Brit. Mus. 1961–707 (1 ex. BMNH); Tanzania: Zanzibar (3) Large Pond Manganpwane rd 13.IX.1955 J.O.C./*H. bomansi* Guign. (4 exx. AMS); Daressalam II. 12 /*Hydrovatus flammulatus* Shp det. A. Zimmermann (1 ex. MNB). In all, 12 exx.

Derivation of the name: The manuscript-name *H. visendus*, proposed by J. Balfour-Browne, is here adopted as the name for the new species.



Figs 295–301: *Hydrovatus visendus*. – 295, habitus. – 296, head, frontal aspect. – 297, male antenna. – 298, male protarsal claw. – 299, penis, dorsal aspect. – 300, penis, lateral aspect. – 301, paramere. Left top scale 0.5 mm, head, antenna and claw; left bottom scale 1 mm, habitus; right scale 0.5 mm, genitalia.

Diagnosis: Closest to *H. megalocerus* (above) from which *H. visendus* is separated by larger body size and by study of male antenna. In the new species only basal and second segments are slender; segments 3–5 are distinctly enlarged and almost as broad as segment 6, while in *H. megalocerus* segments 1–5 are quite slender and almost equally broad.

Description: only separating features are recognized.

Length of body: 2.84–3.00 mm, **breadth:** 1.82–1.94 mm. **Habitus** (Fig. 295).

Head: Frontal aspect of head (Fig. 296). **Antenna** (Fig. 297).

Elytra: Dark brownish to ferrugineous, with quite distinct but slightly variable pale ferrugineous markings (Fig. 295).

Ventral side: Metacoxal plates and metathorax with coarse to very coarse punctures.

Legs: Protarsal claws prolonged, indistinctly asymmetric (Fig. 298).

Male genitalia: Figs 299–301.

Distribution: Tanzania, Zimbabwe (Fig. 287).

Biology: In Zanzibar sampled in a large pond. Also collected at mercury vapour light.

Hydrovatus bomansi Guignot

Figs 302–307, 322.

Hydrovatus bomansi GUIGNOT, 1955b:1 (orig. descr., faun.); BILARDO & PEDERZANI, 1978:106 (disc.).

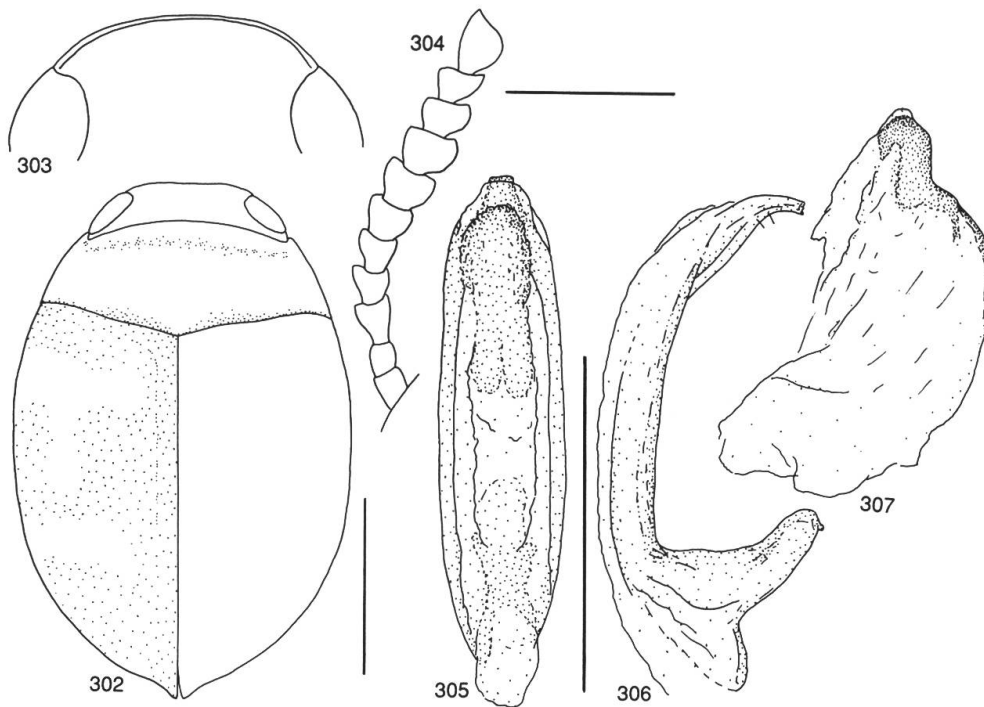
Type locality: Mpala, Zaire.

Type material studied: Holotype, m: Holotypus/Coll. Mus. Congo Tanganyika: Mpala 780 m (la lumire) XII.1953 H. Bomans/Dr. F. Guignot det., 1955 *Hydrovatus* (*Vathydrus*) *bomansi* n.sp. Type m (MAC). Label data deviate in part from those given in the original description, in which the sampling date is given as II.1954 (mistake?). In all, 1 ex.

Diagnosis: Belongs to a species with quite evenly enlarged segments of the male antenna. *H. bomansi* is characterized by having segments 7–11 in the male antenna almost evenly broad; the ninth and tenth segments are on one side distinctly edged. Elytra with discernible colour pattern.

Length of body: 2.70 mm, **breadth:** 1.80 mm. **Habitus** (Fig. 302).

Head: Pale brown. Narrowly at foremargin with small, pale ferrugineous to ferrugineous, vague areas. Finely and rather sparsely punctate. Punctures densest in shallow frontal depressions and sparsest at pronotum. Submat, distinctly microsculptured (meshes dis-



Figs 302–307: *Hydrovatus bomansi*. – 302, habitus. – 303, head, frontal aspect. – 304, male antenna. – 305, penis, dorsal aspect. – 306, penis, lateral aspect (tip missing). – 307, apical part of paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.5 mm, genitalia.

tinct). Head frontally quite narrowly but distinctly margined (Fig. 303). Antenna pale brown, segments distinctly modified, flattened (Fig. 304).

Pronotum: Pale ferrugineous to pale brown, anteriorly and basally with vague, somewhat darkened areas. Finely and sparsely punctate. At margins of pronotum with coarser punctures. Rather shiny, distinctly microsculptured (meshes distinct). Sides of pronotum slightly rounded.

Elytra: Dark ferrugineous to ferrugineous, with vague pale ferrugineous to pale brown areas (Fig. 302). Rather finely and quite densely punctate. Only rather irregular lateral row of punctures discernible. Shiny, microsculpture absent. Epipleura pale brown, quite coarsely punctate, shiny.

Ventral side: Pale ferrugineous to pale brown. Coarsely and quite densely punctate. Abdomen, except basally, almost impunctate. Shiny, without microsculpture. Metacoxal plates posteriorly and abdomen finely microsculptured. Prosternal process laterally margined, medial surface almost flat.

Legs: Pale ferrugineous to pale brown. Pro- and mesotarsi slightly enlarged.

Male genitalia: Figs 305–307. Tip of penis in holotype broken.

Female: Unknown.

Distribution: Zaire (Fig. 322).

Biology: Practically unknown. Sampled at light.

***Hydrovatus difformis* Régimbart**

Figs 308–314, 322.

Hydrovatus difformis RÉGIMBART, 1895b:101 (orig. descr., faun.); ZIMMERMANN, 1920a:33 (faun.); OMER-COOPER, 1931:759 (descr., faun., biol.); GSCHWENDTNER, 1935:24 (descr., disc.); GUIGNOT, 1945a:301 (descr., faun.); OMER-COOPER, 1957:24, 25, 28 (descr., faun., disc.); GUIGNOT, 1959a:149, 152 (descr., faun.); OMER-COOPER, 1963:177, 178 (descr., faun.); 1965:100 (descr., faun.); BILARDO & PEDERZANI, 1978:106 (disc.); BILARDO & ROCCHI, 1987:96 (faun., biol.); PEDERZANI, 1988:106 (faun., biol.).

Hydrovatus corniger GUIGNOT, 1953a:234, 235 (orig. descr., faun.); 1955b:1 (disc.); 1959a:149, 152 (descr., faun.); OMER-COOPER, 1963:178 (disc. syn. *H. difformis*); 1965:100 (list.); BILARDO & PEDERZANI, 1978:106 (disc.).

Type locality: Salisbury, Mashonaland, Zimbabwe.

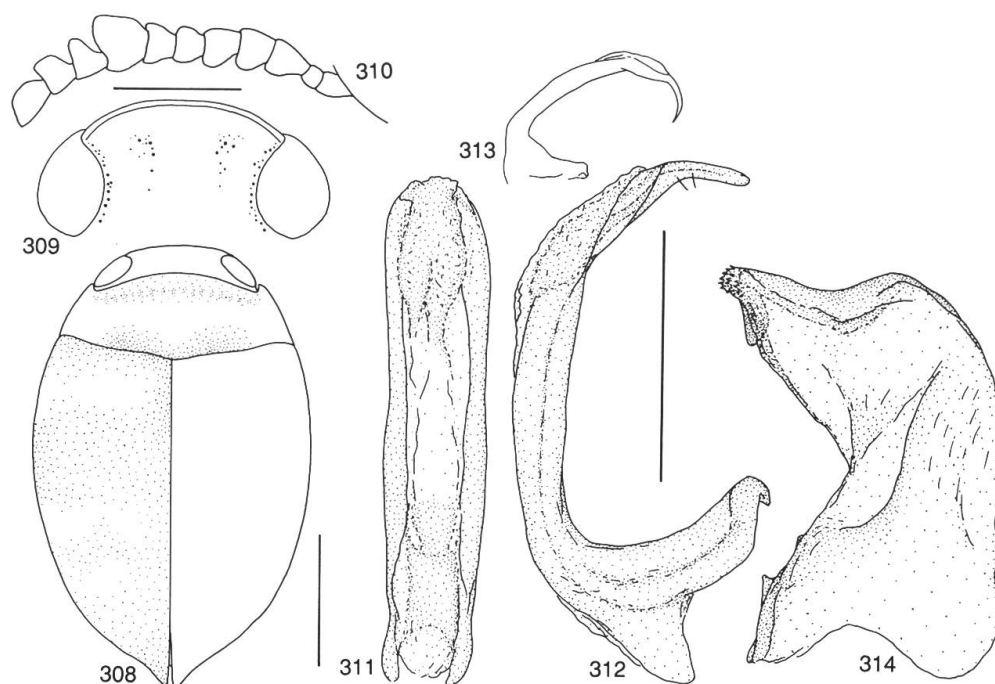
Type material studied: *H. difformis*: Holotype, m: Salisbury Mashonaland Feb. 1899 G.A.K. Marshall/*H. difformis* m type Rég./Type SAM-Ent. 843 (SAM). – *H. corniger*: Holotype, m: Holotypus/Coll. Mus. Congo Elisabethville, la lumière XI-50/VI-51 Ch. Seydel/R. Det. T. 6182/Guignot det., 1953 *Hydrovatus corniger* Guign. Type m (MAC). – Paratype: Same data as holotype (1 ex. MAC).

Additional material studied: Ethiopia: Illubabor pr. Gambela, black light 27.VI-II.1972/*H. difformis* Rég. det. Nilsson (2 exx. MAC); L. Zwai W. marsh 5500 ft. 2-3.XI.1926 (2 exx. AMS); Water hole N. of Makki riv. 6000 ft. 28.XI.1926 (2 exx. AMS). – Kenya: Tsawo West N.P. nr Kitani Lodge/14.IV.1988 (1 ex. TMB). – Malawi: Ft. Johnstone 27.IX.1948 (26 exx. AMS). – Zaire: Elisabethville XI.1951-II.1952 (1 ex. MAC); Elisabethville (1 ex. MAC). – Mozambique: Magude X.1918/*H. difformis* Rég. det. Gschwendtner (1 ex. TMP). – Botswana: Chobe R. 8 km W Kasane 27-29.XII.1987 (13 exx. CMNH, 3 exx. MZH). – South Africa: Trsvl R. Nyl at Num Num 23.VIII.1948 (6 exx. AMS, 1 ex. TMP); Trsvl. Nylstroom Deel Kraal 22.VIII.1948 (6 exx. AMS); Donkerpoort dam 24., 25.VIII.1948 (2 exx. AMS); Pretoria distr. Roodeplaat/UV light trap 30.X.1960 (3 exx. TMP, 2 exx. MZH); Ndumu Zululand 8-11.XI.1971 (1 ex. TMP). In all, 76 exx.

Diagnosis: A characteristic species, the male of which is easy to identify by study of the antenna: Segments 3–11 distinctly enlarged; segment 8 distinctly broader than all other segments.

Description: only important differences from description of *H. bomansi* recognized.

Length of body: 2.54–2.98 mm, breadth: 1.70–1.92 mm. Habitus (Fig. 308).



Figs 308–314: *Hydrovatus difformis*. – 308, habitus. – 309, head, frontal aspect. – 310, male antenna. – 311, penis, dorsal aspect. – 312, penis, lateral aspect. – 313, supplementary illustration of penis. – 314, paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia (excl. Fig. 313).

Head: Frontally rounded, medially slightly straightened, from eye to eye narrowly margined (Fig. 309). Antenna peculiarly modified (Fig. 310).

Pronotum: Rather finely and densely punctate. Punctures somewhat sparser discally on each side.

Elytra: Dark brown to dark ferrugineous, with vague pale ferrugineous to pale brown spots (Fig. 308). Shiny, without microsculpture, except apically; finely microsculptured. Basally and laterally also with indistinct scattered reticulation.

Ventral side: Almost flat medial area of prosternal process finely punctate.

Male genitalia: Fig. 311–314. Supplementary illustration of penis drawn from a specimen collected in Ethiopia.

Female: Antenna slender, segments 3–11 not distinctly enlarged.

Distribution: Ethiopia, Kenya, Zaire, Malawi, Zimbabwe, Mozambique, Botswana, South Africa (Fig. 322). A non-verified record is Zambia (Pederzani 1988).

Biology: In Ethiopia sampled at quite high altitudes (5500–6000 ft. a.s.l.). Often collected in different kinds of light traps. In Zambia

reported from riverside marshes with herbaceous vegetation and reeds, at the sides of a broad and slow running river, with bottom soil made up of clay, sand and vegetal debris (Pederzani 1988). See also BILARDO & ROCCHI (1987).

Synonymy: The synonymy of *H. difformis* Régimbart and *H. corniger* Guignot was introduced by OMER-COOPER (1963). Her synonymization is correct and is thus also followed here. The older name *H. difformis* is the valid name of this species.

Hydrovatus satanas Guignot

Figs 315–322.

Hydrovatus satanas GUIGNOT, 1958b:1 (orig. descr., faun.); PEDERZANI & ROCCHI, 1982:69 (disc.).

Type locality: Parc National, Garamba, Zaire.

Type material studied: Holotype, m: Holotypus/Congo Belge PNG Miss. H. De Saeger I/c/2, 17.III.1950 Réc: G. Demoulin 355/Coll. Mus. Congo (ex I.P.N.C.B.)/Guignot det., 1957 *Hydrovatus* (*Vathydrus*) *satanas* n.sp. Holotype (MAC). – Paratypes: Same data as holotype but 13.XI.1951 H. De Saeger, 2758 (1 ex. MAC); 19.II.1952, 3137 (3 exx. MAC); 8.VIII.1952, 3924 (1 ex. MAC). In all, 6 exx.

Diagnosis: A distinct species, which is undoubtedly closest to *H. satanoides*, below. The two species are easily separated by examination of the male antenna. In *H. satanas*, segments 3–8 are almost equally broad, while in *H. satanoides* the male antenna narrows from segment 8 towards segment 3.

Length of body: 2.50–2.66 mm, breadth: 1.50–1.62 mm. **Habitus** (Fig. 315).

Head: Pale ferrugineous to ferrugineous. Punctuation fine to very fine, irregularly distributed. Punctures densest in indistinct frontal depression at eyes. Somewhat mat, microsculptured (meshes distinct). Head frontally almost straight, narrowly margined but margin does not reach eyes. Margin medially weakly developed (Fig. 316). Antenna pale ferrugineous, strongly modified (Fig. 317).

Pronotum: Ferrugineous to brownish, laterally slightly paler and basally with a vague darkened area. Finely punctate. Discally punctures sparser and more weakly developed. Slightly mat, microsculptured (meshes distinct). Sides of pronotum almost straight.

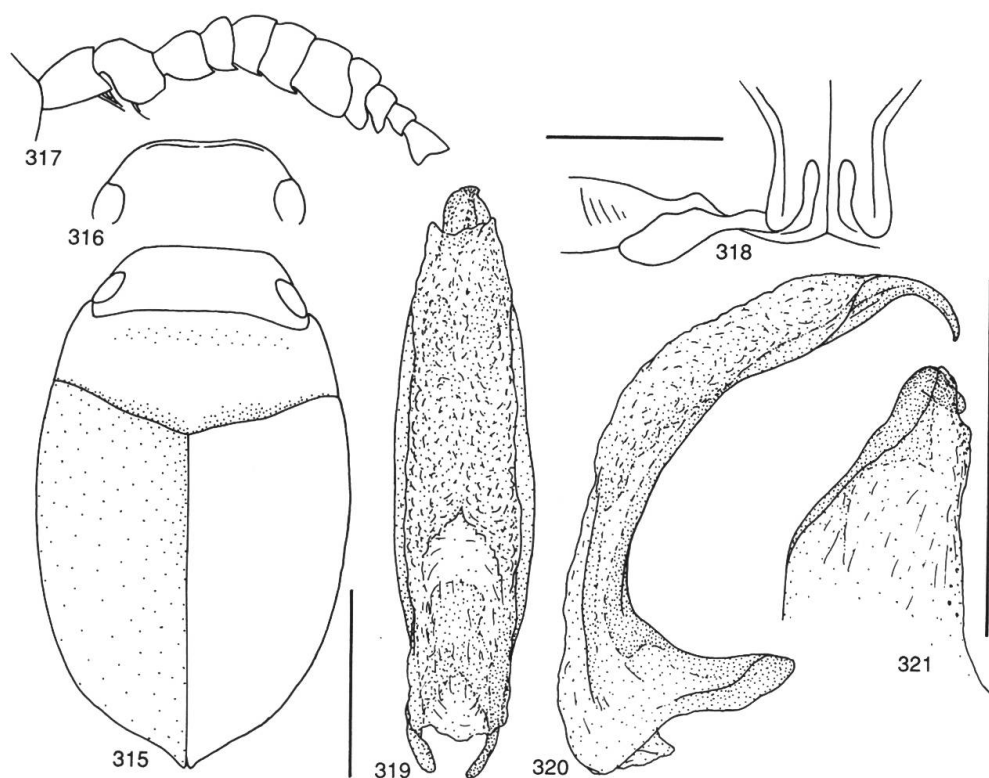
Elytra: Ferrugineous to brown, laterally slightly paler, but without distinct colour pattern. Finely to rather finely and somewhat sparsely punctate. Laterally and apically punctures finer and sparser. Discal and dorsolateral rows of punctures often discernible, although irregular and mixed with adjacent punctuation. Lateral row of pun-

ctures quite fine, slightly irregular but discernible. Rather shiny, microsculptured (meshes weakly developed and somewhat indistinct). Epipleura pale ferrugineous, distinctly punctate and punctures concentrated in inner part of epipleuron. Epipleura finely microsculptured.

Ventral side: Pale ferrugineous to ferrugineous. Rather coarsely to coarsely and somewhat sparsely punctate. Abdomen, except basally, almost impunctate. Shiny, almost without microsculpture. On abdomen very indistinct fragments of reticulation may be discerned. Prosternal process laterally broadly margined, medial area somewhat impressed. Metacoxal process/base of hindleg-region with extraordinary modification in *Hydrovatus*. Metafemur does not reach metacoxal process (Fig. 318).

Legs: Pale ferrugineous. Pro- and mesotarsi slightly enlarged.

Male genitalia: Figs 319–321.



Figs 315–321: *Hydrovatus satanas*. – 315, habitus. – 316, head, frontal aspect. – 317, male antenna. – 318, metacoxal process–metatrochanter. – 319, penis, dorsal aspect. – 320, penis, lateral aspect. – 321, apical part of paramere. Horizontal scale 0.5 mm, antenna and metacoxal process; left scale 1 mm, habitus and head; right scale 0.4 mm, genitalia.

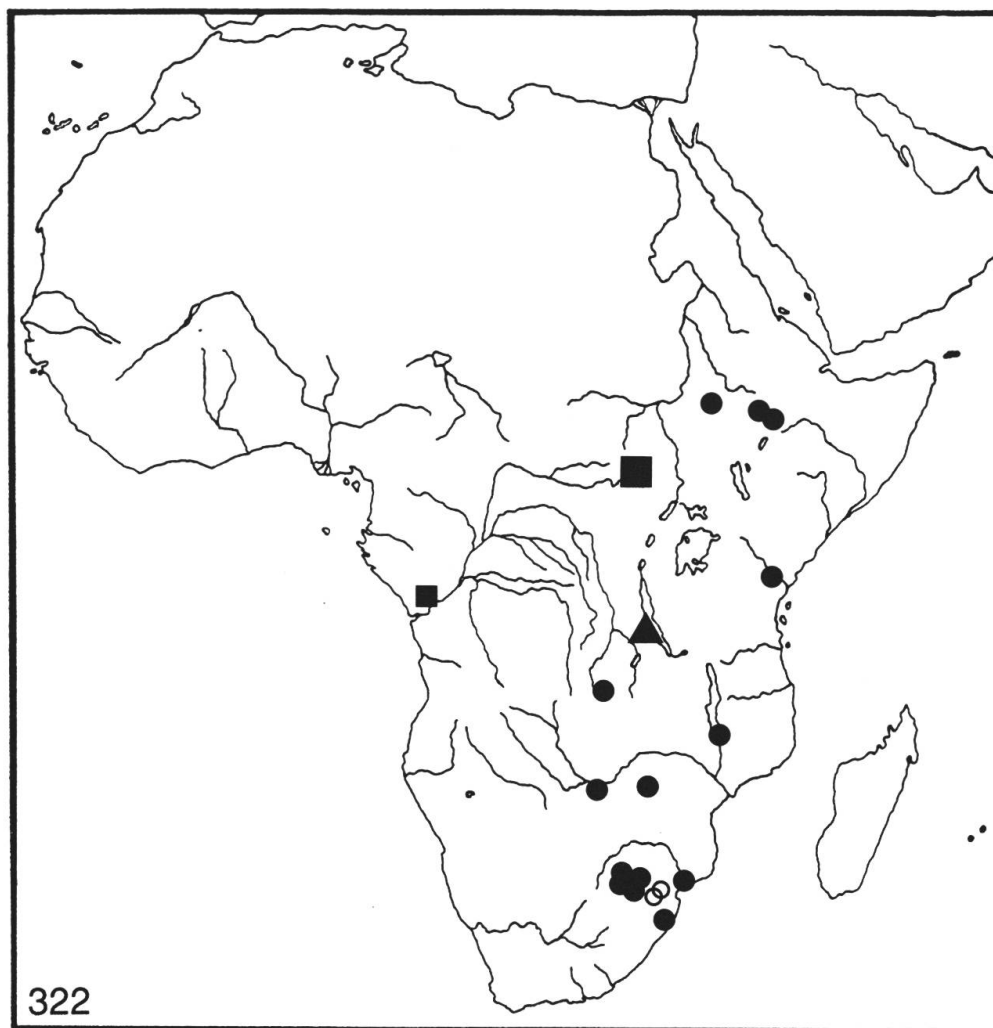


Fig. 322: Distribution of *Hydrovatus bomansi* (triangle), *H. difformis* (dot), *H. satanas* (big square), *H. satanoides* (small square) and *H. pilitibiis* (circle).

Female: Frontal outline of head rounded. Antenna slender, not modified.

Distribution: Zaire (Fig. 322).

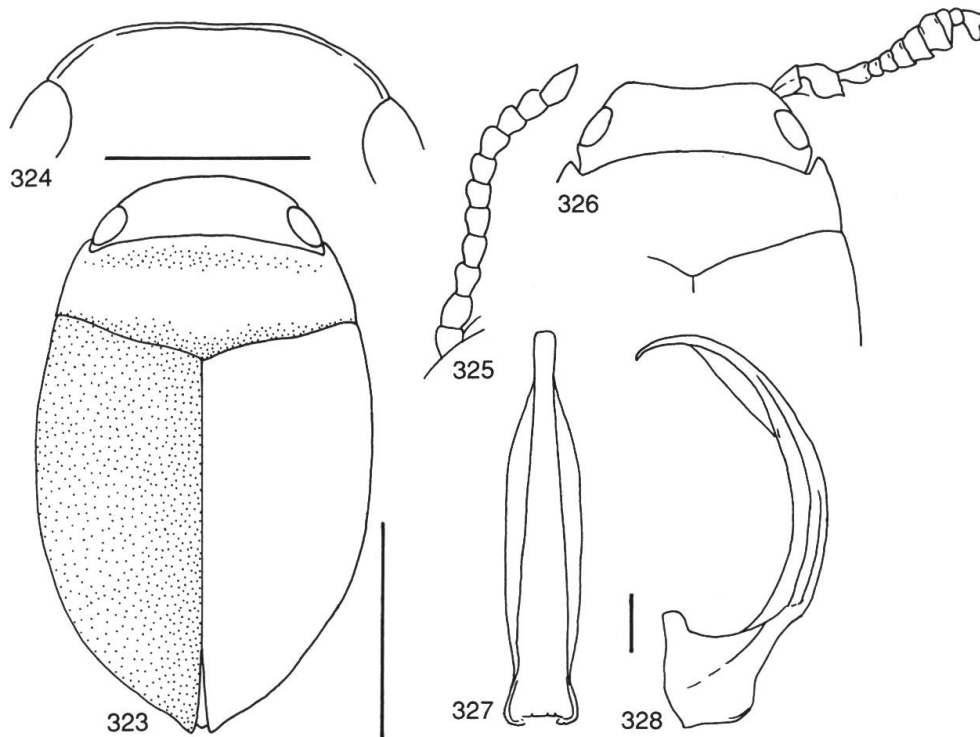
Biology: Unknown.

***Hydrovatus satanoides* Pederzani & Rocchi**

Figs 322–328.

Hydrovatus satanoides PEDERZANI & ROCCHI, 1982:68, 71 (orig. descr., faun.);
BILARDO & ROCCHI, 1987:98, 100 (descr., disc.); BILARDO & ROCCHI, 1990:160,
171, 180 (descr., faun., biol.).

Type locality: Voka (SW of Brazzaville), Congo.



Figs 323–328: *Hydrovatus satanoides*. – 323, female habitus. – 324, female head. – 325, female antenna. – 326, male head and antenna. – 327, penis, dorsal aspect. – 328, penis, lateral aspect. (Figs 326–328 after PEDERZANI & ROCCHI 1982). Horizontal scale 0.5 mm, female head and antenna; left scale 1 mm, habitus; right scale 0.2 mm, genitalia.

Type material: Holotype, m: Voka I–1980, leg. Onore (coll. Pederzani, not available for study). – Paratype studied: Congo Voka pres Boko I–1980 G. Onore/*Hydrovatus satanoides* Ped. & Rocchi Paratypus (1 ex. coll. Rocchi). In all, 1 ex.

Diagnosis: See diagnosis of *H. satanas* above. Additionally, according to the original description of *H. satanoides* (PEDERZANI & ROCCHI, 1982), it has the dorsal surface of the body clearly reticulate and the second segment of the male antenna is much broader.

Description: only the female has been examined – for further characteristics, see original description.

Length of body: 2.48–2.73 mm, breadth: 1.52. Habitus (Fig. 323).

Head: Frontal aspect of head in Figs 324, 326. Antenna in Figs 325–326.

Penis: Fig. 327–328. Based on the original description.

Distribution: Congo (Fig. 322). BILARDO & ROCCHI (1990) gives also Gabon.

Biology: Practically unknown. See BILARDO & ROCCHI (1990).

Hydrovatus pilitibiis Omer–Cooper

Figs 322, 329–334.

Hydrovatus pilitibiis OMER-COOPER, 1957:27 (orig. descr., faun.); 1965:99 (descr., faun.).

Type locality: Wassermans Beacon, Transvaal, South Africa.

Type material studied: Holotype, m: Type/Transvaal Wassermans Beacon 6.12.1948 J.O.C./Brit. Mus. 1957–660/*Hydrovatus pilitibiis* O–C. (BMNH). – Paratypes: Trsvl sluggish stream nr Ermelo 4.XII.1948 Omer–Cooper (1 ex. AMS); Trsvl Vossman's Beacon 6.XII.1948 (4 exx. AMS); Transvaal Wassermans/Beacon 6.12. 1948 J.O.C./Paratypus *H. pilitibiis* sp.n. J. Omer–Cooper (2 exx. TMP). In all, 8 exx.

Diagnosis: A very characteristic species, particularly characterized by the peculiarly and strongly modified male antenna in combination with a partly parallel-sided body.

Length of body: 2.32–2.48 mm, breadth: 1.32–1.40 mm. Habitus (Fig. 329).

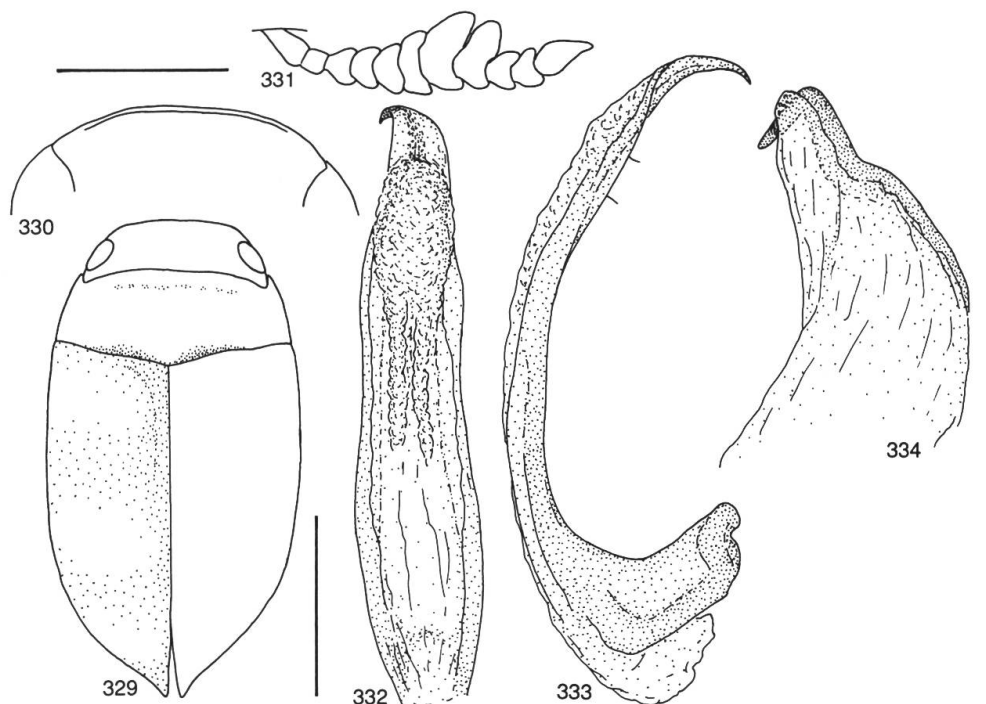
Head: Pale ferrugineous. Very finely and sparsely punctate (punctures in part hardly visible). In shallow frontal depressions and narrowly at eyes with slightly coarser and denser punctures. Slightly mat, microsculptured (meshes distinct). Head frontally rounded, medially for a long distance somewhat straightened and finely margined (Fig. 330). Antenna pale ferrugineous, distinctly modified (Fig. 331).

Pronotum: Pale ferrugineous, mediobasally with a small, vague, darkened area. Punctuation sparse, very fine. Narrowly at margins with slightly coarser and denser punctures. Slightly mat, microsculptured (meshes distinct). Sides of pronotum slightly rounded.

Elytra: Pale brown, with vague pale ferrugineous areas (Fig. 329). With fairly coarse but somewhat sparse punctuation. Apically and laterally punctures finer. Rows of punctures indistinct or absent (mixed with adjacent punctures). Rather shiny, although microsculptured (meshes fairly distinct). Epipleura pale ferrugineous, with a few punctures, indistinctly reticulated.

Ventral side: Pale ferrugineous to ferrugineous to brown. Fairly coarsely but somewhat sparsely punctate. Abdomen, except basally, almost impunctate. Rather shiny, microsculpture indistinct. Abdomen slightly mat, microsculptured (meshes distinct). Prosternal process laterally rather indistinctly margined, medial surface slightly depressed.

Legs: Pale ferrugineous. Pro- and mesotarsus somewhat enlarged. Swimming-hairs of metatibia and -tarsus long and well developed.



Figs 329–334: *Hydrovatus pilitibiis*. – 329, habitus. – 330, head, frontal aspect. – 331, male antenna. – 332, penis, dorsal aspect. – 333, penis, lateral aspect. – 334, apical part of paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Male genitalia: Figs 332–334.

Female: Antenna rather slender, not distinctly modified.

Distribution: South Africa (Fig. 322).

Biology: Sampled in a sluggish stream.

***Hydrovatus oblongus* Omer-Cooper**

Figs 335–340, 354.

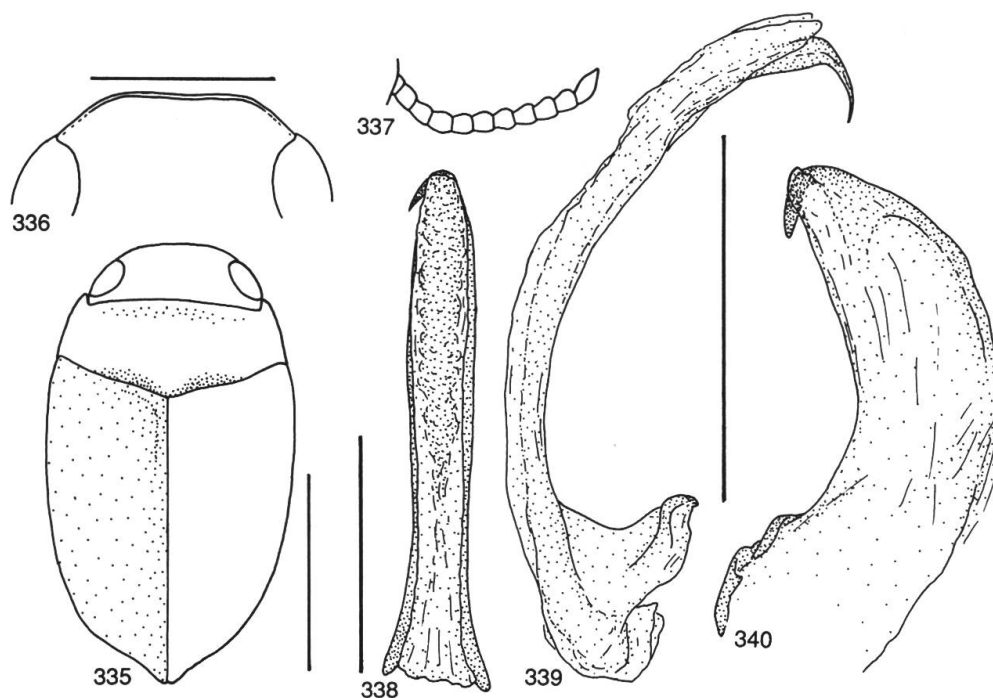
Hydrovatus oblongus OMER-COOPER, 1957:40 (orig. descr., faun.); 1958:59 (faun., biol.); 1965:93 (descr., faun.).

Type locality: Koop River, Barberton Trib., Transvaal, South Africa.

Type material studied: Holotype, m: Type/Transvaal Barberton Trib. Koop River 1 Dec. 1948 J. Omer-Cooper/*H. oblongus*/m-type (BMNH).

Additional material studied: Tanzania: Morogoro VII.1909 (1 ex. MNB). – Swaziland: 9 mi. from Mbabane 6.XII.1948 (1 ex. AMS). – South Africa: Transkei Pt St Jones Silaka 31.33S–29.30E/2.XII.1987 E–Y 2548 UV-light (1 ex. TMP). In all, 4 exx.

Diagnosis: *H. oblongus* is characterized by an elongated body, by the truncate frontal part of the head, and by the unmodified male antenna.



Figs 335–340: *Hydrovatus oblongus*. – 335, habitus. – 336, head, frontal aspect. – 337, male antenna. – 338, penis, dorsal aspect. – 339, penis, lateral aspect. – 340, paramere. (Fig. 338 drawn from dry preparation, Figs 339–340 drawn from permanent preparation; illustrations incompatible.) Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; middle scale 0.25 mm, Fig. 338; right scale 0.4 mm, Figs 339–340.

Description: only differences from description of *H. pilitibiis* recognized.

Length of body: 2.14–2.38 mm, breadth: 1.20–1.38 mm. **Habitus** (Fig. 335).

Head: Medially almost straight, finely margined. Margin close to eyes absent or very indistinct (Fig. 336). Antenna slender, not distinctly modified (Fig. 337).

Pronotum: Sides of pronotum rounded to almost straight.

Elytra: Brownish to pale brownish to pale ferrugineous, without distinct colour pattern. Rather finely and somewhat sparsely punctate. Apically and close to epipleura almost impunctate. Rather shiny, very finely microsculptured (meshes at least partly discernible).

Ventral side: Abdomen with very fine reticulation. Prosternal process quite broadly margined, medial area almost flat, surface punctate.

Legs: Pro- and mesotarsus quite slender.

Male genitalia: Figs 338–340. Dorsal aspect of penis drawn from dry-preparation.

Female: Externally approximately as male.

Distribution: Tanzania, Swaziland, South Africa (Fig. 354).

Biology: Sampled at UV-light collection. In Swaziland collected in a wide area of springs and a marsh with red mud at an approximate altitude of 4700 ft. (OMER-COOPER, 1958).

Hydrovatus amplicornis Régimbart

Figs 341–346, 354.

Hydrovatus amplicornis RÉGIMBART, 1895b:100 (orig. descr., faun.); ZIMMERMANN, 1920a:31 (faun., given by mistake as *amphicornis*); GUIGNOT, 1953a:235 (disc.); OMER-COOPER, 1957:23 (descr., faun.); 1958:59 (faun., biol.); GUIGNOT, 1959a:149, 151 (descr., faun.); 1959c:139 (faun.); OMER-COOPER, 1962:296 (disc., faun.); 1965:99 (descr., faun.); CURTIS, 1991:186 (faun., biol.).

Type locality: Natal, South Africa.

Type material studied: Holotype, m: 376/*amplicornis* Rég. type unique/Type SAM/Ent. 842 (SAM). Additional material studied: Namibia: Okahandja 1240 m 14.III.1979 (1 ex. ZFMB); Kaokoveld Gauko-Otavi 20 mi. SSW Ohopoho 5.VI.1951 (1 ex. AMS, female – determination uncertain). – South Africa: Trsvl Belfast 29.XI.1948/*H. amplicornis* Régb. det. Omer-Cooper (5 exx. AMS, 1 ex. TMP); Belfast 30.XI.1948 (1 ex. AMS); Ermelo 1.XII.1948 (1 ex. AMS); Ermelo 4.XII.1948, sluggish stream (2 exx. AMS); Middleburg 29.XI.1948 (3 exx. AMS); Wasserman's Beacon 6.XII.1948/*H. amplicornis* Régb. det. J. Balfour-Browne (2 exx. AMS); Trsvl, salt pan nr L. Chrissie 2.XII.1948 (1 ex. AMS); Donkerpoort 24.VIII.1948/*H. amplicornis* Régb. det. Omer-Cooper (1 ex. TMP); Pretoria distr. Roodeplaat/UV light trap 30.X.–10.XI.1960 (1 ex. MZH); Johannesburg Bloubank River 15.X.1982 (1 ex. coll. Bilardo, female – det. uncertain); Uitsoek Waterfall area 25.16S–30.35E/5.II. 1987 E–Y 2421 UV light (1 ex. TMP); Transkei Pt St Jones, Siaka 31.33S–29.30E/29.XI.1987 E–Y 2542 UV light (1 ex. TMP); E.C. Pr. Humansdorp distr. Storms Riv. 18.V.1948 (4 exx. AMS); Humansdorp 15.II.1947 (1 ex. AMS); E.C. Pr. Matatiele 3.V.1956 (5 exx. AMS); E.C. Pr. Mquanduli 29.III.1957 (4 exx. AMS); Mt Ayliff distr. 5.IV.1947 (1 ex. AMS); C.Pr. Knysna Main Forest, Buffelsnek 18.I.1951 (1 ex. AMS); Concordia nr Knysna 17.III.1954/*Scirpus* fringed vlei (10 exx. BMNH, 2 exx. MZH); E.C. Pr. Adelaide 9.IX.1957 (43 exx. AMS). – Swaziland: 9 mi. from Mbabane 6.XII.1948 (2 exx. AMS). IN all 97 exx.

Diagnosis: *H. amplicornis* is characterized by the male antenna (medially peculiarly enlarged), by the truncate frontal part of the head, by the elongated body, and by the vague elytral colour pattern.

Length of body: 1.98–2.46 mm, breadth: 1.24–1.52 mm. Habitus (Fig. 341).

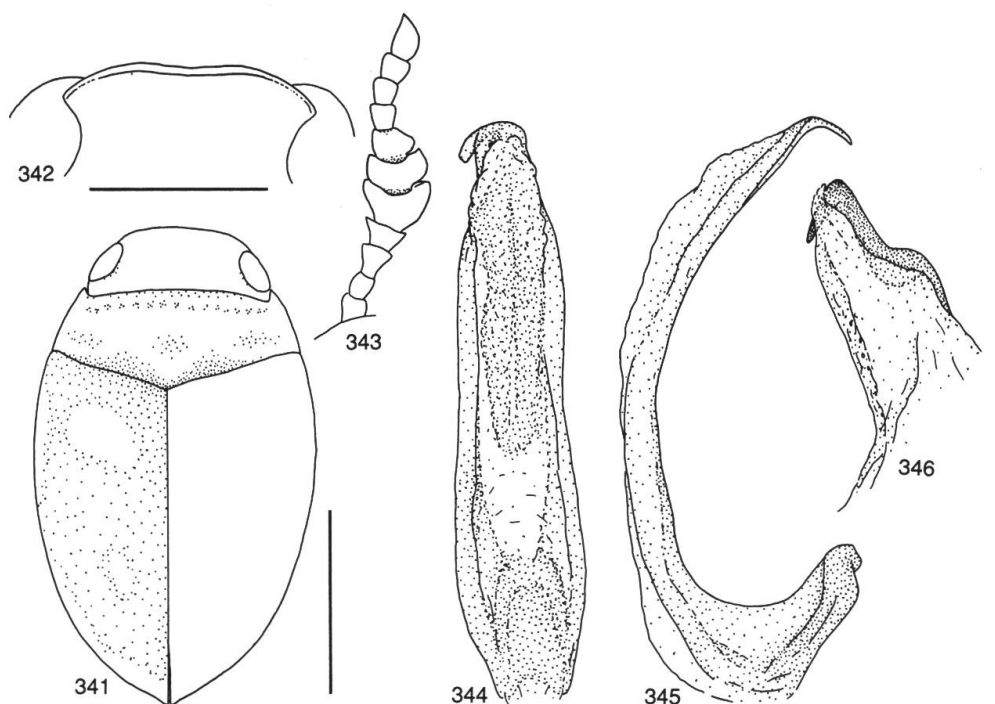
Head: Pale ferrugineous to pale brown. With fine and partly rather indistinct, irregularly distributed punctation. Punctures coarsest in shallow frontal depressions. Head frontally submat, with more strongly developed microsculpture than posteriorly, where head shiny. Head frontally rounded, medially straightened, from eye to eye

narrowly margined (Fig. 342). Antenna pale ferrugineous, strongly modified (Fig. 343).

Pronotum: Pale ferrugineous to ferrugineous, frontally and posteriorly with somewhat vague, darkened areas (Fig. 341). Punctuation fine to fairly coarse. Punctures discally sparse and finer. Rather shiny, although microsculptured (meshes distinct). Sides of pronotum rounded to almost straight.

Elytra: Dark brown, with rather vague pale ferrugineous areas (Fig. 341). Fairly densely and coarsely punctate. Apically and close to epipleura with distinctly finer and sparser punctures. Only lateral row of punctures discernible (fine and quite irregular). Rather shiny, although finely microsculptured. Epipleura pale ferrugineous, fairly coarsely punctate, shiny, indistinctly microsculptured.

Ventral side: Pale ferrugineous to ferrugineous. Coarsely to fairly coarsely punctate, except four apical segments of abdomen, which are almost impunctate. Shiny, almost without microsculpture (metacoxa posteriorly with a small, distinctly reticulated area). Abdomen



Figs 341–346: *Hydrovatus amplicornis*. – 341, habitus. – 342, head, frontal aspect. – 343, male antenna. – 344, penis, dorsal aspect. – 345, penis, lateral aspect. – 346, apical part of paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

finely microsculptured. Prosternal process laterally finely margined, medial surface almost flat, finely punctate.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsi slightly enlarged.

Male genitalia: Figs 344–346.

Female: Antenna slender, not distinctly modified.

Distribution: Namibia, South Africa, Swaziland (Fig. 354).

Biology: At least once sampled in a sluggish stream. Sometimes sampled at light collection. In Swaziland collected in a wide area with springs and a marsh with red mud, at an altitude of about 4700 feet a.s.l. In Namibia sampled at an altitude of 1240 m.

Hydrovatus cristatus Guignot

Figs 347–354.

Hydrovatus cristatus GUIGNOT 1958b:4 (orig. descr., faun.).

Type locality: Garamba National Park, Zaire.

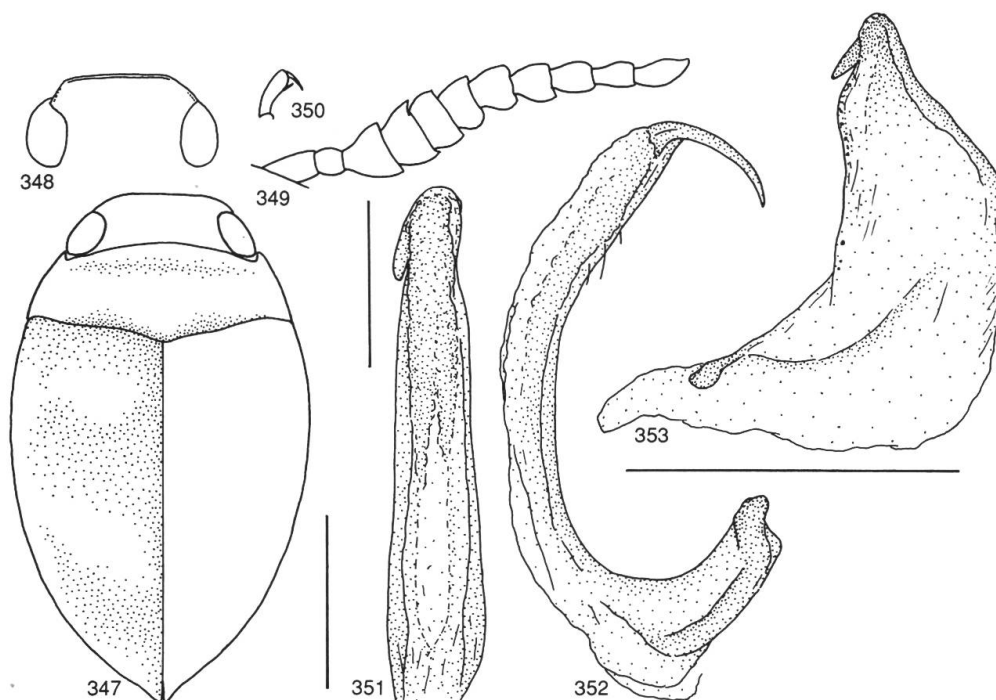
Type material studied: Holotype, m.: Holotypus/Congo Belge PNG Miss. H. De Saeger II/gd/11, 4.V.1951 Réc. H. De Saeger. 1956/Coll. Mus. Congo (ex.coll. I.P.N.C.B.) /F. Guignot det., 1956 *Hydrovatus* (*Vathydrus*) *cristatus* n.sp.. Type m. (MAC). Paratypes: Principally with same data as holotype but: 8.V.1950, 494 (1 ex. MAC); 30.III.1951 (1 ex. ISN); 7.II.1952, 2996 (1 ex. MAC); 21.II.1952, 3143 (2. exx. ISN); 28.IV.1952, 3403 (1 ex. ISN); 30.VI.1952, 3721 (1 ex. MAC); 28.VIII.1952, 3987 (1 ex. MAC). In all, 9 exx.

Diagnosis: A distinct species, which is characterized particularly by the male antenna (narrows quite evenly from the third segment towards the apex: basal enlarged segments sharply edged), by the almost straight frontal aspect of the head, by a vague elytral colour pattern, by a quite slender penis (dorsal view) and by a quite large downwards curved apex of the penis.

Length of body: 2.70–2.84 mm, breadth: 1.62–1.72 mm. Habitus (Fig. 347).

Head: Pale ferrugineous. Finely, quite sparsely and irregularly punctate. Submat, microsculptured (meshes distinct) Head frontally almost straight, narrowly margined (margin near eyes indistinct) (Fig. 348). Antenna pale ferrugineous, strongly modified; segments 3–8 distinctly flattened (Fig. 349).

Pronotum: Pale ferrugineous, frontally with a vague dark ferrugineous area. Basally with a more distinctly delimited blackish to dark ferrugineous area (Fig. 347). Finely and quite sparsely punctate. Punctures quite irregularly distributed, discally sparsest. Rather shiny, although microsculptured (meshes distinct). Lateral outline of pronotum almost straight to slightly rounded.



Figs 347–353: *Hydrovatus cristatus*. – 347, habitus. – 348, head, frontal aspect. – 349, male antenna. – 350, male protarsal claw. – 351, penis, dorsal aspect. – 352, penis, lateral aspect. – 353, paramere. Horizontal scale 0.4 mm, genitalia; top scale 0.5 mm, antenna and claw; bottom scale 1 mm, habitus and head.

Elytra: Dark ferrugineous, with vague ferrugineous to pale ferrugineous areas (Fig. 347). Rather finely and somewhat sparsely punctate, laterally and apically punctures finer and sparser. Generally only an indistinct lateral row of punctures visible. Sometimes an irregular, indistinct, discal row of punctures may basally be discerned. Rather shiny, microsculptured (lateral meshes particularly weakly developed, partly indistinct). Epipleura pale ferrugineous, quite coarsely but sparsely punctate. Rather shiny, indistinctly microsculptured.

Ventral side: Ferrugineous to pale ferrugineous. Fairly coarsely and somewhat sparsely punctate. Abdomen with distinctly finer punctures (partly almost impunctate), except basally. Shiny, almost totally without microsculpture (scattered indistinct reticulation may be discerned). Prosternal process laterally finely margined, medial surface uneven.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsus quite slender. Protarsal claw-segment with a minute process (Fig. 350).

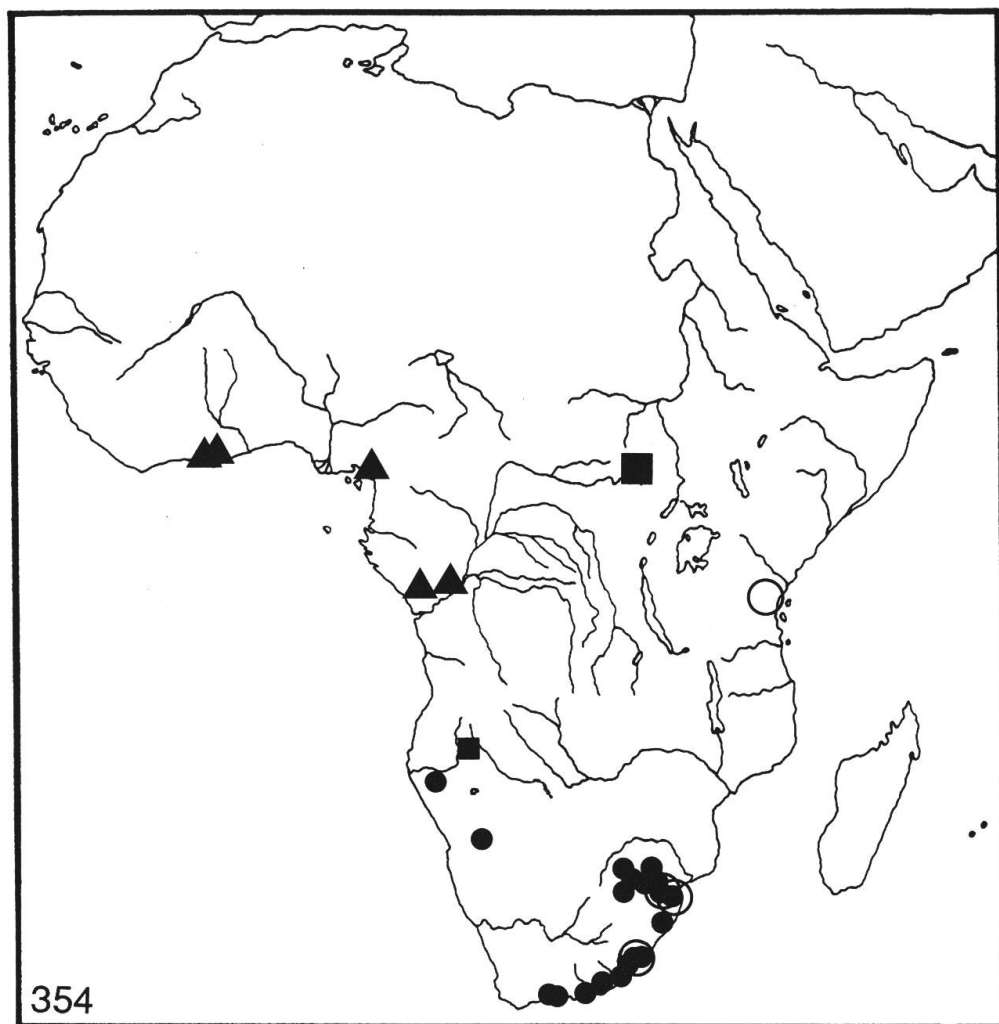


Fig. 354: Distribution of *Hydrovatus oblongus* (circle), *H. amplicornis* (dot), *H. cristatus* (big square), *H. noumeni* (triangle) and *H. fernandoi* (small square).

Male genitalia: Figs 351–353.

Female: Antenna slender, not distinctly modified.

Distribution: Zaire (Fig. 354).

Biology: Unknown.

***Hydrovatus noumeni* Bilardo & Rocchi**

Figs 354–361.

Hydrovatus noumeni BILARDO & ROCCHI 1990:179, 188 (orig. descr., faun.).

Type locality: Buea, NE Malende, Cameroon.

Type material studied: Holotype, m.: Cameroon Buea Nord-Est Malende 17.I.1979 A. Bilardo/L=2.33, la 1.45/Holotypus/*Hydrovatus noumeni* Bil. & Rocchi det. A. Bilardo (coll. Bilardo).

Additional material studied: Ghana: Ashanti Reg., Kwadaso 259 m/UV-light trap on field 26.V.1969 (2 exx. TMB, 1 ex. MZH); Ashanti Reg., Bobiri for. res. 320 m

/water-netting 20.III.1966 (5 exx. TMB, 1 ex. MZH). – Congo: Loudima, Sagro Park/10.XII.1963 by lamplight (1 ex. TMB); Brazzaville/20.XI.1963 light trap (2 exx. TMB). In all, 13 exx.

Diagnosis: Probably quite closely related to the preceding species. *H. noumeni* is particularly characterized by the moderately modified male antenna, by the medially straightened and completely margined frontal part of the head, by a somewhat elongated body with a quite distinct colour pattern, and by a somewhat prolonged male protarsal claws.

Description: only important differences from description of *H. cristatus* recognized.

Length of body: 2.24–2.48 mm, breadth: 1.36–1.56 mm. Habitus (Fig. 355); shape of body in specimens from Congo a little more globular.

Head: At eyes and in shallow frontal depressions with denser punctation (not a distinguishing feature). Head frontally straightened and margined (Fig. 356). Antenna with segments 3–11 somewhat flattened, almost equally broad (Fig. 357).

Elytra: Dark to blackish brown to dark ferrugineous, with vague paler areas (Fig. 355). Elytra at epipleura brown to pale brown. Punctation rather fine, fairly dense. Apically and close to epipleura with distinctly finer punctures. Row of punctures almost absent.

Ventral side: Prosternal process with medial surface slightly depressed.

Legs: Pro- and mesotarsus somewhat enlarged, with quite long claws (Fig. 358).

Male genitalia: Figs 359–361.

Female: Antenna slender, not with distinctly enlarged segments.

Distribution: Ghana, Cameroon, Congo (Fig. 354).

Biology: At light collection; in Ghana collected with a UV-light trap in a field.

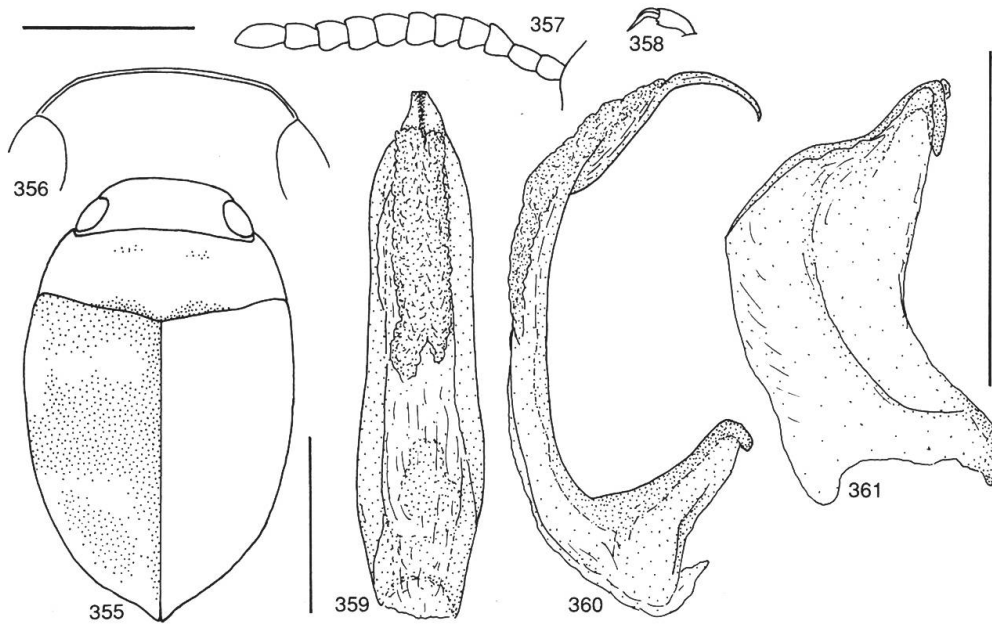
***Hydrovatus fernandoi* n.sp.**

Figs 354, 362–367.

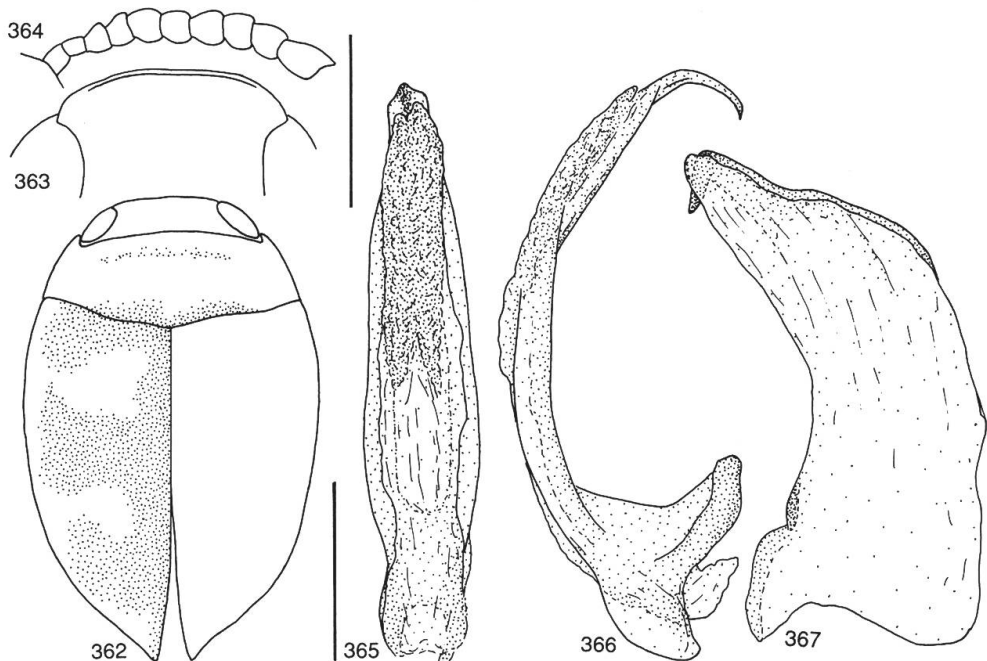
Type locality: Bruco, Angola.

Type material: Holotype, m.: Angola (A 11) Bruco 26.II.–2.III.1972/at light/South Africa Exp. B.M. 1972–1/*Hydrovatus* sp (this group must be revised) det. Pederzani, perhaps a new species (BMNH). In all, 1 ex.

Etymology: The new species is named after Dr. Fernando Pederzani, Ravenna, Italy, who obviously was the first to recognize that it was a new species.



Figs 355–361: *Hydrovatus noumeni*. – 355, habitus. – 356, head, frontal aspect. – 357, male antenna. – 358, male protarsal claws. – 359, penis, dorsal aspect. – 360, penis, lateral aspect. – 361, paramere. Horizontal scale 0.5 mm, head, antenna and claws; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.



Figs 362–367: *Hydrovatus fernandoi*. – 362, habitus. – 363, head, frontal aspect. – 364, male antenna. – 365, penis, dorsal aspect. – 366, penis, lateral aspect. – 367, paramere. Left top scale 0.5 mm, head and antenna; left bottom scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Diagnosis: A characteristic species, which is possible to identify by study of the male antenna: Segments 6–10 approximately of the same size; segment 1 with a peculiar apical expansion.

Description: only important differences from description of *H. cristatus* recognized.

Length of body: 2.44 mm, breadth: 1.54 mm. Habitus (Fig. 362).

Head: Frontally margined, but margin disappears before reaching eyes (Fig. 363). Antenna pale brown, segments 6–10 distinctly enlarged and almost of same appearance, segment 11 apically expanded (Fig. 364).

Elytra: Dark brown, with slightly vague pale brown markings (Fig. 362). Punctuation fairly coarse, slightly sparse and irregularly distributed. Rows of punctures indistinct. Rather shiny, although microsculptured (meshes clearly discernible). Epipleura pale brown, punctuation fine, dense, and concentrated in inner part of epipleuron. Epipleura very finely reticulated.

Ventral side: Punctuation rather fine to fairly coarse, fairly dense. Shiny, without microsculpture, except abdomen and posterior part of metacoxal plates; with fine reticulation. Prosternal process laterally narrowly but quite distinctly margined, medial surface distinctly impressed.

Legs: Pro- and mesotarsus slightly enlarged. Claws symmetric (not a distinguishing feature).

Male genitalia: Figs 365–367.

Female: Unknown.

Distribution: Angola (Fig. 354)

Biology: Sampled at light.

Hydrovatus glaber Guignot

Figs 368–373, 386.

Hydrovatus glaber GUIGNOT 1953c:145, 147 (orig. descr., faun.); 1959a:134, 139 (descr., faun.); OMER-COOPER 1963:173, 177 (descr., faun.).

Hydrovatus katangensis GUIGNOT 1958c:103 (orig. descr., faun.). **New synonym.**

Hydrovatus medioximus OMER-COOPER 1963:174, 177 (orig. descr., faun.); BILARDO & PEDERZANI 1978:105 (disc.). **New synonym.**

Type locality: Elisabethville, Zaire.

Type material studied: *H. glaber*: Holotype, m.: Holotypus m./Coll. Mus. Congo Elisabethville (lumière) XI.1951–II.1952 Ch. Seydel R. Det. S 6226/Dr. F. Guignot det., 1953 *Hydrovatus glaber* Guign. Type m. (MAC). – Paratypes: Same sampling data as holotype (3 exx. MAC). – *H. katangensis*: Holotype, m.: Holotypus/ Elisabethville la lampe 20.XII.1969/ 1026/Coll. Mus. Congo ex. coll. J. Pantos/F. Guignot det. 1957 *Hydrovatus* (*Vathydrus*) *katangensis* n.sp. Holotype (MAC). – Paratype: Same

data as holotype but 3.II.1949/1012 (1 ex. MAC). – *H. medioximus*: Southern Rhodesia Marandellas 2.Nov.1948 J. Omer-Cooper (13 exx. AMS); S. Rhodesia, stream Rusapi 13.XI.1948 J. O-C. (3 exx. AMS); S. Rhodesia Inyanga Bog 16.Nov.1948 J. Omer-Cooper (6 exx. AMS). The specimens lack type-labels, but since there are no types of this species in BMNH, and the label data fit in with the original description, I believe that *H. medioximus* was described on the basis of these specimens.

Additional material studied: Tanzania: Stream Mbeya-Tunduma rd 18.X.1948 (1 ex. AMS). – Zimbabwe: Inyanga Riv. 1948 (1 ex. AMS); Vumba N.P. 31.XII.1962 (1 ex. AMS); Marandellas 12.XI.1948/*H. glaber* Guign. det. Omer-Cooper (1 ex. AMS); 1 mi. fr. Lindi, bog pool 22.XI.1948/ *H. glaber* det. Omer-Cooper (1 ex. AMS); Melsetter arboretum 3.I.1963 (4 exx. AMS). – South Africa: Trsvl Belfast marsh pools 26.XI.1948 (1 ex. AMS); Trsvl, small stream nr Warburton (1 ex. AMS). In all, 39 exx. Diagnosis: A quite distinct species, which is characterized by a somewhat elongated body, by a vague elytral colour pattern, and by a quite weakly but still clearly modified male antenna: Segments 4–7 somewhat enlarged.

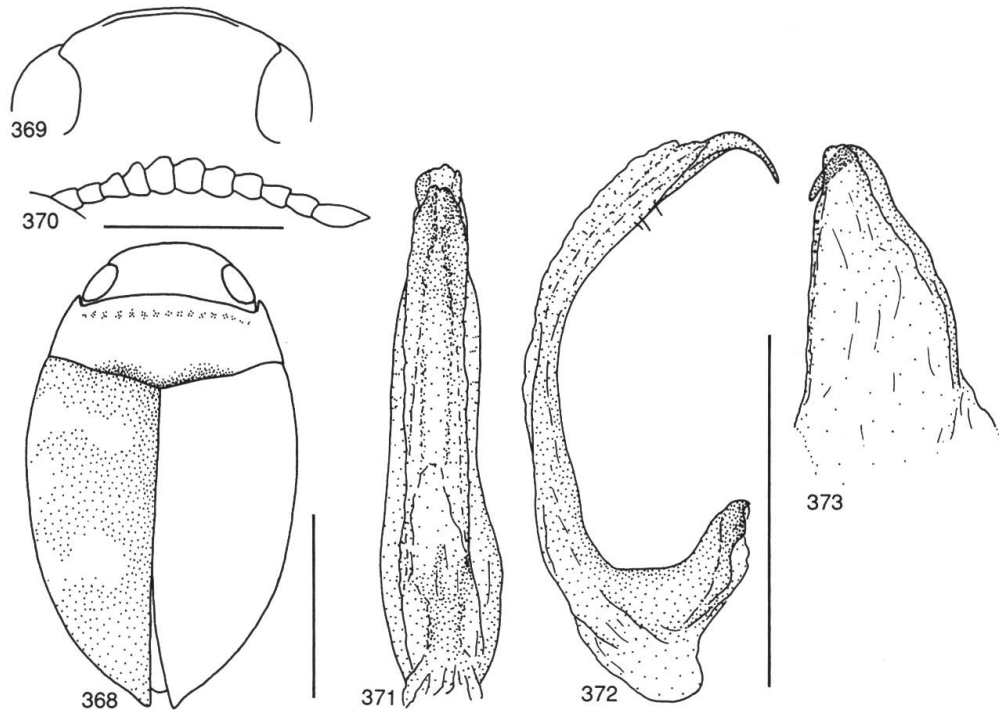
Length of body: 2.14–2.46 mm, breadth: 1.28–1.50 mm. Habitus (Fig. 368).

Head: Pale ferrugineous to pale brown. Punctuation fine, sparse, at eyes and in shallow frontal depressions punctures distinctly denser. Slightly mat, microsculptured (meshes distinct). Frontal outline of head slightly uneven, narrowly margined (margin disappears before reaching eyes) (Fig. 369). Antenna pale ferrugineous, somewhat modified (Fig. 370).

Pronotum: Pale ferrugineous to pale brown, anteriorly and basally with vague darkened areas. Anterior darkened area sometimes lacking. Punctuation fine to rather fine, fairly dense to sparse, quite irregularly distributed. Latero-disacly punctures partly absent. Slightly mat to rather shiny, finely microsculptured (meshes generally discernible). Lateral outline of pronotum almost straight to rounded.

Elytra: Dark ferrugineous to dark brown, generally with vague, somewhat paler areas (Fig. 368). Elytral colour pattern sometimes almost absent. Punctuation coarse to fairly coarse, somewhat sparse and quite irregularly distributed. Punctures close to epipleura and apically fine, sparse, partly almost absent. Rows of punctures absent or indistinct, mixed with adjacent punctuation. Rather shiny, finely microsculptured (meshes generally discernible although partly weakly developed). Epipleura pale ferrugineous, with sparse, quite coarse punctures, rather shiny (meshes rather indistinct).

Ventral side: Ferrugineous to pale ferrugineous to pale brown. Punctuation coarse to fairly coarse, fairly dense. Abdomen, except



Figs 368–373: *Hydrovatus glaber*. – 368, habitus. – 369, head, frontal aspect. – 370, male antenna. – 371, penis, dorsal aspect. – 372, penis, lateral aspect. – 373, apical part of paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

basally with distinctly finer punctures (punctuation in part almost absent). Shiny, microsculpture almost absent, except on abdomen; with fine reticulation. Prosternal process laterally quite distinctly margined, medial surface almost flat and distinctly punctate.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsus somewhat enlarged.

Male genitalia: Figs 371–373.

Female: Antenna slender, without enlarged segments.

Distribution: Zaire, Tanzania, Zimbabwe, South Africa (Fig. 386).

Biology: Not documented. From label data, it appears that the species is attracted by light.

Synonymy: The holotypes of *H. glaber* and *H. katangensis* and probable type material of *H. medioximus* have been examined, and they are regarded to be conspecific. The oldest available name of the species, *H. glaber*, is the valid name of this species.

Hydrovatus oblongiusculus Régimbart

Figs 374-379, 386.

Hydrovatus oblongiusculus RÉGIMBART 1895b:112 (orig. descr.,faun.); ZIMMERMANN 1920a:34 (faun.); GSCHWENDTNER 1932a:260 (faun.); 1943:423 (disc.); GUIGNOT 1945a:310 (disc.); 1949:43 (disc.); 1954f:282 (disc.); 1959a:134, 137 (descr., faun.).

Type locality: Haut Quilou, Loango int., Angola.

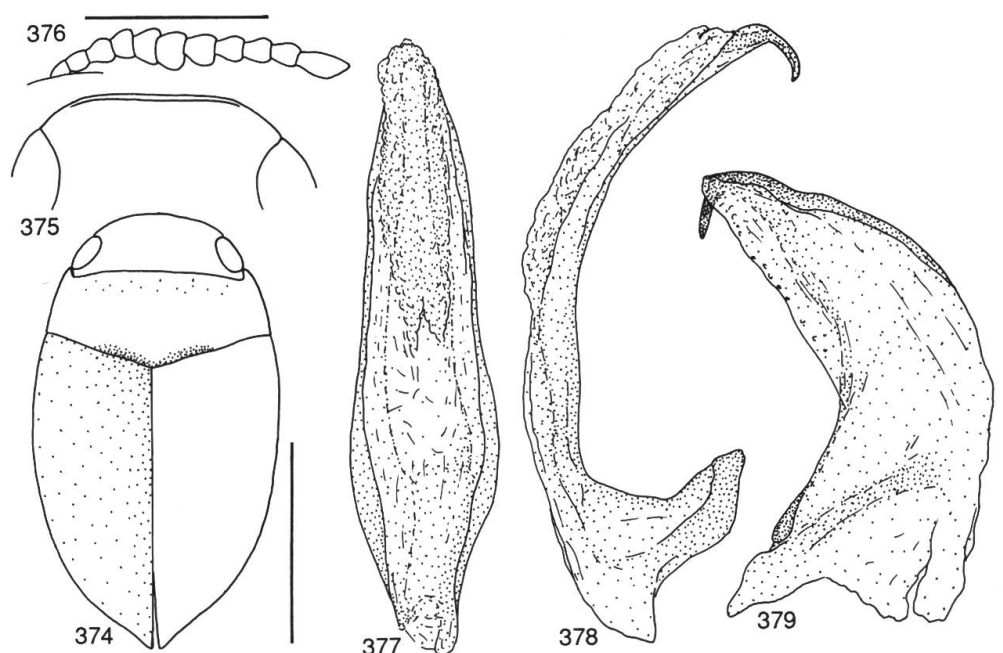
Type material studied: Lectotype by present designation, m.:Loango int. Ht Quilou/Type/*oblongopunctatus*/Museum Paris/Lectotype J.O.C. June 1960 (MNHN). No lectotype designation of this species was published by Omer-Cooper.

Additional material studied: Zimbabwe: Nyawere Bridge, Inyanga 4.XI.1948 (3 exx. AMS). In all, 4 exx.

Diagnosis: Very close to *H. glaber* above. The two species are difficult to distinguish. *H. oblongiusculus* seems to be a little smaller, and it lacks a distinct colour pattern. Synonymy of the two species cannot be excluded.

Description: only differences from description of *H. glaber* recognized.

Length of body: 2.00–2.30 mm, breadth: 1.30–1.38 mm. Habitus (Fig. 374).



Figs 374–379: *Hydrovatus oblongiusculus*. – 374, habitus. – 375, head, frontal aspect. – 376, male antenna. – 377, penis, dorsal aspect. – 378, penis, lateral aspect. – 379, paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Head: Frontal outline rounded, medially almost straight. Finely margined but margin disappears before reaching eyes (Fig. 375). Antenna with enlarged medial segments (Fig. 376).

Elytra: Ferrugineous to dark ferrugineous, without distinct colour pattern. With fine to rather fine, sparse punctation, which laterally and apically becomes finer and sparser. Only an irregular lateral row of punctures discernible. Rather shiny, finely microsculptured (meshes almost obliterated).

Ventral side: Punctation on metathorax and -coxal plates fairly coarse to rather fine and sparse.

Male genitalia: Figs 377–379.

Distribution: Angola, Zimbabwe (Fig. 386). In the original description RÉGIMBART (1895b) gives also Guinea. GSCHWENDTNER (1932a) adds Zaire.

Biology: Unknown.

Hydrovatus brownei Omer-Cooper

Figs 380–386

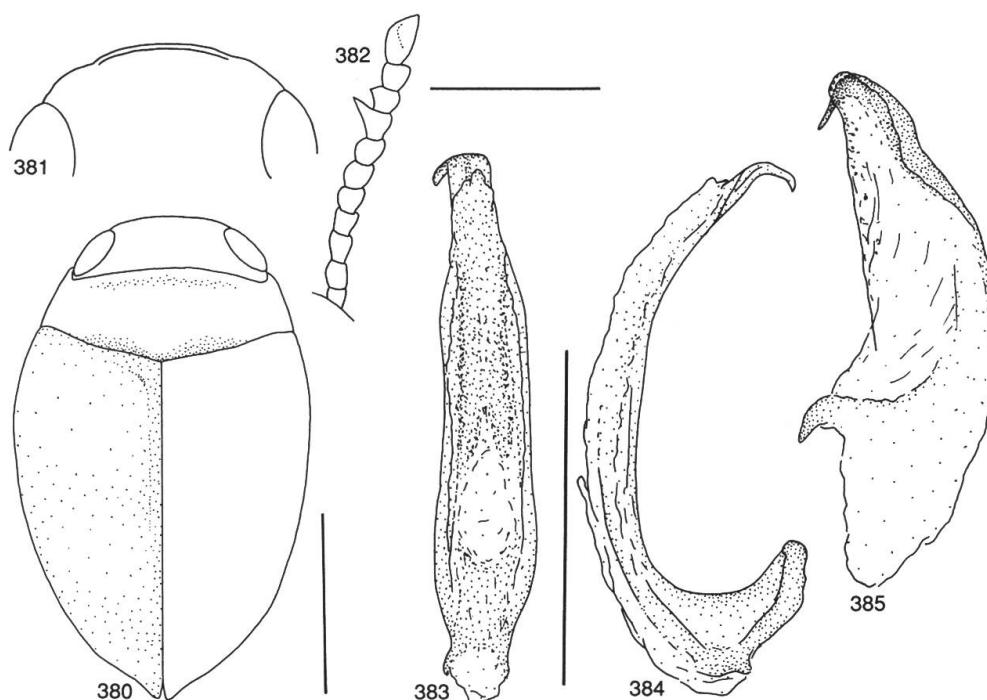
Hydrovatus brownei OMER-COOPER 1955: 195 (orig. descr., faun.); 1962:296 (faun.); 1965:100 (descr., faun.).

Type locality: Kleinemonde, Bathurst distr., Cape Pr., South Africa.

Type material studied: Holotype, m.: Type/Cape Province Bathurst distr. Kleinemonde pond 4. May 9. 1954 J. O-C./Type *H. brownei* O-C. det. J. Omer-Cooper (BMNH). – Paratypes: Same data as holotype but marked as m. (1 ex. BMNH); Paratype/Cape Province Bathurst distr. pond 4 Kleinemonde rd May 1954/*H. brownei* O-C. det. J. Omer-Cooper (1 ex. AMS, 2 exx. MAC); same as preceding but pond 3/9.5.1954 (1 ex. AMS). The status as holotype of the “male type” is indicated in the original description.

Additional material studied: South Africa: Trsvl Punda Milia Krugerpark III.1960 (1 ex. TMP); Trsvl Rustenburg XII.1959 (1 ex. ZSM, female, determination uncertain); Pretoria 6.IV.1954 (1 ex. AMS); OFS Deelfontain Bothaville E 2726 Ba/13–17.XI.1978 (1 ex. BNM); same as preceding but 10–21.IV.1978 (1 ex. MZH); Pietermaritzburg 7.IV.1947 (2 exx. AMS); C. Pr. Albany Distr. Pigott bridge rd 20.III.1939 (29 exx. AMS); C. Pr. Grahamstown 6.VIII.1939 (1 ex. AMS); E.C. Prov. Bedford 10.IX.1957 (3 exx. AMS); Bathurst Distr. Kleinemonde pond IX.1956 (6 exx. AMS); E.C. Pr. Mquanduli 29.III.1957 (11 exx. AMS); E.C. Pr. Humansdorp 20.I.1958 (1 ex. AMS); E.C. Pr. Peddie 16.IX.1957 (80 exx. AMS); E.C. Pr. Engcobo (1 ex. AMS); Mt Currie distr. 14.IV.1947 (1 ex. AMS). In all, 146 exx.

Diagnosis: A distinct species, which is characterized by a quite broad body, by a somewhat vague elytral colour pattern, by a comparatively weakly developed, curved penis apex, and particularly by the modified male antenna: Eighth segment asymmetrically expanded, forming a distinct pointed process.



Figs 380–385: *Hydrovatus brownei*. – 380, habitus. – 381, head, frontal aspect. – 382, male antenna. – 383, penis, dorsal aspect. – 384, penis, lateral aspect. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Length of body: 2.40–2.70 mm, breadth: 1.54–1.72 mm. Habitus (Fig. 380).

Head: Pale ferrugineous. Very finely and indistinctly punctate. Submat, microsculptured (meshes distinct). Head frontally at eyes with a very shallow depression. Frontal outline of head slightly uneven. Medially margined (Fig. 381). Antenna pale ferrugineous, segments 8–9 distinctly modified (Fig. 382).

Pronotum: Pale ferrugineous, anteriorly and posteriorly with vague darkened areas. Finely to very finely and sparsely punctate. Submat, microsculptured (meshes distinct). Lateral outline of pronotum almost straight to slightly rounded.

Elytra: Ferrugineous to brownish, with vague pale ferrugineous to pale brownish areas (Fig. 380). Fairly coarsely to rather finely punctate. Punctures coarsest basally at suture. Laterally punctures distinctly finer, and apically punctation almost absent. Rows of punctures absent or very indistinctly discernible. Slightly mat, microsculptured (meshes distinct). Epipleura pale ferrugineous to pale brown, indistinctly and sparsely punctate, finely microsculptured.

Ventral side: Pale ferrugineous to ferrugineous. Fairly coarsely and densely punctate, except four apical sternites; very finely punctate. Rather shiny, almost without microsculpture. Abdomen finely microsculptured (meshes transversely elongated). Prosternal process laterally rather indistinctly margined, medial surface with a distinct depression.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsus slightly enlarged.

Male genitalia: Figs 383–385

Female: Antenna rather slender, not distinctly modified.

Distribution: South Africa (Fig. 386).

Biology: Practically unknown.

Hydrovatus brunneus Guignot

Figs 386–389.

Hydrovatus brunneus Guignot 1961a:234 (orig. descr., faun.).

Type locality: Badi, National Park Niokolo-Koba, Senegal.

Type material studied: Holotype, f.: Mission IFAN au Parc National du Niokolo Koba Badi (Senegal) 15.VIII–25.IX.1955/Type/F. Guignot det., 1957 *Hydrovatus* s.str. *brunneus* n.sp. Type f. (MNHN). In all, 1 ex.

Diagnosis: No distinguishing features can be presented because the only available specimen is a female. I refer to the description below and to the original description in GUIGNOT (1961a). The systematic location of the species is unclear.

Description: female.

Length of body: 2.40 mm, breadth: 1.56 mm. Habitus (Fig. 387).

Head: Ferrugineous. Punctuation very indistinct, sparse, partly absent. In rather shallow frontal depressions and at eyes punctuation somewhat denser. Rather shiny, microsculptured (meshes distinct). Frontal outline of head rounded. Head frontally very finely margined (partly absent) (Fig. 388). Antenna pale ferrugineous, slender, not distinctly modified (Fig. 389).

Pronotum: Ferrugineous to brownish. Punctuation fine to rather fine, concentrated to pronotal margins. Discal broad area with finer and distinctly sparser punctuation. Rather shiny, microsculptured (meshes distinct). Lateral outline of pronotum rounded.

Elytra: Ferrugineous to pale ferrugineous to brownish, palest laterally. Elytra without distinct colour pattern. Punctuation fairly coarse to rather fine, fairly dense, almost evenly distributed. At apex with finer punctures. Rows of punctures practically absent. Shiny, very finely microsculptured. Large areas without reticulation, apex

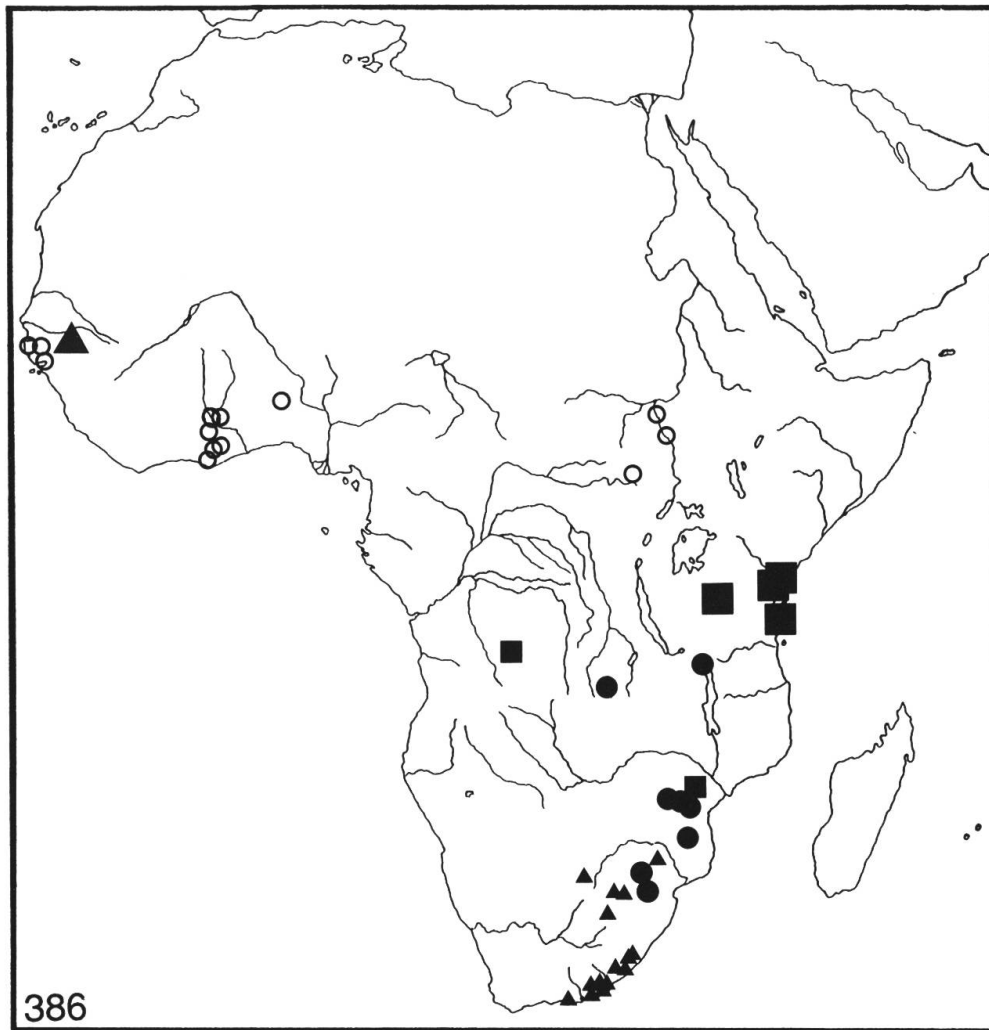


Fig. 386: Distribution of *Hydrovatus glaber* (dot), *H. oblongiusculus* (small square), *H. browni* (small triangle), *H. brunneus* (large triangle), *H. occidentalis* (circle) and *H. sanfilippoi* (large square).

with distinct microsculpture. Epipleura pale ferrugineous, rather finely and sparsely punctate, shiny.

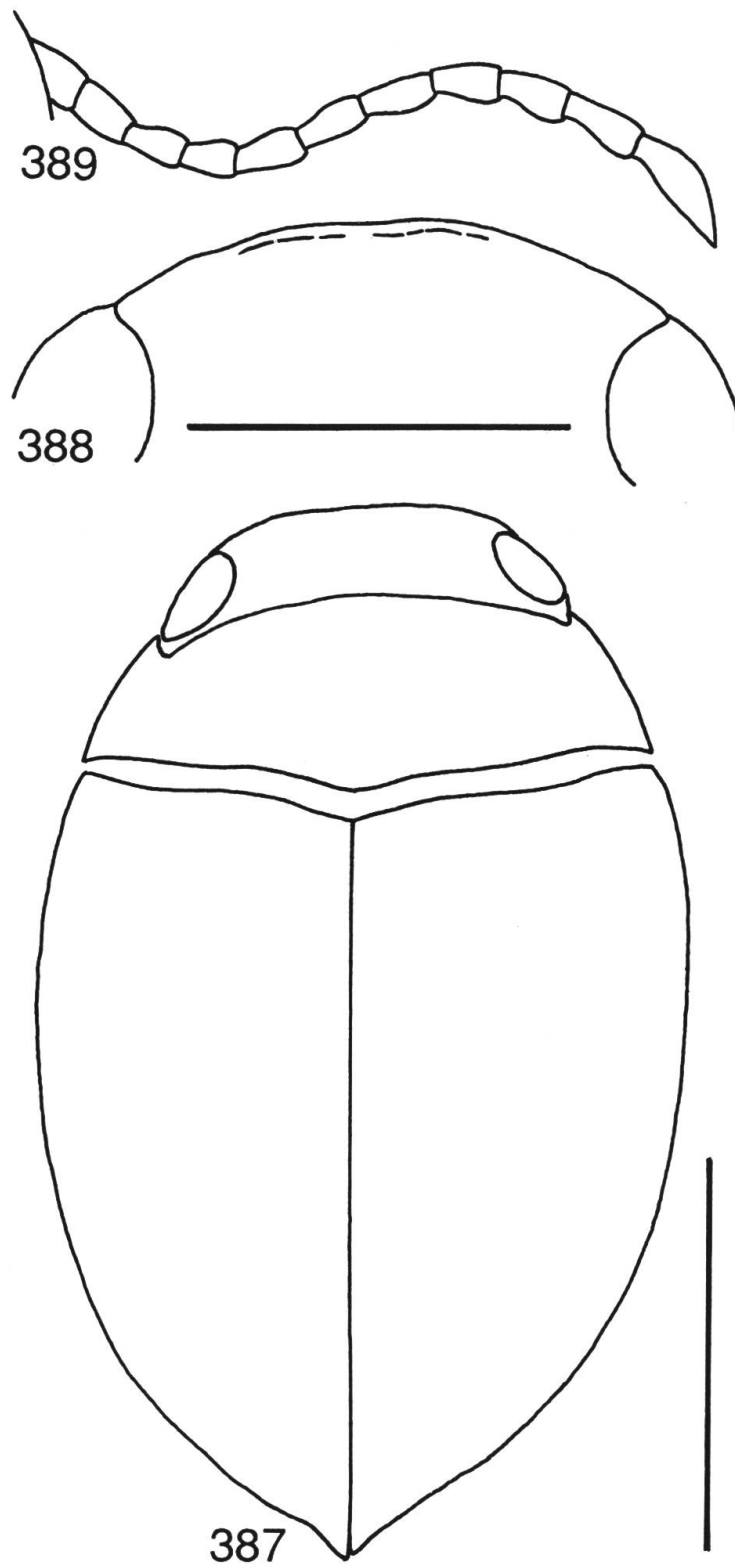
Ventral side: Pale ferrugineous to ferrugineous. Punctuation fairly coarse to rather fine, fairly dense. Abdomen with distinctly finer and sparser punctuation (partly impunctate). Rather shiny, very finely microsculptured. Prosternal process laterally finely margined, medial surface almost flat, with indistinct punctures.

Legs: Pale ferrugineous. Protarsus slightly enlarged (mesotarsus missing).

Male: Unknown.

Distribution: Senegal (Fig. 386).

Biology: Unknown.



Figs 387–389: *Hydrovatus brunneus* female. – 387, habitus. – 388, head, frontal aspect. – 389, antenna. Horizontal scale 0.5 mm, head and antenna; vertical scale 1 mm, habitus.

Hydrovatus occidentalis Guignot

Figs 386, 390–395.

Hydrovatus occidentalis GUIGNOT 1949:42 (orig. descr., faun.); 1953a:234, 235 (disc., faun.); 1953c:147 (disc.); OMER-COOPER 1957:41 (disc.); GUIGNOT 1959a:135, 141 (descr., faun.); 1961b:933 (biol.).

Type locality: Guinea Bissau.

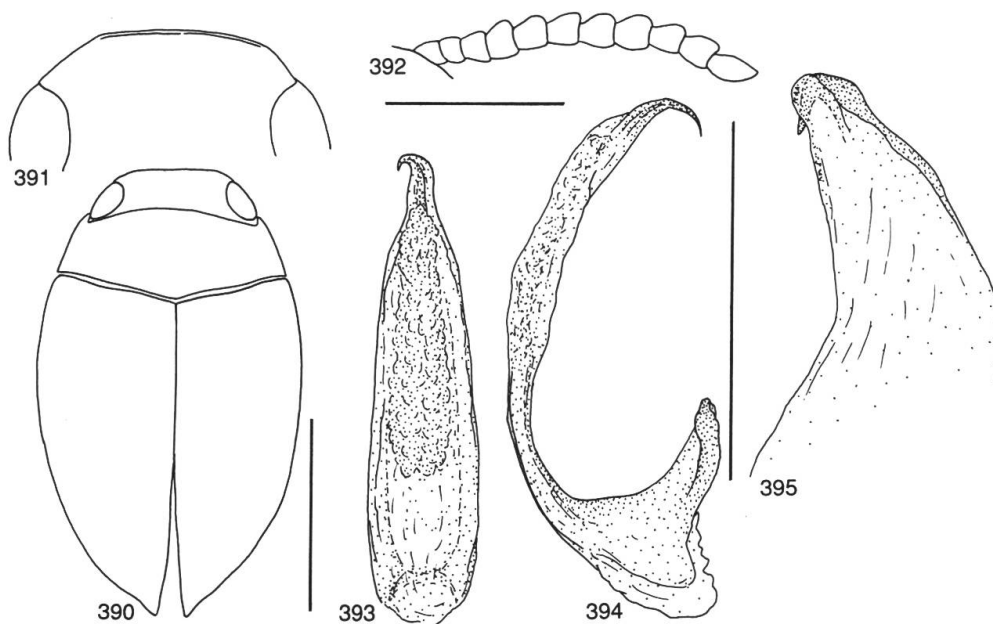
Type material studied: Holotype, m.: Guinée Portugaise-1946/m/Type/*Hydrovatus occidentalis* Guign. Type m./median lobe not present JBB 16.X.1961 (MNHN). – Paratypes: IFAN-1947 Bafata G. Port. (2 exx. MNHN, 1 ex. IFAN); IFAN-1947 G. Port. (1 ex. IFAN).

Additional material studied: Senegal: Mpak 11 km S Ziguinchor, at light 19.00–21.00, 8.XI.1977 (1 ex. LUZ); Cap Skiring, at light 19.30–02.00, 10.XI.1977/*H. occidentalis* Guign. det. Nilsson 1990 (1 ex. LUZ). Sudan: Shambe Bahr el Jebel/28.V.–19.VI.1964 (4 exx. BMNH, 2 exx. MZH); Riv. Post 21 app. 105 km S of L. No/28.V.–19.VI.1964 (1 ex. BMNH). – Ghana: Ashanti Reg. Kwadaso 259 m, N6.55, W1.39/UV light trap on field 26.V.1969 (3 exx. TMB); same but quartz light 9.VI.1969 (1 ex. TMB); same but light trap on field 2.VI.1969 (2 exx. MZH); same but N6.42, W1.39/black light 26.II.1969 (5 exx. TMB); same but light trap 11.III.1969 (1 ex. TMB); same but mixed light 28.IV.1969 (1 ex. TMB); Ashanti Reg. Kumasi Nhasu 330 m, N6.43, W1.36/at light 24.VI., 12.V., 20.V., 12.VI., 2.VII., 10.VIII.1967 (22 exx. TMB, 2 exx. MZH); 330 m. light trap 12., 18.V., 16.VI., 6.VII.1965–1967 (10 exx. TMB); N Reg. Banda-Nkwanta 150 m, N8.22, W2.08/light trap 14–18., 23–26.VIII., 24–26., 27–29.IX., 14–19.X.1965 (7 exx. TMB); Banda-Nkwanta/light trap 10.X.1965 (2 exx. TMB); N Reg. Mole Game Res. 11 km N Larabanga/am Licht (2 exx. TMB); Brong-Ahafo Reg. Bui Camp N8.17, W2.15/light trap 1–5., 6–15.XI., 1–4.XII.1965 (10 exx. TMB, 1 ex. MZH); W. Reg. Busua 15 m/HG light 26.III.1969 (1 ex. TMB). – Zaire: PNG 10.VIII.1950 (1 ex. MNHN). In all, 85 exx.

Diagnosis: *H. occidentalis* is characterized by a quite small and somewhat elongated body, by the finely margined (margin does not reach eyes) frontal part of the head, by the somewhat modified male antenna (segments 3–11 somewhat flattened, almost equally broad), and by the indistinct elytral punctation. Its position in this species group of *Hydrovatus* is unclear. Possibly this species should be located close to *H. parvulus* and *H. spadix*?

Length of body: 2.00–2.18 mm, breadth: 1.20–1.34 mm. Habitus (Fig. 390).

Head: Pale ferrugineous to ferrugineous. Punctation very fine, sparse, indistinct. In shallow frontal depressions and narrowly at eyes with denser punctures. Submat, microsculptured (meshes distinct). Head frontally rounded, medially almost straight, very finely margined (Fig. 391). Antenna pale ferrugineous, segments (except two basal ones) somewhat enlarged and almost equally broad (Fig. 392).



Figs 390–395: *Hydrovatus occidentalis*. – 390, habitus. – 391, head, frontal aspect. – 392, male antenna. – 393, penis, dorsal aspect. – 394, penis, lateral aspect. – 395, paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Pronotum: Pale ferrugineous to ferrugineous. Punctuation very fine, sparse, partly indistinct. Narrowly at anterior margin with slightly coarser and denser punctures. Slightly mat, very finely microsculptured (meshes generally discernible, although weakly developed). Lateral outline of pronotum almost straight to somewhat rounded).

Elytra: Pale ferrugineous to ferrugineous to pale brown. Without distinct colour pattern. Punctuation fine to very fine, rather sparse, somewhat irregularly distributed. Laterally punctures still finer and sparser, partly hardly visible. In specimen from Zaire elytral punctures almost obliterated. Lateral row of punctures clearly discernible, although rather weakly developed. The other rows often indistinct (sometimes both discal and dorsolateral rows of punctures discernible, although somewhat indistinct and irregular; dorsolateral row in particular). Rather shiny, although partly weakly very finely microsculptured (meshes weakly developed, only partly visible). Epipleura pale ferrugineous to ferrugineous, very indistinctly punctated and microsculptured.

Ventral side: Ferrugineous to pale ferrugineous. Punctuation rather fine to fairly coarse, somewhat sparse. Abdomen, except base, almost

impunctate. Shiny, almost lacking microsculpture; abdomen finely reticulated. Prosternal process laterally comparatively broadly margined, medial surface almost flat, with a few punctures.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsus somewhat enlarged.

Male genitalia: Figs 393–395. Penis of holotype broken and obviously lost. Illustrations are based on a specimen from Zaire.

Female: Segments of antenna not enlarged, quite slender.

Distribution: Senegal, Guinea Bissau, Ghana, Sudan, Zaire (Fig. 386).

Biology: In GUIGNOT (1961b) regarded as a sylvicole species. Often sampled at light collection (mixed light, UV light, quartz light).

Hydrovatus sanfilippoi Bilardo & Rocchi Figs 386, 396–402.

Hydrovatus sanfilippoi BILARDO & ROCCHI 1990:180, 192 (orig. descr., faun.);
ROCCHI 1990:442, 444 (faun.).

Type locality: Mombasa, Kenya.

Type material studied: Holotype, m.: Kenya Dint. Mombasa 24.X.1980 leg. A. Bilardo/2.16 × 1.22/Holotypus/*Hydrovatus sanfilippoi* Bil. & Rocchi det. Bilardo det. 2987 (MCM). – Paratype: f./Kenya Mombasa 30 km Nord Kikambala 14/7/68 Bilardo/Paratypus/*H. sanfilippoi* Bil. & Rocchi det. Bilardo 1987 (1 ex. coll. Bilardo).

Additional material studied: Tanzania: Gomba Lichtfang (6 exx. MNB, 2 exx. MZH); Zanzibar 13.IX.1955 (1 ex. AMS). In all, 11 exx.

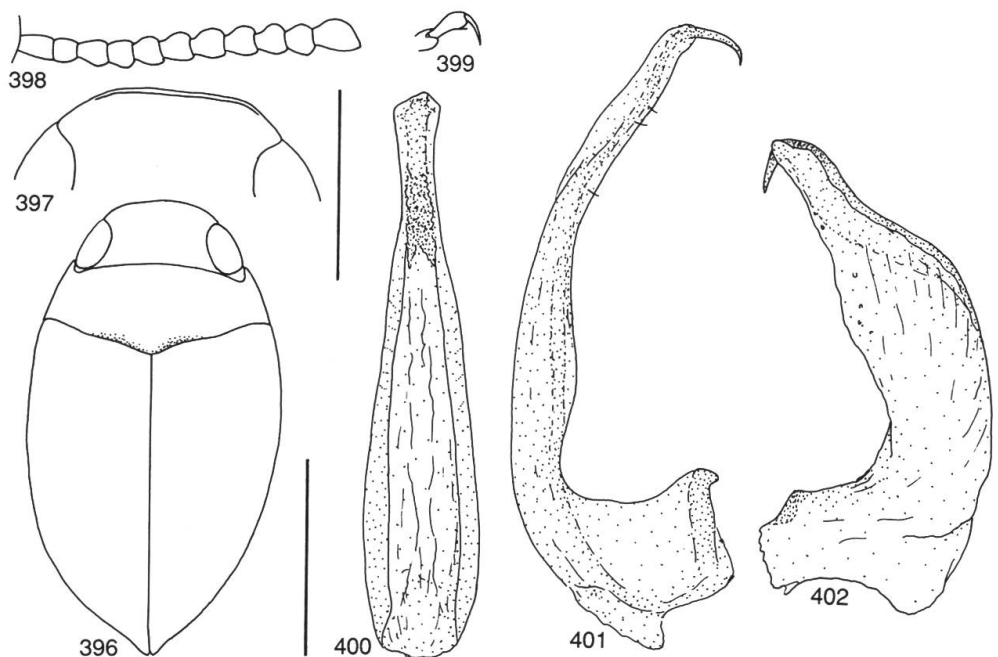
Diagnosis: A distinct species, with is particularly characterized by the shape of the penis (in lateral view the ventral outline quite close to the base of the penis somewhat expanded), by the male antenna (segments 3–8 somewhat broader than segments 1–2), and by the quite small and somewhat elongated body.

Description: only important differences from description of *H. occidentalis* recognized.

Length of body: 2.12–2.26 mm, breadth: 1.22–1.36 mm. Habitus (Fig. 396).

Head: Frontally narrowly margined, but margin disappears before reaching eyes (Fig. 397). Antenna with segments 3–11 quite short, but somewhat flattened (Fig. 398).

Pronotum: Basally with a narrow blackish area (Fig. 396). Punctuation very fine, rather sparse. Punctures on broad discal area still sparser. Laterally punctures indistinct.



Figs 396–402: *Hydrovatus sanfilippoi*. – 396, habitus. – 397, head, frontal aspect. – 398, male antenna. – 399, male protarsal claw. – 400, penis, dorsal aspect. – 401, penis, lateral aspect. – 402, paramere. Left top scale 0.5 mm, head, antenna and claw; left bottom scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Elytra: Dark ferrugineous to brownish. Laterally elytra become gradually paler; at epipleura pale ferrugineous. Without distinct colour pattern. Punctuation fine, rather sparse. Laterally and apically punctures distinctly finer, partly indistinct. Rows of punctures practically absent (laterally a few punctures form an indistinct row).

Ventral side: Punctuation rather fine, somewhat sparse, abdomen almost impunctate. Medial surface of prosternal process frontally with a depression.

Legs: Claws of pro- and mesotarsus slightly prolonged (Fig. 399).

Male genitalia: Figs 400–402.

Distribution: Kenya, Tanzania (Fig. 386).

Biology: Sampled at light collection.

***Hydrovatus eximius* n.sp.**

Figs 403–409, 431.

Type locality: Majinji Pan, Nuanetsi River, Zimbabwe.

Type material studied: Holotype, m.: Type/S. Rhodesia Nuanetsi River, Majinji Pan IV–V.1961/M–V light trap/Rhodesian schoolboys expedition B.M. 1961–707/*Hydrovatus eximius* Type! J. Balfour-Browne det. XI.1961 (BMNH). – Paratypes:

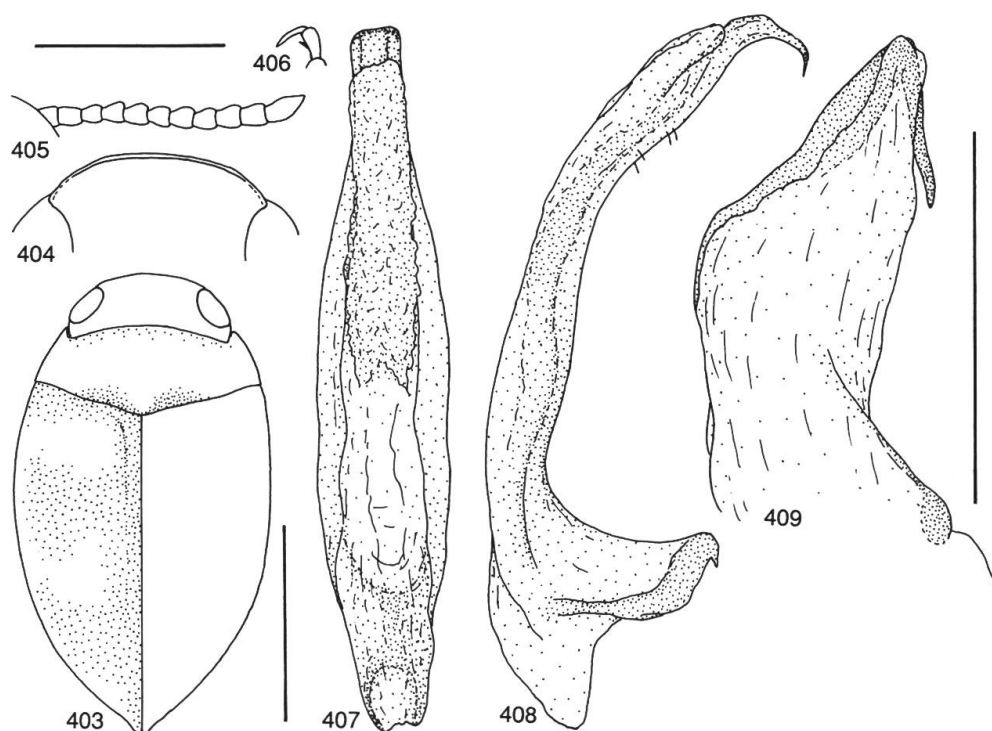
Same data as holotype (13 exx. BMNH, 2 exx. MZH); S. Rhodesia Nuanetsi River, Malipati "bush" IV–V.1961/Rhodesian schoolboys expedition B.M. 1961–707/*H. eximius* Paratype J. Balfour-Brown det. XI.1962 (43 exx. BMNH, 18 exx. MZH); S. Rhodesia Nuanetsi River Malipati M.V. light trap IV–V.1961 J.S. Weir/Brit. Mus. 1961/707/*H. eximius* m. J. Balfour-Brown det. I.1964 (10 exx. BMNH, 2 exx. MZH); R. Rhodesia Malipati Drift Nuanetsi River IV–V.1961/Large muddy pool, marginal vegetation ephemeral (1 ex. BMNH).— Mozambique: Museum Paris Mocambique prov. de Gorongosa Tendos de l'Urma G. Vasse 1907/Fevrier (1 ex. NHN); Mozambique Beira No. 1. 7. Sept.1955 J. Omer-Cooper (2 exx. AMS). In all, 93 exx.

Etymology: I have adopted the manuscript-name proposed by J. Balfour-Browne, who originally recognized this new species.

Diagnosis: A distinct species, which is probably closest to *H. sanfilippii*. The two species are distinguished by examination of the following characteristics: Male antenna of *H. eximius* more slender; apex of penis in dorsal view narrows more evenly towards apex in *H. sanfilippii*; apical hook of paramere long in *H. eximius*.

Description: only important differences from description of *H. sanfilippii* recognized.

Length of body: 2.06–2.30 mm, breadth: 1.22–1.40 mm. Habitus (Fig. 403).



Figs 403–409: *Hydrovatus eximius*. – 403, habitus. – 404, head, frontal aspect. – 405, antenna. – 406, male protarsal claw. – 407, penis, dorsal aspect. – 408, penis, lateral aspect. – 409, paramere. Horizontal scale 0.5 mm, head, antenna and claw; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Head: Foremargin of head sometimes reaches eyes (Fig. 404). Antenna with only indistinctly enlarged segments (Fig. 405).

Pronotum: Pale colour generally almost even.

Elytra: Generally with a discernible colour pattern (Fig. 403).

Ventral side: Punctuation coarse to rather fine. Abdomen, except basally, almost impunctate. Abdomen rather shiny, although finely microsculptured. Medial surface of pronotal process almost flat, with a few punctures.

Legs: Protarsal claws slightly prolonged (Fig. 406).

Male genitalia: Figs 407–409.

Female: Antenna slender. Protarsal claws simple.

Distribution: Zimbabwe, Mozambique (Fig. 431).

Biology: In Zimbabwe sampled in a large, muddy, ephemeral pool. Also captured with a mercury vapour light trap.

***Hydrovatus spissicornis* Régimbart**

Figs 410–417, 431.

Hydrovatus spissicornis RÉGIMBART 1904:207 (orig. descr.); ZIMMERMANN 1920a:36 (faun.); GUIGNOT 1959a:143, 148 (descr., faun.); BILARDO & PEDERZANI 1978:106 (disc.); BARTOLOZZI & al. 1984:75 (faun., list.).

Hydrovatus proculus GUIGNOT 1942:13 (orig. descr., faun.); 1945a:300, 301, 313 (descr., faun.); 1948a:6 (disc.); OMER-COOPER 1957:39 (disc.); GUIGNOT 1959a:143, 145 (descr., faun). **New synonym.**

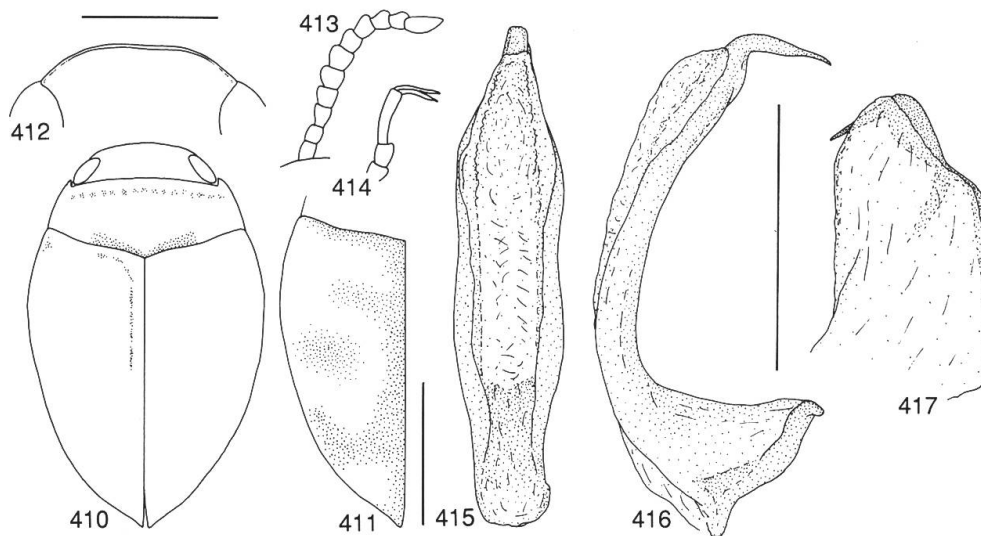
Type locality: Adi-Caie, Erithrea, Ethiopia.

Type material studied: *H. spissicornis*: Holotype, m.: Typus/Eritrea Adi-Caie IV.1902 Dr. A.Andreini/Detriti Au Torr. Ruba Abu Massale/243/*Hydrovatus spissicornis* Rég. n.sp. Type/"La Specola" Firenze 7295 (MZF).– *H. proculus*: Holotype, m.: Uganda Kaboula-Maliro/m./Type/*Hydrovatus proculus* Guign. Type m. (MNHN).

Additional material studied: Ethiopia: Bahar Dar 8.X.1968/Lichtfang/*H. proculus* Guign. det. Nilsson 1990 (1 ex. coll. Nilsson); Bahar Dar 9.X.1968/Lichtfang/*H. proculus* Guign. det. Rocchi 1980 (1 ex. coll. Rocchi); Kaffa Pr. Jimma 1720 m, 23–29.IV.1972/*H. proculus* Guign. det. Nilsson 1990 (3 exx. MAC, 1 ex. MZH). – Uganda: Karamoja/Kiedpo N.P. 25–27.VII.1971 sorg. termale (1 ex. MCG). – Kenya: 30 km W of Kitale 23–28.XII.1990 (2 exx. coll. Persson). In all, 11 exx.

Diagnosis: A distinct species, which is particularly characterized by exhibiting a peculiar body shape (a quite broad posterior to humeral region), slightly enlarged medial segments of the male antenna, and a sharp and straight apex of the parameral hook. Also the shape of the penis is an important feature in the identification of *H. spissicornis*.

Length of body: 2.52–2.76 mm, breadth: 1.56–1.64 mm. Habitus (Fig. 410).



Figs 410–417: *Hydrovatus spissicornis*. – 410, habitus. – 411, elytron with colour pattern. – 412, head, frontal aspect. – 413, male antenna. – 414, male protarsal claws. – 415, penis, dorsal aspect. – 416, penis, lateral aspect. – 417, apical part of paramere. Horizontal scale 0.5 mm, head, antenna and claws; left scale 1 mm, habitus and elytron; right scale 0.4 mm, genitalia.

Head: Pale ferrugineous to pale brown. Punctuation fine and rather sparse. Narrowly at eyes and in shallow frontal depressions with slightly denser punctures. Submat, microsculptured (meshes distinct). Head frontally rounded, medially somewhat straightened. Between eyes finely margined, but margin indistinct close to eyes (sometimes absent) (Fig. 412). Antenna pale brown to pale ferrugineous, segments 4–7 broader than remaining segments (Fig. 413).

Pronotum: Pale brownish to pale ferrugineous, mediobasally with a vague, darker area. Punctuation rather fine, somewhat irregularly distributed. Punctures densest at anterior and posterior margins. Slightly mat, microsculptured (meshes distinct). Lateral outline of pronotum rounded.

Elytra: Brown to dark brown to dark ferrugineous, generally with somewhat paler areas (Fig. 411). In specimens from Kenya elytral colour pattern more pronounced. Punctuation rather fine to fairly coarse, somewhat sparse, slightly irregularly distributed. Apically and close to epipleura punctures distinctly finer and partly hardly visible. Rows of punctures indistinct or absent. Slightly mat, microsculptured (meshes distinct). Epipleura pale brown to pale ferrugineous, with rather few, quite distinct punctures, and shiny, although microsculptured.

Ventral side: Pale brown. Punctuation rather coarse, dense. Abdomen, except basally, with distinctly finer and sparser punctures. Shiny, almost without microsculpture. Abdomen with rather fine transverse reticulation. Prosternal process laterally finely margined, medial surface slightly uneven, with distinct punctures.

Legs: Pale brown to pale ferrugineous. Pro- and mesotarsus quite slender. Protarsal claws quite long, slightly asymmetric (Fig. 414).

Male genitalia: Figs 415–417.

Female: Antenna slender. Protarsal claws simple.

Distribution: Ethiopia, Uganda, Kenya (Fig. 431). Gabon is given in the original description (RÉGIMBART, 1904) and GUIGNOT (1959a).

Biology: In Ethiopia the species has been sampled at light collection at an altitude of 1720 m a.s.l.

Synonymy: Examination of type material of both species involved confirms the synonymy of *Hydrovatus spissicornis* (valid name) and *H. procus*.

***Hydrovatus validicornis* Régimbart**

Figs 418–423, 431.

Hydrovatus validicornis RÉGIMBART 1895b:102 (orig. descr., faun.); ZIMMERMANN 1920a:36 (faun., list.); OMER-COOPER 1956:22 (faun., biol.); 1957:24 (descr., faun.); 1958:59 (faun., biol.); GUIGNOT 1959a:143, 146 (descr., faun.); 1961b:929 (faun.); OMER-COOPER 1962:296 (disc., faun.); 1963:176, 177 (descr., faun.); 1965:100 (descr., disc., faun.).

Type locality: Natal, South Africa.

Type material: Natal (Pringuey), not located; should be in SAM.

Material studied: Zimbabwe: Pond Sinkukwe 30.VIII.1948/*H. validicornis* Régb. det. J. Omer-Cooper (1 ex. AMS); Pool Lundi 22.XI.1948 (10 exx. AMS); Big pool 1 mi fr. Lindi 12.XI.1948 (6 exx. AMS). – Swaziland: Nr. Bremersdorp 5.XII.1948 (3 exx. AMS). – South Africa: Trsvl Duivelskloof 24.XI.1948 (3 exx. AMS); Duivelskloof/*H. validicornis* Rég. det. J. Balfour-Browne (1 ex. TMP); E Trsvl Bergvliet for., farm 25.05S–30.54E/4.XI.1980 E–Y 1224 at light (1 ex. TMP); Plat R. 6–18.IV.1905 (1 ex. TMP); Trsvl Bundu Inn 25.28S–28.55E/24.III.1974 E–Y 306, 307 at merc. vap. light (8 exx. TMP, 4 exx. MZH); Pretoria distr. Roodeplaat/UV light trap 30.X.–10.XI.1960 (13 exx. TMP, 2 exx. MZH); Pietermaritzburg 7.IV.1947 (1 ex. AMS); Cpr. Storms R. Humansdorp Distr. 5.II.1947 (1 ex. AMS, mounted on same card as an other *Hydrovatus* specimen); S Cape, Harkerville forest 34.04S–23.10E/7.III.1976 E–Y 1321 light collection (1 ex. TMP); Transkei, coast Dwesa for. res. 32.17S–28.50E/4.III.1985 E–Y 2182 UV light (1 ex. TMP). in all, 57 exx.

Diagnosis: This distinct species is particularly characterized by the modified male antenna (with somewhat enlarged segments; the apical segment peculiarly modified), but also by a somewhat elongated

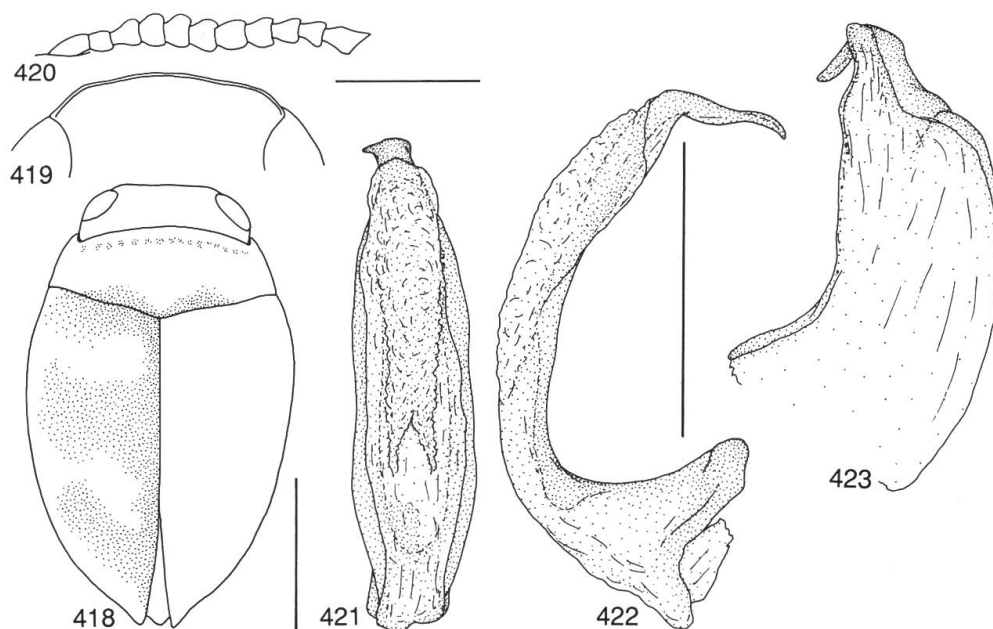
body, by elytra with a colour pattern, and by the shape of the penis (downwards curved penis apex somewhat undulate).

Length of body: 2.40–2.78 mm, breadth: 1.56–1.70 mm. Habitus (Fig. 418).

Head: Pale ferrugineous to pale brown. Punctuation fine to very fine, sparse, partly absent. In rather shallow frontal depressions and narrowly at eyes with somewhat denser punctures. Submat, microsculptured (meshes distinct). Head anteriorly narrowly margined (Fig. 419). Antenna pale ferrugineous to pale brown, segments 3–10 somewhat enlarged, apical segment with a sharp lateral expansion (Fig. 420).

Pronotum: Pale ferrugineous to pale brown, frontally often with indistinct, slightly darkened area. Mediobasally with a blackish to dark ferrugineous, vague area. Punctuation rather fine to fine, somewhat sparse and slightly irregularly distributed. Laterally on disc with a rather narrow impunctate area. Rather shiny to submat, finely microsculptured (meshes generally discernible). Lateral outline of pronotum almost straight to slightly rounded.

Elytra: Dark brown to dark ferrugineous, with somewhat vague pale ferrugineous to pale brown, somewhat variable markings (Fig.



Figs 418–423: *Hydrovatus validicornis*. – 418, habitus. – 419, head, frontal aspect. – 420, male antenna. – 421, penis, dorsal aspect. – 422, penis, lateral aspect. – 423, apical part of paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

418). Punctuation rather fine, somewhat sparse and somewhat irregularly distributed. Apically and close to epipleura with distinctly finer punctures. Distinct rows of punctures absent. Rather shiny, although finely microsculptured (meshes generally discernible). Epipleura pale ferrugineous to ferrugineous to brown, with quite sparse and somewhat indistinct punctuation, indistinctly microsculptured.

Ventral side: Ferrugineous to pale ferrugineous to pale brown. Punctuation rather fine to fairly coarse, fairly dense. Abdomen, except base, almost impunctate. Rather shiny, almost without microsculpture. Abdomen submat, finely reticulated. Prosternal process laterally broadly margined, medial surface slightly convex, without distinct punctures.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsus slightly enlarged.

Male genitalia: Figs 421–423.

Female: Antenna slender, not modified.

Distribution: Zimbabwe, Swaziland, South Africa (Fig. 431). OMER-COOPER (1956) reported the species also from Mozambique but this record was later withdrawn (OMER-COOPER, 1965). Known also from Ethiopia and Zaire (Omer-Cooper, 1963).

Biology: In Swaziland sampled in a swiftly running river with pools among rocks, at an approximate altitude of 2200 feet (OMER-COOPER, 1958). Often collected in light traps.

Hydrovatus dama Guignot

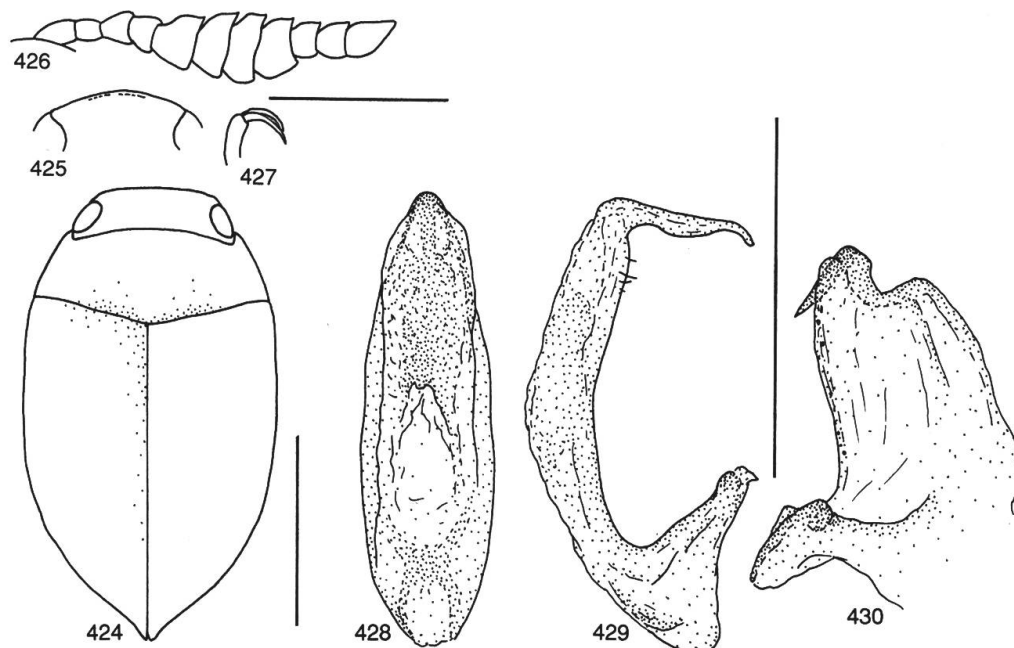
Figs 424–431.

Hydrovatus dama GUIGNOT 1958b:6 (orig. descr., faun.); BILARDO & ROCCHI 1990:181 (syn. with *H. subparallelus* Gschwendtner). Re-established as a valid species.

Type locality: Garamba National Park, Zaire.

Type material studied: Holotype, m.: Holotyous/Congo Belge PNG Miss. H. De Saeger II/ge/11, 11.VII.1951 Rc. H. de Saeger, 2114/Coll. Mus. Congo (ex coll. I.P.N.C.B.)/Guignot det. 1957 *Hydrovatus dama* n.sp. Holotype (MAC). – Paratypes: Same data as holotype but 11.VII.1951, 2058 (1 ex. ISN); 4.VIII.1951, 2209 (1 ex. ISN); 15.IX.1951, 2425 (1 ex. ISN); 28.IV.1952, 3403 (3 exx. MAC); 8.VIII.1952, 3924 (1 ex. MAC); 19.VIII.1952, 3956 (1 ex. MAC); 13.IX.1952, 4058 (1 ex. ISN). In all, 10 exx.

Diagnosis: A distinct species, which is not regarded as a synonym of *H. subparallelus* Gschwendtner (cf. BILARDO & ROCCHI, 1990). *H. dama* is characterized by a strongly and peculiarly modified male antenna, by an almost parallel-sided body, by the prolonged claws of the male protarsus, and by the long, downwards curved apex of the



Figs 424–430: *Hydrovatus dama*. – 424, habitus. – 425, head, frontal aspect. – 426, male antenna. – 427, male protarsal claws. – 428, penis, dorsal aspect. – 429, penis, lateral aspect. – 430, paramere. Horizontal scale 0.5 mm, antenna and claws; left scale 1 mm, habitus and head; right scale 0.4 mm, genitalia.

penis in comparison with the total length of the penis (see, closely related species below).

Length of body: 2.18–2.30 mm, breadth: 1.24–1.36 mm. Habitus (Fig. 424).

Head: Pale ferrugineous to ferrugineous. Almost impunctate. Scattered, indistinct punctures may be discerned. Submat, distinctly microsculptured (meshes distinct). Frontally at eyes with a quite shallow depression. Head frontally rounded, medially very finely margined (Fig. 425). Antenna pale ferrugineous, segments 5–8 very strongly flattened (Fig. 426).

Pronotum: Ferrugineous to brownish, laterally slightly paler and basally with a vague blackish area. Almost impunctate, except near margins; with fine punctures. Submat, strongly microsculptured (meshes distinct). Lateral outline of pronotum almost straight.

Elytra: Dark ferrugineous to dark brown, laterally slightly paler. Without distinct colour pattern. Fairly coarsely and densely punctate. Punctures quite evenly distributed on elytral surface. Without distinct rows of punctures. Submat, distinctly microsculptured. Epipleura pale ferrugineous, quite coarsely but slightly indistinctly punctate due to strongly developed microsculpture. Epipleura mat.

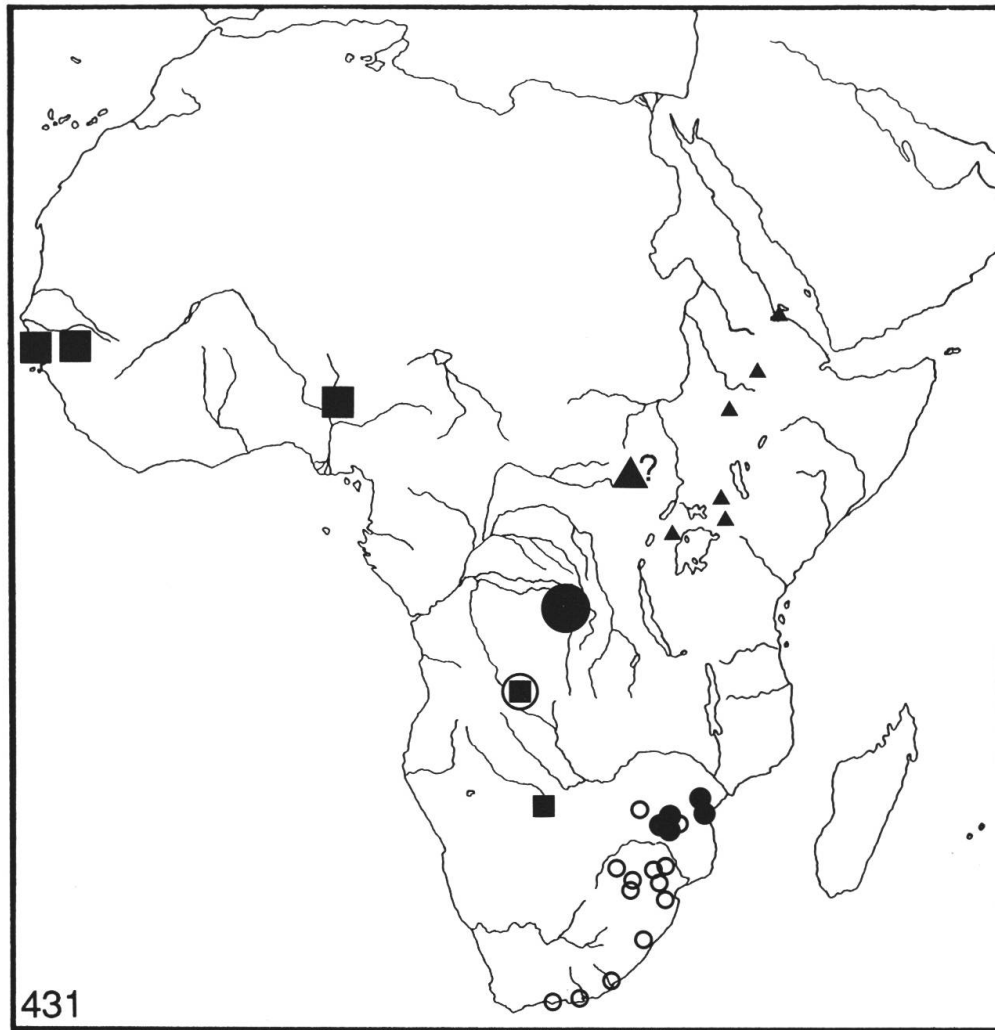


Fig. 431: Distribution of *Hydrovatus eximius* (small dot), *H. spissicornis* (small triangle), *H. validicornis* (small circle), *H. dama* (large triangle), *H. verisae* (small square), *H. angusticornis* (large circle), *H. tristis* (large square) and *H. subparallelus* (large dot, ?).

Ventral side: Ferrugineous to pale ferrugineous. Coarsely to fairly coarsely punctate. Abdomen almost impunctate, except basally and laterally; with quite coarse but somewhat indistinct punctures. Submat, distinctly microsculptured. Prosternal process laterally narrowly margined, medial surface almost flat, distinctly microsculptured.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsus somewhat enlarged. Protarsal claws long, almost symmetric (Fig. 427).

Male genitalia: Figs 428–430. Tip of penis in holotype broken. Genitalia of male paratypes used for illustration.

Female: Antenna simple, quite slender. Protarsal claws shorter than in male.

Distribution: Zaire (Fig. 431).

Biology: Unknown.

Hydrovatus verisae Bilardo & Rocchi Figs 431–435a, 436–438.

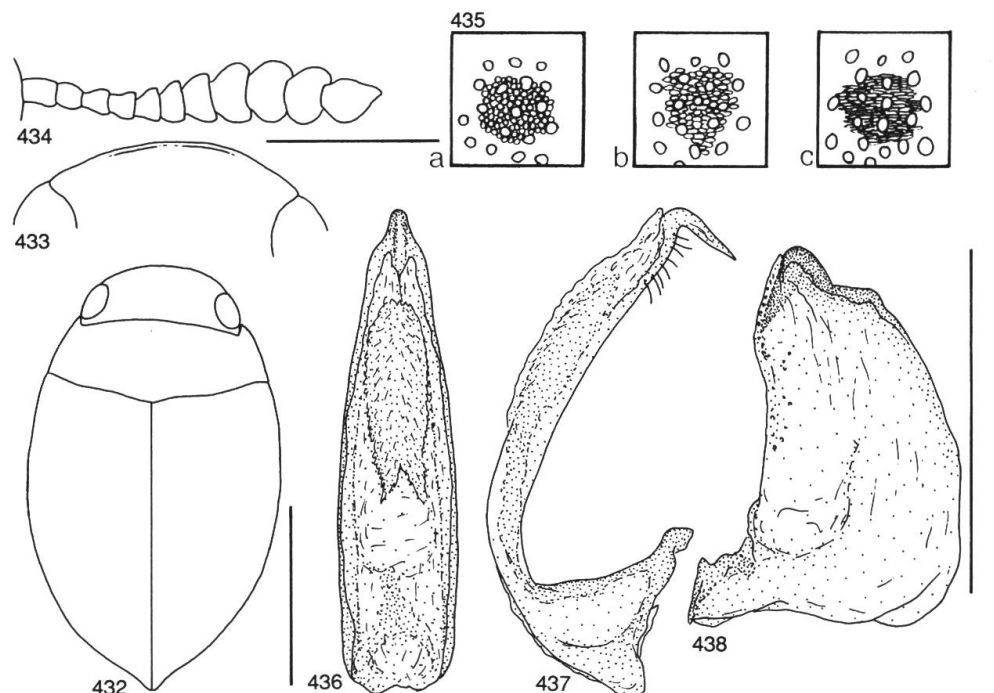
Hydrovatus verisae BILARDO & ROCCHI 1987:98, 99, 100 (orig. descr., faun); 1990:181 (descr.).

Type locality: Xakanaxa, Moremi Reserve, Botswana.

Type material studied: Holotype, m.: Botswana Moremi Reserve Xakanaxa 7.10.82 A. Bilardo//2.20 × 1.35/Holotype/*Hydrovatus verisae* Bil. & Rocchi det. A. Bilardo (MCM). – Paratype: Same data as holotype (1 ex. MCM).

Additional material studied: Angola: Rives Lac Calundo, 105 km est Luso 15., 18., 23., 30., 31.XII.1954, 3.I.1955 (8 exx. MNHN, 4 exx. MZH); same as preceding but 28.XII.1954 sous pierres (1 ex. MNHN). In all, 15 exx.

Diagnosis: Very close to *H. tristis* Guignot, *H. angusticornis* n.sp. and some other species treated below. The male of *H. verisae* is



Figs 432–438: *Hydrovatus verisae*. – 432, habitus. – 433, head, frontal aspect. – 434, male antenna. – 435, shape of punctures and reticulation on central part of elytron (a, *H. verisae*; b, *H. imitator*; c, *H. tristis*). – 436, penis, dorsal aspect. – 437, penis, lateral aspect. – 438, paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right top scale 0.2 mm, punctures and reticulation; right bottom scale 0.4 mm, genitalia.

conveniently distinguished from the two closely related species by study of the male antenna (exhibits different modifications in shape). The female may be separated from the closely related species by comparison of the shape of the elytral microsculpture-meshes: In *H. verisae* they are isodiametric, while the other species have more or less transversely elongated meshes, or their separate meshes are weakly developed, hardly discernible (almost as chagration).

Description: only important differences from description of *H. dama* recognized.

Length of body: 2.06–2.28 mm, breadth: 1.34–1.36 mm. Habitus (Fig. 432), shape of body quite globular.

Head: Dark ferrugineous to dark brown. Anteriorly with a narrow, vague, slightly paler area. In shallow frontal depressions and at eyes fine punctures may be discerned. Frontal aspect of head (Fig. 433). Antenna with apical segments distinctly enlarged (Fig. 434).

Pronotum: Lateral outline of pronotum rounded.

Elytra: Brown to blackish, without distinct colour pattern. Shape of microsculpture-meshes (Fig. 435a).

Ventral side: Prosternal process quite distinctly margined, medial surface almost flat, indistinctly punctate.

Legs: Claws simple.

Male genitalia: Figs 436–438.

Distribution: Angola, Botswana (Fig. 431).

Biology: Not documented.

Hydrovatus angusticornis n.sp.

Figs 431, 439–444.

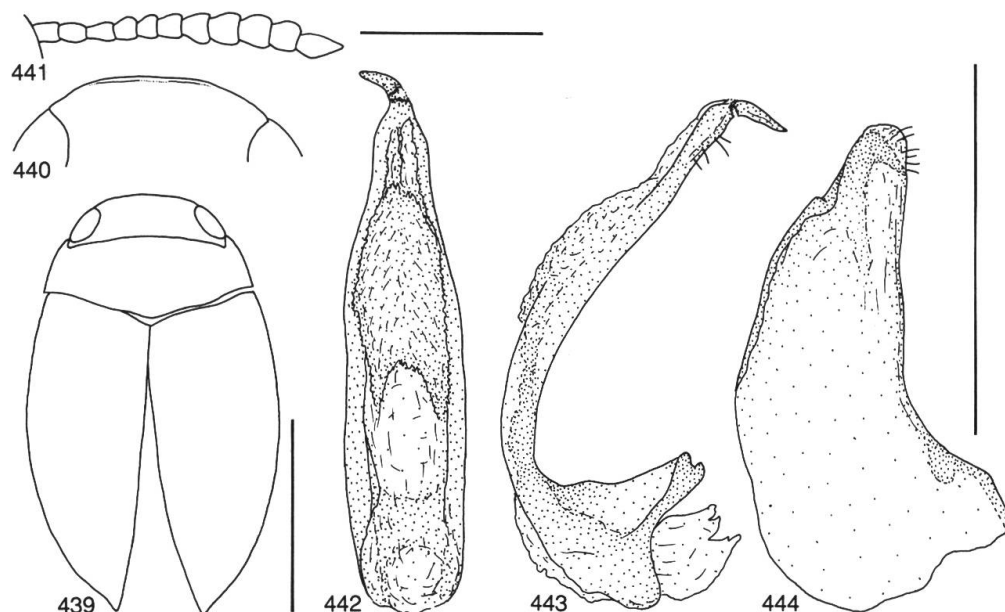
Type locality: Riv. Lac Calundo, Angola.

Type material: Holotype, m.: Stn. No. Ang. 4603–13/Angola: Rives Lac Calundo XII.1954 (MNHN). – Paratypes: Same as holotype (1 ex. MNHN, 1 ex. MZH). In all, 3 exx.

Diagnosis: Very close to *H. verisae* Bilardo & Rocchi, from which *H. angusticornis* is distinguished by generally a slightly more slender body shape, by the elytral reticulation (in *H. angusticornis* meshes transversely elongated), and by the male antenna; apical segments are distinctly narrower in the new species.

Description: only important differences from description of *H. dama* recognized.

Length of body: 2.02–2.10 mm, breadth: 1.24–1.28 mm. Habitus (Fig. 439), body somewhat elongated and general body colour quite pale.



Figs 439–444: *Hydrovatus angusticornis*. – 439, habitus. – 440, head, frontal aspect. – 441, male antenna. – 442, penis, dorsal aspect. – 443, penis, lateral aspect. – 444, paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Head: Frontal aspect (Fig. 440). Antenna (Fig. 441).

Elytra: Reticulation rather weakly developed; meshes somewhat transversely elongated.

Male genitalia: Figs 442–444.

Distribution: Angola (Fig. 431).

Biology: Unknown.

Hydrovatus tristis Guignot

Figs 431, 435c, 445–450.

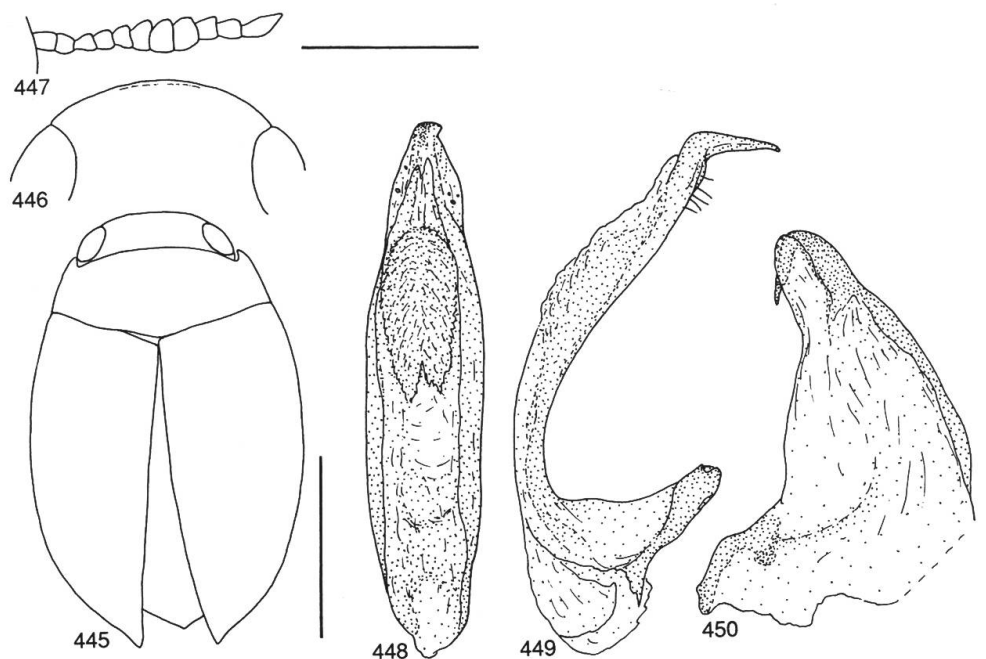
Hydrovatus tristis GUIGNOT 1961a:234 (orig. descr., faun.); BILARDO & ROCCHI 1990:181, 190 (descr., faun).

Type locality: Badi, Niokolo–Koba National Park, Senegal.

Type material studied: Holotype, m.: Mission IFAN au Parc National du Niokolo Koba Badi (Senegal) 15.VIII.–25.IX.1955 Type/Museum Paris F. Guignot det. 1957 *Hydrovatus* (s. str.) *tristis* n.sp. Type m. (MNHN). – Paratypes: Principally with same data as holotype (1 ex. MNHN, 1 ex. IFAN).

Additional material studied: Senegal: Mpak 11 km S Ziguinchor, at light 19.00–21.00, 8.XI.1977 UTM 28PCJ6479 (1 ex. LUZ). – Nigeria: Samaru/light trap 20.X.1969 (2 exx. TMB). In all, 6 exx.

Diagnosis: *H. tristis* is particularly characterized by the shape of the male antenna (medial segments distinctly enlarged; enlarged segments not distinctly edged), and by elytral microsculpture (tran-



Figs 445–450: *Hydrovatus tristis*. – 445, habitus. – 446, head, frontal aspect. – 447, male antenna. – 448, penis, dorsal aspect. – 449, penis, lateral aspect. – 450, paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

versely strongly elongated meshes quite indistinct). Compare with closely related species above and below: *H. dama*–*H. nilssoni*.

Description: only diagnostically important differences from description of closely related species are recognized.

Length of body: 2.14–2.32 mm, breadth: 1.30–1.36 mm. Habitus (Fig. 445), body somewhat elongated.

Head: Frontal aspect of head (Fig. 446). Antenna with segments 5–8 distinctly enlarged (Fig. 447).

Pronotum: Discally with a broad, very finely and sparsely punctated area; at margins with fine and fairly dense punctures. Lateral outline of pronotum rounded.

Elytra: Transversely strongly elongated meshes of microsculpture indistinct (Fig. 435c).

Ventral side: Prosternal process laterally rather finely margined, medial surface slightly uneven, finely punctate.

Male genitalia: Figs 448–450.

Distribution: Senegal, Nigeria (Fig. 431).

Biology: Practically unknown. Sometimes sampled at light collection.

Hydrovatus subparallelus Gschwendtner

Figs 431, 451–458.

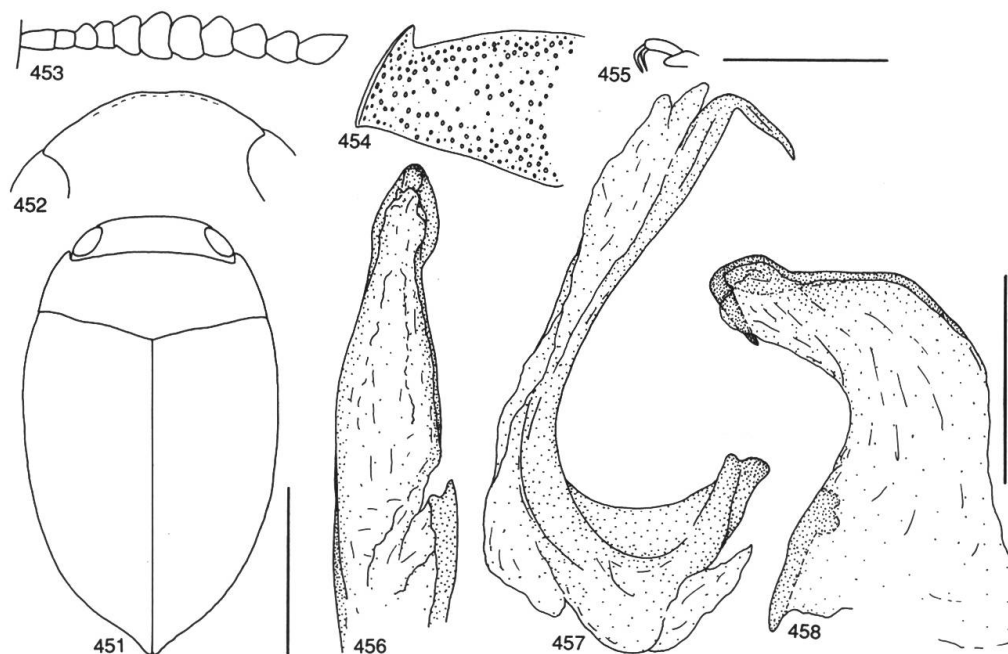
Hydrovatus subparallelus GSCHWENDTNER 1930:195 (orig. descr., faun.); 1943:422 (descr.); GUIGNOT 1945a:298 (descr., faun.); OMER-COOPER 1957:38, 39 (disc.); GUIGNOT 1959a:194 (descr., faun.); BILARDO & ROCCHI 1990:161, 171, 190 (descr., faun., biol.).

Type locality: Luluabourg, Zaire.

Type material studied: Holotype, m.: Holotypus/Muse du Congo Luluabourg 13.IV.1923 P. Callavert/Type Gschw./*Hydrovatus subparallelus* Gschw. det. Gschwendt. R. Det. 1644 o (MAC). Paratypes: Same sampling data as holotype (2 exx. MAC).

Additional material studied: Zaire: Same data as holotype but not belonging to type material (1 ex. ZSM, 1 ex. MZH); PNG (1 ex. MAC; although male determination uncertain). In all, 6 exx.

Diagnosis: A quite distinct species, which probably is most closely related to *H. imitator* and *H. tristis*. From *H. imitator* *H. subparallelus* is distinguished by study of the distribution of pronotal punctures on the disc (punctures also on the medial part of the pronotum, while in *H. imitator* punctures are concentrated in the pronotal margins). *H. subparallelus* is separated from *H. tristis* by examination of the



Figs 451–458: *Hydrovatus subparallelus*. – 451, habitus. – 452, head, frontal aspect. – 453, male antenna. – 454, pronotal punctures. – 455, male protarsal claws. – 456, penis, dorsal aspect. – 457, penis, lateral aspect. – 458, paramere. Horizontal scale 0.5 mm, head, antenna, pronotum and claws; left scale 1 mm, habitus; right scale 0.25 mm, genitalia.

shape of the male antenna (in comparison with enlarged medial segments in *H. tristis*, three apical segments distinctly narrower in *H. subparallelus*). See above and below.

Description: only important differences from description of *H. dama* recognized.

Length of body: 2.42–2.44 mm, breadth: 1.44 mm. Habitus (Fig. 451), body somewhat elongated.

Head: Frontal aspect of head in Fig. 452. Only indistinct rudiments of a frontal margin may be discerned. Antenna modified, segments 3–11 enlarged (Fig. 453).

Pronotum: Punctuation rather fine and somewhat irregularly distributed; discally with slightly finer and sparser punctures (Fig. 454).

Elytra: Submat, microsculpture very fine, dense. Transversely elongated meshes discernible, although weakly developed.

Ventral side: Prosternal process laterally somewhat indistinctly margined, medial surface slightly convex.

Legs: Pro- and mesotarsus distinctly enlarged. Protarsal claws somewhat prolonged, quite strongly curved (Fig. 455).

Male genitalia: Figs. 456–458. Illustration poor, because based on genitalia mounted as permanent preparation. Penis of holotype broken. Male genitalia similar to genitalia of *H. imitator*.

Distribution: Zaire. Uncertain record marked with ? (Fig. 431). Additionally, GUIGNOT (1945a) gives Uganda and BILARDO & ROCCHI (1990) Gabon.

Biology: Unsufficiently known. See BILARDO & ROCCHI (1990).

***Hydrovatus imitator* n.sp.**

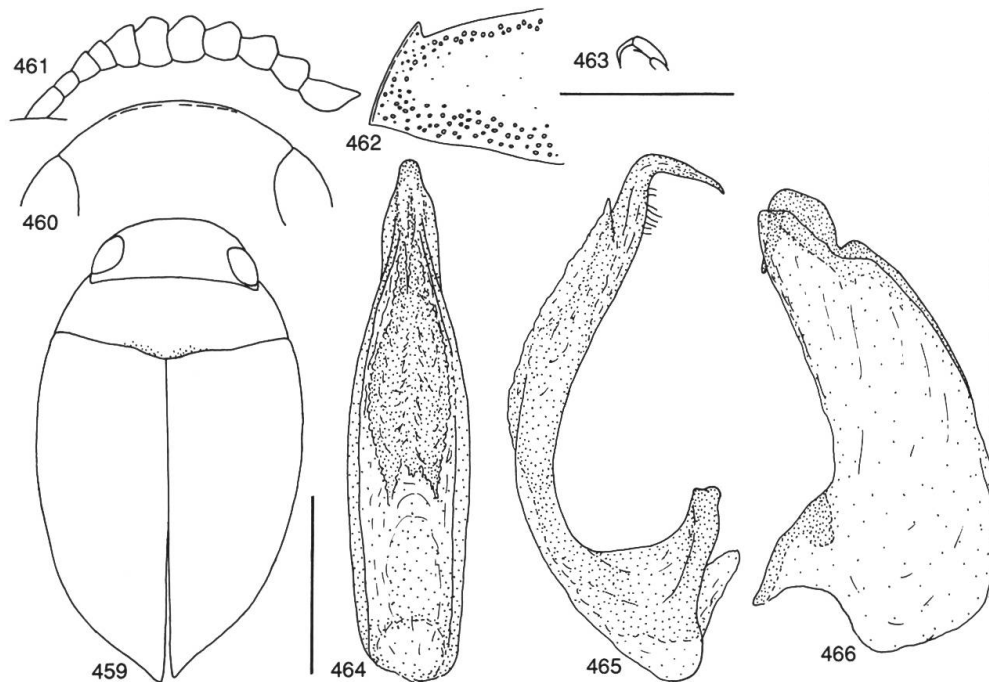
Figs 435b, 459–466, 482.

Type locality: Musosa, Zaire.

Type material: Holotype, m.: Musosa 3.VII.1939 H.J. Bredo/H.B. Leech Collection/*Hydrovatus subparallelus* Gschw. 2 m., 2 f. (CAS). – Paratypes: Same data as holotype (2 exx. CAS, 1 ex. MZH, 1 ex. AMS). In all, 5 exx.

Diagnosis: Very close to *H. subparallelus* Gschwendtner. The two species have similar male genitalia. They are distinguished by a difference in at least two external features: In *H. subparallelus* the pronotal punctures are more evenly distributed on the disc than in *H. imitator* (punctures concentrated in margins) and there is additional elytral reticulation at the scutellar region in *H. imitator* with clearly discernible meshes, while in *H. subparallelus*, the corresponding meshes are rather indistinct.

Description: only diagnostically important features recognized.



Figs 459–466: *Hydrovatus imitator*. – 459, habitus. – 460, head, frontal aspect. – 461, male antenna. – 462, pronotal punctures. – 463, male protarsal claw. – 464, penis, dorsal aspect. – 465, penis, lateral aspect. – 466, paramere. Horizontal scale 0.5 mm, head, antenna, pronotum and claw; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Length of body: 2.40–2.42 mm, breadth: 1.38–1.46 mm. Habitus (Fig. 459); lateral outlines of body quite rounded.

Head: Frontal aspect (Fig. 460). Antenna modified, segments 4–11 enlarged (Fig. 461).

Pronotum: Broad discal area practically impunctate; punctures concentrated in margins (Fig. 462).

Elytra: Meshes of microsculpture discernible in scutellar region (Fig. 435b).

Legs: Protarsal claws of male somewhat prolonged, distinctly curved (Fig. 463).

Male genitalia: Figs 464–466.

Distribution: Zaire (Fig. 482).

Biology: Unknown.

***Hydrovatus nilssoni* n.sp.**

Figs 467–472, 482.

Type locality: Cap Skiring, Senegal.

Type material studied: Holotype, m.: Senegal, Cap Skiring, at light 19.30–02.00, 10.XI.1977 UTM 28PCJ6019, Loc. 30/Lund Univ. Syst. Dept. Sweden-Gambia/Sene-

gal Nov.1977 – Cederholm-Danielsson-Hammarstedt-Hedqvist-Samuelsson (LUZ). – Paratypes: Same as holotype (1 ex. LUZ, 2 exx. MZH, 1 ex. coll. Nilsson); Gambia Bathurst I. 68 Palm (1 ex. coll. Petersson); Soil-Zoological Exp. Congo-Brazzaville Kindamba, Meya settlement/9.11.1963 No 147 by lamplight leg. Endrödy-Younga (1 ex. TMB); Soil-Zoological Exp. Congo Brazzaville Loudima Sagro Park 6., 7., 10., 11.XII.1963 light trap Endrödy-Younga (9 exx. TMB, 4 exx. MZH); Angola Rives Lac Calundo 105 km Est Luso Dec. 1954/Museum Paris 4544–28 coll. H. Bertrand (1 ex. MZH); same as preceding but 21.XII.1954 (1 ex. MNHN); same but 19.XII.1954 (2 exx. MNHN). In all, 24 exx.

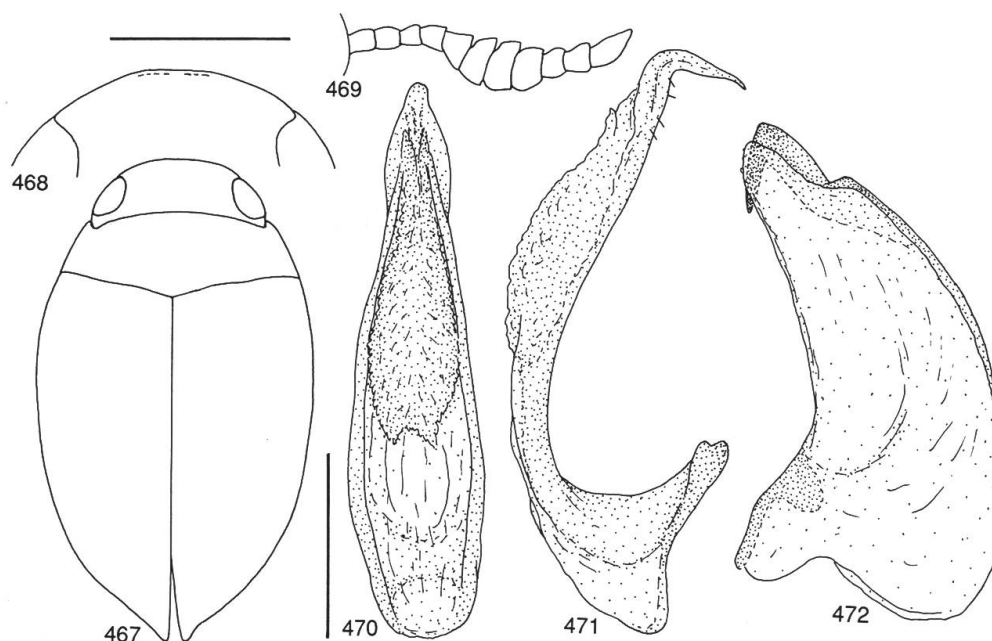
Etymology: Named after Dr. Anders Nilsson, Umeå, Sweden, who provided me with some of the type material of the new species.

Diagnosis: Very closely related to *H. imitator* n.sp., from which *H. nilssoni* is, however, quite easily separated by study of the male antenna. Note the sharp edge of the 6th and 7th antennal joint in *H. nilssoni*. Male genitalia and pronotal punctation are almost similar in the two species.

Description: only diagnostically important features recognized.

Length of body: 2.01–2.38 mm, breadth: 1.22–1.40 mm. Habitus (Fig. 467), shape of body quite rounded.

Head: Frontal margin of head hardly visible (Fig. 468). Male antenna (Fig. 469).



Figs 467–472: *Hydrovatus nilssoni*. – 467, habitus. – 468, head, frontal aspect. – 469, male antenna. – 470, penis, dorsal aspect. – 471, penis, lateral aspect. – 472, paramere. Horizontal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Pronotum: Distribution of pronotal punctures almost as in *H. imitator* (Fig. 462), but anterior punctures rather indistinct.

Elytra: Reticulation at scutellar region very fine, but separate meshes still generally discernible.

Male genitalia: Figs 470–472.

Distribution: Gambia, Senegal, Congo, Angola (Fig. 482).

Biology: Often sampled at light collection.

Hydrovatus guignoti Omer-Cooper

Figs 473–482.

Hydrovatus guignoti OMER-COOPER 1956:22 (faun., biol., not description!); 1957:37 (orig. descr., faun.); 1963:163, 167 (descr., faun.); 1956:94 (descr., faun.).

Type locality: Wasserman's Beacon, Transvaal, South Africa.

Type material studied: Holotype, m.: m./Type/Transvaal Wasserman's Beacon 6.XII.1948 J.O-C./*Hydrovatus* sp. nov. J. Balfour-Browne/*H. guignoti* n.sp./Type (BMNH). – Paratypes: Principally with same data as holotype but labelled as m., allotype (1 ex. BMNH); Trsvl Ermelo 7.XII.1948 (2 exx. AMS); Trsvl Breyton rd nr Lake Chrissie Dec.1948 (2 exx. AMS); Trsvl Vossman's Beacon 6.XII.1948 (3 exx. AMS); the status of the male specimen as the holotype is indicated in the original description.

Additional material studied: Uganda: Type/Kampala 1930 GHE Hopkins/*H. meridionalis* n.sp. J. Balfour-Browne det. (1 ex. BMNH); same as preceding but labelled as cotype (3 exx. BMNH); cotype/Kampala 23.VIII.1929 (10 exx. BMNH); cotype/Kampala 15.XI.1929 (3 exx. BMNH); cotype/Kampala 20.IX.1929 (1 ex. BMNH); cotype/Kampala 31.VII.1929 (1 ex. BMNH). – Zaire: Cotypus/Katanga: Kasenga 3.X.1924/*H. meridionalis* n.sp. J. Balfour-Browne (1 ex. MAC). – South Africa: Humansdorp Gr. Riv. 19.II.1947 (1 ex. MAC). In all, 30 exx.

Remark: The name *H. meridionalis* refers to a manuscript-species discovered by J. Balfour-Browne, but which has never been officially introduced.

Diagnosis: *H. guignoti* resembles externally many of the seven preceding species. It is particularly characterized by the slender, unmodified male antenna, by the quite evenly curved frontal outline of the head and by details in the shape of the penis apex.

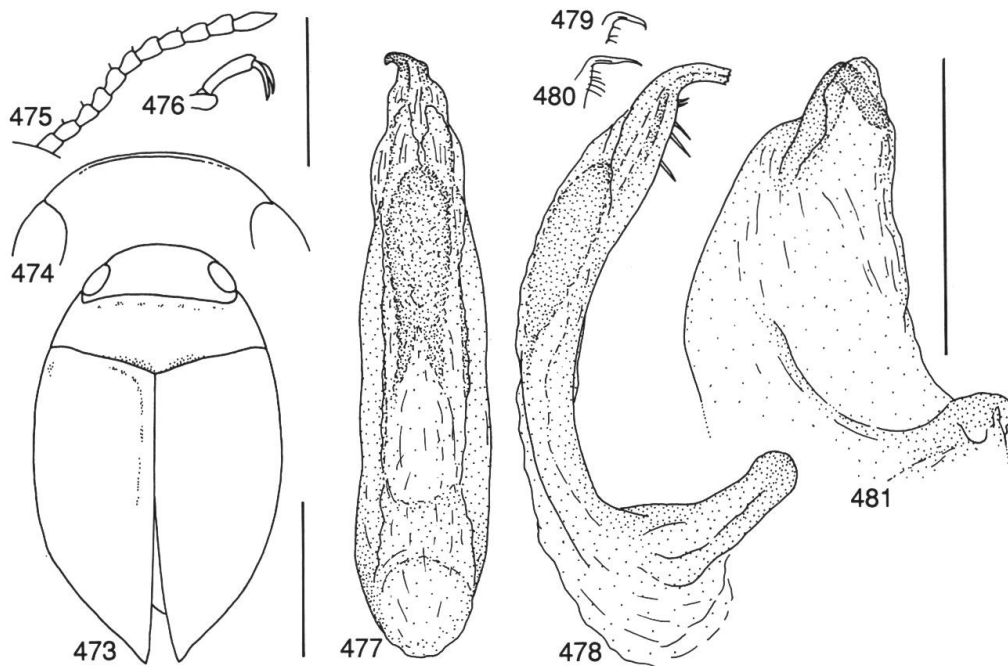
Description: only diagnostically important features are recognized; cf. description of *H. dama* above.

Length of body: 2.14–2.58 mm, breadth: 1.34–1.54 mm. Habitus (Fig. 473), shape of body quite rounded.

Head: Frontally rounded, finely margined, but margin does not reach eyes (Fig. 474). Antenna of both sexes rather slender, not distinctly modified (Fig. 475).

Pronotum: Lateral outlines of pronotum somewhat rounded.

Elytra: Sometimes with very vague colour pattern.



Figs 473–481: *Hydrovatus guignoti*. – 473, habitus. – 474, head, frontal aspect. – 475, male antenna. – 476, male protarsal claws. – 477, penis, dorsal aspect. – 478, penis, lateral aspect. – 479–480, supplementary illustrations of penis. – 481, paramere. Left top scale 0.5 mm, head, antenna and claws; left bottom scale 1 mm, habitus; right scale 0.4 mm, genitalia (excl. Figs 479–480).

Legs: Pro- and mesotarsus fairly broad, claws somewhat prolonged, distinctly curved. Protarsal claws (Fig. 476).

Male genitalia: Figs 477–481. Small variation in tip of penis; curvation of extreme apex of penis variable (Figs 479–480).

Distribution: Uganda, Zaire, South Africa (Fig. 482). Unverified records are Mozambique (OMER-COOPER, 1956) and Malawi and Zimbabwe (OMER-COOPER, 1963).

Biology: Poorly known. In Mozambique reported from a heavily manured garden, with a number of drainage ditches with grassy sides and *Limnophyton* sp. growth (some ditches covered with duckweed), and additionally from a slow-flowing stream forming a pool with *Marsilia* sp. and grass at the edges. In one end with *Lagarosiphon* sp. and blue water lilies (OMER-COOPER, 1956).

***Hydrovatus crassicornis* (Kolbe)**

Figs 482–489.

Hydatonychus crassicornis KOLBE 1883:403 (orig. descr., faun.); BRANDEN 1885:25 (faun.).

Hydrovatus crassicornis (KOLBE), RÉGIMBART 1895b:109 (descr., faun.); 1903:11, 12 (disc.); PESCHET 1917:14 (descr., disc.); ZIMMERMANN 1920a:32 (faun.);

GSCHWENDTNER 1943:422 (descr.); GUIGNOT 1945a:299 (disc.); 1948a:6, 8 (disc.); 1959a:191, 195 (descr., faun.); BERTRAND & LEGROS 1971:242 (faun.).

Type locality: Madagascar.

Type material studied: Lectotype, m., by present designation: 10073/Madagascar Goudot/Type/ *Hydatonychus crassicornis* Kolbe (MNB). – Paralectotypes: Same data as lectotype (2 exx. MNB).

Additional material studied: Madagascar: SO Mad. Lac Iotry 40 m Morombe VII.1957/*H. madagascariensis* Régb. det. Legros (1 ex. MNHN); Tulear (1 ex. MZH). In all, 5 exx.

Diagnosis: Very close to *H. madagascariensis* Régimbart. For separation of the two species, see diagnosis of *H. madagascariensis* below.

Description: only diagnostically important features recognized; see description of *H. madagascariensis* below.

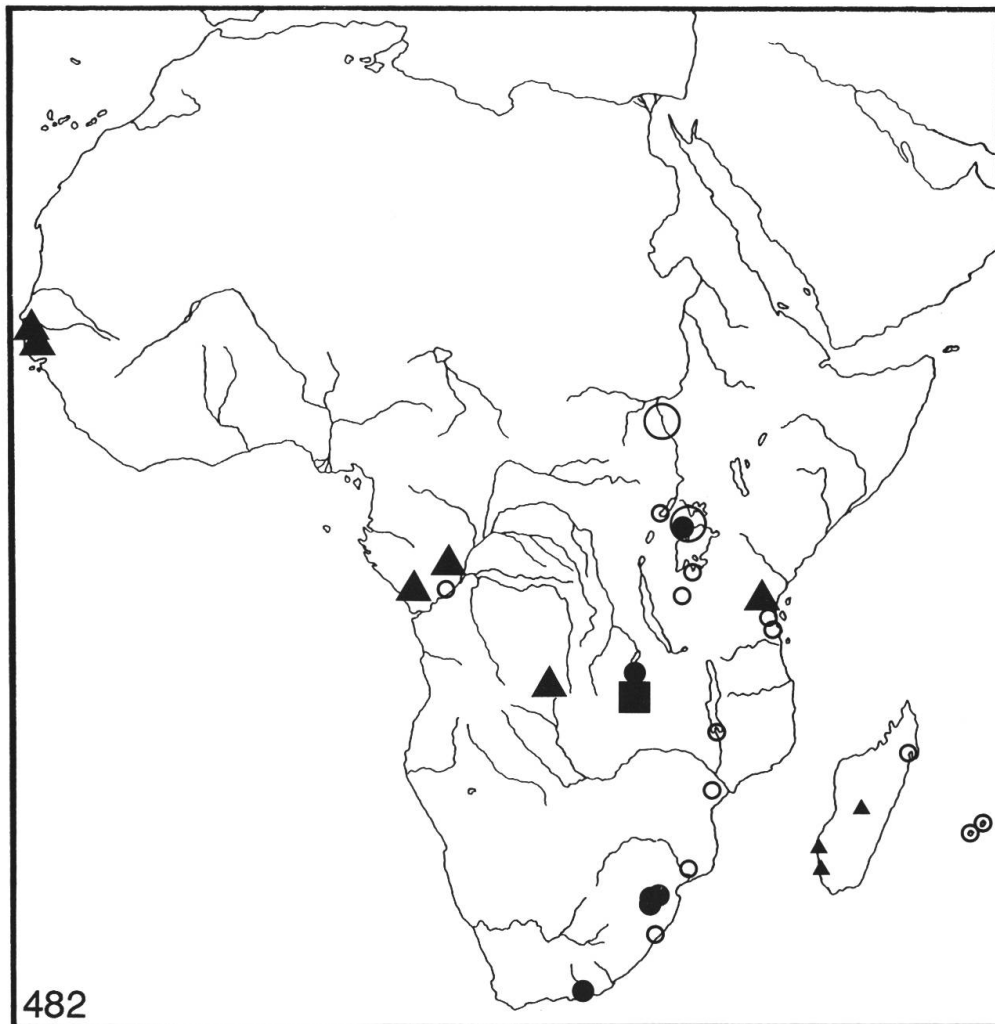
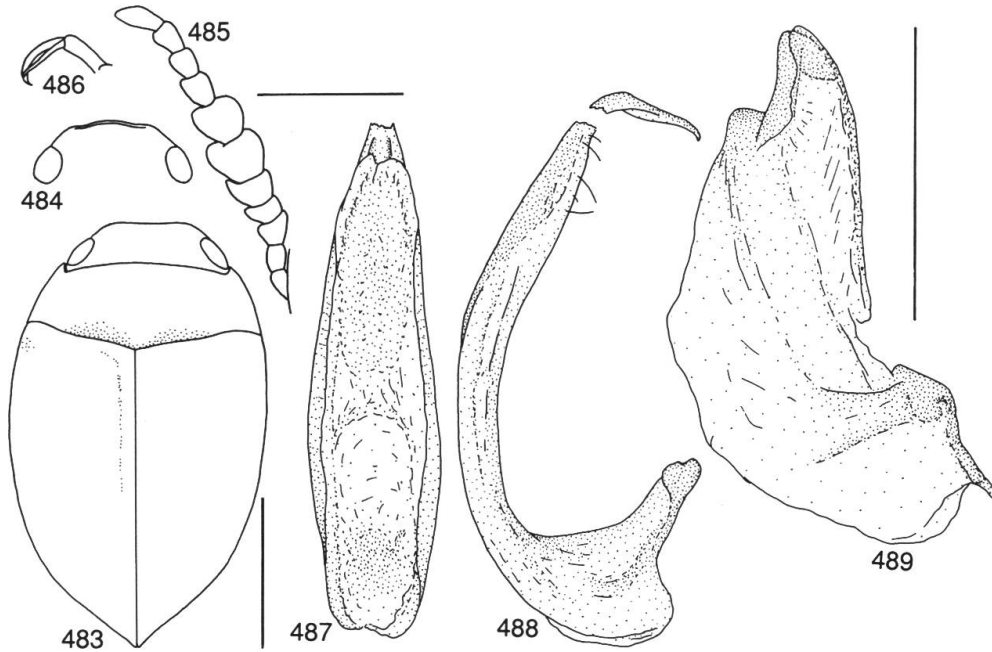


Fig. 482: Distribution of *Hydrovatus imitator* (square), *H. nilssoni* (large triangle), *H. guignoti* (dot), *H. crassicornis* (small triangle), *H. madagascariensis* (small circle) and *H. unguicularis* (large circle).



Figs 483–489: *Hydrovatus crassicornis*. – 483, habitus. – 484, head, frontal aspect. – 485, male antenna. – 486, male protarsal claws. – 487, penis, dorsal aspect (apex broken). – 488, penis, lateral aspect. – 489, paramere. Horizontal scale 0.5 mm, antenna and claws; left scale 1 mm, habitus and head; right scale 0.4 mm, genitalia.

Length of body: 2.52–2.60 mm, breadth: 1.56–1.68 mm. Habitus in Fig. 483, body shape quite globular.

Head: Frontal aspect of head in Fig. 484. Antenna with segments 5–7 distinctly dilatated (Fig. 485).

Legs: Protarsal claws asymmetric, very long (Fig. 486).

Male genitalia: Figs 487–489.

Distribution: Madagascar (Fig. 482). Exact location of type locality unknown; in map marked in central part of Madagascar.

Biology: Unknown.

***Hydrovatus madagascariensis* Régimbart**

Figs 482, 490–496.

Hydrovatus madagascariensis RÉGIMBART 1903:11 (orig. descr., faun.); PESCHET 1917:14, 55 (descr., faun.); ZIMMERMANN 1920a:34 (faun., list.); GSCHWENDTNER 1943:422 (descr.); GUIGNOT 1945a:299 (disc.); VINSON 1956:26 (faun., biol.); GUIGNOT 1959a:191, 196 (descr., faun.); VINSON 1967:314 (faun.); WEWALKA 1980:730 (faun.).

Hydrovatus lophotus GUIGNOT 1948a:7 (orig., descr., faun.): 1955f:861 (disc., faun.); 1959a:191, 197 (descr., faun.); 1959c:143 (descr., faun.); 1961a:234

(disc.); OMER-COOPER 1963:175 (disc.); BRUNEAU DE MIRÉ & LEGROS 1963:852 (faun.); BILARDO & PEDERZANI 1978:105 (disc.); BILARDO & ROCCHI 1987:98, 100 (descr., disc.); 1990:171, 181, 190 (descr., disc., faun.). **New synonym.**

Type locality: Baie d'Antongil, Madagascar.

Type material studied: *H. madagascariensis*: Lectotype, m., by present designation: Madag. B. d'Antongil/Museum Paris coll. Maurice Régimbart 1908/Type/*H. madagascariensis* Rég. lectotype m. (never introduced) J. Omer-Cooper June 1960 (MNHN). – Paralectotype: Principally with same data as lectotype (1 ex. MNHN). – *H. lophotus*: Holotype, m.: Holotypus/Coll. Mus. Congo Kasenyi 19.VII.1937 H.J. Brédo/R. Det. W. 5220/F. Guignot det., 1947 *Hydrovatus lophotus* Guign. Type m. (MAC). – Paratypes: Same as holotype (2 exx. MAC). Two additional paratypes, labelled: Mus. Congo Elisabethville II.1940 H.J. Brédo/Guignot det. 1947 *H. lophotus* Paratype (in MAC), belong to another *Hydrovatus* species.

Additional material studied: Congo: Brazzaville, Orstom Park/17.XI.1963 light trap (1 ex. TMB). – Tanzania: Daressalam, Hinterland Bagomoyo (1 ex. MNB, 1 ex. MZH); Muansa 4.XI.1914 (1 ex. MNB); Gomba Lichtfang (1 ex. MNB); Mombo (2 exx. MNB). – Malawi: Ft. Johnstone 22–27.IX.1948/*H. longicornis* Régb. det. Omer-Cooper (11 exx. AMS). – Mozambique: Magude X.1918/*H. laticornis* Rég. det. Gschwendtner (2 exx. TMP); Pr. Gorongosa Tendo du Sungoue 40 m d'alt. X.1907 (1 ex. MNHN, 1 ex. MZH). – Réunion: St. Andre 11.VI.1952/etang du bois rouge (1 ex. MNHN). – Mauritius: Ile Maurice Vacoas III.1905/*H. madagascariensis* Régb. det. Peschet 1917 (6 exx. MNHN, 2 exx. MZH). – South Africa: Natal, Dukuduku forest 20–21.XI.1956 G. v. Son (3 exx. TMP, 1 ex. MZH). In all, 40 exx. + 2 exx. (see above).

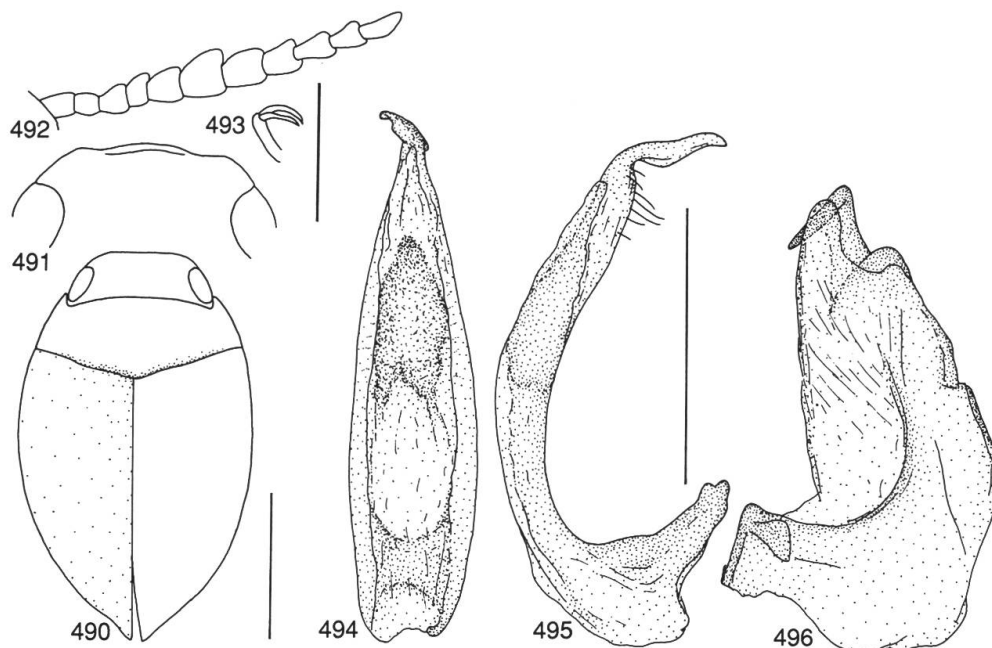
Diagnosis: Very close to *H. crassicornis* (Kolbe) above. The two species are distinguished by examination of the male antenna: In *H. crassicornis* the seventh joint is almost twice as broad as the eighth joint, while in *H. madagascariensis* the seventh joint is only slightly broader than the eighth.

Length of body: 2.30–2.70 mm, breadth: 1.46–1.64 mm. Habitus (Fig. 490).

Head: Pale ferrugineous to ferrugineous. Posteriorly often darker than anteriorly. Punctuation very fine, rather sparse, slightly irregularly distributed. Submat, microsculptured (meshes distinct). Frontal depressions shallow. Anterior outline of head uneven, medially finely margined (Fig. 491). Antenna pale ferrugineous, segments 5–8 distinctly enlarged (Fig. 492).

Pronotum: Pale ferrugineous to ferrugineous. Punctuation fine to very fine, discally with a broad area with sparse punctuation. Rather narrow basal area with distinctly coarser punctures. Submat, microsculptured (meshes distinct). Lateral outline of pronotum almost straight to somewhat rounded.

Elytra: Pale ferrugineous to ferrugineous (slightly darker than head and pronotum), without distinct colour pattern. Punctuation



Figs 490–496: *Hydrovatus madagascariensis*. – 490, habitus. – 491, male head, frontal aspect. – 492, male antenna. – 493, male protarsal claws. – 494, penis, dorsal aspect. – 495, penis, lateral aspect. – 496, paramere. Left top scale 0.5 mm, head, antenna and claws; left bottom scale 1 mm, habitus; right scale 0.4 mm, genitalia.

rather fine (distinctly coarser than anterior pronotal punctures), quite dense, evenly distributed. At apex punctures finer and sparser. Rows of punctures indistinct or absent (mixed with adjacent punctures). Rather shiny, finely microsculptured (meshes quite weakly developed, but discernible almost on whole elytral surface). Elytral microsculpture sometimes well developed, meshes clearly visible. Epipleura pale ferrugineous, punctures quite distinct but somewhat sparse, rather distinctly microsculptured.

Ventral side: Pale ferrugineous to ferrugineous. Punctuation rather fine to fairly coarse, somewhat sparse. Abdomen, except basally, with distinctly finer and sparser punctuation. Rather shiny, distinctly microsculptured. Prosternal process laterally distinctly margined, medial surface slightly convex (sometimes almost flat). Process provided with a distinct narrow anterior extension.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsus somewhat enlarged. Protarsal claws quite long, somewhat asymmetric (Fig. 493).

Male genitalia: Figs 494–496.

Female: Antenna slender, not distinctly modified. Protarsal claws simple.

Distribution: Congo, Zaire, Tanzania, Malawi, Mozambique, South Africa, Madagascar, Réunion, Mauritius (Fig. 482). The species has, under the name *H. lophotus*, also been reported from Mauritania (GIGNOT 1955f) and Zambia and Kenya (BILARDO & ROCCHI, 1990).

Biology: In Congo and Tanzania sampled at light collection. VINSON (1956) reports the species from Mauritania in a rock-pool near a brackish marsh.

Synonymy: The type of each taxon involved has been examined. Although a slight difference in appearance of elytral reticulation exists, I believe they both belong to the same species. Thus the name *H. madagascariensis*, being older, takes precedence over the younger name *H. lophotus*.

Hydrovatus unguicularis n.sp.

Figs 482, 497–504.

Type locality: Kampala, Uganda.

Type material: Holotype, m.: m./Type/Uganda Kampala 4.IV.1932 G.L.R. Hancock NA 6/*Hydrovatus unguicularis* n.sp. J. Balfour-Browne det. (BMNH). – Paratypes: Sudan: Pt. VII (6) RA Shambe Bahr el Jebel/ Sudan 28.V.–19.VI.1954 J.W.B. Thornton/*H. unguicularis* m. J. Balfour-Browne det. III.1955 (2 exx. BMNH, 1 ex. MZH). In all, 4 exx.

Etymology: The manuscript-name proposed by J. Balfour-Brown is adopted here.

Diagnosis: *H. unguicularis* is a distinct species, characterized particularly by the long male antenna, by long and asymmetric male protarsal claws, and by the voluminous male genitalia in comparison with closely related species. The closest relatives are probably *H. madagascariensis* and *H. crassicornis* (see above).

Description: only diagnostically important differences from description of *H. madagascariensis* recognized.

Length of body: 2.70–2.94 mm, breadth: 1.62–1.72 mm. Habitus (Fig. 497).

Head: Frontal aspect of head (Fig. 498). Antenna long, with slightly enlarged medial segments (segment 6 broadest) (Fig. 499).

Elytra: Punctures finer and slightly less strongly impressed. In general elytral reticulation more strongly developed.

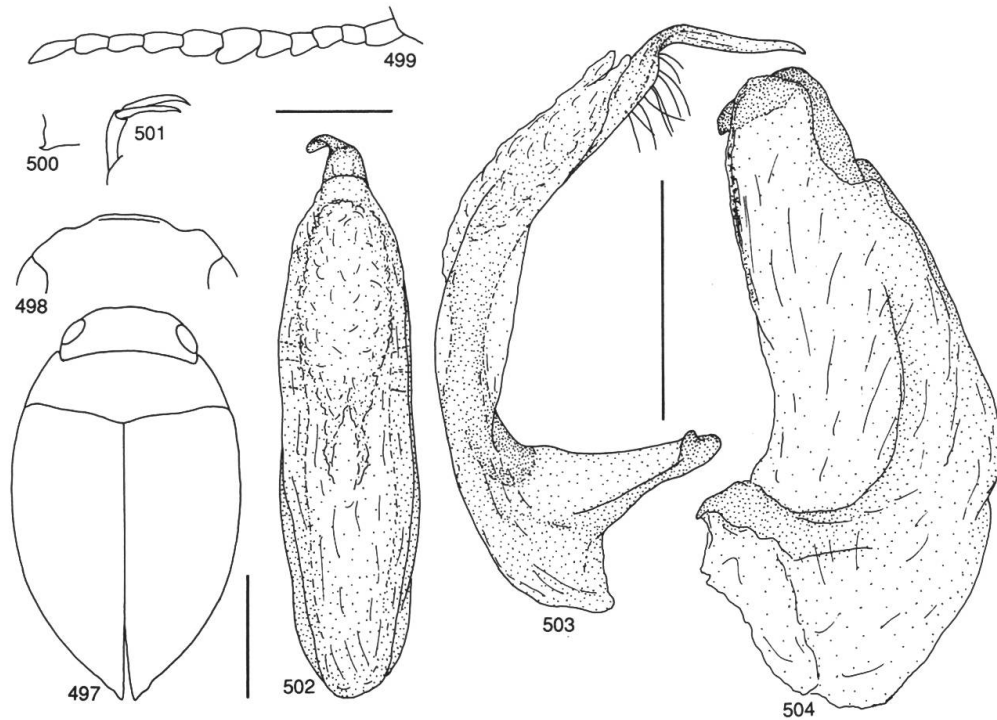
Ventral side: Prosternal process with a hooked anterior extension (Fig. 500).

Legs: Protarsal claws long, asymmetric (Fig. 501).

Male genitalia: Figs 502–504. Almost twice as large as in *H. madagascariensis*.

Distribution: Uganda, Sudan (Fig. 482).

Biology: Unknown.



Figs 497–504: *Hydrovatus unguicularis*. – 497, habitus. – 498, male head, frontal aspect. – 499, male antenna. – 500, prosternal process, lateral aspect. – 501, male protarsal claws. – 502, penis, dorsal aspect. – 503, penis, lateral aspect. – 504, paramere. Horizontal scale 0.5 mm, head, antenna, prosternal process and claws; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

***Hydrovatus cribratus* Sharp**

Figs 505–513, 523.

Hydrovatus cribratus SHARP 1882a:328 (orig. descr., faun.); BRANDEN 1885:26 (faun.); RÉGIMBART 1895b:110 (descr., faun.); ZIMMERMANN 1920a:32 (faun., list.); GSCHWENDTNER 1930:195 (faun.); 1943:419, 422 (descr., disc.); GUIGNOT 1945a:298, 299, 307, 311, 315 (descr., disc., faun.); 1959a:199 (descr., faun.); BERTRAND & LEGROS 1957:678 (faun.); BILARDO & ROCCHI 1990:181, 191 (descr., faun.).

Hydrovatus laticornis RÉGIMBART 1895b:110 (orig. descr., faun.); ZIMMERMANN 1920a:34 (faun., list.); PESCHET 1922:374 (faun.); ZIMMERMANN 1926:27 (faun.); GSCHWENDTNER 1930:195 (faun.); BALFOUR-BROWNE 1939:481 (descr., faun.); GSCHWENDTNER 1943:418, 422 (descr., disc.); GUIGNOT 1945a:298, 299, 307, 311 (descr., disc., faun.); 1948a:6 (disc.); 1948c:8 (faun.); BERTRAND 1948:11 (faun.); GUIGNOT 1950c:4 (disc.); 1956c:318, 319 (disc., faun.); 1959a:133, 191, 198 (descr., disc. faun.); 1959c:136, 143 (disc., faun.); BRUNEAU DE MIRÉ & LEGROS 1963:852, 853 (disc., faun.); OMER-COOPER 1963:166, 171, 175 (descr., faun.); 1965:96 (descr., faun.); BILARDO 1982a:445 (descr., disc.); 1990:171, 181, 190 (descr., disc., faun.). **New synonym.**

Hydrovatus dyscheres GUIGNOT 1955c:182, 185 (orig. descr., faun.); BILARDO & ROCCHI 1990:181, 191 (descr., faun.). **New synonym.**

Type locality: Gabon.

Type material studied: *H. cribratus*: Lectotype, m., by present designation: Type/Sharp Coll. 1905–313/Type 10 *Hydrovatus cribratus* n.sp. Gabon (BMNH). – Paralectotypes: Principally with same data as lectotype (1 ex. BMNH). – *H. laticornis*: Lectotype, m., by present designation: Gabon Mocquerys/Type/ Museum Paris coll. Maurice Régimbart, 1908/*laticornis* Rég. (MNHN). – Paralectotype: Same data as lectotype (1 ex. MNHN). – *H. dyscheres*: Holotype, m.: Holotypus m./R. Det. 6649 W/Coll. Mus. Congo Elisabethville (à la lumière) 1.III.52/30.IX.1953 Ch. Seydel/Type m./Guignot det., 1954 *Hydrovatus dyscheres* n.sp. Type m. (MAC). – Paratypes: Same data as holotype but belongs to another *Hydrovatus* species (1 ex. MAC).

Additional material studied: Gambia: Outside Abuko Nat. Res., at water works, at light 19,00–21.50, 22.XI.1977/*H. laticornis* Régb. det. Nilsson (3 exx. LUZ). – Senegal: Parc Nat. Niokolo Koba, Badi 15.VIII.–25.IX.1955 (1 ex. IFAN); Sangalkam VIII.1971 (11 exx. MNHN, 5 exx. MZH); Mboro VIII.1971 (1 ex. MNHN). – Guinea: Seredou lux. 4., 18.IV.1975 (1 ex. MNB, 1 ex. MZH). – Sierra Leone: Makeni 12,03W;8,53N, 27.XI.1993 light trap 18–21 (1 ex. LUZ). – Ghana: Ashanti Reg. Kumasi Nhiasu 330 m/at light 24.VI.1967 (2 exx. TMB, 1 ex. MZH); Kumasi 330 m/light trap 20.V.1967 (1 ex. TMB); Ashanti Kwadaso 320 m/Light trap 2.III.1967 (1 ex. TMB); Ashanti Juaben 340 m/water pond 19.II.1967 (4 exx. TMB, 1 ex. MZH). – Equatorial Guinea: Bata/*H. cribratus* Shp det. J. Balfour-Browne (10 exx. MCN). – Gabon: Principally with same data as lectotype of *H. laticornis* (2 exx. MNHN, possibly belonging to type material). – Ethiopia: Sidamo L. Awassa 8.I.1989/*H. laticornis* Régb. det. Nilsson 1989 (1 ex. coll. Nilsson); Kaffa Pr. Jimma 1720 m 23–29.IV.1972/*H. laticornis* Régb. det. Nilsson (1 ex. MAC); Shoa Pr. Soedere VIII.1971/*H. laticornis* Régb. det. Nilsson (1 ex. MAC); Hora Bishoftu 7000 ft 2.XII.1926 (1 ex. AMS); Mt Chilalu 7000 ft 8.XI.1926 (1 ex. AMS); Hora Abjata small pond 5000 ft 18.XI.1927 (1 ex. AMS). – Sudan: Equatoria Nimule, duck weed ditch 4.II.1954 (1 ex. AMS); L. Shambe, pool in marsh 21.I.1954 (1 ex. AMS). – Congo: Loudima Sagro park/7.XII.1963 by lamplight (20 exx. TMB, 5 exx. MZH); same but 6.XII.1963 (3 exx. TMB); Brazzaville, Orstom park/20.XI.1963 light trap (1 ex. TMB). – Zaire: Elisabethville I.1951–II.1952 (1 ex. MAC, labelled as paratype but sampling data do not coincide with data in original description); Kivu: Kavimvira, Uvira X.1955 lum. (1 ex. coll. Wewalka). – Uganda: Toro, Lacs Vijongo/*H. cribratus* Sharp det. Guignot (1 ex. MNHN); Mujongo, lake 14.III.1929 (1 ex. AMS). – Kenya: Gwaso Nyiro Patrizi 1919/*H. laticornis* Régb. det. Peschet 1922 (1 ex. MCG). – Tanzania: Kilossa XII.1884/*H. laticornis* Régb. Zimmermann det. (1 ex. MNB); Usa R. 3900 ft/light trap 15.XI.–31.XII.1965 (5 exx. MB, 1 ex. MZH). – Zambia: Lusaka Kafue City-Kafue R. n. 1200, 22.XI.1986–2.II.1987 (4 exx. MCG, 2 exx. MZH). – Malawi: Ft Johnstone, Hornetswamp 27., 28.IX.1948 (5 exx. AMS); Daily's Hotel, swamp, Ft. Johnstone 23.VIII.1948 (4 exx. AMS); Dambo below Livingstonia 21.X.1948/*H. laticornis* Régb. det. J. Balfour-Brown 1948 (8 exx. AMS); Dambo Ft Johnstone 22–27.IX.1948 (29. exx. AMS); L. Shirwa 6.X.1948 (7 exx. AMS). – Mozambique: Maputo/1.V.1977 ljus (5 exx. LUZ). – South Africa: Trsvl Nylsvlei 16.III.1990 (1 ex. MZH); Waterbg Haakdoringboom farm 24.11S–27.50E/13.II.1976 E–Y 1039 flood debris (1 ex. TMP); Pretoria distr. Roodeplaat UV light trap 30.X.–10.XI.1960 (2 exx. TMP, females, det. uncertain); Natal Mtubatuba 22.VII.1947 (5 exx. AMS); Zululd St. Lucia 28.22S–32.35E/18.XII.1975 E–Y 983 at blacklight (1 ex. TMP, female, det. uncertain). In all, 174 exx.

Diagnosis: Undoubtedly closely related with the two consecutive species. The three species are characterized by the uneven outline of the frontal part of the head, by moderately but still distinctly enlarged medial segments of the male antenna, and by the somewhat prolonged claws of the male protarsus. *H. cribratus* is distinguished from the two other species by differences in the shape of the male antenna and the appearance of elytral microsculpture (see also the diagnoses below).

Length of body: 2.12–2.70 mm, breadth: 1.40–1.68 mm. Habitus (Fig. 505).

Head: Pale ferrugineous to ferrugineous to brownish. Punctuation very fine, sparse, rather irregularly distributed, partly absent. At eyes and in shallow frontal depressions with slightly denser punctures. Submat, microsculptured (meshes distinct). Frontal outline of head somewhat uneven, medially very finely margined (Fig. 506). Antenna pale ferrugineous, segments 5–8 enlarged (Figs 507–508). Males from Ethiopia with antenna more robust than in males from other regions.

Pronotum: Pale ferrugineous to ferrugineous to brownish. Medio-basally often with a vague darkened area. Finely to very finely and sparsely punctate. At pronotal margins with slightly coarser and denser punctures. Submat, microsculptured (meshes distinct). Lateral outline of pronotum almost straight to rounded.

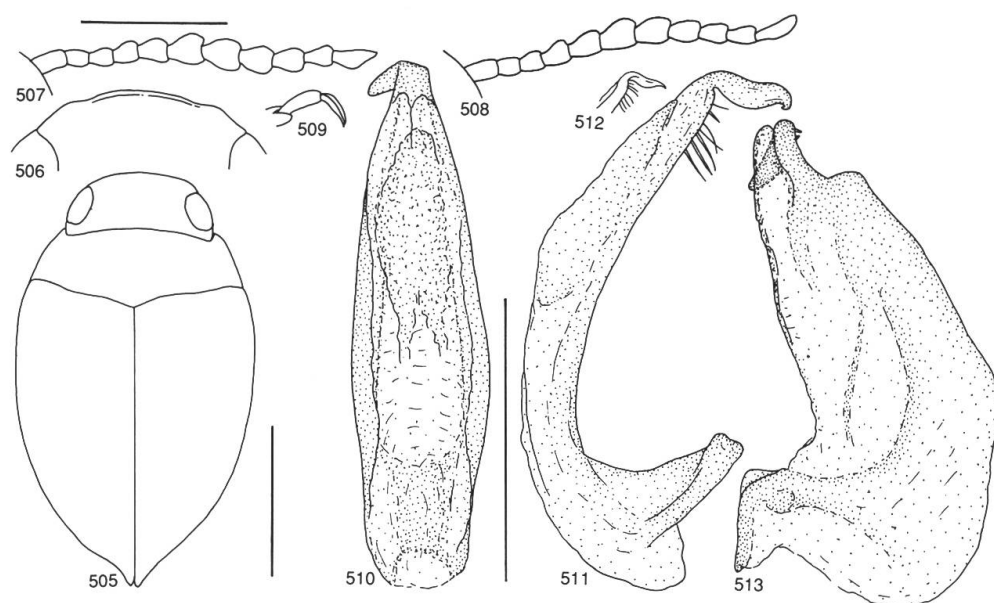
Elytra: Ferrugineous to brownish, laterally often somewhat paler, but without distinct colour pattern. Punctuation fairly coarse and dense. Apically and at epipleura with finer punctures. Rows of punctures absent. Rather shiny, finely microsculptured (meshes quite distinct). In specimen from Uganda elytral reticulation almost obliterated. Epipleura pale ferrugineous, with sparse, rather fine punctures, finely microsculptured.

Ventral side: Ferrugineous to pale ferrugineous. Punctuation fairly coarse to rather fine, somewhat sparse. Abdomen, except basally almost impunctate. Rather shiny, microsculpture fine (meshes distinct). Prosternal process laterally comparatively broadly margined, medial surface almost flat and indistinctly punctate.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsus somewhat enlarged. Protarsal claws long, slightly asymmetric (Fig. 509).

Male genitalia: Figs 510–513.

Female: Antenna slender, not with enlarged segments. Protarsal



Figs 505–513: *Hydrovatus cribratus*. – 505, habitus. – 506, male head, frontal aspect. – 507–508, male antenna. – 509, male protarsal claws. – 510, penis, dorsal aspect. – 511, penis, lateral aspect. – 512, penis, supplementary illustration. – 513, paramere. Horizontal scale 0.5 mm, head, antennae and claws; left scale 1 mm, habitus; right scale 0.4 mm, genitalia (excl. Fig. 512).

Distribution: Gambia, Senegal, Guinea, Sierra Leone, Ghana, Equatorial Guinea, Gabon, Congo, Zaire, Ethiopia, Sudan, Uganda, Kenya, Tanzania, Zambia, Malawi, Mozambique, South Africa (Fig. 523).

Additional record unverified, is Ivory Coast (GUIGNOT, 1945a). The species is also reported under the name *H. laticornis* from Angola (RÉGIMBART, 1895b), Mali (OMER-COOPER, 1965) and Cameroon (Bilardo, 1982).

Biology: In Sudan collected in a duck weed ditch and in a pool in a marsh. Often sampled at light collection. In Ethiopia captured at an altitude of 7000 feet a.s.l.

Synonymy: Lectotypes and holotype of the three species involved have been studied. Despite some morphological differences in the shape of the male antenna and the appearance of the elytral microsculpture, I regard them as belonging to one widely distributed and somewhat variable species. The oldest available name, *H. cribratus*, is the valid name of the species.

Hydrovatus longicornis Sharp

Figs 514–523.

Hydrovatus longicornis SHARP 1882a:323 (orig., descr., faun.); BRANDEN 1885:26 (faun.); RÉGIMBART 1895b:107 (descr., faun.); JAKOBSON 1905:419 (faun.); ZIMMERMANN 1920a:34 (faun.); WINKLER 1924:218 (faun.); ZIMMERMANN 1930:27, 30 (descr., faun.); OMER-COOPER 1931:760 (descr., faun., biol.); GSCHWENDTNER 1943:422 (descr.); GUIGNOT 1945a:298, 299, 310 (descr., disc., faun.); 1948c:8 (faun.); 1949:43 (disc.); 1955c:185, 186 (disc.); 1959a:199, 201 (descr., faun.); 1959c:143 (faun.); OMER-COOPER 1963:165, 167, 175 (descr., faun.); ALFIERI 1976:32 (faun.); BILARDO & PEDERZANI 1978:105 (disc.); EL-SHERIF & al. 1978:95, 96, 97 (faun., biol.); BILARDO 1982b:250 (faun.); YANO & al. 1983b:17, 26 (faun., biol.); BILARDO & ROCCHI 1990:161, 171, 182, 192 (descr., faun., biol.).

Hydrovatus berdoia BRUNEAU DE MIRÉ & LEGROS 1963:850, 888 (orig. descr., faun.); BILARDO & ROCCHI 1987:98, 100 (descr., disc.); 1990:171, 182, 192 (descr., faun.). **New synonym.**

Type locality: Egypt.

Type material studied: *H. longicornis*: Holotype, m.: Type/Egypt/Sharp Coll. 1905–313/Type 3 *Hydrovatus longicornis* n.s. Egypt (BMNH). – Paratypes: Principally with same data as holotype (3 exx. BMNH). – *H. berdoia*: Holotype, m.: Bedo 15.I.1959/Tibesti zone du Borkou, de Miré/Type/Museum Paris/*Hydrovatus berdoia* n.sp. C. Legros det. (MNHN). – Paratypes: Principally with same data as holotype (1 ex. MNHN); Marecages de Bedo 29–30.IX.1959/Tibesti, zone du Borkou Bruneau de Miré (1 ex. MNHN).

Additional material studied: Chad: NE Ft Archambault Bahr Salamat Balabidja III.1904 (1 ex. MNHN). In all, 8 exx.

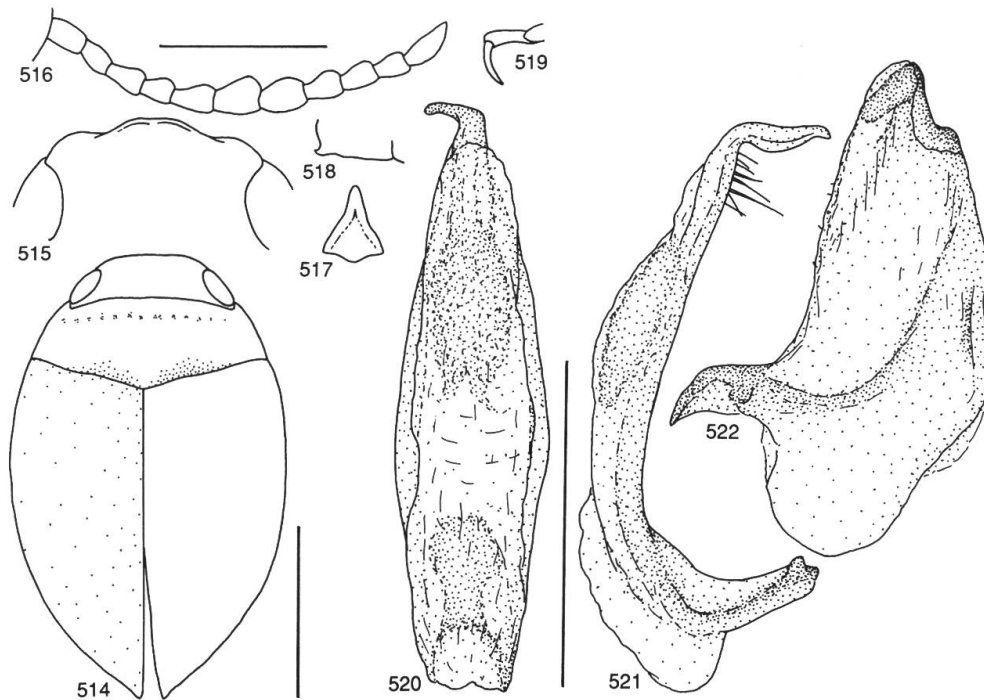
Diagnosis: Very close to *H. cribratus* (synonymy cannot be excluded). The two species are often distinguished by examination of the male antenna (longer in *H. longicornis* than in *H. cribratus*) and by comparison of the appearance of elytral microsculpture (more weakly developed in *H. longicornis* than in *H. cribratus*). There seems to be a great deal of morphological overlapping between the species, which indicates that it could be a question of geographical varieties.

Description: only important deviations from description of *H. cribratus* recognized.

Length: 2.01–2.60 mm, **breadth:** 1.36–1.60 mm. **Habitus** (Fig. 514). Main colour of body often quite dark, ferrugineous to dark ferrugineous.

Head: Frontal aspect of head (Fig. 515). Antenna comparatively long, segments 4–8 somewhat enlarged (Fig. 516).

Elytra: Shiny, microsculpture indistinct, partly absent. In type material of *H. berdoia* at suture with fine reticulation (meshes clearly discernible); laterally reticulation indistinct, partly absent. Epipleural microsculpture indistinct.



Figs 514–522: *Hydrovatus longicornis*. – 514, habitus. – 515, male head, frontal aspect. – 516, male antenna. – 517, prosternal process, ventral aspect. – 518, prosternal process, lateral aspect. – 519, male protarsal claw. – 520, penis, dorsal aspect. – 521, penis, lateral aspect. – 522, paramere. Horizontal scale 0.5 mm, head, antenna, process and claw; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Ventral side: Prosternal process laterally finely to rather finely margined. Process anteriorly distinctly dentate (Figs 517–518).

Legs: Protarsal claw somewhat prolonged (Fig. 519).

Male genitalia: Figs 520–522.

Distribution: Egypt, Chad (Fig. 523). Also reported from Ethiopia (OMER-COOPER, 1931), Kenya (GUIGNOT, 1945a), Zaire (GUIGNOT, 1948c), Malawi (OMER-COOPER, 1963) and Ivory Coast and Gabon (BILARDO & ROCCHI, 1990).

Biology: Adults are reported to occur commonly in rice nurseries and fields in Egypt from early May to late October (EL-SHERIF & al., 1978). In Ethiopia reported from high altitudes: 5000–7000 feet (OMER-COOPER, 1931). This information refers probably to *H. cribratus*? See also BILARDO & ROCCHI (1990).

Synonymy: Holotypes of *H. longicornis* and *H. berdoa* have been studied, and they are regarded to belong to the same species. Thus *H. longicornis*, being older, is the valid name of the species.

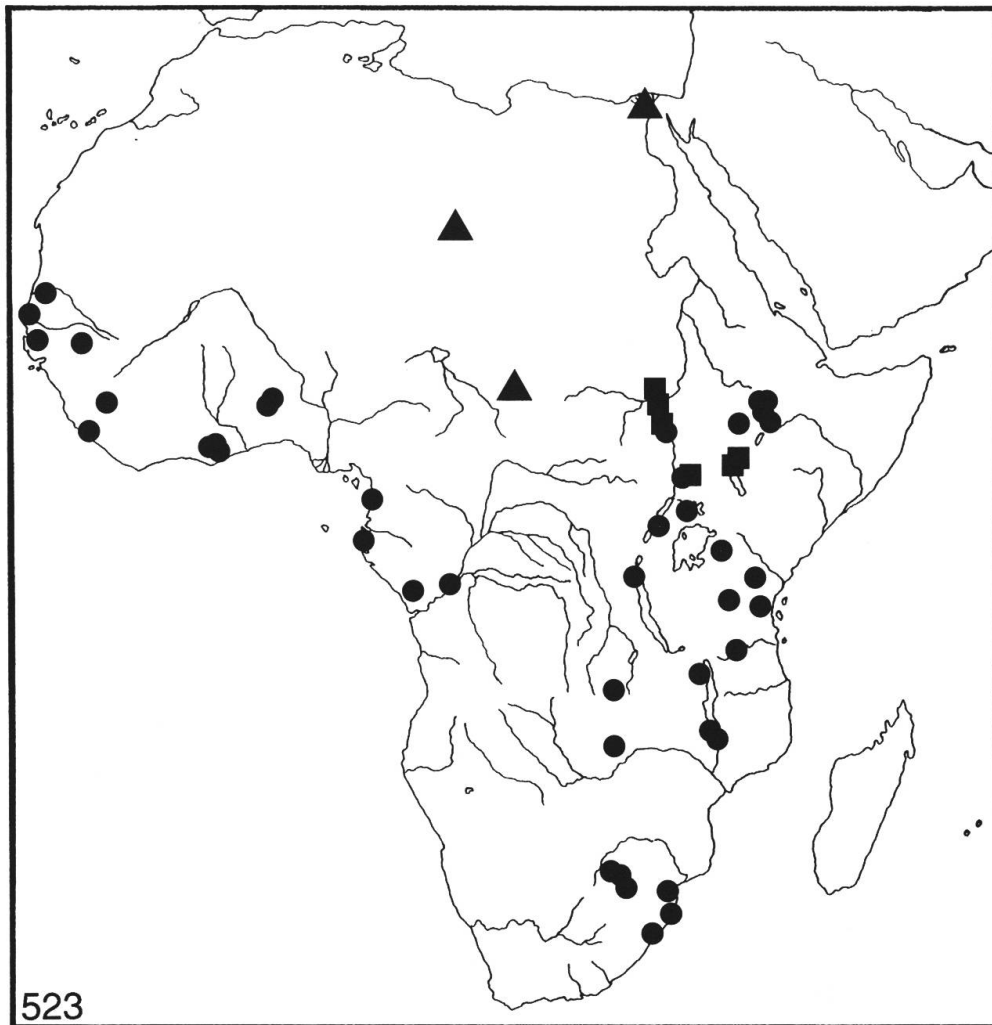


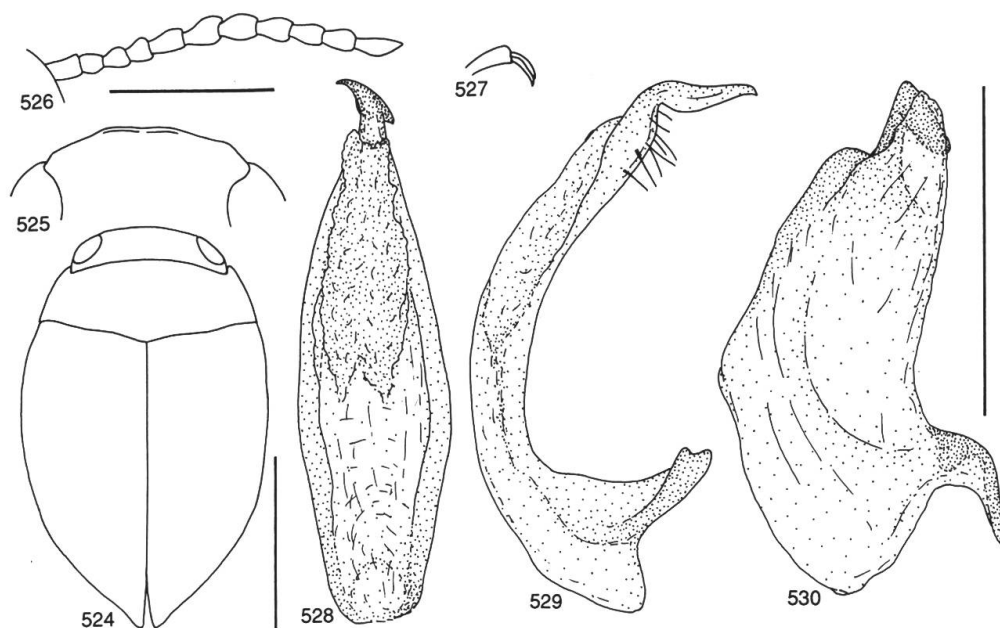
Fig. 523: Distribution of *Hydrovatus cribratus* (dot), *H. longicornis* (triangle) and *H. tydaeus* (square).

***Hydrovatus tydaeus* n.sp.**

Figs 523–530.

Type locality: River Post 21 appr. 105 km S of Lake No, Sudan.

Type material: Holotype, m.: Paratype/Pt. VIII. (4) RA/Sudan 28.V.–19.VI.1954 I.W.B. Thornton River Post 21 appr. 105 km S of Lake No/*Hydrovatus tydaeus* m. J. Balfour-Browne det. 1961 (BMNH, I have not located and accordingly not examined the specimen meant to be holotype according to J. Balfour-Browne). Paratypes: Same as holotype (1 ex. BMNH, 1 ex. MZH); principally same as holotype, but Shambe, Bahr el Jebel (8 exx. BMNH, 4 exx. MZH); Nuba Mts Talodi VI–VIII.1921 (1 ex. BMNH); Sudan, pool in marsh, L. Shambe 21.I.1954/*H. tydaeus* B-Br. in litt. (3 exx. AMS); Sudan, duckweed ditch Nimule fens 4.II.1954/*H. tydaeus* B-Br. in litt. (7 exx. AMS). – Ethiopia: Ethiopie merid. Bovri, bords de la Riv. Omo 800 m/Museum de Paris, Miss. Omo, C. Arambourg, P.-A. Chappuis & R. Jeannel 1932–1933 (3 exx. MZH, 5 exx. MNHN); Ethiopie merid. Nanoropus, bords du Rudolphe 565 m/Museum Paris, Miss. Omo Arambourg, Chappuis & Jeannel (3 exx. MNHN, 1 ex. MZH). In all, 38 exx.



Figs 524–530: *Hydrovatus tydaeus*. – 524, habitus. – 525, male head, frontal aspect. – 526, male antenna. – 527, male protarsal claws. – 528, penis, dorsal aspect. – 529, penis, lateral aspect. – 530, paramere. Horizontal scale 0.5 mm, head, antenna and claws; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Derivation of name: The manuscript-name proposed by J. Balfour-Browne for the new species is here adopted.

Diagnosis: *H. tydaeus* is undoubtedly very close to *H. cribratus*, *H. longicornis* and *H. medialis*. The new species is distinguished from them by its submat, strongly microsculptured body and by the male antenna: Medial segments moderately enlarged in comparison with closely related species (this difference may be difficult to observe). Male genitalia of the species involved seem to be of similar appearance (except for *H. medialis* below).

Description: only important deviations from description of *H. cribratus* recognized.

Length of body: 2.24–2.48 mm, breadth: 1.32–1.50 mm. Habitus (Fig. 524). Whole body submat, covered with distinct, well developed microsculpture (meshes clearly visible).

Head: Frontal aspect of head (Fig. 525). Antenna with segments 5–8 quite weakly enlarged (Fig. 526).

Legs: Protarsal claws (Fig. 527).

Male genitalia: Figs 528–530.

Distribution: Sudan, Ethiopia (Fig. 523).

Biology: In Sudan sampled in a duckweed ditch and in a pool in a marsh.

Hydrovatus medialis Balfour-Browne

Figs 531–541, 551.

Hydrovatus medialis BALFOUR-BROWNE 1939:480 (orig. descr., faun.); GUIGNOT 1948a:8 (disc.); 1953a:234 (faun.); 1955a:28 (faun.); 1955c:186 (disc.); 1956c:319 (disc.); 1958c:102 (disc.); 1959a:126, 131 (descr., faun.); 1959c:136 (descr., disc.); 1961a:232 (disc.); OMER-COOPER 1963:175 (disc.); LEGROS 1972:459 (faun.); BILARDO & PEDERZANI 1978:105 (disc.).

Hydrovatus aequatorius GSCHWENDTNER 1943:418, 422 (orig. descr., faun.); GUIGNOT 1948a:8 (syn. with *H. medialis* B-Br.); 1956c:319 (list.); 1959a:131 (list.); 1959c:136 (list.); OMER-COOPER 1963:175 (disc.); BILARDO & PEDERZANI 1978:105 (disc.).

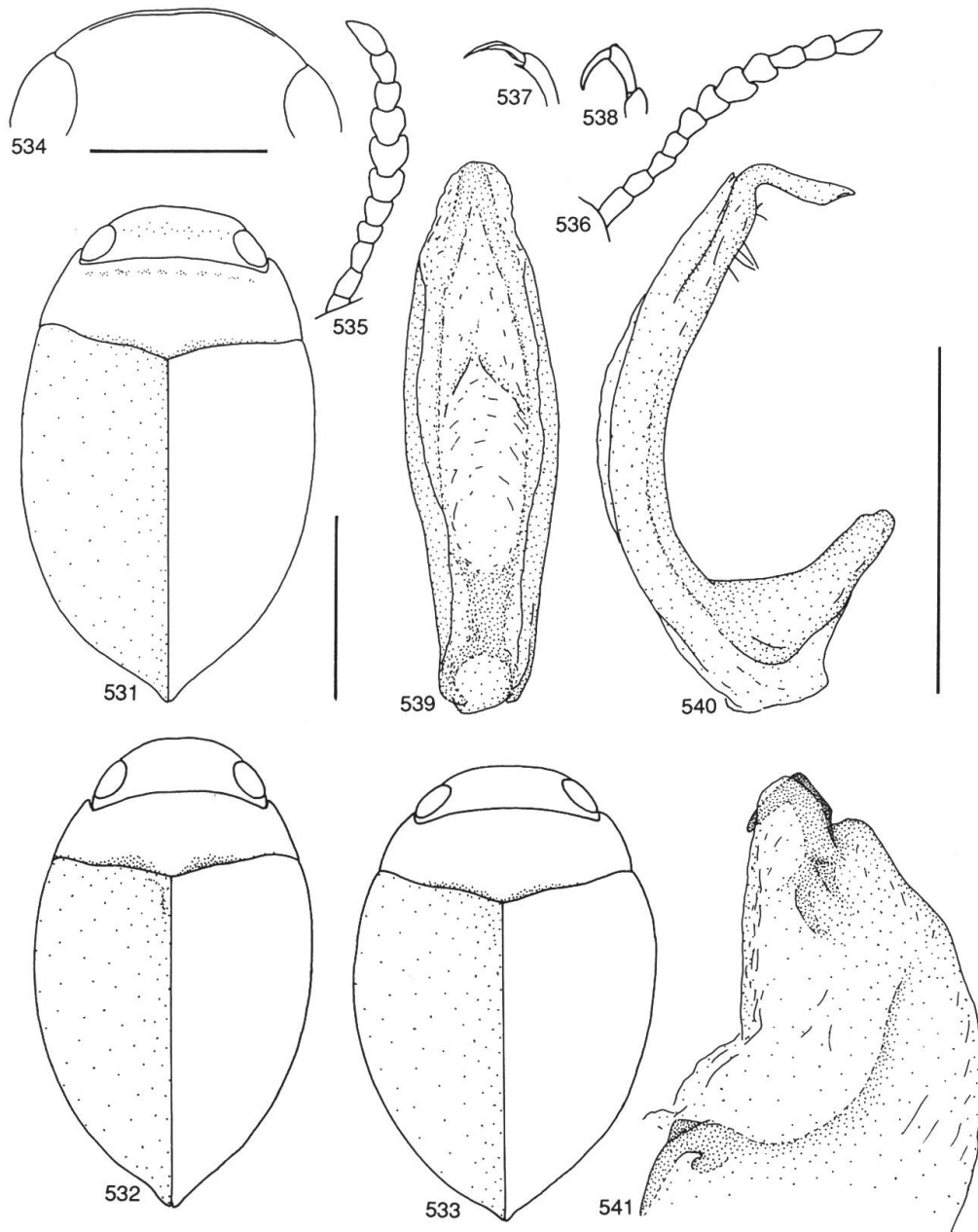
Type locality: Kampala, Uganda.

Type material studied: *H. medialis*: Holotype, m.: Type/Uganda Kampala 22.III.1932 G.L.R. Hancock *Hydrovatus medialis* n.sp. J. Balfour-Browne det. (BMNH). – Paratypes: Same data as holotype (1 ex. BMNH); Kampala 7.VI.1932 (2 exx. BMNH); Uganda: Menyono 14.III.1929 (1 ex. BMNH, 1 ex. MAC). – *H. aequatorius* Lectotype, m., by present designation: Paratype Gschw./Coll. Mus. Congo Elisabethville II.1940 H.J. Bredo/coll. Gschwendtner/*aequatorius* Gschw. det. Gschwendtner/Paratype (OLL). In the original description no indication which specimen should be regarded as the holotype is given, and neither has any lectotype been later designated. I have decided to choose one of the specimens labelled as paratype to be the lectotype, because the male specimen labelled as Type m. in OLL lacks the genitalia (preparation broken). – Paralectotypes: Same data as lectotype, except two specimens, labelled Type m. and Type f. (7 exx. OLL, 6 exx. MAC, 3 exx. MNHN).

Additional material studied: Zaire: Moanda 27.VII.1920 (1 ex. ZSM). – Uganda Namanve swamp Kampala 25.III.1933 (1 ex. BMNH); Kampala 20.VII.1929 (1 ex. AMS). – Kenya: L. Victoria B. Kavirondo XII.1911/*H. laticornis* Rég. det. Guignot (1 ex. MNHN). – Tanzania: Usa R. 3900 ft/light trap 15.XI.–31.XII.1965 (1 ex. TMB, 1 ex. MZH). In all, 29 exx.

Diagnosis: *H. medialis* is characterized by the quite evenly rounded outline of the frontal part of the male head, by quite distinctly enlarged medial segments of the male antenna and by the shape of the penis, with narrows towards the apex (dorsal aspect) more unevenly than in the preceding species (first gradually; than quite abruptly). The status of this species is somewhat unclear, as is the synonymy of *H. medialis* and *H. aequatorius* (cf. GUIGNOT, 1948a), which is still maintained here. This problem undoubtedly needs further study to be solved in a satisfactory way. A minute difference in the shape of the protarsal claws indicates the existence of two different taxa (species/subspecies/variation?). See also the diagnosis of *H. globulosus* below (p. 287).

Length of body: 2.24–2.58 mm, breadth: 1.40–1.56 mm. Habitus somewhat variable (Figs 531–533).



Figs 531–541: *Hydrovatus medialis*. – 531–533, habitus. – 534, male head, frontal aspect. – 535–536, male antenna. – 537–538, male protarsal claws (Fig. 537: *H. aequatorius*). – 539, penis, dorsal aspect. – 540, penis, lateral aspect. – 541, paramere. Horizontal scale 0.5 mm, head, antennae and claws; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Head: Pale ferrugineous. Sometimes with an interocular vague, slightly darker area. Almost impunctate, at eyes and in shallow depressions at eyes with very fine punctures. Slightly mat, microsculptured (meshes distinct). Head frontally rounded, medially slightly

straightened and very finely margined (Fig. 534). Antenna pale ferrugineous to pale brownish, segments 6–8 distinctly enlarged (Figs 535–536). Small variation in shape of antenna exists.

Pronotum: Pale ferrugineous to pale brown, basally with a distinctly darkened but vague area. Sometimes pronotum almost unicoloured, lacking darkened area. Punctuation fine to fairly coarse, irregularly distributed. Discally with only a few punctures. Submat, microsculptured (meshes distinct). Lateral outline of pronotum rounded.

Elytra: Blackish ferrugineous to dark ferrugineous to ferrugineous, laterally elytra generally somewhat paler but without distinct colour pattern. Punctuation fairly coarse, quite dense, fairly evenly distributed; laterally slightly finer. Rows of punctures indistinct. Slightly mat, microsculptured (meshes quite distinct). In specimen from Kenya elytral punctuation and microsculpture slightly weaker. Elytra sometimes shiny, almost without microsculpture. Epipleura pale ferrugineous to pale brown, punctures quite coarse and irregularly distributed, finely reticulate.

Ventral side: Pale ferrugineous to pale brown to brown. Metathorax and -coxal plates with coarse but quite sparse punctures. Abdomen, except basally, almost impunctate. Submat, microsculptured (meshes distinct). Prosternal process laterally rather indistinctly margined, medial surface almost flat.

Legs: Pale ferrugineous. Pro- and mesotarsus rather slender. Protarsal claws prolonged (Figs 537–538). In material of *H. aequatorius* protarsal claws different in length (Fig. 537).

Male genitalia: Figs 539–541.

Female: Antenna slender, not distinctly modified. Body microsculpture dorsally more intensive.

Distribution: Zaire, Uganda, Kenya, Tanzania (Fig. 551). Unverified records are Rwanda (GUIGNOT, 1955a) and Senegal (LEGROS, 1972).

Biology: In Tanzania sampled in light trap at an altitude of 3900 ft. a.s.l.

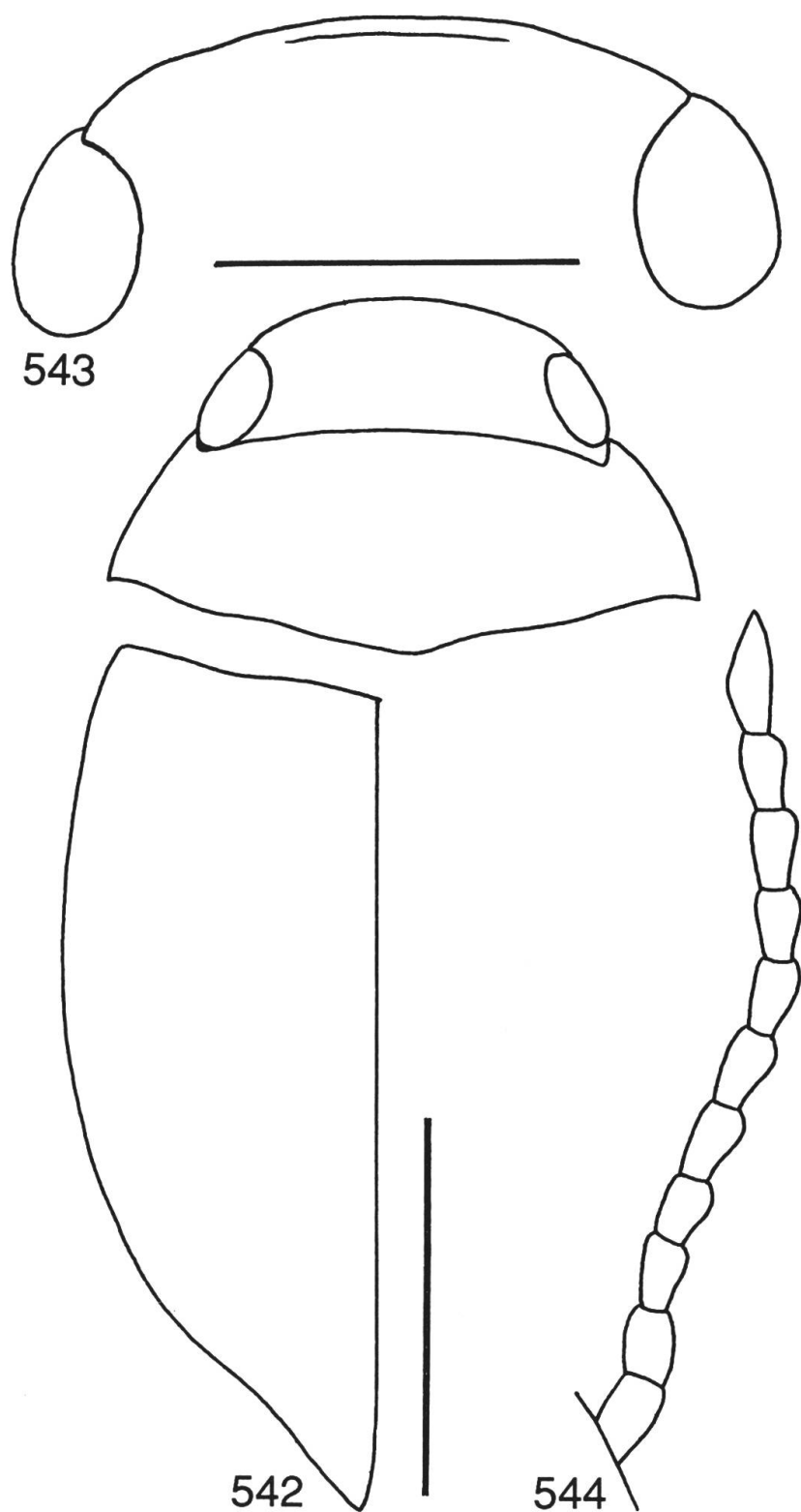
Synonymy: See under diagnosis above.

Hydrovatus coracinus Guignot

Figs 542–544, 551.

Hydrovatus coracinus GIGNOT 1947a:25 (orig. descr., faun.); 1948c:7 (descr., faun.); 1959a:190, 195 (descr., faun.); 1961b:933 (faun.).

Type locality: Ngesho, Parc National d'Albert, Zaire.



Figs 542–544: *Hydrovatus coracinus*, female. – 542, habitus. – 543, head, frontal aspect. – 544, antenna. Horizontal scale 0.5 mm, head and antenna; bottom scale 1 mm, habitus.

Type material studied: Holotype, f: f/Holotypus/Congo belge: PNA Ngesho 3.VIII.1935 Mission H. Damas 291/Coll. Mus. Congo (ex coll. I.P.N.C.B.)/F. Guignot det., 1945 *Hydrovatus coracinus* n.sp. Type (MAC). In all, 1 ex.

Diagnosis: The status of this species is unclear. Only the female holotype is known of the species. Most probably it is close to the preceding species or even synonymous with one of them. The dark colouration of the body is probably an artefact. I am not able to present any distinguishing characters for the species; I simply refer to the present description and previous works dealing with the species.

Description: based on female in bad condition; not detached from the card.

Length of body: 2.70 mm, breadth: 1.74 mm. Habitus (Fig. 542).

Head: Blackish ferrugineous. Impunctate, except posteriorly in middle and in shallow frontal depressions; finely punctate. Submat, microsculptured (meshes distinct, hexagonal). Frontal outline of head rounded, medially somewhat indistinctly margined (Fig. 543). Antenna slender, not distinctly modified (Fig. 544).

Pronotum: Blackish ferrugineous (discally slightly paler). Punctuation dense and quite indistinct; broadly on disc almost impunctate. Submat, distinctly microsculptured (meshes distinct). Lateral outline of pronotum rounded.

Elytra: Blackish ferrugineous to dark brown, laterally somewhat paler. Quite coarsely and densely punctate. Rows of punctures indistinct. Rather shiny, although distinctly microsculptured (meshes clearly discernible). Epipleura dark brown.

Ventral side and legs not studied.

Distribution: Zaire (Fig. 551).

Biology: Reported by GUIGNOT (1961b) to be a sylvicole species.

***Hydrovatus globulosus* Gschwendtner**

Figs 545–551.

Hydrovatus globulosus GSCHWENDTNER, 1943:419, 422 (orig. descr., faun.); GUIGNOT, 1959a:190, 192 (descr., faun.); BILARDO & ROCCHI, 1990:162, 181, 192 (descr., faun., biol.).

Hydrovatus pauxillus GSCHWENDTNER, 1943:420, 423 (orig. descr., faun.); GUIGNOT, 1949:43 (disc.); 1953b:197 (disc.); 1954d:102 (disc.); 1959a:134, 137 (descr., faun.). **New synonym.**

Type locality: Elsiabethville, Zaire.

Type material studied: *H. globulosus*: Holotype, m: Holotypus/Coll. Mus. Congo Elisabethville II.1940 H.J. Bredo/R. Dét. i 4559/*Hydrovatus globulosus* Gschw. det. Gschwendt. (MAC). – Paratypes: Same sampling data as holotype (4 exx. MAC, 4 exx.

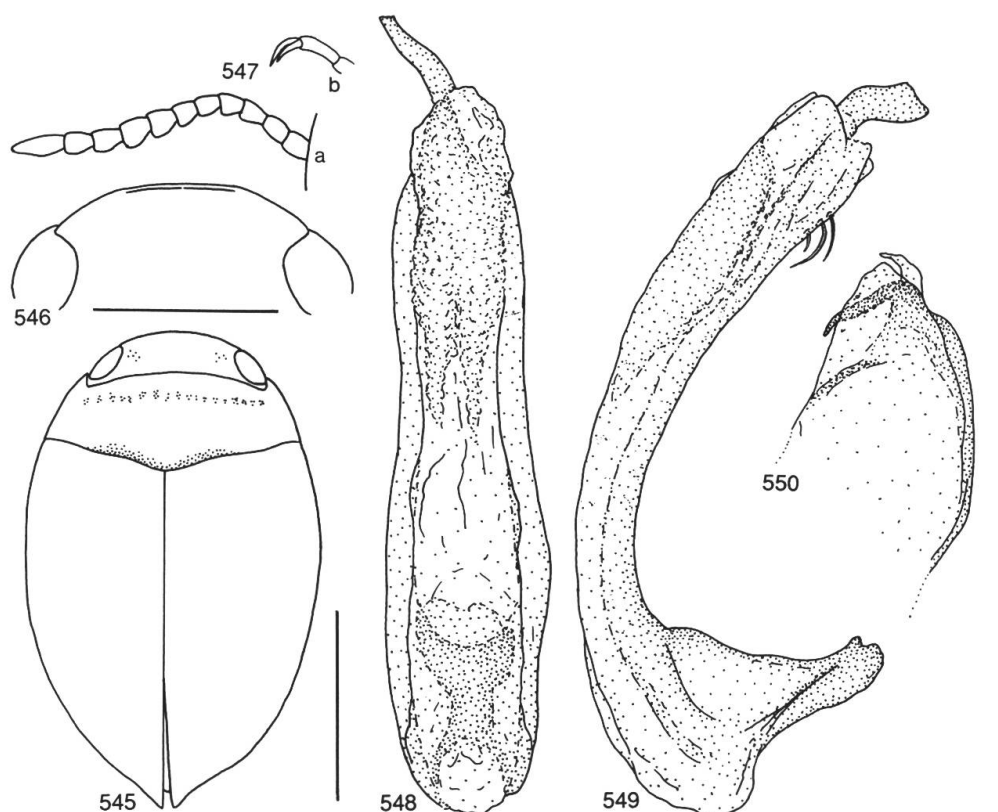
OLL). – *H. pauxillus*: Holotype, m: Holotypus/Coll. Mus. Congo Ter. Lisala Modjumbembe 15.V.1938 J.J. Deheyn/Type m Gschw./R. Det. G. 4559/*Hydrovatus pauxillus* Gschw. det. Gschwendt. (MAC).

Additional material studied: Angola: Etang du Canza 7.38S, 21.38E, 12.VII.1957 (1 ex. MNHN, 1 ex. MZH). In all, 12 exx.

Diagnosis: A quite distinct species, characterized by the almost evenly rounded frontal outline of the male head, by the slightly enlarged medial segments of the male antenna, and by the shape of the penis: Quite evenly broad for a long distance (dorsal aspect); the penis apex is formed as a somewhat anteriorly projecting loose appendage. Resembles externally quite a bit of *H. medialis*-*H. aequatorius* above (p. 282).

Description: only diagnostically important deviations from description of *H. medialis* recognized.

Length of body: 2.12–2.60 mm, breadth: 1.34–1.64 mm. Habitus (Fig. 545).



Figs 545–550: *Hydrovatus globulosus*. – 545, habitus. – 546, head, frontal aspect. – 547a, antenna. – 547b, male protarsal claws. – 548, penis, dorsal aspect. – 549, penis, lateral aspect. – 550, apical part of paramere. Horizontal scale 0.5 mm, head, antenna and claws; left scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Head: Medially along frontal outline finely margined (margin sometimes broken in middle) (Fig. 546). Antenna with segments 6–8 (in type of *H. pauxillus* segments 5–9) slightly enlarged (Fig. 547a).

Pronotum: Rather shiny, finely microsculptured (meshes partly rather indistinct).

Elytra: Rather shiny and with very fine, hardly visible microsculpture (meshes often clearly visible at suture and apically).

Ventral side: Rather shiny and finely microsculptured (meshes on small areas obliterated).

Legs: Protarsal claws asymmetric; one claw a little shorter than the other of the pair (Fig. 547b) (cf. *H. aequatorius*, p. 283).

Distribution: Zaire, Angola (Fig. 551). BILARDO & ROCCHI (1990) gives also Gabon.

Biology: See BILARDO & ROCCHI (1990).

Synonymy: The holotypes of the species *H. globulosus* and *H. pauxillus*, described by GSCHWENDTNER (1943) in the same paper, have been examined. Although small differences exist in the shape of the male antenna (see above) and in the body size (*H. pauxillus* is smaller; no over-lapping in measurements) I consider them as belonging to one species. Because it is equally old and approximately equally often used, I have simply decided to propose *H. globulosus* as the valid name for the species.

Hydrovatus macrocephalus Gschwendtner

Figs 551–555.

Hydrovatus macrocephalus GSCHWENDTNER, 1934:93 (orig. descr., faun.); GUIGNOT, 1945a:298 (descr., faun.); 1950c:4 (disc.); 1954b:11 (disc.); OMER-COOPER, 1957:34 (disc.); GUIGNOT, 1959a:190, 192 (descr., faun.).

Type locality: Ukerewe, Tanzania.

Type material studied: Holotype, f: Type f Gschw./Tang. Territ. Ukerewe VII.1933/ Coll. Gschwendtner/*Hydrovatus macrocephalus* Gschw. det. Gschwendt./Type (OLL). – Paratype: Same data as holotype but VIII. (? 1933) (1 ex. OLL).

Additional material studied: Sudan: Chartoum (1 ex. OLL). – Zaire: Bukama VII.1937 (1 ex. OLL). In all, 4 exx.

Diagnosis: Because only the female is known of *H. macrocephalus*, the status of this species is unclear. External characteristics strongly indicate that the species is very closely related to *H. globulosus*. I cannot, however, present any definite distinguishing features for the species; I simply refer to the original description and the re-description below.

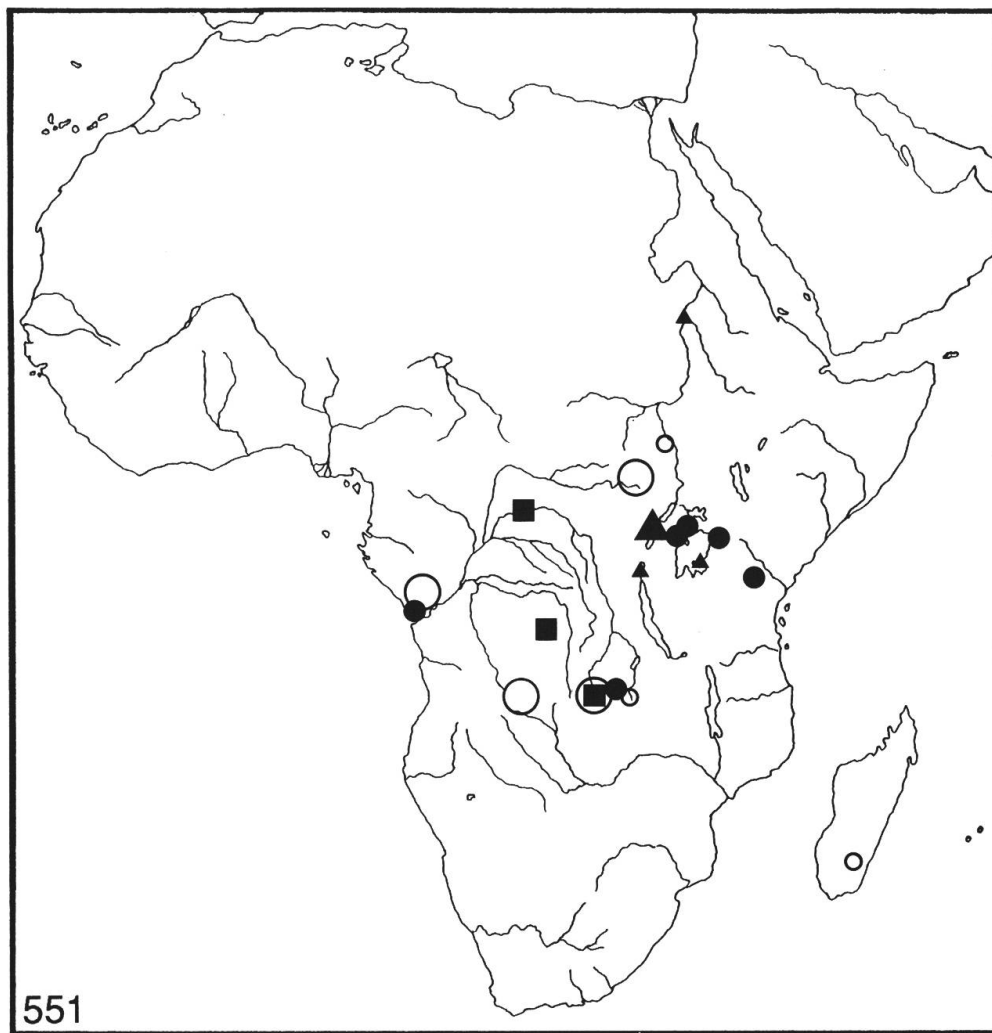


Fig. 551: Distribution of *Hydrovatus medialis* (dot), *H. coracinus* (large triangle), *H. globulosus* (square), *H. macrocephalus* (small triangle), *H. charactes* (big circle) and *H. capnius* (small circle).

Description: based on female; only possibly important differences from descriptions of *H. medialis* and *H. globulosus* recognized.

Length of body: 2.80–3.00 mm, breadth: 1.76–1.80 mm. Habitus (Fig. 552).

Head: Quite large, frontal aspect of head in Fig. 553. Frontal depressions quite distinct, deeper than in *H. globulosus*. Antenna (Fig. 554).

Elytra: Punctuation slightly denser than in *H. globulosus*. Elytra apically with a distinct extension (more pronounced than in *H. medialis* and *H. globulosus* (Fig. 555).

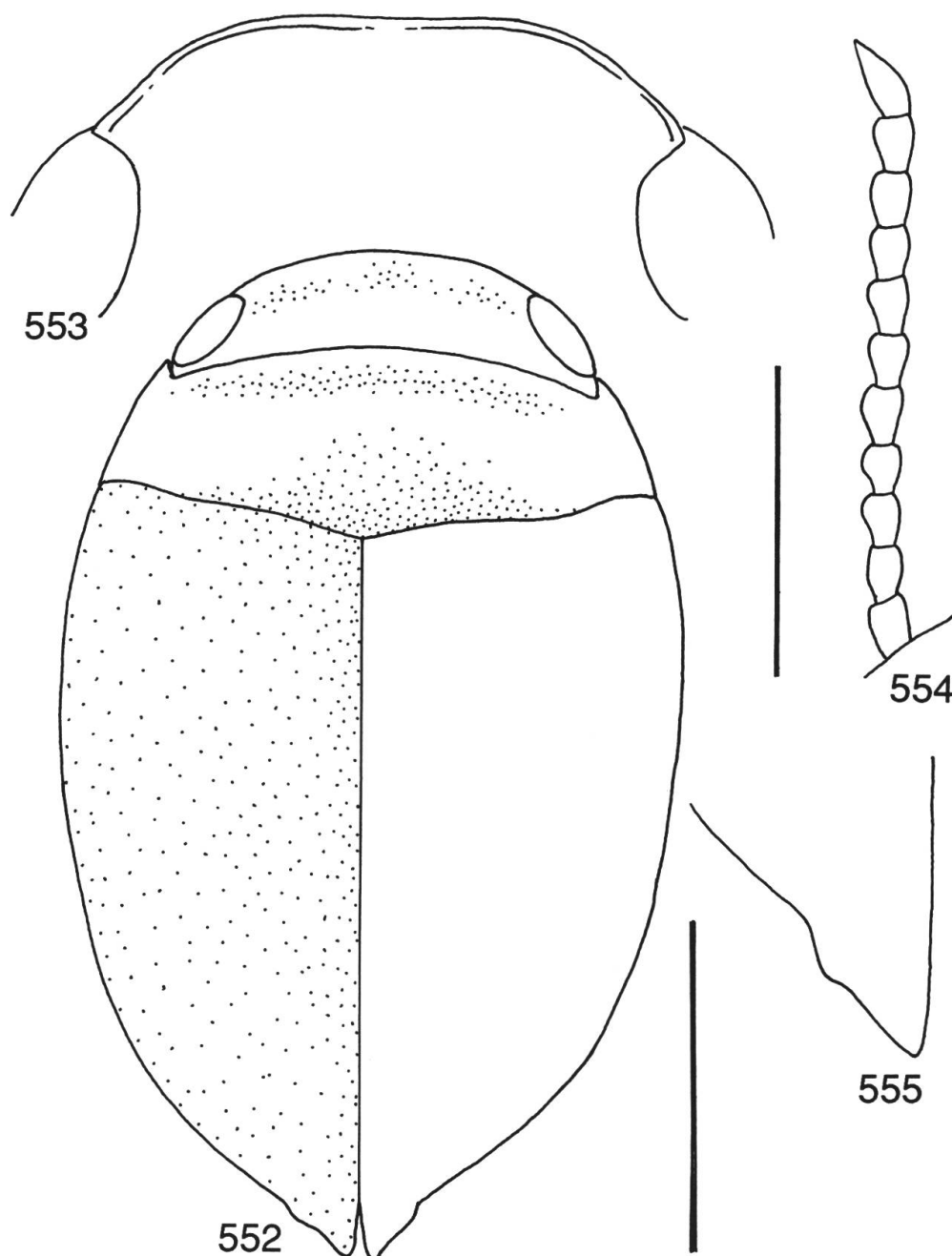
Ventral side: Punctuation rather fine, somewhat sparse. Abdomen, except basally, almost impunctate. Prosternal process laterally fairly

strongly but narrowly margined; medial surface somewhat convex, finely punctate.

Male: Unknown.

Distribution: Sudan, Zaire, Tanzania (Fig. 551).

Biology: Unknown.



Figs 552–555: *Hydrovatus macrocephalus*, female. – 552, habitus. – 553, head, frontal aspect. – 554, antenna. – 555, elytral apex. Top scale 0.5 mm, head, antenna and elytral apex; bottom scale 1 mm, habitus.

Hydrovatus charactes Guignot

Figs 551, 556–562.

Hydrovatus charactes GUIGNOT, 1955c:182, 185 (orig. descr., faun.); 1958b:6 (descr., faun.); BILARDO & ROCCHI, 1990:180 (descr.).

Type locality: Elisabethville, Zaire.

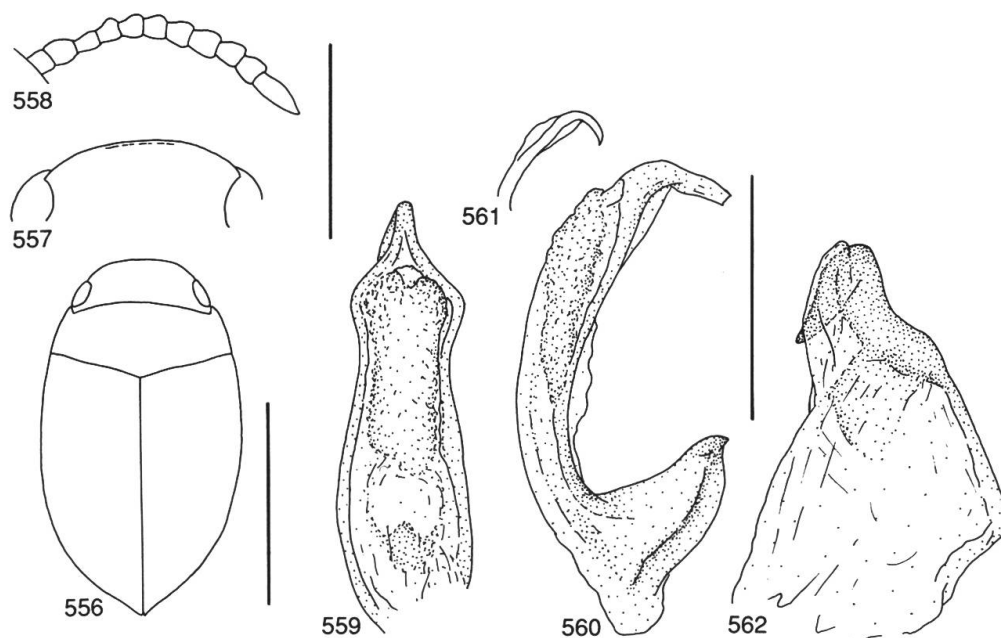
Type material studied: Holotype, f: Holotypus f/Coll. Mus. Congo Elisabethville (a la lumiere) 1.III.52/30.IX.1953 Ch. Seydel/R. Det. 6649 A/Guignot det., 1954 *Hydrovatus* s.str. *charactes* n.sp. Type f (MAC).

Additional material studied: Congo: Loudima Sagro Park 6., 7., 11.XII.1963 light trap (2 exx. TMB, 1 ex. MZH). – Zaire: PNG 21.VI.1951 (1 ex. MAC); PNG 4.VIII.1951 (1 ex. MAC); PNG 6.II.1952 (1 ex. MAC); PNG 24.VII.1952 (8 exx. MAC); PNG 19.VIII.1952 (1 ex. MAC); PNG 28.VIII.1952 (1 ex. MAC). All labelled incorrectly as paratypes. – Angola: Rives Lac Calundo 105 km est Luso 19., 23.XII.1954 (3 exx. MNHN, 1 ex. MZH). In all, 21 exx.

Diagnosis: A distinct species, particularly characterized by the combination of the following features: Body small and elongated; single elytral puncture longitudinally distinctly elongated; penis (dorsal aspect) with distinct preapical constriction.

Length of body: 1.62–1.80 mm, breadth: 0.92–1.00. Habitus (Fig. 556).

Head: Pale ferrugineous to ferrugineous. Punctuation indistinct, except in two shallow frontal depressions and posteriorly in middle;



Figs 556–562: *Hydrovatus charactes*. – 556, habitus. – 557, head, frontal aspect. – 558, antenna. – 559, penis, dorsal aspect. – 560, penis, lateral aspect. – 561, supplementary illustration of penis apex. – 562, paramere. Left top scale 0.5 mm, head and antenna; left bottom scale 1 mm, habitus; right scale 0.25 mm, genitalia (excl. Fig. 561).

with some coarser punctures. Submat, distinctly microsculptured (meshes distinct). Head frontally rounded, medially with indistinct fragments of a margin (Fig. 557). Antenna pale ferrugineous, slender (Fig. 558).

Pronotum: Pale ferrugineous to ferrugineous. Finely and somewhat indistinctly punctate. Punctures irregularly distributed. In specimens from Angola pronotal punctation hardly visible. Submat, distinctly microsculptured (meshes longitudinally somewhat elongated). Lateral outline of pronotum almost straight to somewhat rounded.

Elytra: Ferrugineous to brownish, laterally somewhat paler; pale ferrugineous. Without distinct colour pattern. Quite coarsely and densely punctate. Single punctures longitudinally distinctly elongated. Distinct rows of punctures absent. Submat, distinctly microsculptured (meshes longitudinally somewhat elongated). Epipleura pale ferrugineous to ferrugineous, rather finely punctate, submat, distinctly microsculptured.

Ventral side: Pale ferrugineous to ferrugineous. Coarsely but rather sparsely punctate. Abdomen almost impunctate. Submat, distinctly microsculptured. Prosternal process laterally finely margined, medial surface almost flat.

Legs: Pale ferrugineous. Pro- and mesotarsus slightly enlarged.

Male genitalia: Figs 559–562.

Female: Pro- and mesotarsus slightly narrower than in male.

Distribution: Congo, Zaire, Angola (Fig. 551).

Biology: Poorly known. Sampled at light collection.

***Hydrovatus capnius* Guignot**

Figs 551, 563–568.

Hydrovatus capnius GUIGNOT, 1950c:3 (orig. descr., faun.); 1955a:28 (faun.); 1956d:250 (descr., disc.); OMER-COOPER, 1957:34 (disc.); GUIGNOT, 1958b:1 (disc.); 1959a:199, 201 (descr., faun.); BILARDO & PEDERZANI, 1978:106 (disc.); BILARDO & ROCCHI, 1990:161, 171, 181, 191 (descr., faun., biol.).

Type locality: Musosa, Zaire.

Type material studied: Holotype, m: Musosa 3.VII.1939 H.J. Brédo/R. Mus. Hist. Nat. Belg. I.G. 12.838/Type/*Hydrovatus capnius* Guign. Type m (ISN). – Paratypes: Principally with same data as holotype (2 exx. MNHN).

Additional material studied: Sudan: Bahr el Ghazal L. Nyibor 23.I.1954 (3 exx. AMS). – Madagascar: Mad. Foret Vakoana Ambadamrovandana 1530 m Andingitra-Ambalavao 22.I.1953 (1 ex. MNHN). In all, 7 exx.

Diagnosis: A distinct species, which is characterized especially by the shape of the penis: Downwards pointed apex of the penis quite

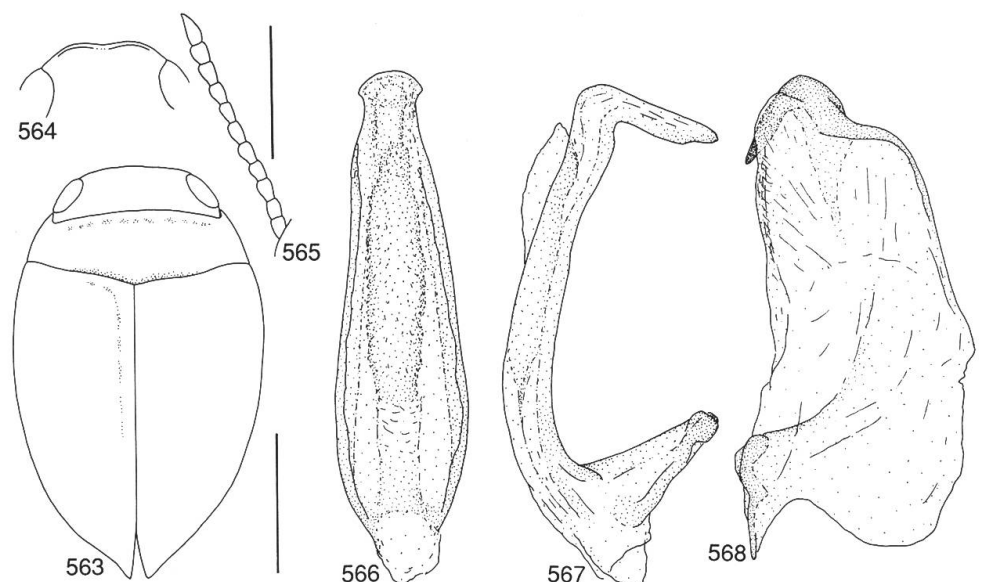
robust, frontal outline (lateral aspect) straight; penis apically with a distinct constriction slightly posterior to the apex (dorsal aspect). Male antenna slender.

Length of body: 2.60–2.72 mm, breadth: 1.62–1.70 mm. Specimen from Madagascar with broader body in proportion to length (length 2.72 mm, breadth 1.76 mm). Habitus (Fig. 563).

Head: Pale ferrugineous to ferrugineous. Almost impunctate, except at eyes, in quite distinct and wide frontal depressions, and on vertex; finely punctate. Rather shiny, microsculptured (meshes quite distinct). Head frontally rounded, medially slightly curved inwards and finely margined (margin does not reach eyes) (Fig. 564). Antenna pale ferrugineous, rather slender, not distinctly modified (Fig. 565).

Pronotum: Brownish, laterally with vague pale brownish areas. Finely and fairly densely punctate. Broad discal area with sparse and very fine punctures. Rather shiny, microsculptured (meshes distinct). Lateral outline of pronotum rounded to almost straight.

Elytra: Brown to pale brown to ferrugineous, without distinct colour pattern. Fairly coarsely and densely punctate. Apical punctation distinctly finer. Rows of punctures indistinct (mixed with ordinary punctures). Rather shiny to shiny, at suture and at base with quite distinct meshes of microsculpture. Meshes laterally reduced and in



Figs 563–568: *Hydrovatus capnius* – 563, habitus. – 564, head, frontal aspect. – 565, antenna. – 566, penis, dorsal aspect. – 567, penis, lateral aspect. – 568, paramere. Left top scale 0.5 mm, antenna; left bottom scale 1 mm, habitus and head; right scale 0.4 mm, genitalia.

part hardly visible. Epipleura pale ferrugineous, fairly coarsely and sparsely punctate, rather shiny and very finely microsculptured.

Ventral side: Pale ferrugineous. Fairly coarsely to rather finely and sparsely punctate. Abdomen with finer punctures, except basally; with fairly coarse punctures. Slightly mat, finely microsculptured. Prosternal process laterally finely margined, medial surface almost flat and densely punctate.

Legs: Pale ferrugineous. Pro- and mesotarsus fairly broad.

Male genitalia: Figs 566–568.

Female: Externally as male.

Distribution: Sudan, Zaire, Madagascar (Fig. 551). Additional unverified records are Burundi (GUIGNOT, 1955a) and Gabon (BILARDO & PEDERZANI, 1990).

Biology: In Madagascar sampled at altitude of 1530 m a.s.l. See also BILARDO & ROCCHI (1990).

Hydrovatus parameces Guignot

Figs 569–571, 585.

Hydrovatus parameces GUIGNOT, 1958b:1 (orig. descr., faun.).

Type locality: Garamba National Park, Zaire.

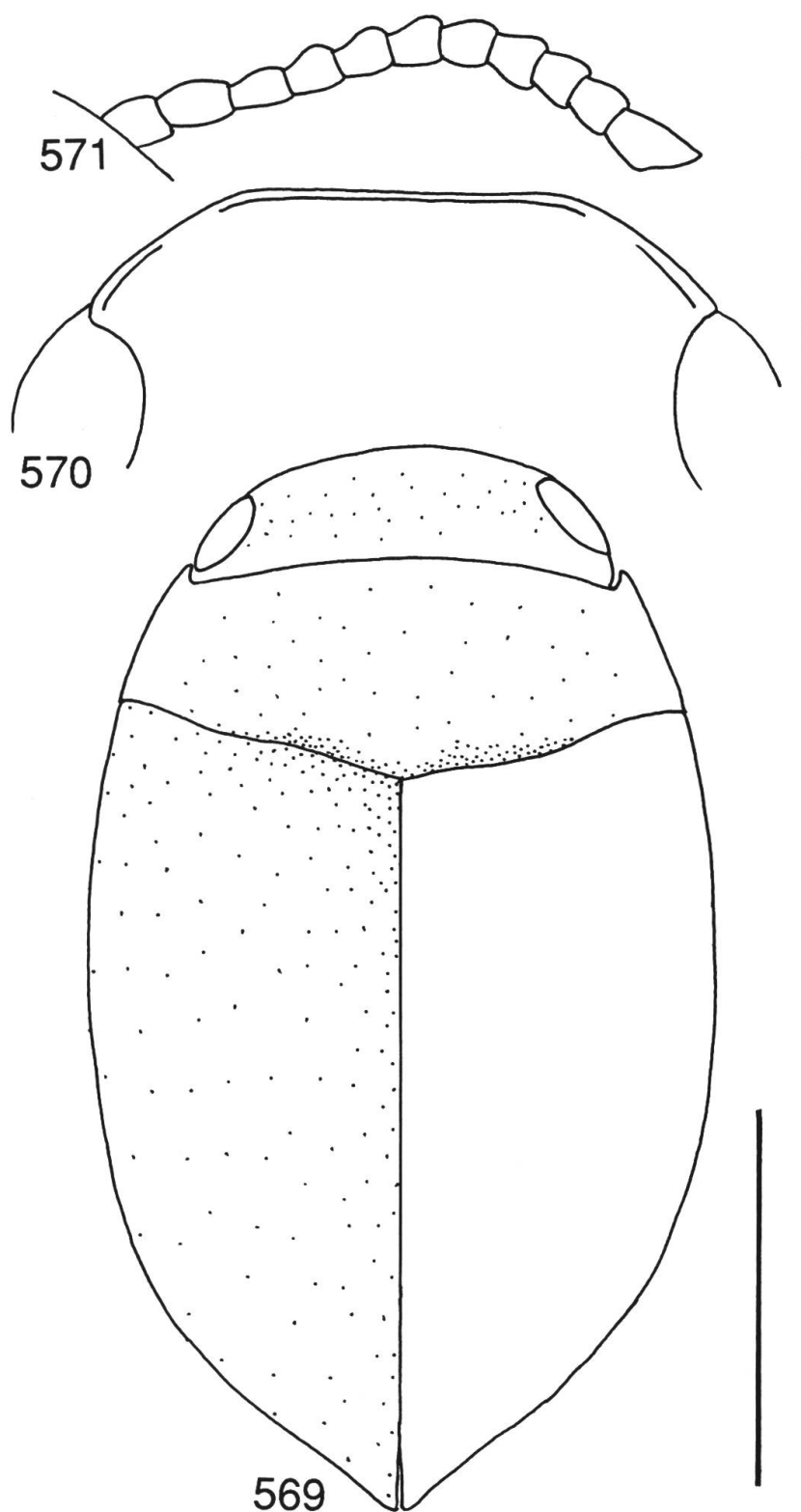
Type material studied: Holotype, f: Holotypus/Congo Belge PNG Miss. H. De Saeger I/gd/11, 4.X.1951 Réc. H. De Saeger, 2511/Coll. Mus. Congo (ex coll. I.P.N.C.B.)/F. Guignot det., 1957 *Hydrovatus* (*Vathydrus*) *parameces* n.sp. Holotype (MAC). – Paratypes: Same data as holotype except 15.IX.1951, 2425 (1 ex. MAC); 21.II.1952, 3143 (1 ex. MAC). In all, 3 exx.

Diagnosis: Since only female of *H. parameces* is known, the status of this species is unclear. I am not able to present any definite distinguishing characters for the species; I simply refer to the original description and the re-description below. According to GUIGNOT (1958b) close to *H. capnius* Guignot.

Description: based on female.

Length of body: 2.60–2.66 mm, breadth: 1.52–1.60 mm. Habitus (Fig. 569).

Head: Dark ferrugineous to brown, anteriorly slightly paler. Punctuation fine, indistinct and somewhat irregularly distributed. Punctuation densest and a little coarser in shallow frontal depressions and narrowly at eyes. Slightly mat, microsculptured (meshes distinct). Head frontally rounded, medially straightened, narrowly margined. Margin broken for a short distance at location where outline starts to straighten (Fig. 570). Antenna pale ferrugineous, rather slender, not distinctly modified (Fig. 571).



Figs 569–571: *Hydrovatus parameces*, female. – 569, habitus. – 570, head, frontal aspect. – 571, antenna. Top scale 0.5 mm, head and antenna; bottom scale 1 mm, habitus.

Pronotum: Dark ferrugineous to brown, laterally with broad, vague and paler area. Punctuation fine to rather fine, quite sparse. Laterally on disc with a narrow impunctate area. Rather shiny, microsculptured (meshes distinct). Lateral outline of pronotum almost straight.

Elytra: Dark ferrugineous to brownish, laterally elytra become paler; at epipleura pale ferrugineous to pale brown. Without distinct colour pattern. Punctuation rather fine, quite sparse, apically almost impunctate. Rows of punctures indistinct or absent (mixed with adjacent punctures). Rather shiny, finely microsculptured (meshes clearly visible). Epipleura pale ferrugineous to pale brown, almost impunctate, microsculpture indistinct.

Ventral side: Pale ferrugineous to ferrugineous to brownish. Rather finely to fairly coarsely and somewhat sparsely punctate. Abdomen almost impunctate, except base; with coarser punctures. Shiny, almost without microsculpture, except abdomen; with very fine, indistinct reticulation. Prosternal process laterally narrowly margined, medial surface finely and sparsely punctate, slightly convex.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsus slightly enlarged.

Male: Unknown.

Distribution: Zaire (Fig. 585).

Biology: Unknown.

Hydrovatus bicolor Guignot

Figs 572–577, 585.

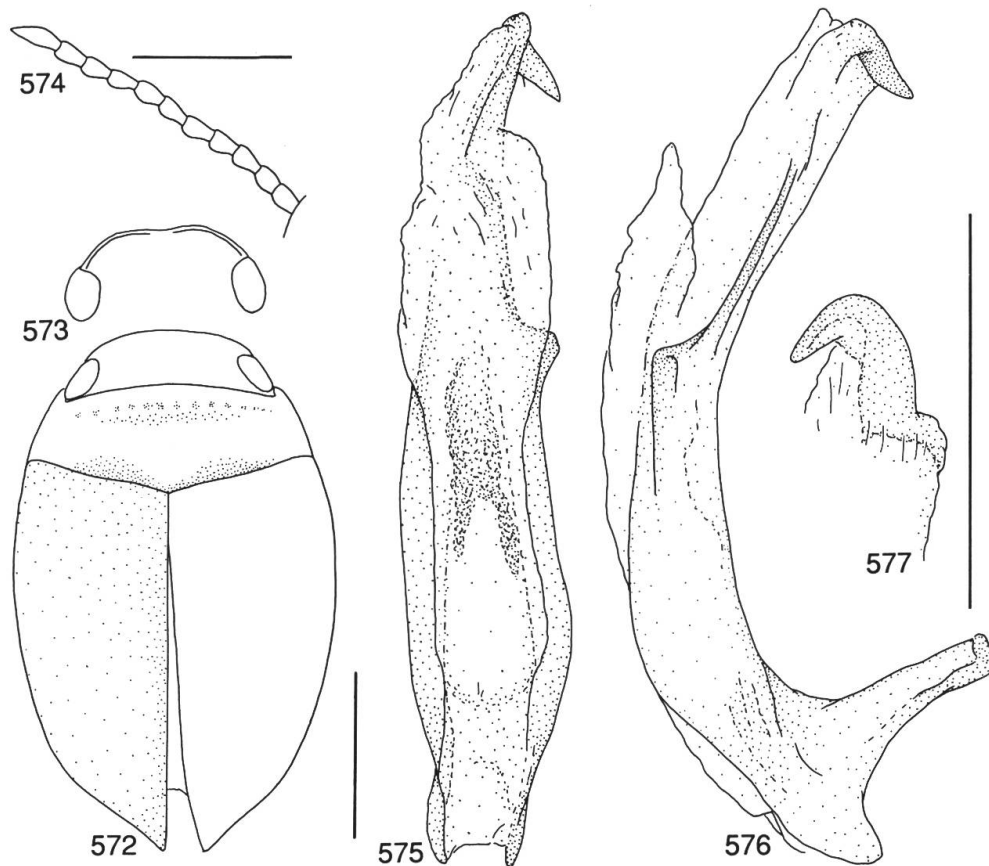
Hydrovatus bicolor GUIGNOT, 1956d:249 (orig. descr., faun.); BILARDO & PDERZANI, 1978:106 (disc.); BILARDO & ROCCHI, 1990:178, 188 (descr., disc., faun.).

Type locality: Uvira, Kivu, Zaire.

Type material studied: Holotype, m: Holotypus/I.R.S.A.C. – Mus. Congo Kivu: Kavimvira (Uvira) la lumire II/III, 1955 G. Marlier/Guignot det. 1956 *Hydrovatus* (*Vathydrus*) *bicolor* n.sp. Type m (MAC). – Paratypes: Same sampling data as holotype (3 exx. MAC). In all, 4 exx.

Diagnosis: A distinct species characterized by the asymmetric penis: Medially with a lateral process and an apex bent towards the right (dorsal aspect). Additionally, the frontal outline of the head medially slightly concave, finely margined but margin broken for a short distance medially.

Length of body: 2.80–2.90 mm, breadth: 1.74–1.80 mm. Habitus (Fig. 572).



Figs 572–577: *Hydrovatus bicolor*. – 572, habitus. – 573, head, frontal aspect. – 574, antenna. – 575, penis, dorsal aspect. – 576, penis, lateral aspect. – 577, apex of paramere. Horizontal scale 0.5 mm, antenna; left scale 1 mm, habitus and head; right scale 0.5 mm, genitalia.

Head: Ferrugineous to pale ferrugineous. Punctuation rather sparse and irregularly distributed. Posteriorly head partly impunctate. Slightly mat, microsculptured (meshes distinct). At both eye with a quite distinct depression. Frontal outline of head medially slightly concave, narrowly margined but margin medially broken (Fig. 573). Antenna pale ferrugineous, quite slender (Fig. 574).

Pronotum: Ferrugineous, laterally pale ferrugineous. Posterior to anterior margin, and at base with vague darkened areas. Finely and somewhat sparsely punctate. Laterally on disc punctuation slightly sparser. Slightly mat, microsculptured (meshes distinct). Lateral outline of pronotum almost straight to slightly rounded.

Elytra: Dark ferrugineous. Laterally elytra become gradually paler, but elytra without distinct colour pattern. Rather finely and somewhat sparsely punctate. Rows of punctures indistinct or absent:

Lateral row of punctures may be discerned. Rather shiny, microsculptured (meshes laterally partly indistinct). Epipleura pale ferrugineous, indistinctly punctate, slightly mat, finely microsculptured.

Ventral side: Pale ferrugineous to ferrugineous. Rather finely and somewhat sparsely punctate. Abdomen almost impunctate. Slightly mat, microsculptured (meshes distinct). Prosternal process laterally narrowly but quite distinctly margined, medial surface almost flat, indistinctly punctate.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsus somewhat enlarged.

Male genitalia: Figs 575–577. Penis asymmetric; anomalous configuration cannot be excluded.

Female: Externally approximately as male.

Distribution: Zaire (Fig. 585).

Biology: Sampled at light collection.

Hydrovatus concii Bilardo & Pederzani

Figs 578–585.

Hydrovatus concii BILARDO & PEDERZANI, 1978:105 (orig. descr., faun.); BILARDO & ROCCHI, 1990:178 (disc.).

Type locality: Bouaké, Ivory Coast.

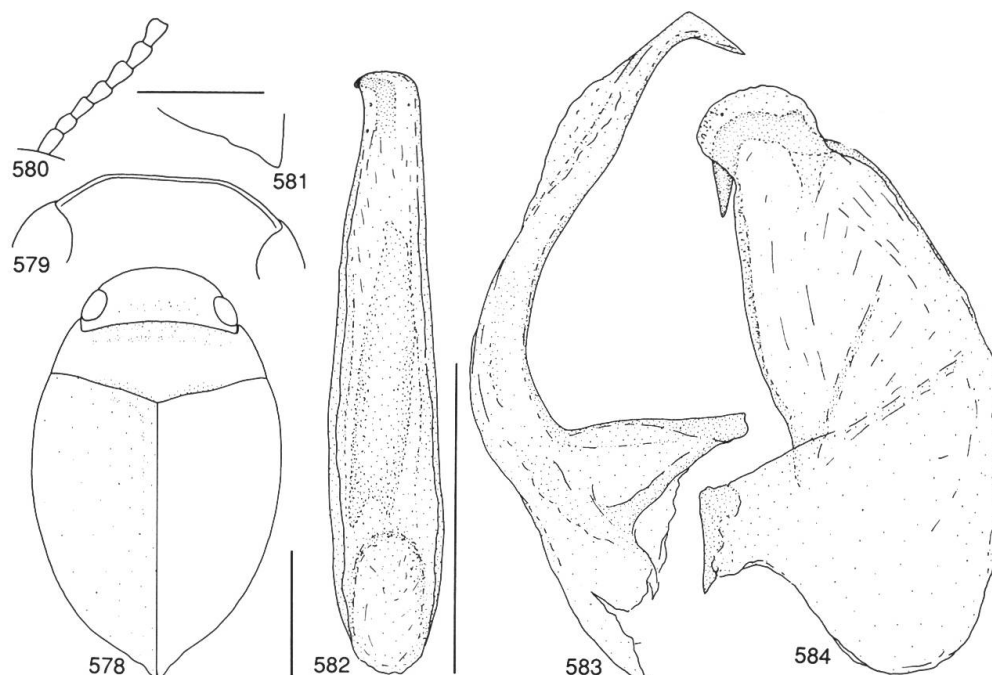
Type material: Holotype, m: Bouaké, St. 10 (in coll. Pederzani; not available for examination). – Paratype studied: Côte d'Ivoire Bouaké 12.VIII.1973 Bilardo & Pederzani/Paratypus/*Hydrovatus concii* Bil. & Ped. det. A. Bilardo (1 ex. coll. Bilardo).

Additional material studied: Uganda: Kampala 4.IV.1932 (1 ex. BMNH). In all, 2 exx.

Diagnosis: A well defined species, especially characterized by the shape of the male genitalia: Penis narrows evenly and gradually towards a broad apex (dorsal aspect); downwards curved apex of penis sharp, quite short and straight (lateral aspect); apical hook of paramere quite robustly built, its apical outline almost evenly rounded. The species (male) is also characterized by medially an almost straight frontal outline of the head, by the totally margined frontal part of the head (from eye to eye; in a specimen from Uganda the margin is broken medially for a short distance), and by the slender male antenna.

Length of body: 2.90–3.08 mm, breadth: 1.74–1.76 mm. Habitus (Fig. 578).

Head: Ferrugineous to brownish, frontally with vague pale ferrugineous area. Punctuation very fine, sparse, indistinct. At eyes and in



Figs 578–584: *Hydrovatus concii*. – 578, habitus. – 579, head, frontal aspect. – 580, antenna (broken). – 581, elytral apex. – 582, penis, dorsal aspect. – 583, penis, lateral aspect. – 584, paramere. Horizontal scale 0.5 mm, head, antenna and elytral apex; left scale 1 mm, habitus; right scale 0.5 mm, genitalia.

quite distinct frontal depressions with denser punctures. Rather shiny, microsculptured (meshes distinct). Head frontally rounded, medially straightened, narrowly margined (margin sometimes medially broken) (Fig. 579). Antenna pale ferrugineous, rather slender (Fig. 580).

Pronotum: Ferrugineous to brownish. Laterally pronotum becomes gradually paler; at slightly rounded sides pale ferrugineous. Punctuation fine, somewhat sparse. Anteriorly and at base with denser punctures. Rather shiny, microsculptured (meshes distinct).

Elytra: Ferrugineous to brownish, laterally somewhat paler, but without distinct colour pattern. Punctuation rather fine and somewhat sparse, quite evenly distributed. Rows of punctures hardly visible (mixed with adjacent punctures). Rather shiny, microsculptured. Meshes of microsculpture distinct, except laterally; partly almost obliterated. Apex of elytron (Fig. 581). Epipleura pale ferrugineous, punctuation indistinct, finely reticulate.

Ventral side: Ferrugineous to pale ferrugineous. Punctuation fine to very fine, sparse. Abdomen almost impunctate. Submat, microsculptured. Prosternal process laterally very finely margined, medial surface almost flat, with fine punctures and distinctly reticulated.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsus somewhat enlarged.

Male genitalia: Figs 582–584.

Female: Not examined; externally probably as male (no indication of differences between sexes given in original description).

Distribution: Ivory Coast, Uganda (Fig. 585).

Biology: Not documented.

Hydrovatus exochomoides Régimbart

Figs 585–591.

Hydrovatus exochomoides RÉGIMBART, 1895b:104 (orig. descr., faun.); ZIMMERMANN, 1920a:33 (faun., list.); GUIGNOT, 1959a:150, 159 (descr., faun.).

Type locality: Guinea.

Type material studied: Holotype, m: Guinée/Museum Paris coll. Maurice Régimbart 1908/Type/*exochomoides* Rég. (MNHN).

Additional material studied: Sierra Leone: Freetown Mocquers 1889 (1 ex. MNHN). In all, 2 exx.

Diagnosis: A very well characterized and delimited species, characterized by both external and genital features: Body globular, dorsally with a distinct colour pattern; frontal outline of head medially slightly concave; male antenna quite slender, segments 4–10 quite short and stout; curved apex of the penis short (lateral aspect).

Length of body: 2.50–2.56 mm, breadth: 1.70–1.80 mm. Habitus (Fig. 586).

Head: Black to blackish ferrugineous, anteriorly and posteriorly with vague slightly paler areas. Punctuation fine, sparse, slightly irregularly distributed. Punctures denser in shallow frontal depressions and narrowly at eyes. Rather shiny, although finely microsculptured (meshes distinct). Head frontally rounded, medially distinctly straightened and slightly concave. Between eyes narrowly margined (Fig. 587). Antenna pale ferrugineous, rather slender but segments 4–10 quite stout (Fig. 588).

Pronotum: Black, laterally with somewhat vague ferrugineous areas. Punctuation rather fine, fairly dense. Laterally on disc punctures somewhat sparser. Rather shiny, finely microsculptured (meshes partly rather indistinct). Lateral outline of pronotum rounded to almost straight.

Elytra: Black, with ferrugineous, fairly well-delimited areas (Fig. 586). Punctuation fine to rather fine, fairly dense, somewhat irregularly distributed. Rows of punctures absent or very indistinct. Only lateral row clearly discernible, although irregular. Rather shiny and partly indistinctly microsculptured. Epipleura ferrugineous, very

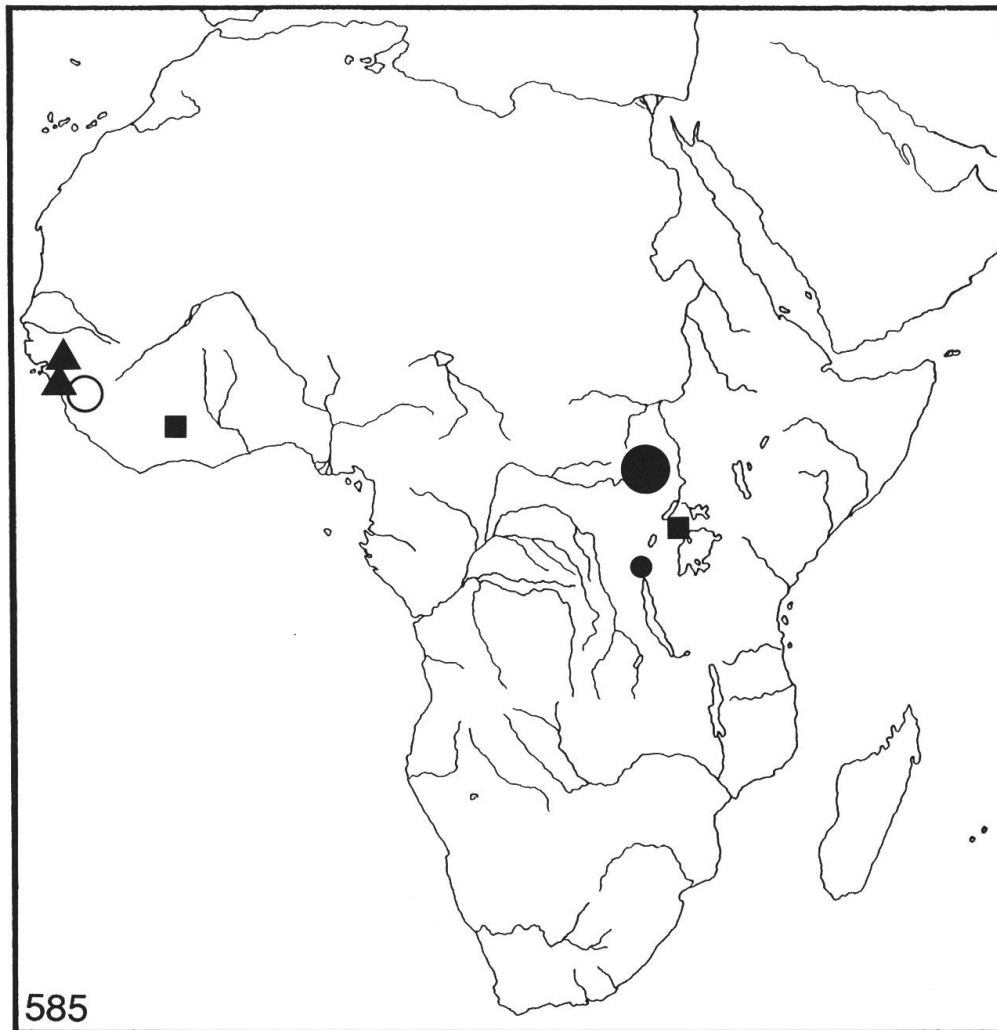


Fig. 585: Distribution of *Hydrovatus parameces* (big dot), *H. bicolor* (small dot), *H. concii* (square), *H. exochomoides* (triangle) and *H. nephodes* (circle).

finely punctate (concentrated to inner half), not microsculptured.

Ventral side: Dark ferrugineous. Punctuation rather fine to fairly coarse, fairly dense. Abdomen, except basally, almost impunctate. Fine punctures visible on abdominal apex. Shiny, almost without microsculpture. Prosternal process laterally rather finely margined, medial surface slightly convex, finely punctate.

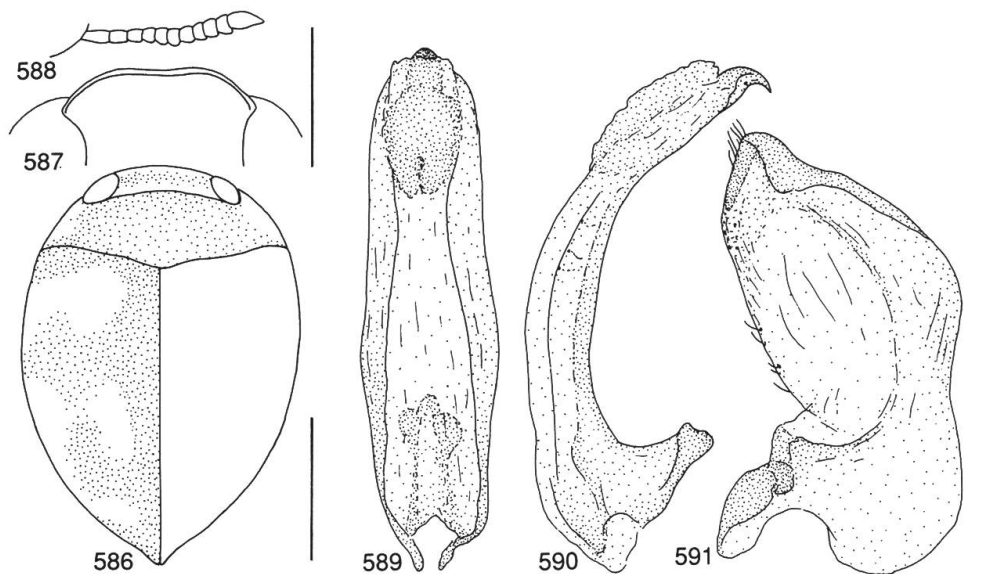
Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsus slightly enlarged.

Male genitalia: Figs 589–591.

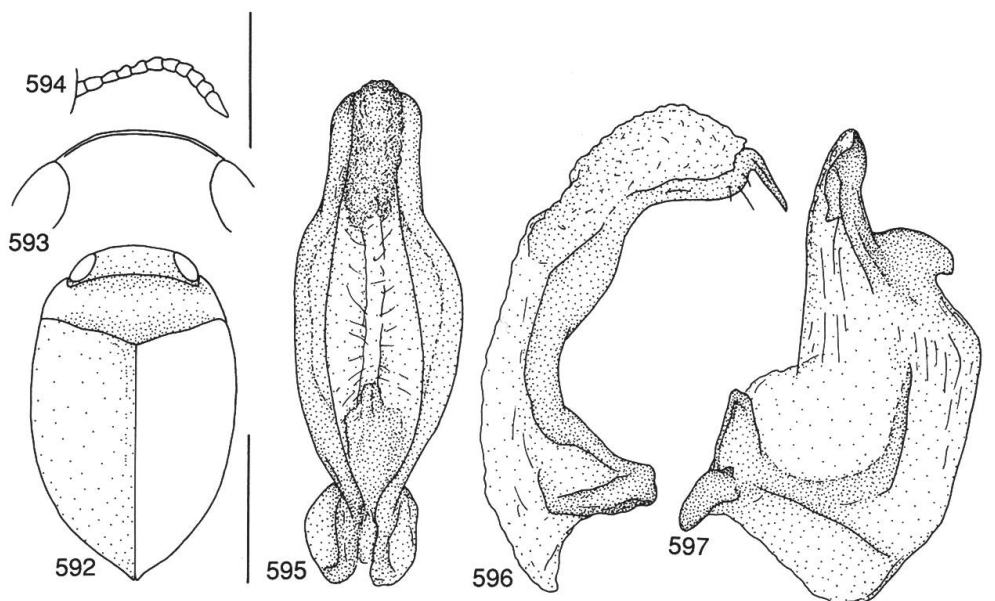
Female: Unknown.

Distribution: Guinea, Sierra Leone (Fig. 585).

Biology: Unknown.



Figs 586–591: *Hydrovatus exochomoides*. – 586, habitus. – 587, head, frontal aspect. – 588, antenna. – 589, penis, dorsal aspect. – 590, penis, lateral aspect. – 591, paramere. Left top scale 0.5 mm, head and antenna; left bottom scale 1 mm, habitus; right scale 0.4 mm, genitalia.



Figs 592–597: *Hydrovatus nephodes*. – 592, habitus. – 593, head, frontal aspect. – 594, antenna. – 595, penis, dorsal aspect. – 596, penis, lateral aspect. – 597, paramere. Left top scale 0.5 mm, head and antenna; left bottom scale 1 mm, habitus; right scale 0.4 mm, genitalia.

Hydrovatus nephodes Guignot

Figs 585, 592–597.

Hydrovatus nephodes GUIGNOT, 1953b:197 (orig. descr., faun.); 1954d:102 (descr., faun.); 1959a:135, 141 (descr., faun.).

Type locality: Mont Gangan, Guinea.

Type material studied: Holotype: Mont Gangan (not studied; according to Guignot 1959a deposited in Mus. Frey). – Paratype studied, m: Exped. Mus. G. Frey Franz, Guinea 1951 W Afr., leg. Bechyne/Paratypus/Kindia 24.5. 51/Paratype/*Hydrovatus tardiosus* Guignot (1 ex. ISN). The specimen is now provided with a red label: *Hydrovatus nephodes* Guign. contr. O. Biström 1989, Paratype. There are many aspects indicating that this specimen does not belong to *H. tardiosus*, but is to be considered a paratype of *H. nephodes*. Most probably it is a question of subsequent mislabelling. The handwritten label pinned with the specimen is not Guignot's; the species *H. tardiosus* was described on the basis of one specimen with different data, and additionally, the specimen was dissected by Guignot (the present specimen was undissected); the label–data fit with that of *H. nephodes*, described on material collected on the same expedition; the present specimen does not fit with some of the diagnostic data in the original description of *H. tardiosus*, and the male genitalia is similar to male genitalia of *H. nephodes*, illustrated in GUIGNOT (1959a). In all, 1 ex.

Diagnosis: A distinct species which is easily identified by examination of the male genitalia: Penis medially strongly expanded (dorsal aspect); ventral outline of penis strongly uneven (lateral aspect); paramere with a distinct preapical process.

Length of body: 2.10 mm, breadth: 1.32 mm. Habitus (Fig. 592).

Head: Dark ferrugineous, frontally with a vague, slightly paler area. Punctuation fine to very fine, sparse, somewhat irregularly distributed. Punctures coarsest in distinct frontal depressions and at eyes. Submat, microsculptured (meshes distinct). Head frontally rounded, narrowly margined but margin almost disappears close to eyes (Fig. 593). Antenna pale ferrugineous, rather slender (Fig. 594).

Pronotum: Dark ferrugineous, laterally pronotum becomes gradually paler; at rounded sides of pronotum pale ferrugineous. Anteriorly and posteriorly with a wide, vague, blackish ferrugineous area. Punctuation fine to very fine, densest basally and anteriorly. Discally punctures sparser and rather indistinct. Rather shiny, microsculptured (meshes quite distinct).

Elytra: Blackish ferrugineous to dark ferrugineous. Laterally paler; at epipleura ferrugineous. Punctuation fine to rather fine, quite sparse. Laterally and apically punctures still distinctly finer and sparser. Rows of punctures indistinct, except lateral row; irregular and formed by fine punctures. Rather shiny, microsculptured (meshes laterally rather indistinct). Epipleura pale ferrugineous, with a few rather fine punctures, almost without microsculpture.

Ventral side: Ferrugineous to pale ferrugineous. Punctuation rather fine to fairly coarse, somewhat sparse. Abdomen, except basally, almost impunctate. Shiny, almost without microsculpture. Abdomen with fine reticulation. Prosternal process laterally finely margined, medial surface slightly convex, finely punctate.

Legs: Pale ferrugineous to ferrugineous. Protarsus slightly enlarged, mesotarsus quite slender, narrower than protarsus.

Male genitalia: Figs 595–597.

Female: Not described.

Distribution: Guinea (Fig. 585).

Biology: Unknown.

Hydrovatus maai n.sp.

Figs 598–604, 612.

Hydrovatus seminarius MOTSCHULSKY, 1859:42 (in part).

Type locality: Bau, Sarawak, Malaysia.

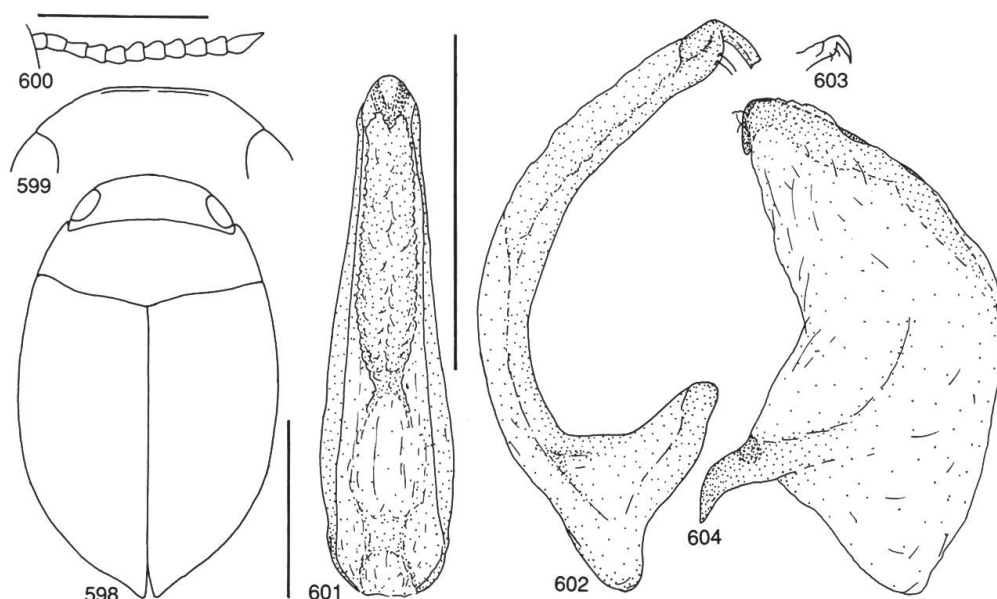
Type material studied: Holotype, m: Borneo: Sarawak Bau, Lake Area 30.VI-II.1958/T.C. Maa Collector Bishop (BBM). – Paratypes: Same as holotype (2 exx. BBM, 1 ex. MZH); Borneo: Sarawak Nauga Pelagus nr Kapit, 180, 585 m, 7–14.VI-II.58/T.C. Maa Collector, Bishop (3 exx. BBM, 2 exx. MZH); Indonesien 1991 (19) leg Jäch/Siberut 15.2. Muarasiberut (1 ex. NMW); S-Nias 1990 (6) Lahusa/Gomo, 0–300 m leg. Jäch 9–11.2. (1 ex. NMW, 1 ex. MZH); *Hydrovatus seminarius* Motsch. I. or. Birma ? (1 ex. ZMM, paralectotype of *H. seminarius* Motschulsky). In all, 13 exx.

Diagnosis: A quite distinct species which is characterized by rather small body size in combination with the peculiar shape of the penis. Undoubtedly close to *H. similis* below. For separation of these two species; see diagnosis of *H. similis*.

Length of body: 2.20–2.40 mm, breadth: 1.32–1.44 mm. Habitus (Fig. 598).

Head: Dark ferrugineous to ferrugineous. Punctuation very fine, partly indistinct, sparse. In shallow frontal depressions and at eyes with slightly denser punctuation. Slightly mat, rather finely microsculptured (meshes equally strongly developed, clearly visible). Head frontally rounded, medially somewhat straightened and very finely margined (Fig. 599). Antenna pale ferrugineous, rather slender, not distinctly modified (Fig. 600).

Pronotum: Dark ferrugineous to ferrugineous, mediobasally with vague darkened area. Punctuation fine to very fine, sparse. At pronotal margins with somewhat denser punctures. Rather shiny, finely microsculptured (meshes in general clearly discernible). Sides of pronotum slightly rounded.



Figs 598–604: *Hydrovatus maai*. – 598, habitus. – 599, head, frontal aspect. – 600, antenna. – 601, penis, dorsal aspect. – 602, penis, lateral aspect. – 603, supplementary illustration of penis apex. – 604, paramere. Horisotal scale 0.5 mm, head and antenna; left scale 1 mm, habitus; right scale 0.4 mm, genitalia (excl. Fig. 603).

Elytra: Dark ferrugineous, laterally slightly paler, but without distinct colour pattern. Main colour of elytra darker than main colour of pronotum. Punctuation fine to very fine, rather sparse. Laterally and apically punctures still finer and sparser. Rows of punctures indistinct, often not discernible. Lateral row also irregular and indistinct but still discernible. Rather shiny, although very finely microsculptured (meshes almost obliterated). Epipleura pale ferrugineous to ferrugineous, at inner margin finely punctate.

Ventral side: Ferrugineous to dark ferrugineous. Punctuation fine to rather fine, somewhat sparse. Abdomen, except basally, almost impunctate. Rather shiny, almost without microsculpture. Abdomen with fine reticulation. Prosternal process quite distinctly margined, medial surface slightly convex, with a few punctures.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsus slightly enlarged.

Male genitalia: Figs 601–604.

Female: Externally approximately as male.

Distribution: Malaysia: Borneo, Indonesia: Siberut, Nias (Fig. 612). One paratype with exact location unknown (Ind. or., Burma?).

Biology: Unknown.

Hydrovatus similis n.sp.

Figs 605–612.

Type locality: Culion Isl., Philippines.

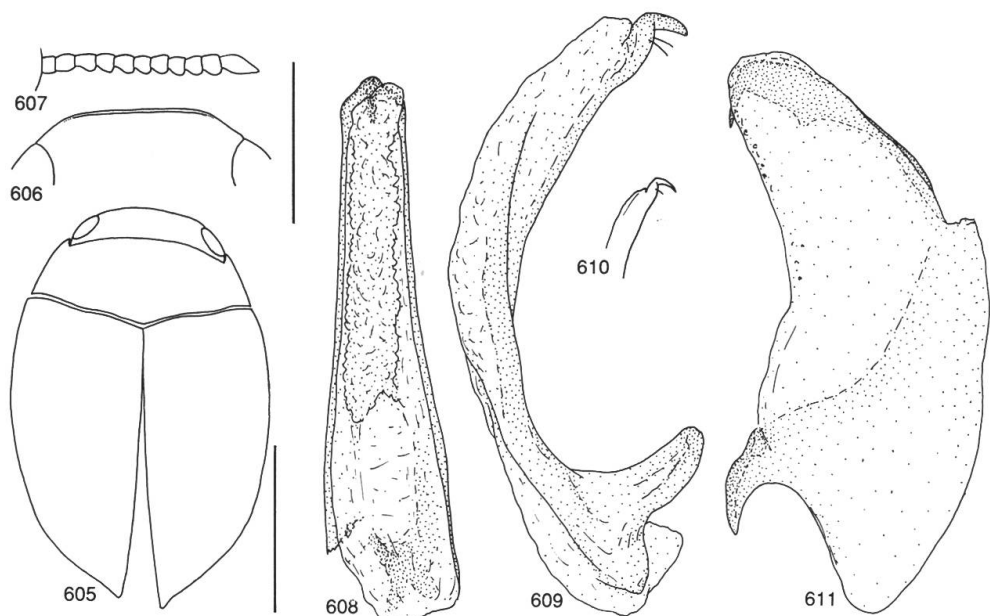
Type material: Holotype, m: Philippines Culion Is. 6 km W Culion 10.VI.1962/H. Hoffmann, Light trap, Bishop (BBM). – Paratypes: Manila Luzon, Philippines Isls Sept. 12.1945 H.E. Milliron/H.E. Milliron Collection (1 ex. BBM, 1 ex. MZH). In all, 3 exx.

Diagnosis: Very close to *H. maai* n.sp. Without comparison of specimens belonging to the two involved taxa, the two species are difficult to distinguish. The head of *H. similis* exhibits fine but clearly discernible punctures (in *H. maai* corresponding punctures very indistinct). Also the elytral punctures are more pronounced than in *H. maai*. There are also small differences in the shape of the penis apex and parameral hook.

Description: only differences from description of *H. maai* are recognized.

Length of body: 2.14–2.18 mm, breadth: 1.38–1.40 mm. Habitus (Fig. 605).

Head: Frontally as in Fig. 606. Frontal margin more strongly developed and medially not broken. Head with more distinct punctures. Antenna (Fig. 607).



Figs 605–611: *Hydrovatus similis*. – 605, habitus. – 606, head, frontal aspect. – 607, antenna. – 608, penis, dorsal aspect. – 609, penis, lateral aspect. – 610, supplementary illustration of penis apex. – 611, paramere. Left top scale 0.5 mm, head and antenna; left bottom scale 1 mm, habitus; right scale 0.4 mm, genitalia (excl. Fig. 610).

Elytra: General punctation slightly coarser.

Male genitalia: Figs 608–611.

Distribution: Philippines (Fig. 612).

Biology: Once sampled at light collection.

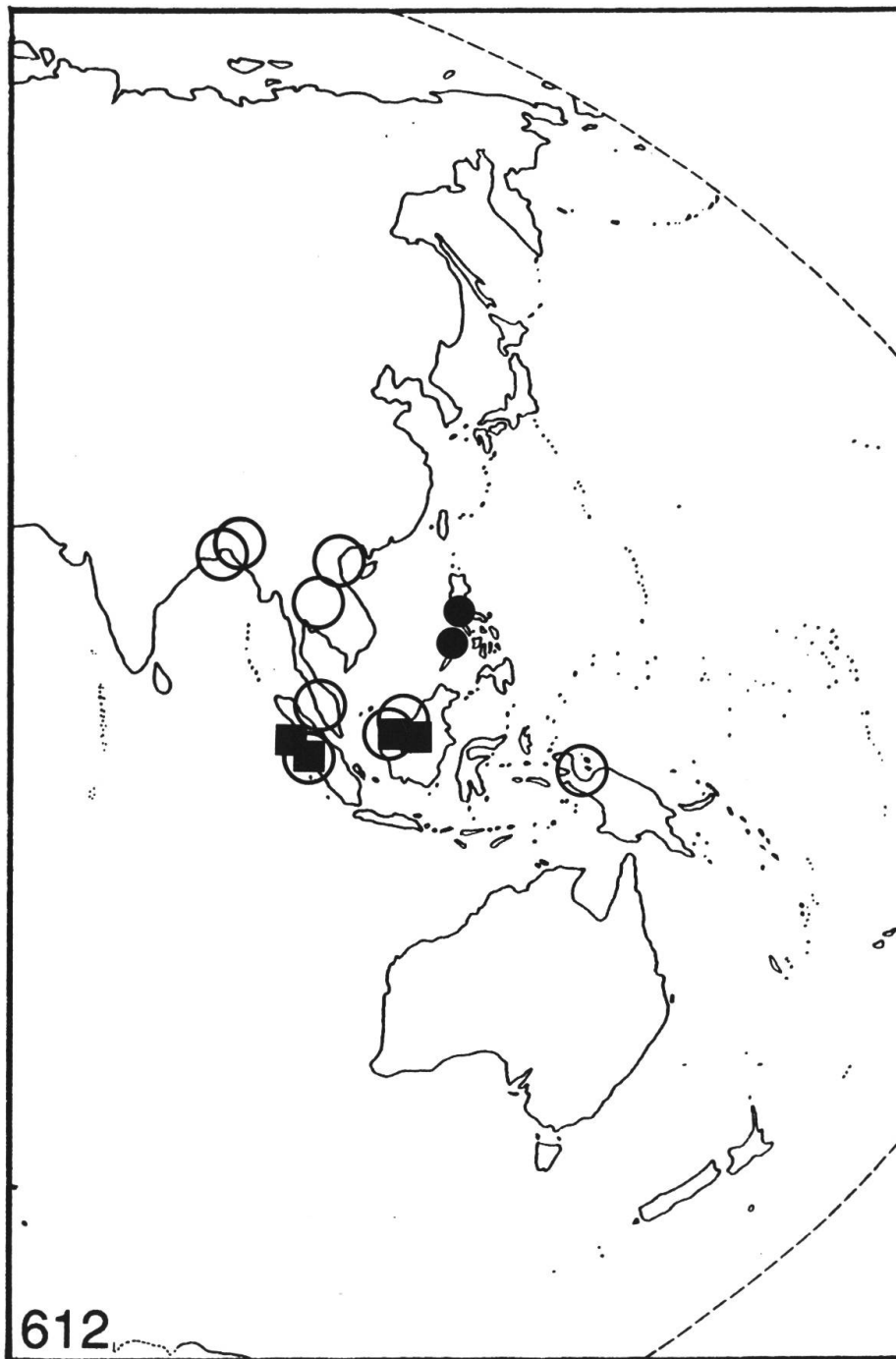


Fig. 612: Distribution of *Hydrovatus maai* (square), *H. similis* (dot) and *H. fractus* (circle).

Hydrovatus fractus Sharp

Figs 612–618.

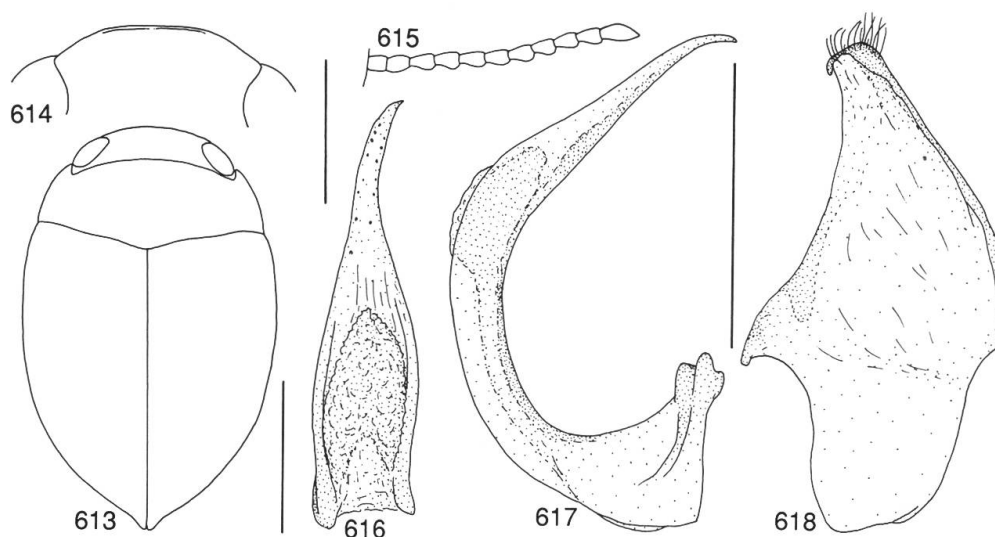
Hydrovatus fractus SHARP, 1882a:330 (orig. descr., faun.); BRANDEN, 1885:26 (faun.); RÉGIMBART 1899b:236, 237 (descr., disc., faun.); SHARP, 1890:343 (disc.); ZIMMERMANN, 1919:127 (descr., disc., faun.); 1920a:33 (faun.); 1922:148 (faun.); VAZIRANI, 1967:102 (disc., faun.); 1970a:39 (disc.); 1970b:103 (disc.); ROCCHI, 1976:179 (faun.); VAZIRANI, 1977a:27 (faun.); ROCCHI, 1986a:33 (faun.).

Type locality: Thailand.

Type material studied: Two specimens labelled as type exist, although according to the original description, the type material consists of a single specimen. At present I prefer to leave this problem unsolved – I am not able to decide which one is the correct type specimen: *Hydrovatus fractus* Type D.S. Siam/Type/Type 15 Siam/Sharp Coll. 1905–313/*Hydrovatus fractus* n.sp. (1 ex. f BMNH); Type/Siam/Sharp Coll. 1905–313/Type 15 *Hydrovatus fractus* D.S. (1 ex. m BMNH).

Additional material studied: India: Assam Gauhati 200 m, 5.XI.1978 (1 ex. coll. Brancucci); Kaziranga Bogori V.1961 Mikir Hills (3 exx. coll. Brancucci). – Bangladesh: Dinajpur X.1969/*H. fractus* Sharp det. Rocchi 1977 (1 ex. coll. Rocchi). – Thailand: NO Thail. Khon Kaen, lux 20.V.1980 (1 ex. MNB). – Malaysia: Penang 15–17.I.1981 (1 ex. UZI, 1 ex. MZH); Borneo; Sarawak Nanga Pelagus nr Kapit 585 m, 7–14.VIII. 1958 (1 ex. MZH); Sarawak Bau distr. Bidi 90–240 m, 31.VIII.1958/light trap (1 ex. BB M). – Vietnam: Phu-Lang-Thong/Ind. Chine (1 ex. coll. Brancucci); Tonkin Central (2 exx. coll. Brancucci). – Indonesia: Siberut Bakeuluk-Madobak 18.II.1991 (1 ex. NMW). In all, 16 exx.

Diagnosis: A distinct species which is immediately recognized by study of the male genitalia: Penis strongly curved; penis narrows



Figs 613–618: *Hydrovatus fractus*. – 613, habitus. – 614, head, frontal aspect. – 615, antenna. – 616, penis, dorsal aspect. – 617, penis, lateral aspect. – 618, paramere. Left top scale 0.5 mm, head and antenna; left bottom scale 1 mm, habitus; right scale 0.4 mm, genitalia.

gradually towards apex; penis apex slightly curved to the right, asymmetric (dorsal aspect); parameral hook quite weakly developed, provided with distinct hairs.

Length of body: 2.30–2.54 mm, breadth: 1.38–1.62 mm. Habitus (Fig. 613).

Head: Ferrugineous to pale ferrugineous. Punctuation very fine, indistinct, sparse, partly absent. In very shallow frontal depressions with slightly denser punctures. Submat, microsculptured (meshes distinct). Head frontally rounded, medially almost straight, very indistinctly margined (Fig. 614). Antenna pale ferrugineous, rather slender, not distinctly modified (Fig. 615).

Pronotum: Ferrugineous, laterally with somewhat vague pale ferrugineous areas. Mediobasally with vague narrow darkened area. Punctuation rather fine, somewhat sparse to sparse. Laterally on disc with still sparser punctures. Submat, microsculptured (meshes distinct). Sides of pronotum rounded.

Elytra: Dark ferrugineous to ferrugineous, without distinct colour pattern. Punctuation rather fine, fairly dense, quite evenly distributed. Apically and narrowly at epipleura with finer punctures. Distinct rows of punctures absent. Rather shiny and finely microsculptured (meshes distinct). Epipleura pale ferrugineous to ferrugineous, with quite coarse but somewhat vague punctures, microsculptured.

Ventral side: Ferrugineous to pale ferrugineous. Punctuation rather fine to fine, somewhat indistinct. Abdomen, except basally, almost impunctate. Slightly mat, distinctly reticulated. Prosternal process laterally broadly but quite finely margined, medial surface almost flat, impunctate but reticulated.

Legs: Pale ferrugineous to ferrugineous. Pro- and mesotarsus fairly broad. Protarsal claws somewhat prolonged, symmetric.

Male genitalia: Figs 616–618.

Female: Externally approximately as male.

Distribution: India, Bangla Desh, Thailand, Vietnam, Malaysia: Borneo, Indonesia: Siberut (Fig. 612). Unverified literature record is Burma (ROCCHI, 1986).

Biology: Sampled at light collection.