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outline of head somewhat uneven, medially rather indistinctly margined (Fig. 1313). Antenna pale brown, rather slender and not distinctly modified (Fig. 1314).

Pronotum: Brown to pale brown. Laterally pronotum becomes gradually paler; at somewhat rounded lateral outline, pronotum pale brown. Punctuation rather fine to fine, fairly dense. Laterally on disc with sparser punctures. Rather shiny, microsculptured (meshes clearly visible).

Elytra: Brown, laterally with vague pale brown areas, but without distinct colour pattern. Punctuation rather fine, fairly dense, almost evenly distributed. Rows of punctures absent (mixed with ordinary punctures). Rather shiny, finely microsculptured (meshes generally discernible although rather weakly developed). Epipleura pale brown, fairly distinctly punctate, finely microsculptured.

Ventral side: Brown to pale brown. Punctuation rather fine to fairly coarse, fairly dense. Abdomen with sparse and indistinct punctuation. Submat, microsculptured (meshes distinct). Stridulatory apparatus absent, as always, in females. Prosternal process laterally rather finely margined, medial surface slightly impressed.

Legs: Pale brown. Pro- and mesotarsus slightly enlarged.

Male: Unknown.

Distribution: Mainland of India, possibly Burma; exact location unknown. Not mapped.

Biology: Unknown.

6.5.15. Species group 15 (sp.gr. *clypealis*)

Hydrovatus clypealis Sharp

Figs 19, 1299, 1315–1323.

Hydrovatus clypealis SHARP, 1876:61 (orig. descr., faun.); LEPRIEUR, 1879:LX-XXIII (disc.); RÉGIMBART, 1880:213 (disc.); SHARP, 1882a:321 (descr., faun.); 1882b:15 (disc.); BRANDEN, 1885:25 (faun.); GANGLBAUER, 1892:447 (descr., faun.); RÉGIMBART, 1895b:107 (descr., disc., faun.); JAKOBSON, 1905:418 (faun.); REITTER, 1908:207 (descr., faun.); DORSSELAER, 1919:79 (descr.); ZIMMERMANN, 1919:126 (list.); 1920a:32 (cat., faun.); WINKLER, 1924:218 (faun.); BEDEL, 1925:334, 335 (descr., faun., biol.); BARRINGTON, 1927:175, 179 (faun., biol.; given as *Oxynoptilus clypealis*); BERTRAND, 1928:42, 43 (descr., faun.); PORTEVIN, 1929:180 (descr., faun.; given as *Oxynoptilus clypealis*); ZIMMERMANN, 1930:27, 29 (descr., faun.); GUIGNOT, 1933:280 (descr., faun., biol.); HOULBERT, 1934:45, 138 (descr., faun., biol.); F. BALFOUR-BROWNE, 1936:28 (faun.); F. BURMEISTER, 1939:217 (faun., biol.); LINDBERG, 1939:29 (faun., biol.); F. BALFOUR-BROWNE, 1940a:187 (descr., disc., faun., biol.); 1940b:198 (faun.); HORION, 1941:369 (faun.); GSCHWENDTNER, 1943:422 (descr.); GUIGNOT, 1947b:58, 59,

266 (descr. incl. larva, faun., biol.); BERTRAND, 1948:10 (disc. juvenile); F. BALFOUR-BROWNE, 1953:13 (descr., biol.); DORSSELAER, 1957:11 (faun.); KOCHER, 1958:12 (faun.); GUIGNOT, 1959a:124, 125, 130 (descr., juvenile disc., faun.); YOUNG, 1963:184 (disc.); FRANCISCOLO, 1964:177, 178, 181 (descr., disc., faun.); GUÉORGUIEV, 1971:9 (faun.); SCHAEFLEIN, 1971:25 (faun.); ZAITZEV, 1972:115 (larva descr.); GUÉORGUIEV, 1973:105 (faun.); GALEWSKI, 1974:582 (larva disc., faun.); LARSON & PRITCHARD, 1974:57 (stridulation disc.); ALFIERI, 1976:31 (faun., biol.); POPE, 1977:10 (faun.); FRANCISCOLO, 1979:273, 276, 277, 686 (imago & juv. descr., faun., biol.); EL ALAOUTI 1983:133 (faun., biol.); SCHAEFLEIN, 1983:5 (disc., faun.); ANGELINI, 1984:55 (faun.); RÉGIL CUETO, 1985:14 (faun.); RÉGIL CUETO & VEIGA FERNANDEZ, 1985:13, 19 (descr., faun.); ABDUL-KARIM & ALI, 1986:281, 282 (disc.); ROCCHI, 1986b:92 (faun.); PONS, 1987:127 (faun.); BURMISTER & al., 1987:169, 184 (faun.); CARR & PHILIP, 1988:214 (faun., biol.; given as *H. clypealis* Motschulsky); FERY & HENDRICH, 1988:150 (faun., biol.); FRIDAY, 1988:57, 150 (descr., biol.); GONZALES & NOVOA, 1988:61 (faun.); LEBLANC, 1988:29 (list.); ALI & ABDUL-KARIM, 1990:10 (descr.); RICO & al., 1990:40, 178 (faun.).

Type locality: England.

Type material studied: Lectotype, m, by present designation: *Hydrovatus clypealis* m type D.S./Type/England D. Sharp/Sharp Coll. 1905–313/syntype (BMNH). – Paralectotypes: Same data as lectotype, except f (1 ex. BMNH); Landes Sharp t./60346/type/*clypealis* Sharp Gallia: Landes (1 ex. MNB).

Additional material studied: United Kingdom: *clypealis* Shp Caneole/*clypealis* Shp Anglia (1 ex. MNB); *H. clypealis* Ind. auth. D.S. Anglia (2 exx. MNB). – France: St. Barbant Ht Vienne (4 exx. MNB, 2 exx. MZH); Salies VIII.1912/*H. clypealis* Shp det. Gschwendtner (1 ex. OLL); Boulogne s. Mer (2 exx. MZH); St Gilles s. Vie (3 exx. MZH); Fountain bleu (1 ex. MCN); Gal. mer./*H. clypealis* Shp det. Fichtner 1973 (1 ex. MNB); 92/Ga, *clypealis* Shp (1 ex. GNM); Gallia (1 ex. MNB, 2 exx. MZH). – Portugal: Alentejo Vila Nova di Milafontes 2–5.IX.1987/*H. clypealis* Shp det. Hendrich 1988 (1 ex. coll. Rocchi). – Algeria: Alger III. 1850 (1 ex. MNHN, 1 ex. MZH). – Morocco: Tetuan (2 exx. BMNH, 1 ex. MZH); Esmir (1 ex. BMNH); Atlas mer. Ras-el-ma 24–29.VI.1926 (2 exx. MZH). – Exact location unknown: Pyren. (1 ex. MNB); (unreadable text)(1 ex. MNB). In all, 35 exx.

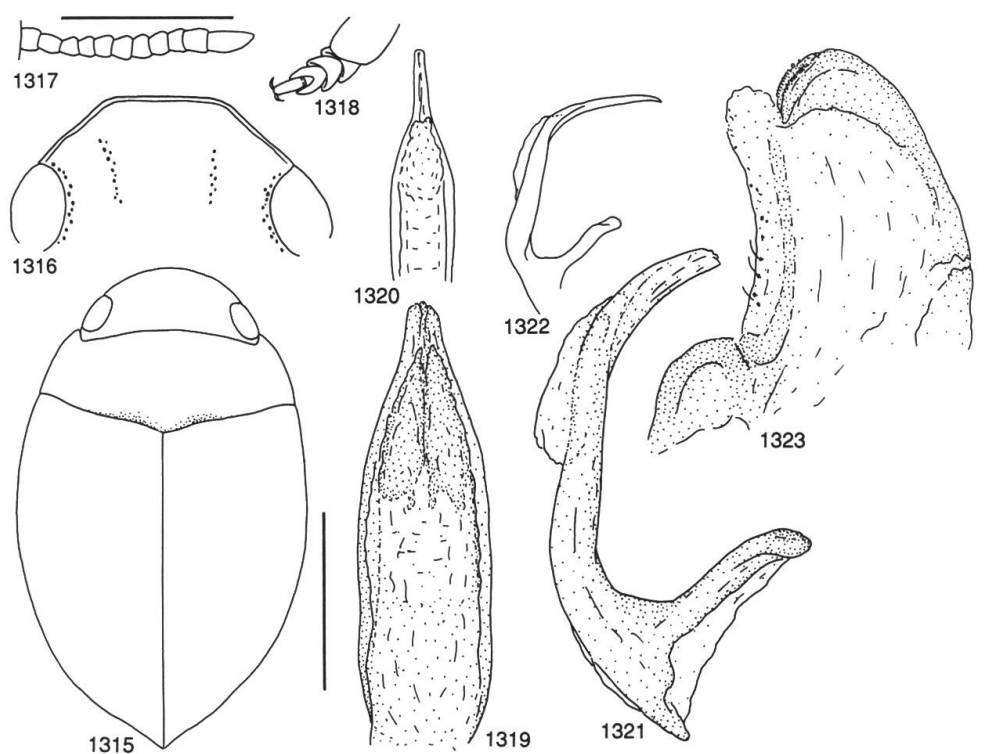
Diagnosis: *H. clypealis* is a distinct species, deviating from the other *Hydrovatus* species by exhibiting a unique combination of features: The male head is frontally extended; the frontal outline of the male head is angled; the male ventrally has stridulation files; the apex of the penis is rather narrow and long; the apex of the paramere is without a distinct sclerotized hook. *H. clypealis* can be regarded as an intermediate form between species group 3 and the species groups provided with stridulatory devices.

Length of body: 2.30–2.64 mm, breadth: 1.46–1.66 mm. Habitus (Fig. 1315).

Head: Pale ferruginous to ferruginous. Almost impunctate. Very fine, sparse punctures may be discerned. In shallow frontal depressi-

ons and at eyes with a few slightly coarser punctures. Slightly mat, microsculptured (meshes distinct). Head frontally somewhat extended. Frontal outline angled and finely margined (Fig. 1316). Antenna pale ferrugineous, rather short but not distinctly modified (Fig. 1317).

Pronotum: Ferrugineous, laterally pronotum becomes gradually paler; at rounded lateral outlines pronotum pale ferrugineous. Punctuation fine to very fine, somewhat irregularly distributed. Finest and sparsest discally. Slightly mat, distinctly microsculptured (meshes distinct).



Figs 1315–1323: *Hydrovatus clypealis*. – 1315, habitus. – 1316, male head, frontal aspect. – 1317, male antenna. – 1318, male protarsus. – 1319, penis, dorsal aspect (tip broken). – 1320, penis apex, supplementary illustration. – 1321, penis, lateral aspect. – 1322, supplementary illustration of lateral aspect of penis. – 1323, apical part of paramere (to left at apex slightly broken and expanded). Horizontal scale 0.5 mm, head, antenna and tarsus; left scale 1 mm, habitus; right scale 0.5 mm, genitalia (excl. Figs 1320, 1322).

Elytra: Ferrugineous to dark ferrugineous, laterally slightly paler; pale ferrugineous. Punctuation quite distinct but somewhat sparse. Slightly irregularly distributed. Lateral row of punctures quite distinct; other rows hardly visible. Submat, microsculptured (meshes quite distinct). Epipleura pale ferrugineous, almost impunctate, very finely microsculptured.

Ventral side: Pale ferruginous to ferruginous. Metathorax and metacoxal plates with quite coarse but somewhat sparse punctation. Abdomen almost impunctate. Rather shiny, with scattered, fine reticulation. Abdomen slightly mat, distinctly microsculptured. Stridulatory apparatus with about 15 rather short and fine striae. Prosternal process laterally rather indistinctly margined, medial surface with shallow excavation.

Legs: Pale ferruginous. Pro- and mesotarsus distinctly enlarged (Fig. 1318).

Male genitalia: Figs 1319–1323. Lectotype with extreme apex of penis broken. Complementary illustration drawn from specimen sampled in Algeria.

Female: Frontal outline of head almost evenly rounded. Body dorsally more mat; reticulation stronger. Pro- and mesotarsus quite slender. Lacks stridulatory apparatus.

Juveniles: Larva described in BERTRAND (1928), GUIGNOT (1933), ZAITZEV (1972) and FRANCISCOLO (1979). See also Fig. 19 in this work.

Distribution: UK, France, Portugal, Algeria, Morocco (Fig. 1299). Also reported from Spain and the Netherlands (F. BALFOUR-BROWNE, 1940a), Switzerland and Italy (F. BURMEISTER, 1939), Yugoslavia (GUÉORGUIEV, 1971), Tunisia (GUIGNOT, 1947b), Egypt (ALFIERI, 1976). Records from Belgium and Germany have been declared incorrect (DORSSELAER, 1957, SCHAEFLEIN, 1971).

Biology: Many scattered notes exist, giving limited information (see under list of references above). F. BALFOUR-BROWNE (1940a) regarded *H. clypealis* as a pond species, but it occurs also in channels and lake-edges where pond conditions prevail. Furthermore he recorded it occasionally in peat bogs. Full-grown larvae were sampled in July.