

***Hydraena* (s.str.) *chersonesica* sp.n. (Coleoptera: Hydraenidae), a new member of the *H. testacea* species group from Crimea (Ukraine)**

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Abstract

Hydraena (s.str.) *chersonesica* sp.n. (Coleoptera: Hydraenidae) is described from Crimea, Ukraine. It is the ninth species of the *H. testacea* species group.

Key words: Insecta, Coleoptera, Hydraenidae, new species, *Hydraena testacea* species group, Ukraine, Crimea.

Zusammenfassung

Hydraena (s.str.) *chersonesica* sp.n. (Coleoptera: Hydraenidae) wird beschrieben. Es ist die neunte Art der *H. testacea* Artengruppe.

Introduction

The members of the *Hydraena* (s.str.) *testacea* species group (“*Phothydraena* lineage”) deviate from the remaining species of the genus by a number of synapomorphies, especially the presence of a second pair of metaventral plaques. On the other hand, their genital morphology is characterized by a very plesiomorphic appearance (parameres symmetrical, gonocoxite divided). Claude BERTHÉLEMY (1965, 1986) was the first author who recognized the unusual arrangement of characters of this lineage, which was at that time treated as a subgenus of *Hydraena* KUGELANN. BERTHÉLEMY (1965, 1986) provided a key and excellent illustrations of the male genitalia (incl. detailed accounts of the parameral chaetotaxy) of five species (*Hydraena atrata* DESBROCHERS DES LOGES, *H. paganettii* GANGLBAUER, *H. pallidula* SAINTE-CLAIRE DEVILLE, *H. serricollis* WOLLASTON, and *H. testacea* CURTIS). Since then, three additional species have been described: *H. hernandoi* FRESNEDA & LAGAR (FRESNEDA & LAGAR 1990), *H. putearius* JÄCH & DÍAZ (JÄCH & DÍAZ 2000), and *H. isabelae* CASTRO & HERRERA (CASTRO & HERRERA 2001). Quite recently, illustrations of the male and female genitalia and a photograph of the habitus of *H. paganettii* were published by JÄCH & DÍAZ (2006).

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In the present paper, we describe the ninth member of this species group. It was collected in the Autonomous Republic of Crimea, southern Ukraine.

Abbreviations:

CDL	Coll. J.A. Díaz, Lugo, Spain
CPP	Coll. M. Przewoźny, Poznań, Poland
CRW	Coll. R. Ruta, Wrocław, Poland
CZW	Coll. K. Żuk, Wrocław, Poland
NMW	Naturhistorisches Museum Wien, Austria

Hydraena (s.str.) chersonesica sp.n.

Type locality (see Fig. 2): River Kokkozka, ca. 4 km SSE Sokolinoo [village], near Bolshoy kan'on Kryma [Crimean Grand Canyon], 430 m, 44°31'07"N, 33°59'07"E, ca. 15 km [bee-line] NW Jalta, southern Autonomous Republic of Crimea, southern Ukraine.

Type material: **Holotype** ♂ (NMW): "Crimea: Sokolinoo 4 km SE, Bolshoy kan'on Kryma env. (550-600), bank of Kokkozka river, 21-23 V 2005, leg. K. Żuk [Katarzyna Żuk]". The holotype lacks the right middle leg. **Paratypes** (NMW, CDL, CPP, CRW, CZW): 2 ♂♂, 3 ♀♀, same label data as holotype (one of the males lacks the abdomen); 1 ♂, 1 ♀: "Crimea: Sokolinoo 4 km SE, Bolshoy kan'on Kryma env. (550-600), bank of Kokkozka river. 21-23 V 2005, leg. RR [Rafał Ruta]".

Description: 1.65 - 1.85 mm long. Habitus as in Fig. 1. Testaceous brown, head usually black, pronotum dark brown or black, margins more or less extensively testaceous; apical segment of maxillary palpi not distinctly darkened preapically.

Anterior margin of labrum deeply excised; margins very slightly upturned. Clypeus densely micropunctate, mat, or middle moderately densely macropunctate with glabrous interstices. Fronto-clypeal suture arcuate, moderately or distinctly impressed. Frons moderately or rather densely punctate medially (interstices glabrous), rugosely punctate and microreticulate laterally; interocular grooves shallow. Eyes small, with ca. 15–20 facets visible in dorsal view. Maxillary palpi very long, distinctly longer than maximum width of pronotum; terminal segment about twice as long as preterminal.

Pronotum subhexagonal, cordiform, distinctly attenuate anteriorly and arcuately constricted posteriorly; wider than long; anterior margin shallowly emarginate; anterior angles obtuse; lateral margin crenulate; disc transversely convex, anterior and posterior admedian foveae well impressed, elevated parts moderately densely or sparsely punctate, interstices glabrous or partly microreticulate; lateral furrow deeply impressed before and after middle; lateral portion of pronotum deflexed, rather coarsely punctate, partly or entirely microreticulate, mat.

Elytra elongate, subparallel; with seven rows of punctures between suture and shoulder (12 rows per elytron); punctures large, deeply impressed and arranged in more or less regular, not impressed lines; apical punctures of lateral row not conspicuously enlarged; intervals slightly convex, glabrous; lateral gutter of elytra moderately wide, reaching elytral apex, inconspicuously serrate basally and apically; elytral apices conjointly or separately rounded.



Fig. 1: Habitus of *Hydraena* (s.str.) *chersonesica*, holotype. Left antenna and right middle leg added digitally.

Mentum and submentum coarsely micropunctate. Posterior genal ridge strongly crested. Prosternum short and transversely impressed in front of procoxae, impression laterally demarcated by short longitudinal ridge; with distinct median keel. Hypomer al antennal pocket partly (basally) closed ventrally by mesial (pubescent) hypomeron. Mesoventrite with five longitudinal ridges; mesoventral process not steeply sloping toward mesoven-trite (mesoventral angle obtuse). Metaventr ite with very faintly developed short longi-tudinal ridges posterior of mesocoxae; metaventral disc flat; with two pairs of glabrous plaques, admedian ones well developed, long, parallel, anteriorly connected to form



Fig. 2: Type locality of *Hydraena* (s.str.) *chersonesica*, with Katarzyna Żuk, while collecting the type specimens.

inverse “Y”; sublateral pair very short, inconspicuous. Intercoxal segment (= abdominal sternite II) elongate, slender, distinctly longer than wide. First ventrite impressed medially (posterior of intercoxal segment).

Aedeagus (Fig. 3a, b): Main piece very long and slender; more or less straight, basally curved (lateral view); apical part tapering, not very strongly sclerotized; dorsal side with small subapical blunt projection; with row of three subapical setae on right side, two of which are moderately long, third one tiny and situated distal of the two longer ones; ven-

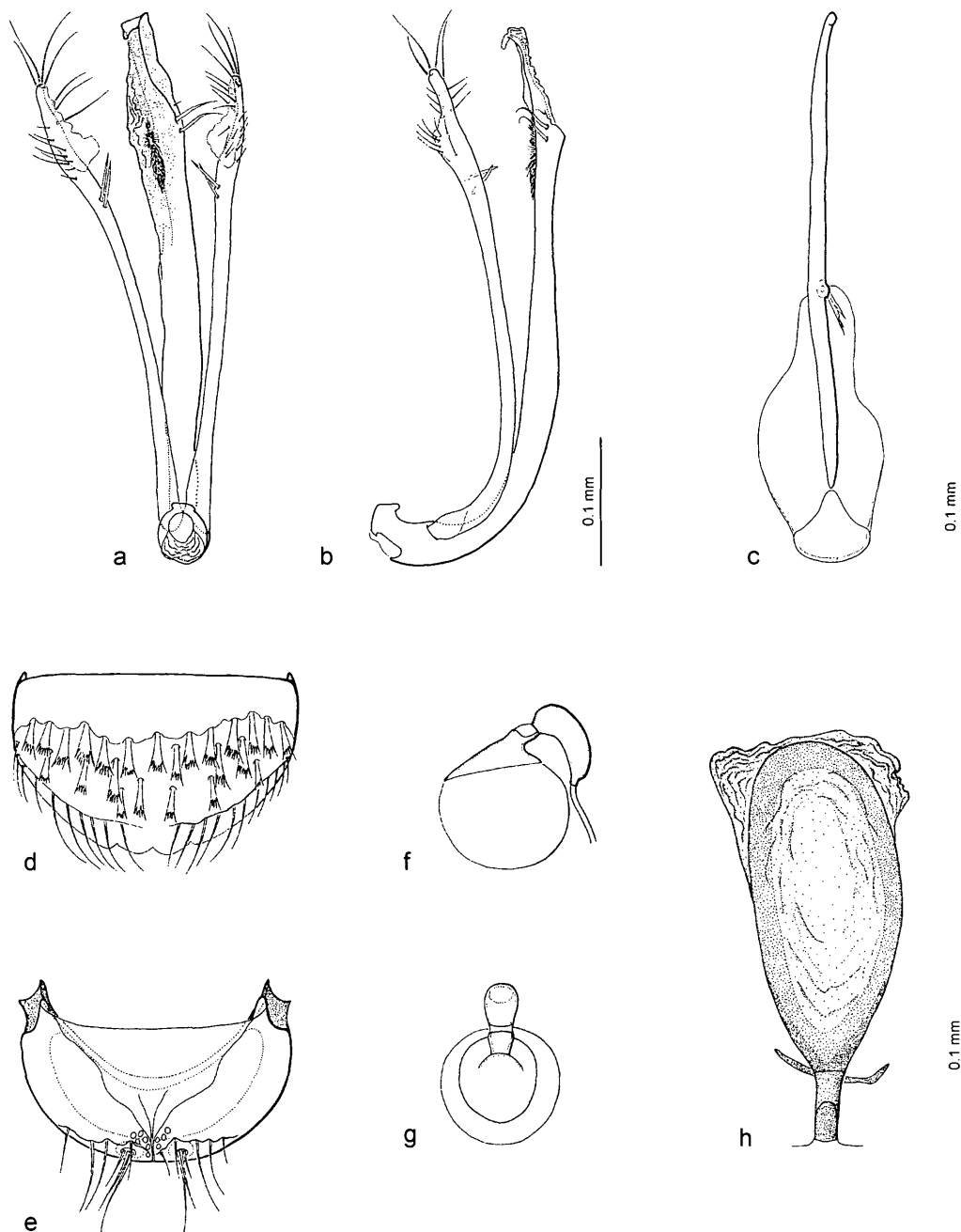


Fig. 3: *Hydraena* (s.str.) *chersonesica*: a–b) aedeagus in ventral and lateral view; c) male terminal sternite and spiculum; d) female tergite X; e) gonocoxite; f–g) spermatheca; h) accessory vaginal sclerite ("pseudospermatheca").

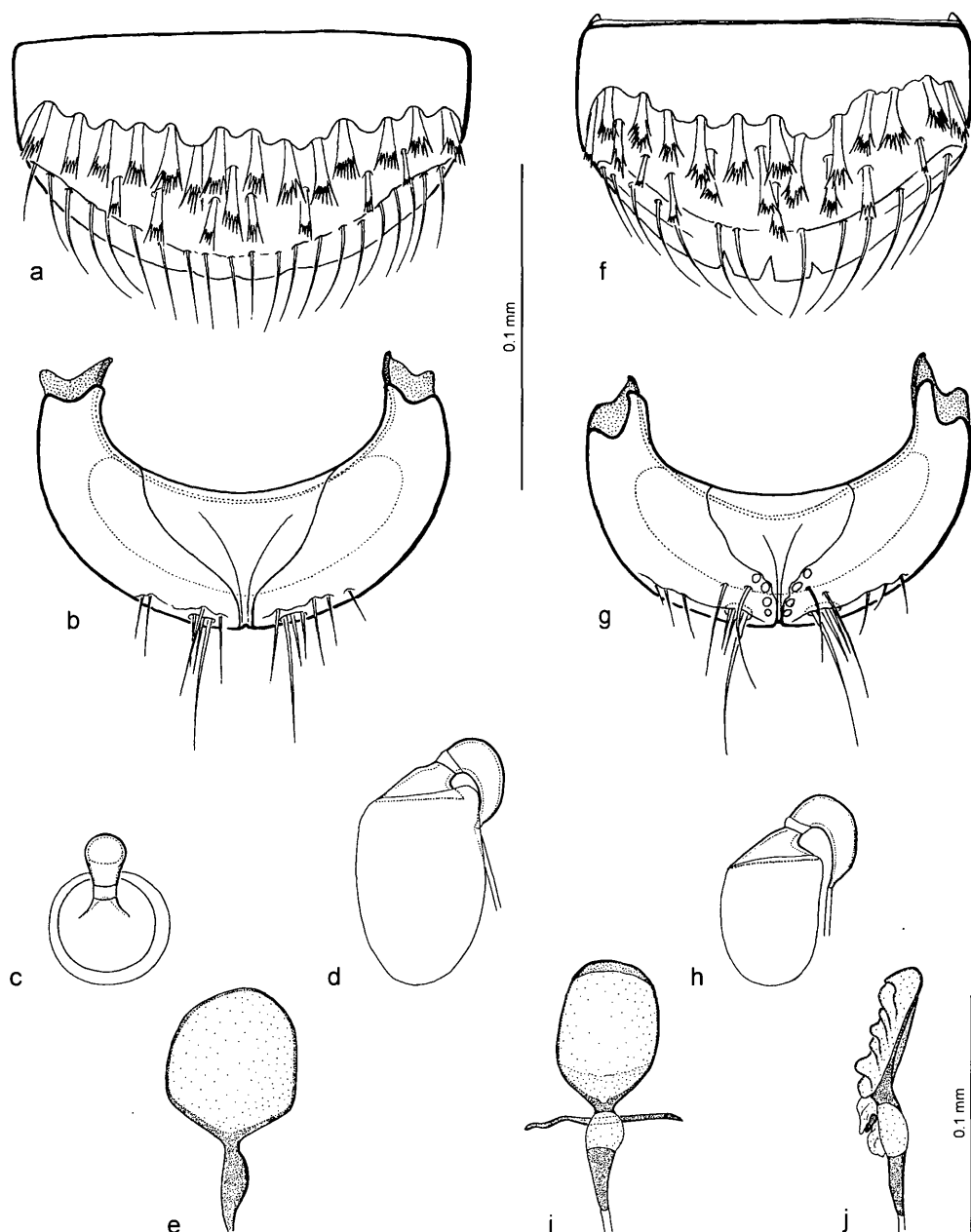


Fig. 4: *Hydraena (s.str.) paganettii*: a–e: specimen from Lebanon, f–j: specimen from European Turkey (Istanbul); a, f) female tergite X; b, g) gonocoxite; c–d, h) spermatheca; e, i–j) accessory vaginal sclerite ("pseudospermatheca").

tral side with elongate subapical brush of very dense short setae; phallobase small, symmetrical. A distinctly defined distal lobe is absent. Parameres long and slender, symmetrical, inserted ventro-laterally (immediately behind phallobase), almost reaching apex of main piece; subapically with inconspicuous hyaline part and with about 15 thin hair-like setae of variable length, and with a pair of ventro-mesal spine-like bristles further proximal.

Gonocoxite (Fig. 3e): Transverse, subsemicircular; outer plate divided medially; inner plate short, with a large median cavea.

Spermatheca (Fig. 3f, g): Very similar to that of *Hydraena paganettii* (Fig. 4c-d, h).

Pseudospermatheca (Fig. 3h): Very large, more elongate than in *Hydraena paganettii* (Fig. 4e, i-j).

Secondary sexual characters: There is no apparent secondary sexual dimorphism, except for the terminal abdominal sclerites.

Male terminal sternite and spiculum gastrale as in Fig. 3c.

Female tergite X (Fig. 3d): Agrees fairly well with that of *Hydraena paganettii* (Fig. 3a, b, f, g); subapical fringe of trichoid setae interrupted medially; three notches of hyaline margin distinctly incised.

Differential diagnosis: At least genitally, *Hydraena chersonesica* is quite similar to *H. paganettii* (JÄCH & DÍAZ 2006: Fig. 11) due to the long and slender aedeagus, the shape of the spermatheca and the female tergite X; a similar aedeagal shape is shared also by *H. atrata*. However, the aedeagus of the new species differs from all other species of the lineage in the shape of the main piece (long and evenly slender, not markedly widened medially or subapically in ventral view), and in the presence of a conspicuous elongate subapical brush of very densely arranged short setae. In *H. paganettii*, the isolated pair of parameral bristles is flattened in the apical half. Male terminal sternite comparatively smaller than in *H. paganettii*, spiculum straight, rather thick.

The gonocoxite, the spermatheca, and especially the female tergite X are obviously quite variable in *H. paganettii* (see Fig. 4). More material must be examined to clarify if the gonocoxite is reliable enough to allow unambiguous distinction between *H. chersonesica* and *H. paganettii*.

Externally, the new species is distinguished easily from *H. paganettii* by the more distinctly heart-shaped pronotum, which is strongly attenuate anteriorly. In addition, the elytral margin is less distinctly serrate, and the eyes and the lateral metaventral plaques are considerably smaller than in *H. paganettii*.

Ecology: The type specimens were collected in the gravel at the river margin (see Fig. 2). Other water beetles sampled at the same locality included *Enicocerus ineditus* (FERRO) (= ? *E. colveranus* (FERRO)), *Hydraena jailensis* BREIT (Hydraenidae), and *Riolus syriacus* (ALLARD) (Elmidae). The small eyes of this species prompt that it might be groundwater dwelling.

Distribution: So far known only from the type locality.

Etymology: The Latin word Chersonesus derives from the Greek term for peninsula (chersonēsos, from “chersos” (“dry land”) + nēsos (island)). Chersonesus Taurica was the ancient name for the Crimean Peninsula.

Discussion

The *Hydraena* (s.str.) *testacea* species group was formerly treated as a subgenus (*Phothydraena* KUWERT) of *Hydraena*. A thorough cladistic analysis (JÄCH et al. 2000) as well as recent DNA-sequencing revealed that *Hydraena testacea* CURTIS and its allies are indeed taking a very basal position within the genus. However, the relationships of the “*Phothydraena* lineage” and other basal species (e.g. *H. monikae* JÄCH & DÍAZ, *H. rugosa* MULSANT) are not resolved satisfactorily and therefore a subgeneric rank is at present not recommended.

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