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New and little known Palearctic species of the genus *Hydraena* KUGELANN VIII (Coleoptera: Hydraenidae)

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Abstract

A new species of *Hydraena* KUGELANN, *H. gavarrensis*, is described from the Catalan province of Girona (sometimes spelled as Gerona) in northeastern Spain. The new species is characterized by the densely setose aedeagal apex. It is probably endemic to the Gavarres Mountains.

Key words: Coleoptera, Hydraenidae, *Hydraena*, new species, Spain, Girona.

Introduction

Are there still undescribed species of *Hydraena* KUGELANN living in Europe? Without any doubt, the answer to this question must be yes, because females of two obviously undescribed species from the Ukraine and from Bosnia respectively are deposited in the Vienna Natural History Museum. Their localities are well known and it is just due to unfavourable travel conditions, that males have not been collected so far. And apart from these two? How many undiscovered species may there still exist?

Statistically, approximately two new species were described annually within the last decade. A total of 19 species was described between 1995 and 2004: six in 1995, one in 1996, three in 1997, none in 1998 and 1999, six in 2000, two in 2001, none in 2002 and 2003, one in 2004: *H. achaica* JÄCH, 1995, *H. nike* JÄCH, 1995, *H. occitana* (AUDISIO & DE BIASE, 1995), *H. pelops* JÄCH, 1995, *H. sanfilippoi* (AUDISIO & DE BIASE, 1995), *H. zezerensis* DÍAZ PAZOS & BILTON, 1995, *H. christinae* AUDISIO, DE BIASE & JÄCH, 1996, *H. bicolorata* JÄCH, 1997, *H. marcosae* AGUILERA, HERNANDO & RIBERA, 1997, *H. gynaephila* JÄCH, 1997, *H. arachthi* FERRO & JÄCH, 2000, *H. hortensis* JÄCH & DÍAZ, 2000, *H. mecai* MILLÁN & AGUILERA, 2000, *H. quetiae* CASTRO, 2000, *H. larissae* JÄCH & DÍAZ, 2000, *H. madronensis* CASTRO, GARCÍA & FERRERAS, 2000, *H. imbria* JÄCH & DÍAZ, 2001, *H. isabelae* CASTRO & HERRERA, 2001, *H. marinae* CASTRO, 2004. The majority of these 19 species was discovered in Greece (8), followed by Spain (6), Italy (3), European Turkey (2), Portugal (1), and Yugoslavia (1). About 50 % of these 19 species are no "true" discoveries (i.e., undetected "species of restricted distribution": SORD). They must rather be regarded as "split-offs" from already known species. And if we take into account that most parts of Greece and Spain can meanwhile be regarded as quite well investigated, the number of undescribed species roaming Europe should be estimated as rather low.

Where are new discoveries still to be expected? Excursions in the last few years have shown that often the most spectacular mountain ranges do not host peculiar endemics. For instance, a recent survey carried out by the senior author in 2002 on Mt. Athos (Greece), a grandiose isolated rocky giant, 2033 m high and with promising springs did not yield any new *Hydraena*. Contrarily, the Gavarres are a small inconspicuous mountain range, which had been largely

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neglected by the cohorts of water beetlers swarming over the Iberian Peninsula each year. Remarkably, this comparatively dry mountain range with a maximum elevation of only 537 m is the exclusive abode of a very distinctive endemic species, *H. gavarrensis* sp.n., which has managed to escape from discovery until the year 2004.

Acronyms:

CDS	Coll. Díaz, Santiago de Compostela
CFL	Coll. Ferro, Lancenigo
CHB	Coll. Hernando, Barcelona
CMT	Coll. M. Martinoy, Torroella de Montgrí
MCB	Museu de Ciències Naturals (Museu de Zoologia), Barcelona
MNM	Museo Nacional de Ciencias Naturales, Madrid
NMW	Naturhistorisches Museum Wien
PL	Projected length of aedeagus (sensu JÄCH 1998a)

***Hydraena* (s.str.) *gavarrensis* sp.n.**

TYPE LOCALITY: Riera [temporary mountain stream] de Sant Pol, ca. 1.5 m wide, ca. 60 m a.s.l., 03º01'30" E / 41º56'00" N, ca. 0.5 km SW of Sant Pol [village], 4 km SW of La Bisbal, Baix Empordà, Girona province, northeastern Spain.

TYPE MATERIAL: **Holotype** ♂ (NMW): "SPAIN: Gerona Gavarres Riera de Sant Pol \ 30.V.2004 leg. M.Martinoy". **Paratypes** (CDS, CFL, CHB, CMT, MCB, MNM, NMW): 9 exs. (4 ♂♂, 5 ♀♀), same label data as holotype; 33 exs.: "SPAIN: Gerona Gavarres 29.12.2004 \ Rissec (Font Picant) leg. M.Martinoy"; 2 exs. (1 ♂, 1 ♀): "Riera de Sant Pol GAVARRES 30-05-04 CATALUNYA Baix Empordà M.Martinoy leg.".

DIAGNOSIS: Habitus as in Fig. 1. Body length: 1.5–1.6 mm. Reddish brown to dark brown, head almost black, appendages paler yellowish brown to reddish brown. Head: labrum microreticulate except for shiny middle, anterior margin deeply excised medially, rim superficially crenulate; clypeus microsculptured, with smooth and glabrous area at anterior margin extending posteriad at middle; frons densely microsculptured laterally, sparsely punctate and more or less glabrous medially. Eyes rather small, with ca. 15–20 facets visible in dorsal view. Pronotum: lateral rim denticulate, moderately convergent to anterior angle, more strongly sinuately convergent to posterior angle; anterior margin slightly concave; anterior angles obtuse; disc moderately convex in cross section, rather superficially punctate, more or less glabrous or superficially microreticulate between punctures, interstices often larger than one puncture diameter; anterior foveae forming very shallow transverse groove, posterior foveae more or less obsolete, rarely distinct. Elytra: elongate, subparallel; with approximately six to seven rows of punctures between suture and shoulder; rows of punctures, especially admedian ones, somewhat irregular, with distinct duplications; strial punctures small, rather densely arranged, their outlines sometimes star-shaped; explanate margin of elytra moderately wide, rather weakly denticulate; in females, elytral disc flattened or slightly impressed (especially before apical declivity), laterally (along app. 9th interval) more abruptly declivitous than in male, thus area around 9th interval (shoulder interval, lateral margin of elytral disc) usually more convex in female; elytral apices conjointly rounded in male, slightly acuminate in female.

Metaventrite without significant sexual dimorphism; metaventral plaques large, almost straight, parallel, glabrous, reaching posterior margin of metaventrite. Tibiae of male (especially distally) hardly perceptibly wider than those of female; mesotibia very slightly curved in some of the males, with slightly stronger spines.

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Fig. 1: *Hydraena* (s.str.) *gavarrensis*, holotype.

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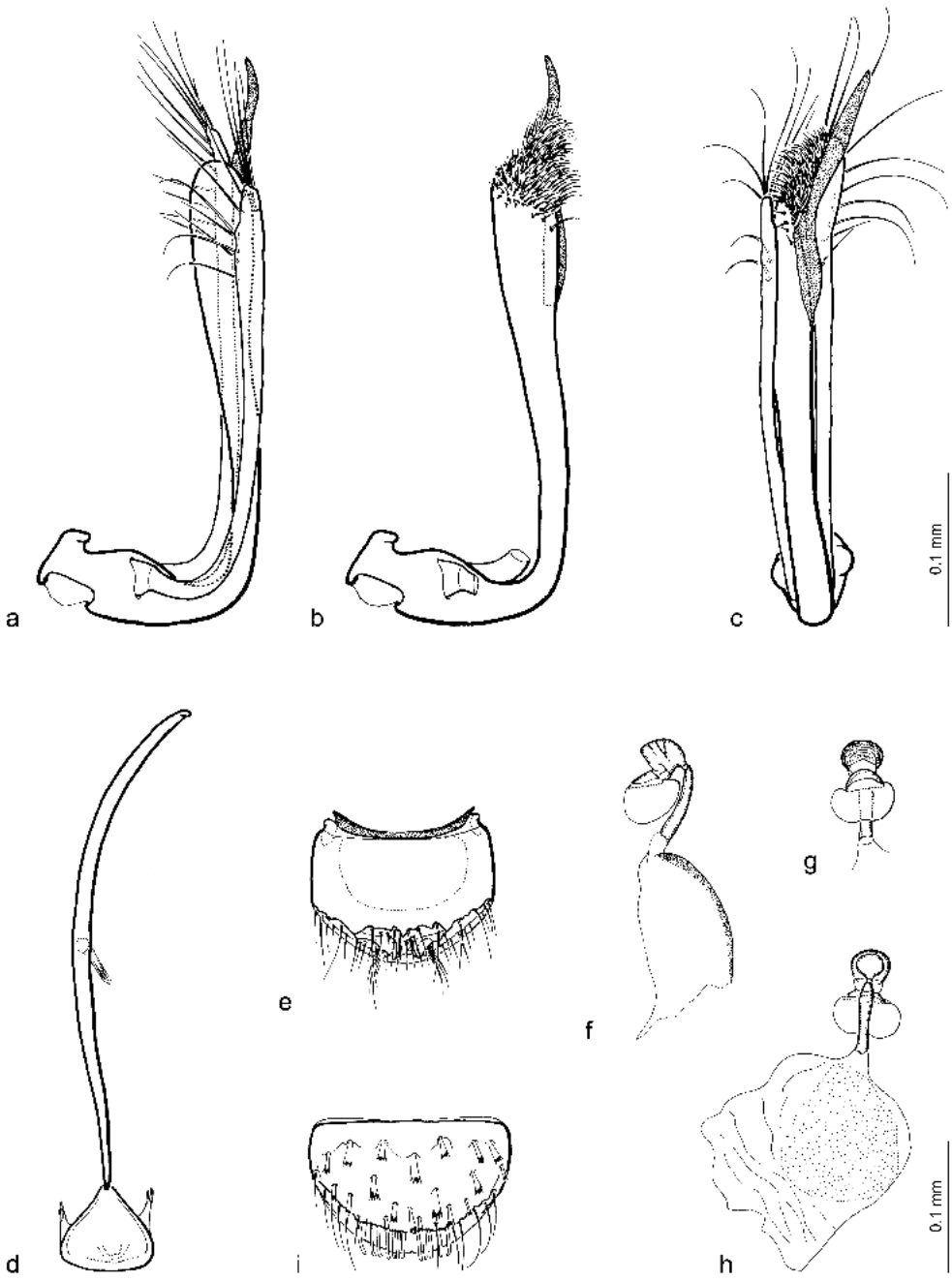

Fig. 2: *Hydraena* (s.str.) *gavarrensis*: a–c) aedeagus in lateral view (a: setae of main piece omitted, b: parameres omitted), and dorsal view (c); d) male sternite X and spicula; e) gonocoxite; f–h) spermatheca; i) female tergite X.

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Non-pubescent areas behind metacoxal sockets on first ventrite well developed, microreticulate or glabrous.

Male sternite X (Fig. 2d): subtriangular; not firmly connected with spicula (sternite IX).

Aedeagus (Fig. 2a–c): Main piece (PL: ca. 330 µm) very strongly curved basally (in lateral view), then more or less straight until apex; very densely setose apically, with a group of ca. 3–4 isolated setae on dorsal side of apex; phallobase more or less symmetrical. Distal lobe simple, flagellum-like. Parameres slender, not strongly dilated apically, with simple rows of not very densely set setae along ventral margins; left paramere longer than right one.

Female tergite X (Fig. 2i) transverse; subsemicircular; disc with about 15 squamose setae; subapical fringe admedially with vermiform setae; hyaline margin very slightly notched medially.

Gonocoxite (Fig. 2e) subpentagonal, slightly transverse; inner plate slightly surpassing outer plate basally, with a large cavea.

Spermatheca (Fig. 2f–h): proximal portion knob-like, surface wrinkled; distal portion discoidal, very small; gland very small; spermathecal duct very short.

Vagina with large, weakly sclerotized vaginal sclerite.

VARIABILITY: The elytral flattening (depression) and the convexity of the lateral margin of the elytral disc are sometimes observed also in males (e.g. in holotype, Fig. 1), although always to a much lesser extent. In females, this character is more distinctly pronounced, but somewhat variable as well.

DIFFERENTIAL DIAGNOSIS: Genitalically, *Hydraena gavarrensis* can be distinguished from all known species by the densely setose apex of the aedeagal main piece.

Externally, the new species is quite distinctive by the combination of the following characters: small body size, unicoloured maxillary palpi, pronotal and elytral punctation, shape of elytra, the weakly pronounced secondary sexual dimorphism. In the Iberian Peninsula, only few species agree with *Hydraena gavarrensis* in the small size and the unicoloured palpi (*H. servilia* d'ORCHYMONT and *H. sharpi* REY). Both are distinguished easily from *H. gavarrensis* by the less distinctly parallel-sided shape of the elytra and by being not evenly unicoloured.

Outside the Iberian Peninsula, the variable *Hydraena smyrnenis* is somewhat similar to *H. gavarrensis* in having rather parallel-sided elytra. But the elytra of *H. smyrnensis* are more narrow and the maxillary palpi are darkened apically, which distinguishes it immediately from the new species.

PHYLOGENETIC POSITION: Obviously, the new species belongs to the *Hydraena pulchella* species group, where it agrees with the *H. pulchella* complex (as defined by JÄCH 1997) in the lack of dorsal aedeagal setae. However, *Hydraena gavarrensis* is not distinctly bicoloured as the other members of the complex and the densely setose apex of the aedeagus deviates from any other *Hydraena* species.

ECOLOGY: The following water characteristics were measured on May 30, 2004: temperature (13.9° C), O_2 (7.6 mg/l), conductivity (0.25 µS/cm), pH (7.5).

Hydraena atrata DESBROCHERS DES LOGES, *Hydraena subimpressa* REY and *Hydraena testacea* CURTIS were collected together with the new species in the same habitat.

DISTRIBUTION: So far known only from the Gavarres Mountains, northeastern Spain.

ETYMOLOGY: Named in reference to the geographical distribution.

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