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## ***Hydraena (Haenydra) hosseiniorum* sp.n. (Insecta: Coleoptera: Hydraenidae) from Iran**

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### **Abstract**

*Hydraena (Haenydra) hosseiniorum* sp.n. is described from northwest of Shiraz, Iran. The subgenus *Haenydra* REY, 1886 is recorded from Iran for the first time.

### **Zusammenfassung**

*Hydraena (Haenydra) hosseiniorum* sp.n. wird aus dem Nordwesten von Shiraz (Iran) beschrieben. Die Untergattung *Haenydra* REY, 1886 wird somit zum ersten Mal aus dem Iran gemeldet.

**Key words:** Hydraenidae, *Hydraena (Haenydra) hosseiniorum*, taxonomy, new species, Iran.

### **Introduction**

Six species of *Hydraena* KUGELANN, 1794 have been recorded from Iran to date (see JÄCH 1992): *H. (s.str.) calcarifera* JANSSENS, 1959, *H. (s.str.) janeceki* JÄCH, 1987, *H. (s.str.) orientalis* BREIT, 1916, *H. (s.str.) parysatis* JANSSENS, 1980, *H. (s.str.) persica* JANSSENS, 1980 and *H. (s.str.) verstraeteni* FERRO, 1984.

Thanks to the activities of Dr. Sh.O. Hosseinie and Prof. F. Hosseinie (Department of Biology, Shiraz University), numerous international limnological cooperations were launched in Iran recently. These limnological surveys have yielded a new species of *Hydraena* subgen. *Haenydra* REY, which is described below.

### **Abbreviations**

The material used for this study is deposited in the following institutions and private collections (abbreviations are used to refer to collections in the text):

BML	The Natural History Museum, London, U.K. [formerly: British Museum (Natural History)]	NMW	Naturhistorisches Museum, Wien, Austria
		SUS	Department of Biology, Shiraz University, Iran
CBP	Collection of D.T. Bilton, Plymouth, U.K.		

### **Acknowledgements**

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*Hydraena (Haenydra) hosseinieorum* sp.n.

Type material: **Holotype** ♂ (NMW): "IRAN: Fars, 22.IX.1997 ca. 80km NW Shiraz 2000m leg. Schödl (29)". **Paratypes** (BML, CBP, NMW, SUS): 1 ♂ (partly damaged), same data as holotype; 4 ♂♂ + 12 ♀♀ from the type locality, 7.IX.1997, leg. Bilton; 1 ♀: Fars, N Dalin, ca. 55 km NW Shiraz, 23.IV.1996, leg. Wewalka.

**Type locality** (Figs. 1, 2): Bozghan Spring, ca. 2000 m a.s.l., ca. 80 km NW of Shiraz, Fars Province, Iran.

**Description:**

Length: males: 2.63 - 2.68 mm (mean 2.65); females: 2.50 - 2.63 mm (mean 2.57).

Colour: Head, pronotum and elytra dark brown to black; somewhat paler towards apex of elytra. Legs and maxillary palps reddish brown; tarsi and apical two segments of palps paler.

Head: Labrum with deep v-shaped notch in centre, upper surface shagreened with scattered fine setae. Outer edges of labrum with narrow border. Clypeus with shallow rugose punctation, this being closer towards the outer hind margins and absent from the extreme front margin bordering the labrum. Frons shiny on disc, with dense, deep rugose punctation, which becomes confluent around the inner margins of the eyes and on neck. Texture here similar to hind lateral margins of clypeus.

Pronotum: Broadly hexagonal with weakly crenulate side margins. Pronotal disc shiny with deep punctures which are spaced roughly one puncture width apart in the centre, becoming more densely packed towards the strong longitudinal fossae on each side of the disc. Longitudinal fossae with dense, coalescent punctures. Fossae deepened in front and behind their mid-point which is relatively shallow and less strongly punctured. Pronotum outside fossae with punctation denser than on disc; surface between punctures shagreened and punctures densest towards front angles.

Elytra: Entirely smooth and shiny between longitudinal puncture rows. Elytra distinctly impressed subbasally. Elytra of both sexes with explanate lateral margins, these being particularly pronounced in females and towards the apex in both sexes. Male with elytra more or less parallel sided; broadest around middle. Female with elytral outline expanded towards the apex; broadest one third from apex. Outline in both sexes broken by an indentation of the side margin at around the mid point. Side margins finely serrate and setose. Elytral apex rounded with slight sutural notch which is more prominent in males than females.

Alae: Reduced; length ca. three-quarters the length of the elytra. Venation restricted to abbreviated costa and media.

Legs: Male mesotibia (Fig. 3) with distal half thickened with crenulate inner margin furnished with stiff bristles. Male metatibia (Fig. 4) with dense, comb-like setae on inner margin of distal two-thirds. Legs otherwise unmodified in both sexes.

Aedeagus (Fig. 5): Main piece straight and slender, obliquely truncate apically; dorsal side characteristically emarginate subapically; with four setae: a short one at apical third on right side and three longer, dorsal ones. Phallobase with distinct, tooth-like process. Distal lobe with several, more or less strongly sclerotised appendages and with a very long, thread-like, coiled flagellum.

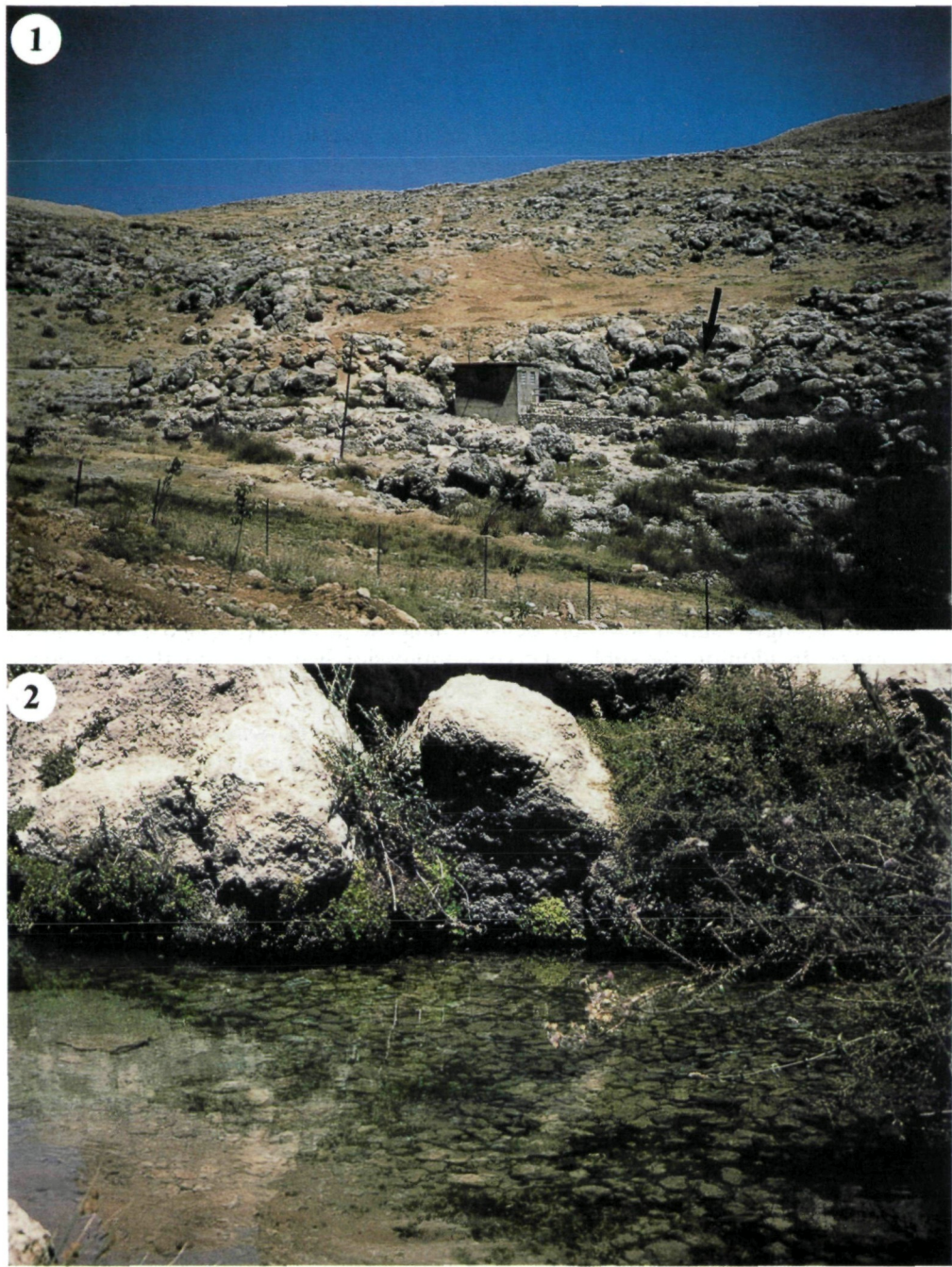


Fig. 1: Type locality of *Hydraena hosseinieorum* sp.n. Note the small pump house in the centre of the picture. The spring pool from which specimens were collected is indicated by the arrow to the right. Streamlets form below this area, and to the left of the picture.

Fig. 2: Detail of spring pool at the type locality from which specimens were collected.

Female characters: Short hydrofuge hairs covering the abdominal sternites are absent from the last two visible sternites and an adjacent semicircle on the fifth sternite. (These are absent only from the last sternite and from a semicircular area of the adjacent sixth sternite in the male.) Hind margins of the fifth and sixth sternites heavily setose; the sixth sternite being crenulate in the centre of the hind margin. Last abdominal tergite as in Figure 6. Hydrofuge microtrichia present along anterior margin. Posterior margin weakly pointed in the centre, and overhung on each side by a fringe of large, flattened, blunt-ended bristles which originate from a roughened area between the top and bottom of the plate. Last abdominal sternite as in Figure 7. Anterior edge of outer and inner plates concave. Hind margin of outer plate doubly sinuate on each side, terminating in a blunt point flanked by blunt projections on either side. Region inside hind margin more strongly sclerotised than remainder. Hind margin of outer plate truncately rounded with a deep u-shaped central notch. False hole of inner plate ellipsoid. Spermatheca as in Figure 8. Proximal sclerotised section comma-shaped. Intermediate unsclerotised portion small, and distal sclerotised portion somewhat hat-shaped.

**Differential diagnosis:** According to external and aedeagal characters (e.g. presence of a very long, thread-like flagellum), *H. hosseinieorum* sp.n. is quite similar to *H. fontiscarsavii* JÄCH, 1988 (see JÄCH 1988), *H. septemlacuum* JÄCH, 1992, and *H. plastica* d'ORCHYMONT, 1943 (see JÄCH 1988, 1992). Externally, it can be distinguished from *H. fontiscarsavii* and *H. plastica* by the elytra being widely explanate posteriorly, and from *H. septemlacuum* by the more strongly vaulted and more densely punctate pronotal disc and by the shorter elytral apices. In addition, the subbasal elytral impression is more distinctly pronounced in *H. hosseinieorum* sp.n. than in any other known species.

The shape of the aedeagal main piece is rather similar to that of *H. fontiscarsavii* from which it can be distinguished by the wider apex and by the ventral margin being almost straight.

**Distribution:** So far known only from two localities northwest of Shiraz, Fars Province, Iran.

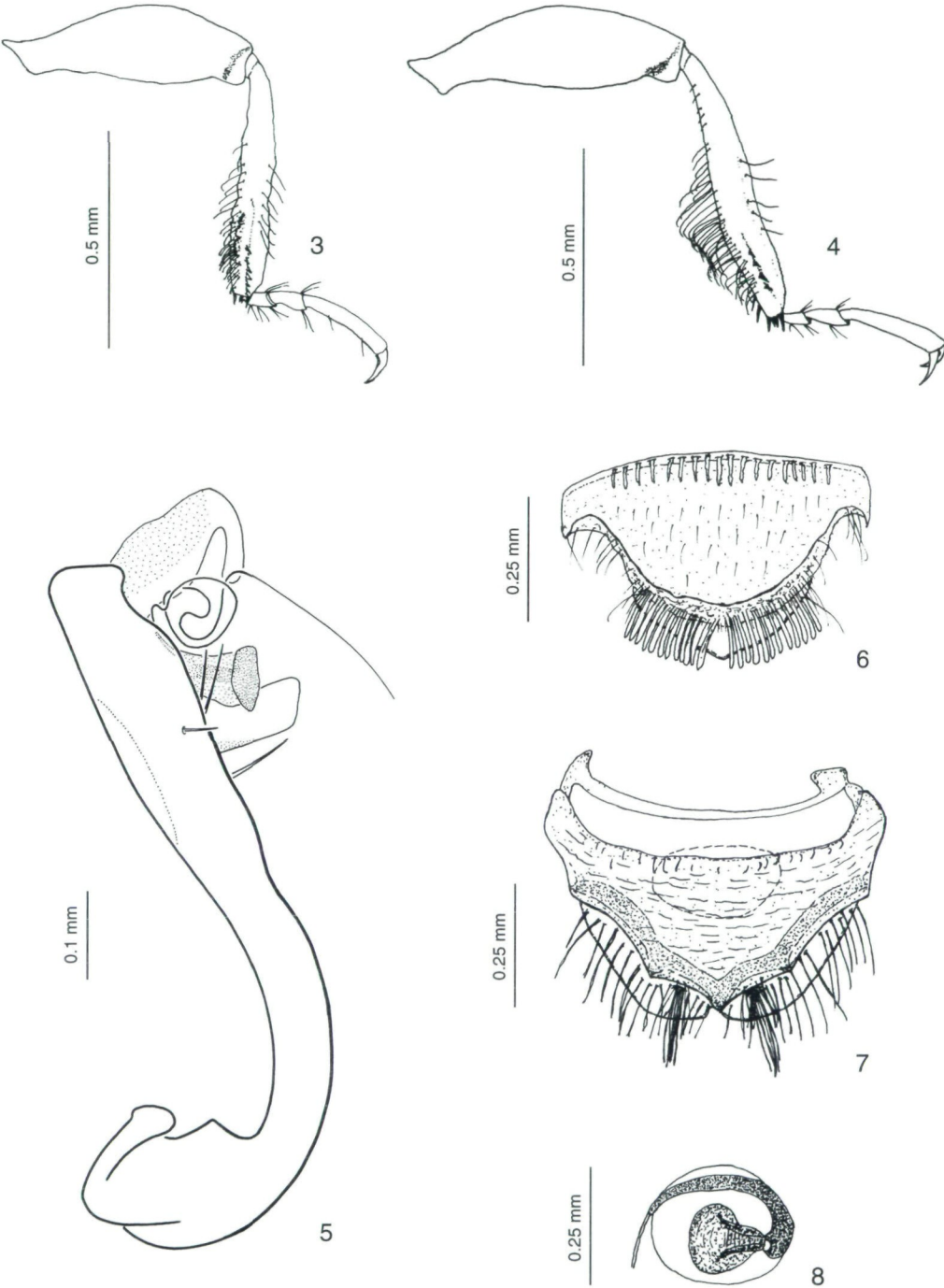
**Discussion:** *Hydraena hosseinieorum* sp.n. is the first species of *Haenydra* to be recorded from Iran. However, *Hydraena anatolica* JANSSENS, 1963 was found to be very common in Turkey in localities quite close to the Iranian border (see JÄCH 1995). Thus the occurrence of *H. anatolica* in Iran is very likely.

**Ecology:** All specimens were taken from springs. Bozghan Spring (type locality) forms the head of a small stream, emerging from a limestone escarpment.

Specimens collected by the senior author were netted from amongst limestone pebbles on the pool bed, encrusted with algae. This pool was 20 - 30 cm deep, cold (ca. 10° C) and clear. This pool was all that remained of a spring complex, most of which had been capped for abstraction use. Other beetles present in the pool were *Elmis* cf. *bosnica* ZAITZEV, 1908, *E.* cf. *robusta* JÄCH, 1984, *Esolus* cf. *parallelepipedus* MÜLLER, 1806 and *Limnius* cf. *volckmari* PANZER, 1793. No specimens of *H. hosseinieorum* sp.n. were found in the stream below the spring complex despite an exhaustive search. The stream contained the same elmids species as the spring pool, *Elmis* cf. *bosnica* being particularly abundant.

**Etymology:** The new species is named after Dr. Shidokht O. Hosseinie and Prof. Fara Hosseinie (Department of Biology, Shiraz University), in recognition of their painstaking efforts to explore the fresh waters of Iran.





Figs. 3 - 8: *Hydraena hosseinieorum*, (3) male middle leg, (4) male hind leg, (5) aedeagus, lateral view, (6) last abdominal tergite of female, dorsal view, (7) last abdominal sternite of female, ventral view, (8) spermatheca, dorsal view.

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