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## Three Unrecorded *Helophorus* Fabricius, 1775 (Coleoptera, Hydrophilidae) Species for the Turkish Fauna\*

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**Abstract:** Three newly recorded *Helophorus* Fabricius, 1775 species for Turkish fauna, *Helophorus (Rhopalhelophorus) fulgidicollis* Motschulsky, 1860, *H. (R.) similis* Kuwert, 1887 and *H. (R.) subarcuatus* Rey, 1885, are compared against our specimens. Furthermore, their distribution in Turkey and around the world is presented.

**Key Words:** Coleoptera, Hydrophilidae, *Helophorus*, Systematics, Turkey

### Türkiye Faunası İçin Yeni Üç *Helophorus* Fabricius, 1775 (Coleoptera, Hydrophilidae) Türü

**Özet:** Türkiye faunası için yeni kayıt olan *Helophorus (Rhopalhelophorus) fulgidicollis* Motschulsky, 1860, *H. (R.) similis* Kuwert, 1887 ve *H. (R.) subarcuatus* Rey, 1885'un türleri örneklerimizle karşılaştırılmış ve Türkiye ve dünyadaki dağılımları verilmiştir.

**Anahtar Sözcükler:** Coleoptera, Hydrophilidae, *Helophorus*, Sistematiği, Türkiye

### Introduction

The Helophoridae is a large family comprising only a single subfamily of a single genus, *Helophorus*. This genus comprises about 180 species of which about 150 occur in the Palearctic (1-3). There are 41 species known in the Nearctic (4), 10 of which are Holarctic in distribution. There are about three species in the Ethiopian region, and one undescribed species in the Oriental region (1,5).

Besides aquatic forms, however, the Hydrophiloids also include a substantial number of forms living in terrestrial habitats. Approximately one-quarter of the species (and 60% of the genera) are terrestrial (6). Most species of *Helophorus* are aquatic and occur in a wide range of aquatic habitats from sea level to the alpine zone of high mountains, where they occur in snow-fed puddles and pools (4,7).

The aim of this study was to make a contribution to Turkish aquatic Coleoptera fauna. Forty-one species have been recorded belonging to the six subgenera in Turkey (1,5,8-10). This study adds three new records.

### Materials and Methods

The specimens of three species were collected in different surveys of the aquatic Coleoptera of Erzurum, Artvin and Rize provinces. The beetles were killed with ethyl acetate or 70% alcohol solution. The aedeagophores of beetles cleaned with a brush were dissected out under a stereomicroscope and were exposed in 10% KOH solution for nearly 1-2 hours. The figures of the aedeagophore were drawn using a Nikon type 104 microscope.

### Systematics

*Helophorus (Rhopalhelophorus) fulgidicollis*  
Motschulsky, 1860

Body length 3.5-4.2 mm. Head bronze or blackish. Maxillary palpi dark brown, apical segments clearly asymmetrical and darker towards apex. Antennae 9 segmented. "Y" groove conspicuous, its stem widened anteriorly. Pronotum rather quadrate, dark, sometimes with metallic bronze reflections. Pronotal grooves narrow and deep, marginal grooves yellow or light brown. Lateral margins of pronotum rounded anteriorly.

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Suprapleural area rather narrow, hardly visible from below. Elytra dark brown, spots pale, strongly striate (larger anteriorly), elytral flanks rather broad and easily visible from below. Legs long, tarsi with well-developed swimming-hairs. Apical segments of tarsi long and darker.

Aedeagophore 0.55 mm in length. Outer margins of the paramers straight, then rather abruptly incurved towards apex. Median lobe rather thickened, its apex nearly straightened. Paramers as long as struts. Basal piece shorter than paramers (Fig. 1).

**Material examined:** Grassy pools or edges of fresh streams, 20.VI.2000, 5 ♂♂, 5 ♀♀, Balıklıgöl, Ilıca; 12.IX.2000, 1 ♂, Serçeme stream, İspir; 18.VII.2000, 2 ♂♂, 1 ♀, Plateau of Tuzluca village, Çat; 2 ♂♂, 1 km along the Çat-Karlıova highway; 28.IX.2000, 1 ♂, Değirmenlidere, Şenkaya; 20.V.2000, 1 ♂, Çayırözü stream, ERZURUM.

**Distribution:** Algeria, Britain, Denmark, France, Germany, Ireland, Italy, Morocco, Portugal, Spain, Sweden, Tunisia (1,5,8,11-13).

It is a new record for the Turkish fauna.

*Helophorus (Rhopalhelophorus) similis* Kuwert, 1887

Body 5.3 mm in length. Head reddish, "Y" groove deep, its stem expanded anteriorly. All portions of "Y" groove with metallic green reflections. Maxillary palpi rather long, apical segments distinctly asymmetrical and darker towards apex. Antenna 9 segmented. Pronotum reddish, darker antero-medially. Grooves with metallic greenish reflections. Internal intervals distinctly curved outwards medially. Surface of all intervals covered shining, large and sparsely scattered granules. Granules of external intervals larger than others. Grooves large

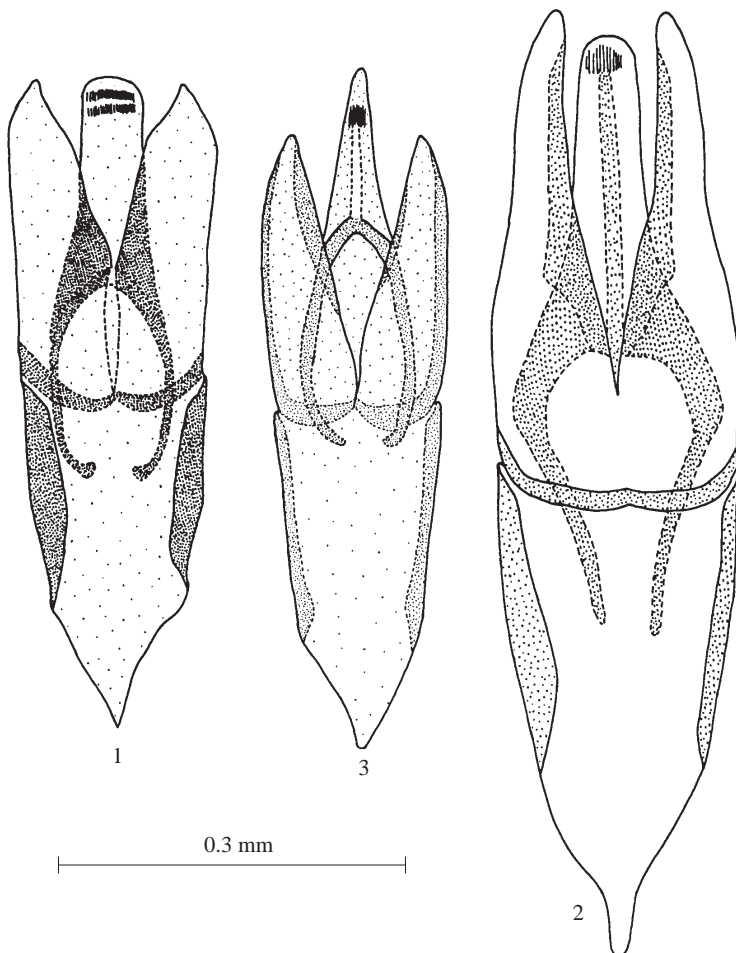


Figure. Aedeagophore. dorsal. 1) *Helophorus (Rhopalhelophorus) fulgidicollis*. 2) *H. (R.) similis*. 3) *H. (R.) subarcuatus*.

and shallow, median and marginal grooves narrowed anteriorly and posteriorly. Anterior margin of pronotum yellow. Elytra finely striate, pale yellow and without spots. Lateral margins parallel, pointed towards apex. All punctures on 1/3 of elytra larger. Appendages yellowish and long, last tarsal segments and claws darker. Dorsal face of tibia covered thin and sparsely scattered setae. Tarsi with well-developed swimming-hairs.

Aedeagophore 0.81 mm in length. Median lobe shorter than parameres and its structure of apex oval. Outer margins of parameres incurved medially and apically. Struts obtusely angled anteriorly. Basal piece shorter than parameres (Fig. 2).

**Material examined:** Fresh grassy pools, 19.VII.2000, 1 ♂, 5 km along the Erzurum-Tortum highway, ERZURUM.

**Distribution:** Algeria, Britain, Denmark, France, Germany, Ireland, Italy, Morocco, Netherlands, Portugal, Russian Fed., Spain, Sweden, Tunisia (1,5).

It is a new record for Turkish fauna.

*Helophorus (Rhopalhelophorus) subarcuatus* Rey, 1885

Body length 2.5-3.0 mm. Head black, sometimes with purplish reflections. "Y" groove deep and conspicuous narrowed. Maxillary palpi asymmetrical but not conspicuous. Colouration yellowish to dark brown, darker at the apex. Antennae 9 segmented. Pronotum rather convex, blackish (mixed with purplish), narrowed posteriorly. Anterior margins sinuate. Marginal grooves yellow, its outer lines dark brown. Submarginal grooves larger, others narrow and deep. Elytra light brown to dark brown. Strongly striate, striae punctures wide. Both elytra rounded antero-laterally. Legs long, yellowish brown. Claw segments longer and darker than others.

Aedeagophore 0.57 mm in length. Parameres tapered. Median lobe fairly long, pointed apically. Struts long. Basal piece triangular and longer than parameres (Fig. 3).

**Material examined:** 14.X.2000, 3 ♂♂, Taşlıgüney stream, ERZURUM.

**Distribution:** France?, Italy, Turkey (1,5,14).

It is a new record for Turkish fauna.

## Discussion

Forty-one species of *Helophorus* are known in Turkey (10). This study adds three new records to Turkish fauna.

*Helophorus (Rhopalhelophorus) fulgidicollis* is a western species (1). Although it is an active swimmer, it is generally found in stagnant and temporary pools (1, 11). However, our specimens were generally collected from the edge of running water. The fact that the median lobe of the aedeagophore of this species is extremely large, the apex of this lobe is almost straight, and that the head is dark-coloured distinguishes this species from the other features known before. The remaining features of this species, both the morphological and ecological, are similar to the features indicated by other authors for this species (1,4,9,11,15-17). Considering the median lobe of the aedeagophore, it seems to be another species, but it is easily understood that this species is *H. fulgidicollis* when we examine its general appearance, shape of pronotum and easily visible elytral flanks from below carefully.

*Helophorus (R.) similis* is a steppe species. It is, however, much more widely distributed, with its range extending from the lower Volga (Astrakhan, Lake Bogdo) over the southern Urals and the West Siberian steppe to Mongolia and Manchuria (1,13). This species is very easily distinguishable from *H. kirgicus* by the shape of its aedeagophore. *H. similis* is generally found abundant in fresh, grassy pools (1). We have only one male which was collected from slowly running, polluted water. Its elytra was without spots. The two features mentioned above have not been noted by any author.

*H. (R.) subarcuatus* is known only from Corsica and Sardinia, but the Corsican records present a problem because Rey's material was possibly mislabelled, so its presence in Corsica requires confirmation (5,14). While *H. subarcuatus* was a subspecies of *H. obscurus*, it was raised to species level by Angus (14). Our specimens were collected from edge of fast-running fresh water. As the *H. subarcuatus* has mostly been confused with *H. obscurus*, descriptions of them are generally presented together. Here, the treated samples are distinctly narrower and shorter than *H. obscurus*. In addition, the colouration of the elytra of *H. subarcuatus* is lighter than Turkish *H. obscurus*.

## References

1. Angus, R. B., Süßwasserfauna von Mitteleuropa (Insecta: Coleoptera: Hydrophilidae: Helophorinae). 20/10-2, Gustav Fischer Verlag, Stuttgart, 1992, 144p.
2. Chiesa, A., Hydrophilidae Europae (Coleoptera, Palpicornia). (ed): Arnaldo Forni. Bologna, 1959, 198 p.
3. Hebauer, F., The Hydrophiloidea of Israel and Sinai (Coleoptera, Hydrophiloidea). Zoology in Middle East, 10: 73-137, 1994.
4. Smetana, A., Revision of the subfamily Helophorinae of the Nearctic region (Coleoptera: Hydrophilidae). Mem. Ent. Soc. Can., 131: 1- 151, 1985.
5. Hansen, M., World Catalogue of Insects. Hydrophiloidea (Coleoptera). Apollo Books, Vol. 2, p. 416, 1999.
6. Hansen, M., The Hydrophiloid Beetles. Phylogeny, Classification and a Revision of the Genera (Coleoptera, Hydrophiloidea). Biologiske Skrifter 40, The Royal Danish Academy of Science and Letters. p. 368, 1991.
7. Smetana, A., Review of the Family Hydrophilidae of Canada and Alaska (Coleoptera). Mem. Ent. Soc. Can., 142: 1-316, 1988.
8. Ienista, M.A., Hydradephaga und Palpicornia. In J. Illies (ed): Limnofauna Europe. Stuttgart, 1978, 291-314 p.
9. Angus, R.B., Towards a revision of the Palaearctic species of *Helophorus* F. (Coleoptera, Hydrophilidae) II. Ent. Rev. 64 (4): 128-162, 1985.
10. Mart, A., Erman, O., A Study on *Helophorus* Fabricius, 1775 (Coleoptera, Hydrophilidae) Species. Turkish Journal of Zoology, 25 (1): 35-40, 2001.
11. Hansen, M., The Hydrophiloidea (Coleoptera) of Fennoscandia and Denmark. Fauna Entomologica Scandinavica, 18: 1-253, 1987.
12. Angus, R.B., Towards a Revision of the Palaearctic species of *Helophorus* F. (Coleoptera, Hydrophilidae) I. Ent. Rev., 63 (3): 89-119, 1984.
13. Angus, R.B., Notes on the *Helophorus* (Coleoptera, Hydrophilidae) occurring in Turkey, Iran and neighboring territories. Rev. Suisse Zool., 95: 209-248, 1988.
14. Angus, R.B., A re-evaluation of the *Helophorus flavipes* group of species (Coleoptera, Hydrophiloidea), based on Chromosomal analysis, larvae and biology. Nouv. Revue Ent. (N.S). 13 (2): 111-122, 1996.
15. Balfour-Browne, F., British Water Beetles. III, Ray Society, London, 1958, Bernard Quaritch, Ltd., 210 p.
16. Freude, H., Harde K.W. and Lohse G.A., Die Käfer Mitteleuropas I. Goecke and Evers Verlag, Krefeld, 1965, 306 p.
17. Hansen, M., De danske arter af slægten *Helophorus* Fabricius, 1775 (Coleoptera, Hydrophilidae). Ent. Meddr., 50: 55-76, 1983.