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## First Record of *Graptodytes bilineatus* (Sturm, 1835) (Coleoptera, Dytiscidae) from Turkey\*

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**Abstract:** *Graptodytes bilineatus* (Sturm, 1835) is newly recorded from Turkey. Its identification according to our specimens and distribution around the world is reviewed.

**Key Words:** Coleoptera, Dytiscidae, *Graptodytes*, Taxonomy, First Record, Turkey.

### Türkiye'den *Graptodytes bilineatus* (Sturm, 1835)'un İlk Kaydı

**Özet:** *Graptodytes bilineatus* (Sturm, 1835) Türkiye faunası için yeni kayıt olarak verilmiş, örneklerimize göre tanımı ve dünyadaki dağılımı yeniden gözden geçirilmiştir.

**Anahtar Sözcükler:** Coleoptera, Dytiscidae, *Graptodytes*, Taksonomi, İlk Kayıt, Türkiye.

### Introduction

This West Palaearctic genus includes about 25 species, most of which occur in the Mediterranean region (Zimmermann, 1930; Balfour-Browne, 1940; Franciscolo, 1972; Schaefflein, 1972; Zaitsev, 1972; Nilsson and Holmen, 1995). Mostly live in clean, shallow, slowly running water but some are found in stagnant water rich in detritus (Nilsson and Holmen, 1995).

One species and 2 subspecies have been recorded in Turkey: *Graptodytes flavipes* Olivier, 1795; *Graptodytes veterator behningi* Zaitsev, 1927; *Graptodytes sedilloti phrygius* (Guignot, 1942). *Graptodytes bilineatus* has so far never been recorded from Turkey (Zimmermann, 1930; Balfour-Browne, 1940; Guéorgiev, 1968; Franciscolo, 1972; Schaefflein, 1972; Zaitsev, 1972; Nilsson and Holmen, 1995).

### Materials and Methods

The samples were collected by means of a sieve, ladle and net having a pore diameter of 0.5 mm from shallow

areas of various running waters, springs, streams and brooks. The beetles were killed with ethyl acetate or in 70% alcohol solution and then the clayed and muddy substance on their surfaces was brushed off with a small paint brush in the laboratory. Genitalia were dissected out under the microscope. The genitalia, elytron, protarsal claws, metatibia and metacoxa were drawn using a Nikon type SMZ-U stereo microscope.

### Findings and Discussion

Genus: *Graptodytes* Seidlitz, 1887

Small maculate or vittate species (Zimmermann, 1930; Balfour-Browne, 1940; Guignot, 1947; Schaefflein, 1972; Zaitsev, 1972; Friday, 1988; Nilsson and Holmen, 1995). Body oval or elongate (Friday, 1988; Nilsson and Holmen, 1995); lateral outline more or less continuous. Elytral pubescence weak (Zaitsev, 1972; Nilsson and Holmen, 1995). Dorsal and ventral surfaces puncturate and microreticulate (Zimmermann, 1930; Balfour-Browne, 1940; Guignot, 1947;

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Franciscolo, 1972; Schaefflein, 1972; Zaitsev, 1972; Nilsson and Holmen, 1995). Antenna testaceous basally, piceous to black distally (Nilsson and Holmen, 1995); antennomere 4 short (Zaitsev, 1972; Nilsson and Holmen, 1995). Palpi with apical excavation. Clypeus with 2 small anteromedial foveae. Pronotum with sublateral impressions not reaching anterior or posterior margins (Zimmermann, 1930; Balfour-Browne, 1940; Guignot, 1947; Franciscolo, 1972; Zaitsev, 1972; Friday, 1988; Nilsson and Holmen, 1995); lateral beading very narrow. Elytral lateral margin only weakly ascending to humeral angle. Prosternal process narrowly convex (Friday, 1988; Nilsson and Holmen, 1995). Metacoxal processes with hind margin conjointly incised at middle (Guignot, 1947; Franciscolo, 1972; Schaefflein, 1972; Zaitsev, 1972; Friday, 1988; Nilsson and Holmen, 1995). Metafemur with a single row of setiferous punctures on ventral surface. Abdominal sternite 6 with an apical, pit-like impression. Male protarsal claws modified; pro- and mesotarsomeres 1-3 weakly expanded (Nilsson and Holmen, 1995).

***Graptodytes bilineatus* (Sturm, 1835)**

*Hydroporus bilineatus* Sturm, 1835:68; TL: Germany, Berlin; Syntypes; DESCR.: Nilsson & Holmen 1995: 72; N. COMB.: Zimmermann 1919a: 182.

*Hydroporus bilineatus* var. *hopffgarteni* Schilsky, 1892: 193; TL: Germany, Thüringen; Syntypes.

*Hydroporus narentinus* Zimmermann, 1915: 220; TL Croita, Metcovic; Syntypes; N. SYN.: Zimmermann 1920a: 110.

*Hydroporus nigritarsis* J. Sahlberg, 1882: 453; TL: Russia, Siberia, N part; Syntypes; N. SYN.: Jakobson 1908: 423.

*Hydroporus granularis* var. *pervasus* Gozis, 1914a: 120; TL: France, Bergerac; Holotype; N. SYN.: Zimmermann 1932: 81.

Length 2.4-2.6 mm. Body elongate; lateral outline with a slight constriction at level of pronotal base. Head piceous to black; gula rufous. Antenna rather long, testaceous basally; antennomeres 5-11 piceous; middle antennal segments 1.75 times as long as broad. Pronotum piceous to black, with lateral margin broadly rufous. Elytron black with 2 yellow vittae (Figure 1a); outer 2 vittae fused subbasally; sublateral vitta expanded

to subapical spot; inner vitta expanded subbasally; vittae often reduced or confluent. Punctuation of elytra denser; dorsum of females slightly less shining and punctuation slightly finer. Ventral surface black; prosternum and epipleuron rufous. Legs, metatibia and -tarsus rufous; punctuation of metasternum and -coxae not very coarse (Figure 1b). Male anterior protarsal claw much longer than posterior claw, slightly curved, with a subapical denticle (Figure 1c); metatibia narrow (Figure 1d). Penis apex with an asymmetrical expansion (Figures 1e and f). Paramere Figure 1g.

Total length 2.3-2.7 mm (Guignot, 1947; Franciscolo, 1972; Schaefflein, 1972; Zaitsev, 1972; Friday, 1988; Nilsson and Holmen, 1995). Our specimens are 2.4-2.6 mm.

**Material examined:** 27.6.1997, 1 ♀; 29.6.1997, 5 ♀♀, Ilıca; 18.4.1998, 1 ♂, 1 ♀, Gökçeyamaç Village; 26.6.1998, 1 ♂, Erzurum-Umudum Village road ca. 12 km; 30.9.1999, 1 ♀, Çat, Erzurum. 22.06.2000, 1 ♂, Ayder, Rize.

**Distribution:** Albania, Austria, Belgium, Bosnia Herzegovina, Bulgaria, Byelorussia, Croatia, Czech Republic, Denmark, Finland, France, Great Britain, Germany, Georgia, Greece, Hungary, Ireland, Italy, Macedonia, Netherlands, Poland, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, Yugoslavia, Kazakhstan (Zimmermann, 1930; Balfour-Browne, 1940; Guignot, 1947; Guéorgiev, 1968; Franciscolo, 1972; Schaefflein, 1972; Zaitsev, 1972; Galewski, 1976; Ienistea, 1978; Friday, 1988; Hendrich, 1993; Nilsson and Holmen, 1995, Nilsson, 2001).

**Notes on biology:** It is often very abundant in shallow, temporary pools in open country, especially on alvar grounds (Nilsson and Holmen, 1995) and in detritus ponds and brackish water (Balfour-Browne, 1940).

Our specimens have been collected in shallow, temporary, detritus ponds. In general, our specimens agree with both the morphological and ecological features of this species indicated by other authors (Zimmermann, 1930; Balfour-Browne, 1940; Guignot, 1947; Franciscolo, 1972; Schaefflein, 1972; Zaitsev, 1972; Friday, 1988; Hendrich, 1993; Nilsson and Holmen, 1995).

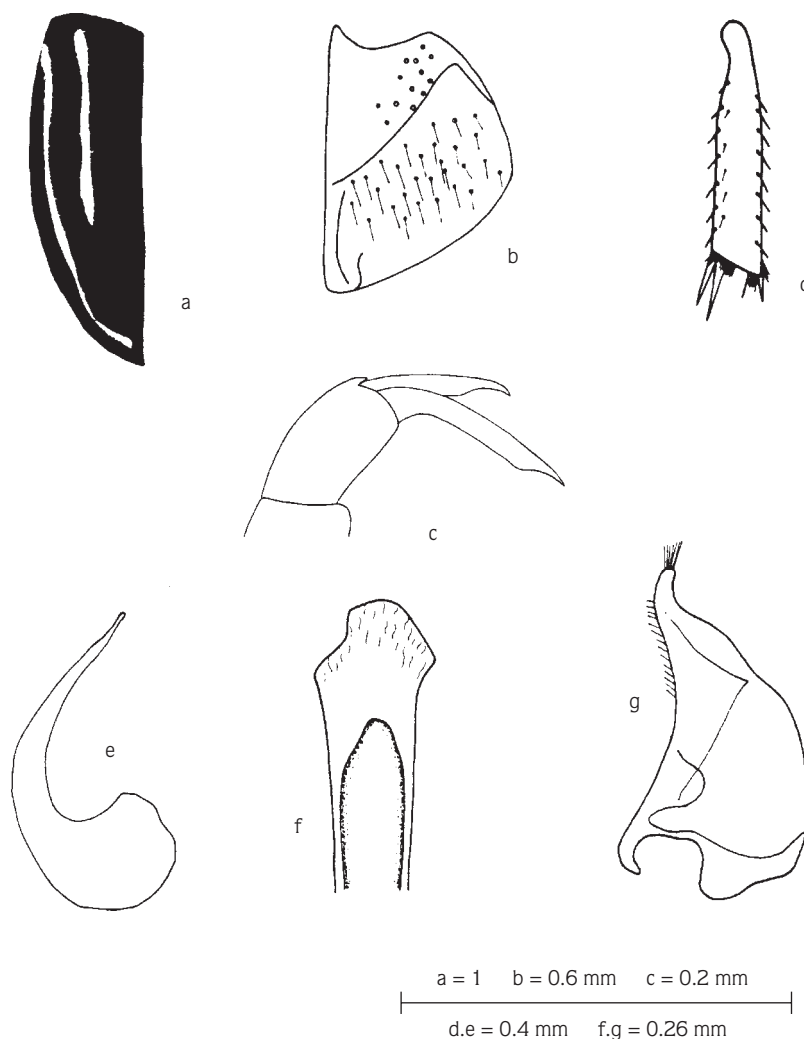


Figure 1. *Graptodytes bilineatus*: a) Elytron, b) Metacoxa, c) Male protarsal claws, anterior view, d) Male metatibia, ventral view, e) Aedeagus, lateral view, f) Aedeagus, dorsal view, g) Paramere.

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