

Predaceous Diving Beetles (Coleoptera: Dytiscidae) of Elâzığ Province, Türkiye with Description of the Female of *Deronectes hakkariensis* Wewalka, 1989.

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Highlights:

- Dytiscidae
- Fauna
- Deronectes

Keywords:

- Predaceous diving beetles
- Coleoptera
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- Elâzığ
- Türkiye

ABSTRACT:

The present study was conducted between May 2022 and September 2024 in Elâzığ Province; located in eastern Anatolian Region of Türkiye, to identify the species of family Dytiscidae (Predaceous diving beetles). A total of 1,163 dytiscid specimens were collected from 52 different localities and identified. In total, 38 species belonging to 16 genera within the family Dytiscidae were recorded. All identified species represent new records for Elâzığ Province. Additionally, the female genitalia of *Deronectes hakkariensis* Wewalka, 1989 an endemic water beetle previously known only from Hakkari and Erzurum Provinces of Türkiye are illustrated for the first time.

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INTRODUCTION

The members of the beetle family Dytiscidae, commonly known as predaceous diving beetles, inhabit nearly all types of aquatic environments (Hájek & Reiter, 2014; Balke *et al.*, 2020). The family is represented by 182 genera and approximately 4,600 species worldwide (Nilsson & Hájek, 2025a). In the Palearctic region, it comprises 80 genera and around 650 species (Nilsson & Hájek, 2025b). In Türkiye, numerous faunal studies have been conducted on Dytiscidae. As a result, a total of 178 species belonging to 31 genera have been recorded, 40 of which are endemic to the country (Wewalka, 1989; Erman & Erman, 2002, 2004; Erman & Fery, 2006; Darılmaz & Kıyak, 2009, 2010; Fery *et al.*, 2001; Fery, 2009; Fery & Erman, 2009; Fery & Hendrich, 2011a, b; Fery & Przewozny, 2011; Hájek *et al.*, 2011; Hernando *et al.*, 2012; Vorst & Fery, 2014; Aykut & Fery, 2017; Aykut, 2018, 2022; Aykut & Taşar, 2018; Darılmaz *et al.*, 2018; Erman *et al.*, 2018; Aykut *et al.*, 2018, 2019, 2021, 2025, 2026; Aykut & Tusun, 2022; Aykut & Tuğal, 2023).

Elazığ Province, which hosts diverse aquatic habitats, is located in the southwestern part of the Eastern Anatolia Region, covering an area of 9,151 km². To the best of our knowledge, despite numerous faunistic studies on dytiscid beetles in Türkiye, no research has been conducted specifically in Elazığ. Therefore, the aim of this study is to document the diving beetle fauna of Elazığ Province and contribute to the overall knowledge of Turkish biodiversity.

MATERIALS AND METHODS

Dytiscid specimens were collected from 52 sampling sites across various water bodies in Elazığ Province, located in the southwestern part of the Eastern Anatolia Region of Türkiye, from May 2022 to September 2024. Specimens were collected using hand nets with mesh diameters of 0.5–1 mm. additionally; a handheld GPS device (*Magellan Explorist 610*) was used to record the Co-ordinates of the sampling sites. The basic characteristics of the sampling sites are presented in Table 1.

The collected specimens were fixed in an ethylene solution and transported to the laboratory. In the laboratory, a small paintbrush and an ultrasonic cleaner (*Augusta GS3*) were used to remove clay and muddy residues from the surface of the specimens. The material was examined with a Leica S8APO stereoscopic microscope. Photographs of the specimens were taken with a Canon EOS 550D digital camera attached to the microscope. Stacks of photos taken at different focal planes were combined using the Helicon Focus 6.4.1 software. The genitalia were studied in wet condition. The following abbreviations are used in the text: TL: total body length, MW: maximum width of body. The specimens studied are deposited in the collection of M. Aykut, Dicle University, Diyarbakır, Türkiye.

Table 1. Sampling sites

Abbr.	Samplin Site	Coordinates	Alt. (m)	Habitat
E1	Alacakaya district, Aslantaşı village	38°24'27"N, 39°43'22"E	1073	Small spring with moss and grass
E2	Alacakaya district, Çanakça village	38°24'17"N, 39°45'14"E	957	Small water source with sandy bottom
E3	Alacakaya district, Kayranlı village	38°27'56"N, 39°47'50"E	1146	Small water source with sandy bottom
E4	Alacakaya district, Güleman hamlet	38°28'37"N, 39°54'03"E	887	Small water source with sandy bottom
E5	Arıcak district, Akdağlar plateou	38°34'36"N, 40°08'24"E	1985	Spring water
E6	Arıcak district, Akdağlar plateou	38°37'18"N, 40°08'07"E	2176	Spring water
E7	Arıcak district, Akdağlar plateou	38°07'23"N, 40°10'32"E	2086	Spring water

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Table 1. Continued

Abbr.	Samplin Site	Coordinates	Alt. (m)	Habitat
E8	Arıcak district, Akdağlar plateou	38°37'53"N, 40°07'54"E	2128	Spring water
E9	Palu district, Yarımtepe village	37°54'30"N, 40°16'31"E	1735	Small stream with fine gravel
E10	Palu district, Tarhana village	38°36'41"N, 40°03'34"E	1852	Small stream with fine gravel
E11	Palu district, Karacabağ village	38°40'26"N, 40°00'17"E	1304	Small stream with grass
E12	Palu district, Damlapınarı village	38°41'25"N, 40°09'16"E	1170	Small stream with vegetation
E13	Karakoçan district, Kızılpınar village, Şehan plateau	39°00'06"N, 40°09'06"E	1560	Small stream with vegetation
E14	Karakoçan district, Kızılpınar village, Şehan plateau	39°00'01"N, 40°10'25"E	1607	Small spring water with muddy bottom
E15	Karakoçan district, Yenikaya village	39°00'41"N, 40°12'07"E	1738	Small spring water with grass
E16	Bingöl Elazığ provincial border	38°59'37"N, 40°08'51"E	1584	Puddle
E17	Karakoçan district, Kulundere village	38°58'11"N, 40°06'15"E	1337	Puddle
E18	Elazığ, Kayaönü village	38°33'21"N, 39°47'36"E	1241	Small stream near to drying up
E19	Elazığ, Baltaş village	38°34'29"N, 39°47'15"E	1145	Small stream with stony sandy
E20	Elazığ, Kuşhane village	38°34'24"N, 39°43'59"E	920	Small stream
E21	Elazığ-Alacakaya Road, 10 km to Alacakaya district	38°32'06"N, 39°49'23"E	1293	Grassy spring
E22	Maden district, Sağrılı village	38°24'30"N, 39°45'05"E	1053	Mossy spring
E23	Maden district, ETİ maden facilty	38°24'38"N, 39°40'36"E	1038	Small stream
E24	Maden district, Ağadibek village	38°21'16"N, 39°40'09"E	1025	Stream
E25	Maden district, Above the ETİ mining facility	38°22'23"N, 39°38'44"E	1240	Puddle
E26	Maden district, Above the ETİ mining facility	38°22'56"N, 39°39'22"E	1216	Water source
E27	Alacakaya district, Karatop village	38°25'20"N, 39°41'50"E	1297	Leak of water source
E28	Baskil district, Çulhalar hamlet	38°33'53"N, 38°46'02"E	1274	Irrigation lakes
E29	Baskil district, Çulhalar hamlet	38°33'48"N, 38°46'13"E	1258	Puddle
E30	Baskil district, Beşbölük village	38°34'39"N, 38°42'46"E	1365	Stream
E31	Baskil district, Beşbölük-Akdemir road, 2,5 km to Akdemir village	38°36'11"N, 38°42'19"E	1563	Leak of water source
E32	Baskil district, Konalga village	38°34'04"N, 38°11'02"E	1154	Small spring water with grass
E33	Baskil district, Akçalar hamlet	38°31'54"N, 38°34'35"E	946	Small puddle in a stream
E34	Keban district, Badempınarı village	38°31'22"N, 39°07'24"E	1133	Small stream
E35	Keban district, Temürköy village	38°30'24"N, 39°03'50"E	1125	Stream surrounded by trees
E36	Keban district, Yolçatı village	38°32'30"N, 39°01'42"E	1263	Puddle

Table 1. Continued

Abbr.	Samplin Site	Coordinates	Alt. (m)	Habitat
E37	Keban district, Çalıca village	38°32'22"N, 38°59'12"E	1400	Puddle
E38	Ağın district, Bademli village	39°00'17"N, 38°40'33"E	977	Small stream
E39	Ağın district, Beyelması village	38°57'48"N, 38°42'26"E	987	Puddle on the streamside
E40	Elazığ Alaca village	38°45'02"N, 39°03'36"E	934	Small stream
E41	Elazığ Sünköy village	38°40'16"N, 38°59'47"E	1155	Small stream
E42	Elazığ Bağlarca village	38°38'37"N, 39°03'16"E	1047	Puddle
E43	Elazığ Hal village	38°46'42"N, 39°54'33"E	1136	Grassy spring
E44	Elazığ Meşeli village	38°45'37"N, 39°12'18"E	1037	Grassy spring
E45	Elazığ Pinoğlu village	38°50'22"N, 39°10'37"E	857	Puddle
E46	Elazığ Alatarla village	38°49'21"N, 39°07'31"E	967	Spring pond
E47	Elazığ Kaplıkaya village	38°47'19"N, 39°10'33"E	970	Stream
E48	Sivrice district, Ağıluzu village	38°26'49"N, 39°15'30"E	1402	Spring pond
E49	Sivrice district, Yedipınar village	38°24'55"N, 39°12'26"E	1524	Small stream
E50	Sivrice district, Kavakköy village	38°24'58"N, 39°09'06"E	1620	Water source
E51	Kovancılar district, Mirahmet village	38°46'54"N, 40°02'56"E	1215	Puddle of small stream
E52	Kovancılar district, Karasungur village	38°47'48"N, 40°03'58"E	1294	Puddle of small stream

RESULTS AND DISCUSSION

A total of 1,163 adult specimens, representing 38 species from 16 genera within the family Dytiscidae, were collected and identified from the study area. The recorded species and their locality data are listed below:

Systematics

Agabus Leach, 1817

1- *Agabus biguttatus* (Olivier, 1795)

Material examined: E2 (1 ♂♂); E10 (2 ♂♂); E24 (2 ♂♂, 3 ♀♀); E26 (1 ♀♀); E27 (2 ♂♂, 1 ♀♀); E28 (1 ♂♂, 1 ♀♀); E34 (1 ♂♂, 4 ♀♀); E39 (2 ♂♂, 1 ♀♀); E41 (5 ♂♂, 3 ♀♀); E45 (3 ♂♂, 3 ♀♀); E48 (2 ♂♂); E50 (2 ♂♂, 1 ♀♀); E51 (1 ♂♂, 2 ♀♀).

2- *Agabus bipustulatus* (Linnaeus, 1767)

Material examined: E2 (1 ♂♂, 2 ♀♀); E4 (2 ♀♀); E7 (7 ♂♂, 6 ♀♀); E10 (2 ♂♂, 1 ♀♀); E17 (1 ♂♂); E22 (1 ♂♂, 2 ♀♀); E25 (1 ♂♂, 1 ♀♀); E28 (3 ♂♂); E35 (3 ♂♂, 2 ♀♀); E38 (1 ♂♂, 2 ♀♀); E40 (9 ♂♂, 3 ♀♀); E44 (5 ♂♂, 2 ♀♀); E46 (1 ♂♂, 3 ♀♀); E51 (2 ♀♀).

3- *Agabus caraboides* Sharp, 1882

Material examined: E12 (1 ♂♂, 1 ♀♀); E20 (2 ♂♂); E27 (1 ♂♂, 2 ♀♀).

4- *Agabus conspersus* Marsham, 1802

Material examined: E4 (1 ♂♂); E10 (2 ♀♀); E22 (1 ♂♂, 3 ♀♀); E24 (2 ♂♂, 1 ♀♀); E27 (1 ♂♂, 3 ♀♀); E50 (2 ♂♂, 2 ♀♀); E52 (5 ♂♂, 3 ♀♀).

5- *Agabus dilatatus* Brullé, 1832

Material examined: E27 (1 ♂♂, 1 ♀♀); E38 (5 ♂♂, 1 ♀♀); E44 (1 ♂♂, 2 ♀♀).

6- *Agabus glacialis* Hochhuth, 1846

Material examined: E24 (1 ♀♀); E28 (2 ♂♂); E38 (3 ♂♂, 2 ♀♀); E45 (1 ♂♂, 2 ♀♀).

7- *Agabus nebulosus* Forster, 1771

Material examined: E2 (2 ♂♂, 1 ♀♀); E23 (1 ♂♂); E29 (2 ♂♂, 2 ♀♀); E50 (2 ♀♀); E52 (4 ♂♂, 2 ♀♀).

Bidessus* Sharp, 1880*8- *Bidessus calabricus* Guignot, 1957b**

Material examined: E1 (1 ♂♂, 2 ♀♀); E19 (9 ♂♂, 5 ♀♀); E31 (3 ♂♂, 2 ♀♀).

9- *Bidessus unistriatus* Schrank, 1781

Material examined: E14 (4 ♂♂, 5 ♀♀); E31 (3 ♂♂, 1 ♀♀).

Colymbetes* Clairville, 1806*10- *Colymbetes fuscus* Linnaeus, 1758**

Material examined: E33 (1 ♂♂, 1 ♀♀); E36 (1 ♂♂, 2 ♀♀); E40 (3 ♂♂, 1 ♀♀).

Deronectes* Sharp, 1882*11- *Deronectes hakkariensis* Wewalka, 1989**

Material examined: E7 (7 ♀♀).

Remarks: *Deronectes hakkariensis* was first described by Wewalka (1989) based on a single male specimen collected from the Uludere district of Hakkari Province, located in southeastern Türkiye. Since 1990, Uludere has been administratively part of Şırnak Province. Subsequent field studies have also recorded this species in northeastern Türkiye, specifically: 2 ♂♂, 2 ♀♀, 27.7.1999 Erzurum province, Demirdöven Barajı; 3 ♂♂, 3 ♀♀, 7.9.2000 Erzurum province, Serdarlı village and 7 ♂♂, 2 ♀♀, 18.9.2000 Erzurum province, Yedigöller (Fery *et al.* 2001).

In both of these studies, only male specimens were described in detail, while female specimens remained undescribed. In our study, the female genitalia of *D. hakkariensis* are illustrated for the first time. The specimens collected from Elâzığ Province are consistent with the original description, and the examined females exhibit external similarities to males. For a detailed analysis of the diagnostic characters of *D. hakkariensis*, see Wewalka (1989) and Fery *et al.* (2001).

Gonocoxae and gonocoxosterna as in Fig. 1, habitus as Fig. 2. The female has the following values: TL 3.95 - 4.30 mm (4.05 mm), MW 2.05 - 2.15 mm (2.06 mm), TL/MW 1.93 - 2.00 (1.97).

Graptodytes* Seidlitz, 1887*12- *Graptodytes flavipes* Olivier, 1795**

Material examined: E5 (3 ♂♂, 4 ♀♀); E13 (2 ♀♀); E25 (1 ♂♂, 2 ♀♀); E33 (11 ♂♂, 6 ♀♀).

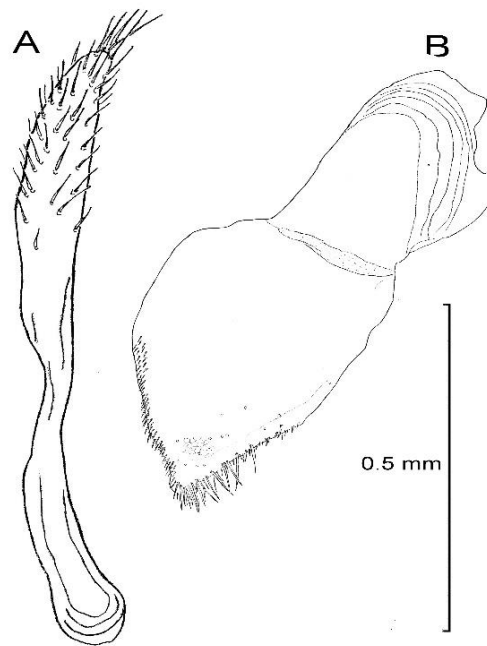


Figure 1. *Deronectes hakkariensis*, female: gonocoxae (A) and gonocoxosternum (B)

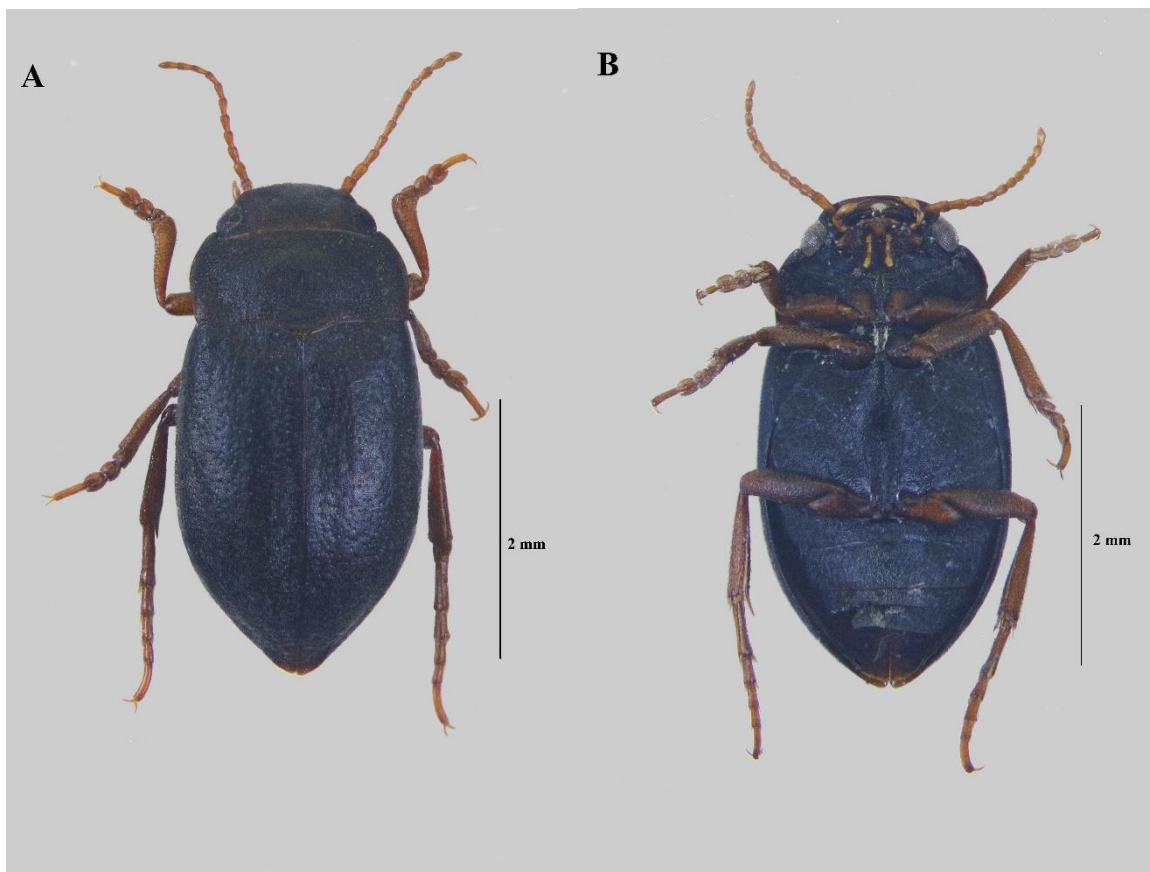


Figure 2. Habitus of *Deronectes hakkariensis* (female): (A) in dorsal view; (B) in ventral view

Hydroglyphus Motschulsky, 1853

13- *Hydroglyphus geminus* Fabricius, 1792

Material examined: E4 (6 ♂♂, 3 ♀♀); E12 (3 ♂♂, 5 ♀♀); E15 (7 ♂♂, 5 ♀♀); E18 (4 ♂♂, 2 ♀♀); E22 (8 ♂♂, 5 ♀♀); E30 (4 ♂♂, 1 ♀♀); E42 (4 ♂♂, 4 ♀♀); E43 (4 ♂♂, 2 ♀♀); E47 (4 ♂♂, 7 ♀♀); E52 (3 ♂♂, 4 ♀♀).

14- *Hydroglyphus pusillus* (Fabricius, 1781)

Material examined: E4 (3 ♂♂, 2 ♀♀); E15 (3 ♂♂, 2 ♀♀); E24 (2 ♂♂, 4 ♀♀); E30 (3 ♀♀); E36 (3 ♂♂, 2 ♀♀); E42 (5 ♂♂, 7 ♀♀); E49 (5 ♂♂, 2 ♀♀).

Hydroporus Clairville, 1806**15- *Hydroporus discretus* Fairmaire & Brisout, 1859**

Material examined: E5 (3 ♂♂, 2 ♀♀); E15 (2 ♂♂); E17 (1 ♀♀); E20 (2 ♂♂, 2 ♀♀); E22 (3 ♂♂); E26 (1 ♀♀); E34 (3 ♂♂, 2 ♀♀); E39 (8 ♂♂, 5 ♀♀); E44 (3 ♂♂, 4 ♀♀); E49 (1 ♂♂, 2 ♀♀).

16- *Hydroporus kozlovskii* Zaitzev, 1927

Material examined: E12 (2 ♂♂, 2 ♀♀); E15 (1 ♂♂, 2 ♀♀); E43 (1 ♂♂, 1 ♀♀); E47 (3 ♂♂, 2 ♀♀).

17- *Hydroporus marginatus* Duftschmid, 1805

Material examined: E5 (1 ♂♂, 2 ♀♀); E12 (3 ♂♂, 5 ♀♀); E17 (1 ♂♂, 3 ♀♀); E38 (4 ♂♂, 2 ♀♀); E42 (1 ♂♂, 4 ♀♀); E51 (11 ♂♂, 6 ♀♀).

18- *Hydroporus palustris* Linnaeus, 1761

Material examined: E5 (3 ♂♂, 4 ♀♀); E17 (3 ♂♂); E24 (2 ♂♂, 4 ♀♀); E29 (2 ♂♂, 6 ♀♀); E37 (3 ♀♀); E47 (4 ♂♂, 1 ♀♀).

19- *Hydroporus planus* Fabricius, 1782

Material examined: E5 (3 ♂♂, 5 ♀♀); E6 (4 ♂♂, 1 ♀♀); E8 (3 ♂♂, 1 ♀♀); E11 (2 ♂♂, 2 ♀♀); E27 (8 ♂♂, 4 ♀♀); E27 (4 ♂♂, 2 ♀♀); E36 (1 ♂♂, 3 ♀♀); E40 (4 ♂♂, 7 ♀♀); E46 (3 ♂♂, 5 ♀♀).

20- *Hydroporus pubescens* Gyllenhal, 1808

Material examined: E5 (11 ♂♂, 7 ♀♀); E6 (6 ♂♂, 5 ♀♀); E7 (3 ♂♂); E8 (1 ♀♀); E11 (3 ♂♂, 1 ♀♀); E17 (1 ♂♂); E26 (2 ♀♀); E27 (4 ♂♂, 2 ♀♀); E43 (6 ♂♂, 11 ♀♀); E48 (1 ♂♂, 2 ♀♀); E49 (5 ♂♂, 3 ♀♀); E52 (1 ♂♂, 3 ♀♀).

21- *Hydroporus tessellatus* Drapiez, 1819

Material examined: E1 (1 ♀♀); E2 (1 ♀♀); E4 (1 ♂♂, 1 ♀♀); E13 (3 ♂♂, 2 ♀♀); E17 (1 ♂♂, 2 ♀♀); E19 (4 ♂♂, 2 ♀♀); E23 (2 ♂♂); E25 (3 ♂♂, 7 ♀♀); E26 (1 ♂♂); E27 (3 ♂♂, 5 ♀♀); E29 (2 ♂♂, 1 ♀♀); E36 (2 ♂♂, 4 ♀♀); E37 (2 ♂♂, 3 ♀♀); E45 (3 ♂♂, 1 ♀♀); E51 (3 ♂♂, 5 ♀♀).

22- *Hydroporus transgrediens* Gschwendtner, 1923

Material examined: E15 (4 ♂♂, 2 ♀♀); E24 (2 ♀♀); E25 (1 ♂♂, 1 ♀♀); E27 (3 ♂♂, 2 ♀♀); E50 (2 ♂♂).

Hydrovatus* Motschulsky, 1853*23- *Hydrovatus cuspidatus* Kunze, 1818**

Material examined: E16 (2 ♂♂, 3 ♀♀); E30 (3 ♂♂, 1 ♀♀); E32 (3 ♂♂, 2 ♀♀); E50 (2 ♂♂, 1 ♀♀).

Hygrotus* Stephens, 1828*24- *Hygrotus confluens* (Fabricius, 1787)**

Material examined: E7 (1 ♂♂, 2 ♀♀); E11 (2 ♀♀); E19 (1 ♂♂, 2 ♀♀); E43 (2 ♂♂, 4 ♀♀).

25- *Hygrotus impressopunctatus* (Schaller, 1783)

Material examined: E7 (5 ♂♂, 1 ♀♀); E29 (3 ♂♂, 2 ♀♀); E43 (3 ♂♂); E48 (1 ♂♂, 1 ♀♀); E50 (1 ♀♀).

26- *Hygrotus inaequalis* (Fabricius, 1777)

Material examined: E3 (2 ♀♀); E9 (3 ♂♂, 1 ♀♀); E12 (1 ♂♂); E18 (2 ♂♂, 3 ♀♀); E21 (1 ♂♂, 2 ♀♀); E33 (11 ♂♂, 6 ♀♀); E40 (3 ♂♂, 2 ♀♀); E46 (2 ♀♀); E48 (2 ♂♂, 4 ♀♀).

Ilybius* Erichson, 1832*27- *Ilybius fuliginosus* Fabricius, 1792**

Material examined: E32 (1 ♂♂, 2 ♀♀); E35 (1 ♀♀); E39 (1 ♂♂, 2 ♀♀); E46 (2 ♂♂, 4 ♀♀).

Laccophilus* Leach, 1817*28- *Laccophilus hyalinus* (De Geer, 1774)**

Material examined: E2 (1 ♂♂, 2 ♀♀); E16 (3 ♂♂); E17 (1 ♂♂); E21 (1 ♂♂, 3 ♀♀); E28 (3 ♂♂, 1 ♀♀); E30 (1 ♂♂, 2 ♀♀); E38 (4 ♂♂, 1 ♀♀); E51 (3 ♂♂, 2 ♀♀).

29- *Laccophilus minutus* Linnaeus, 1758

Material examined: E3 (1 ♂♂, 2 ♀♀); E12 (2 ♂♂, 1 ♀♀); E19 (3 ♂♂, 1 ♀♀); E22 (3 ♂♂, 2 ♀♀); E30 (3 ♂♂, 3 ♀♀); E41 (5 ♂♂, 3 ♀♀); E43 (1 ♂♂, 2 ♀♀); E49 (3 ♂♂).

30- *Laccophilus poecilus* Klug, 1834

Material examined: E14 (3 ♂♂, 3 ♀♀); E31 (2 ♂♂, 1 ♀♀); E46 (3 ♂♂, 2 ♀♀); E51 (2 ♀♀).

Nebrioporus* Régimbart, 1906b*31- *Nebrioporus airumilus* Kolenati, 1845**

Material examined: E9 (11 ♂♂, 7 ♀♀); E12 (2 ♂♂, 5 ♀♀); E18 (8 ♂♂, 4 ♀♀); E27 (1 ♀♀); E21 (3 ♂♂, 2 ♀♀); E29 (2 ♂♂, 4 ♀♀).

32- *Nebrioporus stearinus suavis* Sharp, 1882

Material examined: E1 (1 ♂♂); E3 (3 ♂♂, 2 ♀♀); E21 (7 ♂♂, 4 ♀♀); E26 (1 ♂♂, 2 ♀♀).

33- *Nebrioporus stearinus stearinus* Kolenati, 1845

Material examined: E1 (2 ♂♂, 1 ♀♀); E9 (3 ♂♂); E17 (2 ♀♀); E18 (1 ♂♂, 2 ♀♀); E26 (1 ♂♂).

Oreodytes* Seidlitz, 1887*34- *Oreodytes davisii davisii* Curtis, 1831**

Material examined: E32 (1 ♂♂, 2 ♀♀); E38 (1 ♂♂, 1 ♀♀); E41 (2 ♂♂); E45 (3 ♂♂, 2 ♀♀); E49 (5 ♂♂, 2 ♀♀).

Platambus* Thomson, 1859*35- *Platambus lunulatus* Fischer von Waldheim, 1829**

Material examined: E6 (2 ♀♀); E11 (1 ♂♂, 2 ♀♀); E28 (3 ♂♂, 2 ♀♀); E43 (4 ♂♂, 2 ♀♀).

36- *Platambus maculatus* Linnaeus, 1758

Material examined: E12 (3 ♂♂); E14 (1 ♀♀); E43 (1 ♂♂, 2 ♀♀); E44 (1 ♂♂, 1 ♀♀).

Rhantus* Dejean, 1833*37- *Rhantus suturalis* W.S. Macleay, 1825**

Material examined: E13 (3 ♂♂, 2 ♀♀); E18 (3 ♂♂, 2 ♀♀); E33 (1 ♂♂, 3 ♀♀); E37 (3 ♂♂, 3 ♀♀); E42 (1 ♂♂, 2 ♀♀); E47 (2 ♂♂).

Scarodytes* Gozis, 1914*38- *Scarodytes halensis* Fabricius, 1787**

Material examined: E9 (3 ♂♂, 2 ♀♀); E18 (3 ♂♂, 5 ♀♀); E29 (3 ♂♂, 4 ♀♀); E36 (5 ♂♂, 11 ♀♀); E43 (4 ♂♂, 3 ♀♀); E48 (2 ♂♂, 3 ♀♀); E49 (1 ♂♂, 2 ♀♀); E50 (9 ♂♂, 4 ♀♀).

CONCLUSION

In the freshwater habitats of Elazığ Province, 38 diving beetle species belonging to 16 genera were recorded. The female genitalia of *Deronectes hakkariensis* Wewalka, 1989 previously known only from Hakkari and Erzurum Provinces are illustrated for the first time in this study. The total number of collected diving beetle specimens from the research area was 1,163. Among the recorded species, *Hydroglyphus geminus* was the most dominant (7.31%), followed by *Hydroporus pubescens* (6.53%), *Hydroporus tessellatus* (5.59%), *Scarodytes halensis* (5.42%), *Agabus bipustulatus* (5.33%), and *Hydroporus planus* (5.07%). In contrast, *Agabus glacialis*, *Platambus maculatus*, *Colymbetes fuscus*, *Agabus caraboides*, and *Deronectes hakkariensis* were rare, each with an abundance of less than 1%. The remaining 25 species were subdominant, with an abundance ranging from 1% to 5%.

Hydroporus tessellatus, *Agabus bipustulatus*, *Agabus biguttatus*, *Hydroporus pubescens*, *Hydroglyphus geminus*, and *Hydroporus discretus* were the most widespread species in the study area. These six species were recorded at the following number of sites: *Hydroporus tessellatus* in 15 sites, *Agabus bipustulatus* in 14 sites, *Agabus biguttatus* in 13 sites, *Hydroporus pubescens* in 12 site, *Hydroglyphus geminus* and *Hydroporus discretus* in 10 sites. In contrast, *Bidessus calabricus*, *Agabus dilatatus*, *Colymbetes fuscus*, and *Agabus caraboides* were less widespread, each found at fewer than five sites, while *Deronectes hakkariensis* was restricted to a single site. Further field studies are required to gain a more comprehensive understanding of the distribution of Turkish Dytiscidae.

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Çıkar Çatışması

The article authors declare that there is no conflict of interest between them.

Yazar Katkısı

The authors declare that they have contributed equally to the article.

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