

# First Record of *Discus rotundatus* (Müller, 1774) (Gastropoda: Discidae) in Bulgaria

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**Abstract:** The first record of *Discus rotundatus* (Müller, 1774) in Bulgaria and in eastern Balkan Peninsula is reported. Twelve shells were collected from the northern slope of Rahat Tepe hill in the city of Plovdiv (Upper Thracian Lowland), N42°09'06" E24°45'06", 175 m a.s.l.

**Keywords:** Terrestrial snails, introduced, town, Balkans

## Introduction

*Discus rotundatus* (Müller, 1774) is known from central Atlantic islands, western Europe from Italy to Southern Scandinavia and the eastern Baltic region (WELTER-SCHULTES 2012). The recognized native distribution range of this species covers only West and Central Europe (KERNEY *et al.* 1983). On the eastern parts of Balkans Peninsula, *D. rotundatus* has not been registered (WELTER-SCHULTES 2012). In Turkey (Asian side of the Bosphorus in Istanbul), in a very close proximity to the Balkan Peninsula, this species has been considered as introduced (ÖRSTAN 2003). It has been introduced also to Finland (KERNEY, CAMERON 1979) and several locations in North America, from Mexico to Canada (DUNDEE 1974, ROTH, SADEGHIAN 2006, ÖRSTAN 2012).

By now, only other European species of this genus have been found in Bulgaria, i.e. *D. perspectivus* (Megerle von Mühlfeld, 1816) and *D. ruderatus* (Férussac, 1821) (see DAMYANOV, LIKHAREV 1975, DEDOV 1998, HUBENOV 2007, IRIKOV, ERÖSS 2008). This paper reports the first record of *D. rotundatus* in Bulgaria and on the territory of the eastern part of the Balkan Peninsula.

## Material and Methods

Shells of terrestrial gastropods were collected by hand on Rahat Tepe hill in the town of Plovdiv on

30 November 2013. For identification of the species, materials of *D. rotundatus* collected from the United Kingdom (Shrewsbury, 17 August 2001, D. Georgiev Leg.) were used for comparison. The photographs were made with a camera system with digital adapter and CETI stereomicroscope. Three adult shells of *D. rotundatus* in good stage of preservation were measured using a caliper. Abbreviations used: D, shell diameter; H, shell height; U, umbilicus width. The material is preserved in the collection of the author.

## Results and Discussion

**Material examined:** 12 ex. (8 adults and 4 juvenile shells) from the northern slope of Rahat Tepe hill in the town of Plovdiv, Upper Thracian Lowland, Bulgaria, N42°09'06" E24°45'06", 175 m a.s.l., D. Georgiev leg.

**Description:** Shell horny-coloured with reddish brown spots, quite flat, coarsely ribbed, weakly keeled at its periphery; umbilicus more than 1/3 of shell diameter (Fig. 1). Measurements of three adult shells in a good stage of preservation (in mm): D = 5.4, 5.0, 5.6, H = 2.6, 2.7, 2.7, U = 1.8, 2.2, 2.5.

**Differential characters:** This species clearly differs from the similar *D. ruderatus* in its coarsely ribbed shell surface, wider umbilicus, slightly angled



**Fig. 1.** Shell of *Discus rotundatus* from Rahat Tepe hill in the city of Plovdiv, a photograph of the second specimen measured ( $D = 5.0$  mm), top – close look at the shell surface

last whorl and aperture (versus finely ribbed shell, umbilicus 1/3 of shell diameter, and rounded shell

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periphery and aperture in the latter species). In addition, *D. rotundatus* often has one whorl more than *D. ruderatus* and specific shell pigmentation.

**Habitat:** The specimens were collected among granite rocks, bricks, soil, and leaf detritus. The locality was occupied by various broad leaf trees and bush species, and Ivy (*Hedera helix*) growing on the ground and among rocks. It is well known that the species is not strictly calcareous and is often found in non-limestone areas (WELTER-SCHULTES 2012); therefore, the record on the granite hills of the city of Plovdiv is not surprising.

**Associated gastropods:** *Zebrina detrita* (O. F. Müller, 1774), *Cochlicopa lubrica* (O. F. Müller, 1774), *Oxychilus* cf. *draparnaudi* (Beck, 1837), *Helix lucorum* Linnaeus, 1758, *Bulgarica varnensis* (L. Pfeiffer, 1848).

On the basis of the available literature, the following identification key to the Bulgarian species of the genus *Discus* is proposed:

1. Shell very flat, with a sharp keel .....  
..... *D. perspectivus*  
- Shell not very flat, without a keel.....2.
2. Shell finely ribbed, umbilicus 1/3 of shell diameter ..... *D. ruderatus*  
- Shell coarsely ribbed, umbilicus more than 1/3 of shell diameter.....*D. rotundatus*

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