Contribution to the knowledge of the terrestrial gastropod fauna (Mollusca: Gastropoda) of the Eastern Rhodopes (Bulgaria)

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Abstract. First reports on 15 newly-recorded for the malacofauna of the Eastern Rhodopes species of terrestrial gastropods are given. Three of them are also new for the fauna of the Rhodopes Mountains as a whole. According to the existing literature and our field data, the number of the established species of terrestrial gastropods in the Eastern Rhodopes so far, becomes 45. Fourteen of them are Bulgarian or Balkan endemic species, while three species are found only in the region of the Rhodopes. By the discovery of new localities of some of the formerly recorded in the Eastern Rhodopes terrestrial gastropods, their distribution area in the region was expanded.

Key words: Gastropoda, terrestrial snails, Eastern Rhodopes, Bulgaria, distribution, new records.

Introduction

In respect of both species composition and distribution of terrestrial gastropods, the Eastern Rhodopes are one of the most poorly investigated regions in Bulgaria. According to literature (HUDEC & VAŠATKO, 1971; RIEDEL, 1975; HUBENOV, 2004), there are 30 recorded species of terrestrial gastropods in this region of Bulgaria, which makes about 13% of all 236 species, established in Bulgaria (DEDOV, 1998). The small number of established species, as well as the small number of investigated localities (HUBENOV, 2004), presume that the future studies will establish higher number of terrestrial gastropod species in that region.

Materials and methods

The gastropods were collected in the period between 1995 and 2002. The sample material was determined after DAMIANOV & LIKHAREV (1975). The gastropods are preserved in 70% ethanol or under the form of shells in authors' collections.

Localities of the species are numbered in Table 1 as follows:

1. Plevun Village, Ivaylovgrad District.
2. Kondovo Village, Ivaylovgrad District.
3. Zhelezari Village, Ivaylovgrad District.
4. Kostilkovo Village, Ivaylovgrad District.
5. Dolno Lukovo Village, Ivaylovgrad District.
6. Kodja-Kaya Cave, Odrintsi Village, Ivaylovgrad District.
7. Dupkata Cave, Beli Dol Village, Krumovgrad District, under stones.
8. Ayna-Ini Cave, Ribino Village, Krumovgrad District, clay.
9. Vodnata Peshtera Cave, Kobilyane (Chitashko) Village, Kardjali District, under stones.
10. Vodnata Peshtera Cave, Nedelino Village, Kardjali District, 700 m a.s.l.
11. Srednogortsi Village, Kardjali District, 780 m a.l.s.
12. Patron Kaya Area, Madjarovo District, under stones.

Results and discussions

The malacofauna of the Eastern Rhodopes Mountains is enriched by 15 newly recorded in that region terrestrial gastropods (Table 1). HUBENOV (2004), based on liter-

Table 1
Species composition and distribution of terrestrial gastropods in the Eastern Rhodopes

Species	Localities and data
* *Ena obscu*ra (Müller, 1774)	**1**, **2**, **3**, **4**: 10.12.2000, leg. D. Gyorgiev, det. A. Irikov
* *Ena montana* (Draparnaud, 1801)	**1**, 11.11.2001, leg. D. Gyorgiev, det. A. Irikov
** *Imparietula seductilis* (Rossmässler, 1846)	**1**, **2**, **3**: 21.10.2000, leg. D. Gyorgiev, det. A. Irikov
* *Chondrula microtraga microtraga* (Rossmässler, 1839)	**1**, **4**: 10.12.2000, leg. D. Gyorgiev; det. A. Irikov
** *Mastus rossmaessleri* (L. Pfeiffer, 1846)	**1**, **4**, **5**: 9-10.12.2000, leg. D. Gyorgiev, det. A. Irikov
* *Laciniaria plicata* (Draparnaud, 1801)	**7**: 15.4.1998, leg. B. Petrov & B. Barov, det I. Dedov
* *Bulgarica thessalonica* (Rossmässler, 1839)	**1**: 10.12.2000; **3**, **4**: 5.5.2001, leg. D. Gyorgiev, det. Irikov; **11**: 1996, leg B. Petrov, det. I. Dedov; **12**: 9.2.1998, leg B. Petrov & G. Stoyanov, det I. Dedov
** *Oxyloma elegans* (Risso, 1826)	**1**: 10.12.2000, near brook, leg. D. Gyorgiev, det. A. Irikov
* *Cecilioides acicula* (Müller, 1774)	**3**: 11.11.2001, leg. D. Gyorgiev; det. A. Irikov
* *Oxychilus urbanskii* Riedel, 1963	**1**: 10.12.2000, leg. D. Gyorgiev, det. A. Irikov **2**: 11.11.2001, leg. D. Gyorgiev, det. A. Irikov **8**: 11.10.1995, leg. P. Stoev & B. Petrov, det. I. Dedov **9**: 12.2.1998, leg. B. Petrov & T. Ivanova, det I. Dedov**10**: 31.8.1999, leg. B. Petrov & V. Beshkov, det. I. Dedov
* *Oxychilus depressus* (Sterki, 1880)	**6**: 5.7.1995, leg. T. Ivanova, det I. Dedov
* *Daudebardia rufa cycladum* Martens, 1889	**1**: 11.11.2001, leg. D. Gyorgiev, det. A. Irikov
* *Lindholmiola corcyrensis corcyrensis* (Deshayes, 1839)	**1**, **4**, **5**: 10.12.2000, leg. D. Gyorgiev, det. A. Irikov.
* *Perforatella incarnata* (Müller, 1774)	**7**: 15.4.1998, leg. B. Petrov & B. Barov, det I. Dedov
* *Monacha carascaloides* (Bourguignat, 1855)	**1**: 11.11.2001, leg. D. Gyorgiev, det. A. Irikov

Symbols: * Newly reported species for the Eastern Rhodopes; ** Species that are new for the fauna of the Rhodopes Mountains

ature data, summarizes 27 species of terrestrial gastropods, reliably proven to inhabit the region of the Eastern Rhodopes. Other species, inhabiting the Eastern Rhodopes are *Pomatias elegans*, *Zebrina detrita inflata*, *Chondrula microtraga tricuspidata*, *Helicopsis instabilis*, *Xeropicta krynickii*, *Monacha cartusiana* (HUDEC & VAŠATKO, 1971), *Vitrea neglecta* (RIEDEL, 1975). In this way, the total number of species established for the Eastern Rhodopes becomes 45.

By the discovery of new localities for many of the already established in the Eastern Rhodopes terrestrial gastropods, their distribution area was expanded: Ivaylovgrad District, Plevun Village - *Pomatias elegans*, *Zebrina detrita inflata*, *Balkanodiscus frivaldskyanus*, *Xerolenta obvia*, *Monacha cartusiana*, *Cepaea vindobonensis*, *Helix lucorum*; Zhelezari Village - *Xerolenta obvia*; Kostilkovo Village - *Balcanodiscus fryvaldskyanus*, *Xerolenta obvia*, *Monacha cartusiana*, *Helix lucorum*; Dolno Lukovo Village - *Monacha cartusiana*, *Helix lucorum*; Kodja-Kaya Cave, Odrintsi Village - *Pomatias elegans*. Krumovgrad District - *Helicopsis instabilis*; Dupkata Cave, Beli Dol Village - *Chondrula microtraga tricuspidata*.

Zoogeographic review of the Eastern Rhodopes malacofauna showed considerable presence of Pontomediterranean species (13 species, about 29% of all 45 species, established in the Eastern Rhodopes), currently distributed mainly in the countries around the Black Sea basin and Asia Minor, as well as some Holomediterranean species (2 ~5%). Most probably, the lack of large karst massifs and the predominance of volcanic rocks (HUBENOV, 2004) are some of the main reasons for the lack of endemic species, specific only for the Eastern Rhodopes. Five endemic species for Bulgaria are present in the region (~12%); two of them are established only in the Rhodopes Mountains (*Deroceras bulgaricum* and *Pagodulina subdola brabeneneci*). All records of *Pagodulina pagodula* in the Rhodopes Mountains should be referred as *Pagodulina subdola brabeneneci*, because *Pagodulina pagodula* most probably does not occur in Bulgaria (HUDEC & VAŠATKO, 1971). Nine Balkan endemic species (~20%) are established in the Eastern Rhodopes, and one of them (*Balcanodiscus frivaldskyanus*) may be considered as an Rhodopes' endemic species (DEDOV & PETROV, 2003). The remaining, considerably more widely spread species, are as follows: 5 - Lato-Mediterranean species (~ 12%), 9 - European species (~ 20%), and 1 - Palearctic species (~ 2%).

In respect of their ecological requirements, the species with higher resistance to the typical for the Eastern Rhodopes drier and warmer climate, are predominant (DEDOV & PETROV, 2003): xerophilous (15%), meso-xerophilous (4%) and everybionts (1%), or totally about 44% of the established 45 species. The remaining ecological groups are distributed as follows: 17 mesophilous species (or about 38%), 7 meso-hygrophilous species (~16%), and one hygrophilous species (~2%).

In general, the malacofauna of the Eastern Rhodopes is formed under the influence of the following basic factors: proximity to the Aegean and Black Seas, considerably mild and dry Mediterranean climate, hilly-like character of the region, and lack of large karst massifs.

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Принос към изучаването на сухоземната гастроподна фауна (Mollusca: Gastropoda) на Източните Родопи (България)

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(Р е з ю м е)

Като нови за фауната на Източните Родопи се съобщават 15 вида сухоземни охлюви, четири от които са нови и за фауната на Родопите като цяло. С това броят на известните досега по литературни и оригинални данни видове сухоземни охлюви от Източните Родопи става 45. Четиринадесет от тях са български или балкански ендемити, като 3 вида са известни само от Родопите. В Източните Родопи преобладават медитеранските топлолюбиви и сухоустойчиви видове. За девет от известните за Източните Родопи видове се съобщават нови находища.