ECOLOGIA BALKANICA

2015, Vol. 7, Issue 2 December 2015 pp. 87-90

Short note

New Information on the Snail Fauna of "Sinite Kamani" Nature Park (Stara Planina Mountains, Bulgaria)

Dilian Georgiev[1*], Silvia Kalcheva[2], Dian Georgiev[2], Ivaylo Dedov[3]

1 - University of Plovdiv, Faculty of Biology, Department of Ecology and Environmental Conservation, 24 Tzar Assen St., BG-4000 Plovdiv, BULGARIA
2 - Trakia University, Faculty of Agriculture, Department of Biology and Aquaculture, Stara Zagora 6014, BULGARIA
3 - Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, 2 Gagarin St., 1113 Sofia, BULGARIA
*Corresponding author: diliangeorgiev@abv.bg

Abstract. The malacofauna in the Bulgarian nature parks situated in Stara Planina Mts. is poorly known. So far only one research in the area of Nature Park "Sinite kamani" was carried out in 2008. A total of 23 species of terrestrial snails were discovered and some data on their habitats were presented, but no freshwater snails were found. The author has suggested that many other species could be found in case of future studies. In the present paper we present some new terrestrial and aquatic species discovered on the territory of the park.

Key words: protected area, Bulgaria, malacofauna.

The study was carried out in the period 20.10.2013 - 27.04.2014. Snails were hand-collected or collected by using a sieve from 24 different places in the park (Table 1). Species were determined mainly by DAMJANOV & LIKHAREV (1975), WELTER-SCHULTES (2012) and a reference shell collection by GEORGIEV (2013).

In the current study 23 new species of snails were found: 3 freshwater and 20 terrestrial species of snails (Table 2). Till now there are 46 gastropod species known in the area. The present study confirmed the existence of 11 species of terrestrial snails. During the short period of the on-field research made in 2014, the following species were not found - *V. pulchella; A. biplicata; B.urbanskii; Z. nitidus; V. neglecta; O. urbanskii; L. (Limacus) flavus; L. nyctelia; D. reticulatum; L. girva* and *H. figulina.*

It's impressive that most of the species (12 of them) were discovered in coppice forests, pure and mixed forest of *Ulmus sp.* with *J. regia, Cornus sp.* and *H. lupulus* located at 500 m height, outside the river valleys. Furthermore such an altitude it should be noted that refers also to grass terrain, open grass terrain among limestone and *Tilia sp.* and *Fraxinus sp.* forest with, wherein the number of the observed mollusks increase up to 18 species.

Six of the species were forund in the mixed deciduous forests of *F. sylvatica maesiacus* and *Quercus sp.* in the hilly and foothill regions and 3 of the species in the coastal forests, open grasslands and rocks.

Table. 1. Places of collection in the NP "Sinite Kamani" used for the present study.

№	Date	Coordinates	Alt.	Habitat
1	20.10.2013	N42 43 53.1 E26 17 54.9	806 m	*Carpinus betulus* and *Acer sp.* forest
2	20.10.2013	N42 43 50.6 E26 18 03.1	845 m	open bush, grass and rocky terrains
3	20.10.2013	N42 43 42.8 E26 18 08.8	837 m	spring near planted coniferous trees
4	21.10.2013	N42 43 03.8 E26 15 39.8	399 m	*Tilia sp.* and *Fraxinus sp.* forest
5	21.10.2013	N42 42 36.6 E26 16 14.4	426 m	open grass terrain among limestone rocks
6	21.10.2013	N42 42 06.0 E26 15 56.3	309 m	*Ulmus sp.* forest with *Juglans regia*, *Cornus sp.*, *Humulus lupulus*
7	21.10.2013	N42 44 43.0 E26 22 04.0	1040 m	bush area near a watersource
8	21.10.2013	N42 43 01.8 E26 22 00.7	944 m	*Fagus sylvatica* forest near a watersource, watersource
9	21.10.2013	N42 43 03.6 E26 22 31.4	922 m	*Populus sp.* trees near a building
10	21.10.2013	N42 43 03.7 E26 22 35.5	919 m	small artificial pond
11	21.10.2013	N42 43 38.3 E26 18 07.2	810 m	bush area
12	22.10.2013	N42 42 31.4 E26 17 25.9	521 m	*Quercus sp.* forest near a watersource
13	29.11.2013	N42 42 54.8 E26 15 49.3	420 m	rocks occupied by bush as *Carpinus orientalis*, *Fraxinus sp.*, *Quercus sp.*
14	29.11.2013	N42 42 41.8 E26 15 39.7	300 m	river bank forest dominated by *Alnus glutinosa*, *Rubus sp.*, *Hedera helix*
15	29.11.2013	N42 42 50.4 E26 15 48.0	308 m	spring near Asenovska River
16	29.11.2013	N42 42 50.4 E26 15 48.0	308 m	around a spring near Asenovska River
17	29.11.2013	N42 42 53.3 E26 15 44.3	311 m	grass terrain
18	19.3.2014	N42 44 15.1 E26 24 34.4	539 m	*Fagus sylvatica* and *Quercus sp.* forest
19	19.3.2014	N42 43 09.6 E26 21 34.2	987 m	*Fagus sylvatica* forest
20	19.3.2014	N42 43 06.8 E26 21 22.2	909 m	*Fagus sylvatica* forest
21	19.3.2014	N42 43 08.0 E26 21 26.1	932 m	steep limestone rocks in *Fagus sylvatica* forest
22	26.4.2014	N42 44 03.4 E26 21 37.4	1030 m	*Fagus sylvatica* forest
23	26.4.2014	N42 44 16.5 E26 18 07.2	894 m	open bush, grass and rocky terrains, limestone
24	27.4.2014	N42 42 17.1 E26 17 25.9	592 m	*Carpinus betulus* and *Quercus sp.* forest,

Table 2. Gastropod species found in Nature Park "Sinite kamani" - locations, environmental data and conservation status (based on DEDOV, 1998 and IRIKOV & ERÖSS, 2008). *Legend:* lit. – species reported by GEORGIEV (2008); W - global significance; E - European significance; N - national significance; TRL – relict from the Tertiary Period; BC - Bern Convention; HD – the Habitats Directive; Rare – rare species; me - mesophiles ; me-hg – me - hygrophiles; xph – xerophiles.

№	Species	Locality №	Ecological groups and Conservation Status
	Freshwater species		
	Family Hydrobiidae		
1	*Belgrandiella* cf. *angelovi* Pintér 1968	3, 8, 15	
	Family Limnaedae		
2	*Radix auricularia* (Linnaeus, 1758)	10	
3	*Radix labiata* (Rossmässler, 1835)	15	
	Terrestrial species		
	Family Pomatiasidae		
4	*Pomatias rivularis* (Eichwald, 1829)	6, 13, 16	TRL
5	*Pomatias elegans* (O. F. Müller, 1774)	lit., 6	TRL
	Family Orculidae		
6	*Sphyradium doliolum* (Bruguière, 1792)	6, 18	
	Family Valloniidae		
7	*Vallonia pulchella* (O. F. Müller, 1774)	lit.	
8	*Acanthinula aculeata* (O. F. Müller, 1774)	6, 19	
	Family Cochlicopidae		
9	*Cochlicopa lubricella* (Porro, 1838)	2	me
	Family Enidae		

10	*Merdigera obscura* (O. F. Müller, 1774)	6	me
11	*Ena montana* (Draparnaud, 1801)	lit.	me-hg
12	*Zebrina detrita* (O. F. Müller, 1774)	lit., 5, 6, 7, 13	xph,E
13	*Pseudochondrula seductilis* (Rossmässler, 1846)	lit., 5	me
14	*Mastus rossmaessleri* (L. Pfeiffer, 1846)	23	me
15	*Eubrephulus bicallosus* (L. Pfeiffer, 1847)	lit., 18	me-xph, Rare, N
	Family Clausiliidae		
16	*Cochlodina laminata* (Montagu, 1803)	18	me
17	*Macedonica marginata* (Rossmässler, 1835)	22	me-xph, E
18	*Laciniaria plicata* (Draparnaud, 1801)	6	me,E
19	*Alinda biplicata* = Balea biplicata (Montagu, 1803)	lit.	me
20	*Bulgarica urbanskii* Nordsieck, 1973	lit.	xph,W
21	*Bulgarica* cf *varnensis* (L. Pfeiffer, 1848)	6	me,E
22	Baleinae indet.	21	
23	*Vitrina pellucida* (O. F. Müller, 1774)	2	me-hg
	Family Gastrodontidae		
24	*Zonitoides nitidus* (O. F. Müller, 1774)	lit.	
	Family Zonitidae		
25	*Vitrea neglecta* Damjanov et L. Pintér 1969	lit.	me,E
26	*Aegopinella minor* (Stabile, 1864)	1, 6, 20	me-xph
27	*Oxychilus glaber* (Rossmässler, 1838)	6, 14	me-hg,
28	*Oxychilus urbanskii* Riedel, 1963	lit.	me, N
29	*Oxychilus* cf *urbanskii* Riedel, 1963	18	
30	*Oxychilus investigatus* Riedel, 1993	22	me,N
31	*Daudebardia rufa* (Draparnaud, 1805)	1	me-hg
	Family Arionidae		
32	*Arion silvaticus* Lohmander, 1937	19, 24	me
	Family Limacidae		
33	*Limax maximus* complex Linnaeus, 1758	lit., 8	me
34	*Limax* (*Limacus*) *flavus* Linnaeus, 1758	lit.	me ,N
35	*Lehmannia nyctelia* (Bourguignat, 1861)	lit.	me
	Family Agriolimacidae		
36	*Deroceras turcicum* (Simroth, 1894)	1, 6, 14, 18	me
37	*Deroceras reticulatum* (O. F. Müller, 1774)	lit.	me
	Family Lindholmiolmiolinae		
38	*Lindholmiola girva* (Frivaldsky, 1835)	lit.	xph, E
	Family Hygromiidae		
39	*Xerolenta obvia* (Menke, 1828)	lit., 5, 17	xph, E
40	*Perforatella incarnata* = *Monachoides incarnatus* (O. F. Müller, 1774)	lit., 18	me
41	*Monacha cartusiana* complex (O. F. Müller, 1774)	lit., 4	me- xph
42	*Monacha carascaloides* (Bourguignat, 1855)	17	me- xph
	Family Helicidae		
43	*Cattania balcanica* (Kobelt, 1876)	20	
44	*Helix lucorum* Linnaeus, 1758	lit., 11, 12, 14, 16	xph-me, E
45	*Helix pomatia* Linnaeus, 1758	lit., 7, 9	Corine, IUCN, BC, HD,E
46	*Helix figulina* Rossmässler, 1839	lit.	me, N
47	*Cepaea vindobonensis* (Férussac, 1821)	lit., 6	xph

Totally 13 snail species were identified in habitats placed near water basins and coastal forest areas. 11 species were found in the rest of the park - more specifically in the deciduous forests of the hilly and high regions.

The main features of the malacofauna in the park are determined by the typical mesophilic and mesophilic-xerophilic representatives - a total of 35 species of terrestrial snails. 11 xerophilic and calciphilic species were discovered in the

grassland habitats, open forests and rocks which are typical for the park.

The most widely spread terrestrial snail species are the *Z. detrita*, *D. turcicum* and *H. lucorum*, which were discovered in four habitat types and among the aquatic snails these are - *B. cf. angelovi*, *P. rivularis* and *A. minor* which were registered in three habitats.

With regard to its conservation value, the malacofauna in the Natural Park "Sinite kamuni" has a significant diversity. Between the 46 species of freshwater and terrestrial snails discovered in the park, 17 have important conservation significance. Seven species have importance at national level. These are *P. rivularis*, *P. elegans*, *O. Investigates, O. urbanski*, *L. flavus*, *H. figulina* and *E. bicallosus*. The last species is pretty rare for our fauna and *O. urbanski*, *L. flavus* and *H. figulina* are tertiary relics. Nine of the species like *Z. detrita*, *M. marginata*, *L. plicata*, *Bulgarica cf varnensis*, *V. neglecta*, *H. lucorum*, *L. girva*, *H. pomatia* and *X. obvia* have importance at European level and two of them - *B. urbanski* and *V. neglecta* (Bulgarian endemic species) have importance for the world natural heritage.

Acknowledgements

Authors are grateful to Alexander Metchev (NGO "Green Balkans") for his cooperation during the present study.

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Received: 01.12.2015
Accepted: 10.12.2015