

New records of *Sinanodonta woodiana* (Lea, 1834) (Mollusca: Bivalvia: Unionidae) from Eastern Romania

Oana P. Popa^{1*}, Beatrice S. Kelemen², Dumitru Murariu¹ and Luis O. Popa¹

¹“Grigore Antipa” National Museum of Natural History, Sos. Kiseleff no.1, Bucharest, Romania

E-mail: oppopa@antipa.ro, dmurariu@antipa.ro, popaluis@antipa.ro

²“Babeş-Bolyai” University, Molecular Biology Center, 42 Treboniu Laurian Street, 400271 Cluj-Napoca, Romania

E-mail: bkelemen@hasdeu.ubbcluj.ro

*Corresponding author

Received 29 August 2007; accepted in revised form 10 September 2007

Abstract

In 2006 and 2007 living individuals of *Sinanodonta woodiana* (Lea 1834) were collected from the eastern part of Romania. These samples represent the first report of this invasive species in the region and indicate that this alien species has colonized the main aquatic basins of Romania.

Key words: Bivalvia, eastern Romania, invasive species *Sinanodonta woodiana*

Sinanodonta woodiana (Lea 1834) is a large size representative of the Unionidae family, with populations distributed in both East and South-East Asia. Native distribution areas of this species include the basin of the Amur River, Hanka Lake, China, Hong Kong, Taiwan, Kampuchea, Thailand and Japan.

S. woodiana was accidentally introduced to Europe, and was first recorded in Hungary in 1984, from material collected in 1980. In Romania, the first three specimens of *S. woodiana* were collected from fish farms at Cefa – Oradea in 1979 and following identification, the data was published in 1986 (Sárkány-Kiss 1986). In fact, these specimens represent the first examples of this species found in Europe. *S. woodiana* was subsequently reported from: Caras River, Crisul Alb, Crisul Repede, Crisul Negru and Bega. (Sárkány-Kiss et al. 2000); Dobrogea,

at Isaccea, Harşova and Măcin in 1997 (Skolka and Gomoiu 2001); the Danube Delta (Popina and Sahalin) in 1998 (Sárkány-Kiss et al. 2000); Zavideni dam lake on the Olt River; Cerna River, but also Cerna Valley, at the confluence of this river with the Danube (Sirbu 2004); Corabia, upstream and downstream Giurgiu (r.km 480), (Andrei and Popa 2004); from Drobeta Turnu Severin (Popa and Popa 2006) (see Figure 1 and Annex). The last two findings report mature and juvenile shells, but also mature living specimens of the species.

In July 2006, fifteen live individuals and several shells were collected from Siret River, Cosmesti bridge (see Annex). The population was also surveyed in 2007 and ten adult individuals were collected. In 2007 the species was recorded from the Danube River following the collection of a live specimen and several

juvenile shells from Galati, Cocuta Beach (Annex). The coordinates of the sampling points were taken by GPS (Garmin eTrex Legend) and charted by using MapSource version 6.10.2 software (RO.A.D.2005 Deluxe 1.22 map). The collected specimens were placed in the Molluscs Collection of the “Grigore Antipa” National Museum of Natural History.

These first reports of this species from the eastern part of Romania are further proof that *Sinanodonta woodiana* has spread within the entire country, colonizing, within twenty years, the most important aquatic basins of Romania. Further studies are necessary to evaluate the impact of this species on the local Unionidae communities with whom it shares the same ecological niche.

Acknowledgements

We wish to acknowledge to the reviewer, Dr Frances Lucy, Institute of Technology Sligo, Ireland, for her time, useful comments and language improvements. This study was supported by the Grant no. 13GR/28.05.2007 from the National University Research Council, allotted to O. P. P.

References

- Andrei G and Popa O-P (2004) Noi date privind răspândirea speciei *Sinanodonta woodiana* (Lea, 1834) (Mollusca, Bivalvia, Unionoidea) în România. Muzeul Olteniei Craiova. Studii și comunicări, Științele naturii, 20: 99-104
- Popa O-P and Popa L-O (2006) *Sinanodonta woodiana* (Lea, 1834), *Corbicula fluminea* (O. F. Müller, 1774), *Dreissena bugensis* (Andrusov, 1897) (Mollusca: Bivalvia): alien invasive species in Romanian Fauna Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa" 49: 7-12
- Sárkány-Kiss A (1986) *Anodonta woodiana* (Lea, 1834) a new species in Romania (Bivalvia, Unionacea). Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa", 28: 15-17
- Sárkány-Kiss A, Sirbu I and Hulea O (2000) Expansion of the adventive species *Anodonta woodiana* (Lea, 1834) (Mollusca, Bivalvia, Unionoidea) in central and eastern Europe. Acta oecologica, 7 (1-2): 49-57
- Sirbu I (2004) Comunitățile de moluște acvatice din Dunăre sectorul Baziaș - Orsova (Banat). Muzeul Brukenthal - Studii și Comunicări - Științele Naturii, 29: 107-134
- Skolka M and Gomoiu M-T (2001) Alien invertebrates species in Romanian waters. Ovidius University Annals of Natural Sciences, Biology - Ecology Series, 5: 51-55

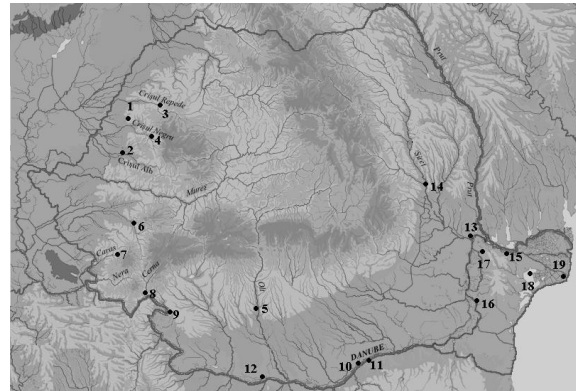


Figure 1. Records of *Sinanodonta woodiana* in Romania (see Annex for coordinates)



Figure 2. *Sinanodonta woodiana* (Lea 1834) from Cosmesti (Siret River) (Photograph by O. P. Popa)



Figure 3. *Sinanodonta woodiana* (Lea 1834) from Danube Galati Cocuta Beach (Photograph by O. P. Popa)

New records of *Sinanodonta woodiana* from Eastern Romania

Annex
Records of *Sinanodonta woodiana* in Romania

Map ref.	Location	River	Record coordinates		Record date	Collector/Reference
			Latitude, °N	Longitude, °E		
1	Cefa	Fishponds	46°54'53"	21°43'05"	1979	Sárkány-Kiss A. 1986
2	Ineu	Crisul Alb	46°25'54"	21°50'41"	1985	Sárkány-Kiss et al. 2000
3	Fughiu	Crisul Repede	47°03'30"	22°02'40"	1986	Sárkány-Kiss et al. 2000
4	Tinca	Crisul Negru	46°46'28"	21°55'53"	1986	Sárkány-Kiss et al. 2000
5	Zavideni	Olt	44°45'57"	24°16'51"	1999	Sárkány-Kiss et al. 2000
6	Chizatau	Bega	45°45'36"	21°43'42"	2000	Sárkány-Kiss et al. 2000
7	Vrani	Caras	44°59'42"	21°32'34"	1998	Sárkány-Kiss et al. 2000
8	Orsova	Cerna	44°44'27"	22°24'42"	2004	Sirbu 2004
9	Drobeta Turnu Severin	Danube	44°37'13"	22°40'49"	2005	Popa and Popa 2006
10	Giurgiu	Danube	43°45'34"	25°48'31"	2004	Andrei and Popa 2004
11	Penciu	Danube	43°56'16"	26°04'26"	2004	Andrei and Popa 2004
12	Corabia	Danube	43°46'38"	24°30'14"	2004	Andrei and Popa 2004
13	Cocuta	Danube	45°25'08"	28°03'26"	01.05.2007	Oana Popa and Luis Popa
14	Cosmesti	Siret	45°51'01"	27°18'29"	22.07.2006 30.04.2007	Luis Popa
15	Isaccea	Danube	45°16'51"	28°27'53"	1998	Skolka and Gomoiu 2001
16	Harsova	Danube	44°40'49"	27°57'07"	1998	Skolka and Gomoiu 2001
17	Macin	Danube	45°14'21"	28°07'36"	1998	Skolka and Gomoiu 2001
18	Popina	Lake Razelm	44°58'02"	28°57'44"	1998	Sárkány-Kiss et al. 2000
19	Sahalin	Danube	44°52'48"	29°36'56"	1999	Sárkány-Kiss et al. 2000