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NEW LOCALITIES OF *CLATHRUS RUBER* (BASIDIOMYCOTA) IN BULGARIA

BLAGOY A. UZUNOV¹, PLAMEN MITOV², BOYAN ZLATKOV²
& OGNJAN SIVILOV²

*1 - Department of Botany, Faculty of Biology, Sofia University “St. Kliment Ohridski”,
8 Dragan Zankov Blvd, 1164 Sofia, Bulgaria*

*2 - Department of Zoology and Anthropology, Faculty of Biology, Sofia University
“St. Kliment Ohridski”, 8 Dragan Zankov Blvd, 1164 Sofia, Bulgaria*

*The paper is dedicated to Prof. D. Temniskova
on the occasion of her 80th jubilee*

Abstract: In Bulgaria the basidiomycete *Clathrus ruber* is known generally from the Black Sea coastal region and has been sporadically recorded in Sofia city, Vitosha Mt and Rodopi Mts. In the last edition of the Red List of fungi in Bulgaria it has been declared as “near threatened”. The paper provides data on three new localities of the species in south-western part of Bulgaria and presents a chorological map for this fungus in the country.

Key words: Belasitsa Mt, fungi, Maleshevska Mt, Tisata Nature Reserve, Struma River

According to the data published so far it could be stated that in the Northern Hemisphere the basidiomycete *Clathrus ruber* P. M icheli ex Pers. is spread erratically throughout warm er areas o f temperate zone. In Europe the fungus appears m ainly in the M editerranean region, but not everywhere and rarely (K_ut_ha_n

* *corresponding author:* B. Uzunov - Sofia University “St. Kliment Ohridski”, Faculty of Biology, Department of Botany, 8 bld. Dr. Zankov, BG-1164, Sofia, Bulgaria; blagoy_uzunov@abv.bg

& Kotlaba 1981). In Bulgaria this species is known generally from the Black Sea coastal region (including localities in the regions of eastern Stara planina Mts and Strandzha Mt) and has been sporadically recorded also in Sofia city, Vitosha Mt and Rodopi Mts (Hinkova 1961; Kuthan & Kotlaba 1981, 1988; Gyosheva et al. 2000; Assyov et al. 2010; Denchev & Assyov 2010; Lacheva 2012). The present paper provides new data on the distribution of *Clathrus ruber* in a new region of Bulgaria and presents a chorological map of the fungus in the country.

The first locality of *Clathrus ruber* is in Belasitsa Mt near to village Samuilovo (41°22'08,0"N 23°05'30,8"E) at 371 m a. s. l. There twice (on 19 May 2008 and 16 September 2009) were found single basidiomata in the same *Platanus orientalis* L. and *Castanea sativa* Mill. forest (Figs. 1-2, leg. P. Mitov). Second locality of the fungus was found in Tisata Nature Reserve (41°45'03,50"N 23°08'57,25"E) at 200 m a. s. l. in Maleshevska Mt (leg. B. Zlatkov & O. Sivilov). On 01 May 2014 in this place also only one fruit body (Fig. 3) was determined in sparse *Platanus orientalis* forest. The third finding of the species was on the left Struma River bank (41°23'12,5"N 23°20'39,7"E) at 77 m a. s. l. near to the village Kulata. There were found two basidiomata of *Clathrus ruber* and one of them was still in egg stage (Fig. 4). These two fruiting bodies were discovered on 15 November 2014 among decaying plant materials (leg. P. Mitov). Soil temperature in all new localities ranged between 16,6°C and 28°C.

The all new findings of *Clathrus ruber* in SW Bulgaria were related with *Platanus orientalis* and *Castanea sativa* forests and decaying plant materials on the river bank. According to Hinkova (1961) the fungus was found for the first time in Bulgaria in 1936 by Acad. Nikolay Stoyanov in flower-beds of the Botanical Garden of Sofia. Kuthan & Kotlaba (1981, 1988) reported the species from the ground between *Ruscus acutatus* L. and also the ground below *Acer campestre* L., *Carpinus orientalis* Mill., *Carpinus* sp. *Fraxinus angustifolia* Vahl, *Fraxinus ornus*

L., *Fraxinus* sp., *Pinus nigra* J. F. Arnold, *Quercus* sp. and *Ulmus* sp. Later on Assyov et al. (2010) recorded the fungus in woodland strips of *Quercus cerris* L. and on the soil under small group of oaks (*Quercus* sp.). Likewise Lacheva (2012) found *Clathrus ruber* in deciduous forests of oak (*Quercus cerris* and *Quercus*

sp.). Comparison of all data on the species findings in the country proved that it is a soil saprotroph and shows no strong dependence on the dominant tree species. However, it is possible to suggest that the species distribution in Bulgaria (Fig. 5) is generally related to the regions climatically influenced by the Black Sea and the Mediterranean Sea. Basidiomata of the fungus have been found at different altitudes in the country - between 10 and 600 m a. s. l. According to Kuthan & Kotlaba (1981, p. 104) "outside Mediterranean area *Clathrus ruber* appears from time to time in Central and Eastern Europe, especially in gardens, cemeteries, parks and more rarely in the wild nature". This could explain the findings of basidiomata of the species in Sofia city gardens by Hinkova (1961) and Assyov et al. (2010) and in Vitosha Mt (Gyosheva et al. 2000; Denchev & Assyov 2010).

Figs. 1-4. Basidiomata of *Clathrus ruber*: 1, 2 - the region of village Samuilovo (19.V.2008 and 16.IX.2009); 3 - Tisata Nature Reserve (01.V.2014); 4 - Struma River bank (15.XI.2014). Photos: P. Mitov (1, 2, 4) and O. Sivilov (3).

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Fig. 5. Map of distribution of *Clathrus ruber* in Bulgaria. Map template is after PEEV (2011).

In the preliminary checklist of the Bulgarian threatened macrofungi Gyosheva et al. (2000) included *Clathrus ruber* in the threat category “Rare” in accordance with IUCN Red Data List Categories. Later on, in the Red List of fungi in Bulgaria, in conformity with new established and adopted version of the IUCN Red Data List, Gyosheva et al. (2006) changed the threat status of the fungus to “Near Threatened” but did not include species in the Red data Book of the Republic of Bulgaria (Peev 2011). The new findings of the species in SW Bulgaria and a large period of fruiting bodies producing - between May and November correspond with the opinion of Hinkova (1961, p. 257) that *Clathrus ruber* is “not rare” in the country and its “near threatened” conservation status, proposed by Gyosheva et al. (2006).

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