



## The first record of *Pyxidium tardigradum* Van der Land, 1964 (Ciliophora) in Romania

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### Summary

In three lichen samples collected from eastern part of Romania, three populations of *Ramazzottius* cf. *oberhaeuseri* (Doyère, 1840) infested by *Pyxidium tardigradum* Van der Land 1964 were found. In this short correspondence we present a first record of *P. tardigradum* in Romania and infestation rates in studied populations according to the different life stages.

*Pyxidium tardigradum* Van der Land, 1964 (Ciliophora: Peritricha: Epistylidae) is a ciliate epizoan symphoriont which infests eutardigrades. For the first time it was observed attached to *Ramazzottius oberhaeuseri* (Doyère, 1840) (Van der Land 1964), however, later this ciliate was also observed attached to other members of Eutardigrada: *Isohypsibius undulatus* (Thulin 1928), *Macrobotus hufelandi sensu lato* C.A.S. Schultze, 1834, *Milnesium tardigradum sensu lato* Doyère 1840 and *Minibiotus intermedius sensu lato* (Plate 1888) (Iharos 1966, Morgan 1976, Hallas 1977, Wright 1991, Marley & Wright 1994, Vicente *et al.* 2008, Kiosya 2009). Additionally, Jennings (1976) and Dastyh (1984) found Peritricha protozoans on *Ramajendas frigidus* (Ramazzotti, 1972), but did not specify the species.

*Pyxidium tardigradum* was reported from Europe (Belarus, France, Hungary, Poland, Portugal, Ukraine and United Kingdom), Kyrgyzstan (Vicente *et al.* 2008) and possibly from Antarctica (Dastyh 1984, Jennings 1976), which could indicate a cosmopolitan distribution of this taxon (Vicente *et al.* 2008).

We studied three populations of *Ramazzottius* cf. *oberhaeuseri* from eastern Romania infested with *P. tardigradum* and the results are presented in this paper.

Three lichen samples from trees were collected by the first author from three different counties in 2013/14:

46°14'41.2"N 027°40'19.0" E 80 m asl; Bârlad town (Vaslui County), April 2014, coppice, north of town;

45°30'16.9" N 027°43'27.2" E 29 m asl; Piscu locality (Galați County), August 2013, open space, village garden;

47°07'56" N 027°35'09.8" E 110 m asl; Iași city (Iași County), August 2014, woodland south city centre.

In 15g of dry lichens (5g/ sample), 697 individuals (active specimens, specimens in "simplex stage" and exuviae) and 12 eggs of *Ramazzottius* cf. *oberhaeuseri* were found.

All tardigrades were extracted following the method in Dastyh (1980, 1985) and mounted on microscope slides in Hoyer's medium. Observations and photomicrographs were taken using Phase Contrast Microscopy (PCM) (Olympus BX41 with digital camera ARTCAM-300Mi). Tardigrades were verified using a general key (Ramazzotti & Maucci 1983), a recent specific key to the genus *Ramazzottius* (Biserov 1998) and comments by Pilato *et al.* (2013). According to Pilato *et al.* (2013) it is not possible to stated with certainty whether the cuticle of *R. oberhaeuseri* s. s. is entirely ornamented or partially smooth. While the morphological characteristics of our Romanian *Ramazzottius* populations match descriptions of *R. oberhaeuseri*, some individual variations lead us to determine our specimens as *Ramazzottius* cf. *oberhaeuseri* pending further taxonomic investigation.

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