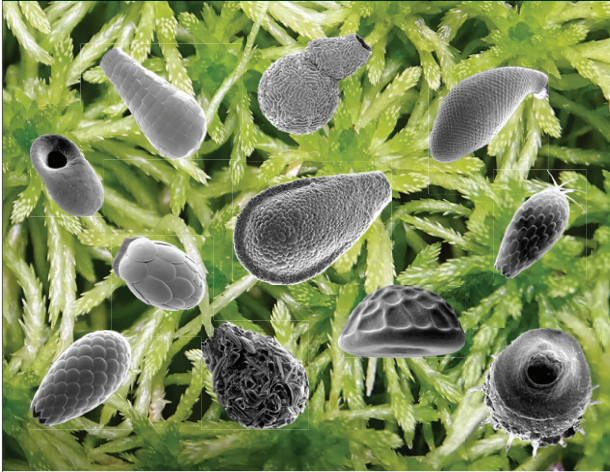


# AN ATLAS OF SPHAGNUM-DWELLING TESTATE AMOEBAE IN BULGARIA

Milcho Todorov & Nikola Bankov



Institute of Biodiversity and Ecosystem Research  
Bulgarian Academy of Sciences



## BOOK REVIEW

*M. Todorov & N. Bankov 2019. AN ATLAS OF SPHAGNUM-DWELLING TESTATE AMOEBAE IN BULGARIA. – PENSOFT Publishers, Sofia: 286 p., 130 colour plates with figures, 120 morphometric tables. ISBN 978-954-642-972-8 (Hardback) ISBN 978-954-642-973-5 (E-book) <https://doi.org/10.3897/ab.e38685>*

Testate amoebae are widespread single-celled eukaryotic organisms inhabiting freshwaters, brackish and marine waters as well as diverse moist terrestrial habitats (soils, mosses, leaf cover, etc.). Worldwide, about 1800 species are known. They attract the attention of researchers mainly due to their significant role as components of the diverse ecosystems they inhabit and as bioindicators of the status and changes of their habitats in the geological past as well as in the present.

In the last 3-4 decades, the classical notions of the morphology, taxonomy and systematics of testate amoebae have undergone significant changes because of the development of modern microscopic methods and tools as well as the use of new biochemical and molecular methods. As a result, their phylogenetic relationships and evolution have been studied extensively and in more detail. The criteria for the more accurate identification of both species and subspecies or higher taxa are also much more precise.

The study of taxonomy and ecology of testate amoebae in Bulgaria has started in the beginning of the 20th century and already has considerable history, traditions and achievements. Much of these studies are faunal contributions to separate geographical regions, reservoirs and specific biotopes but some of them contain significant taxonomic contributions, descriptions of new taxa and taxonomic revisions that have been praised by international experts. A natural result of the development and achievements of the Bulgarian School of Protozoologists-Tecamebologists is the recently published significant monograph by Milcho Todorov and Nikola Bankov of the Institute of Biodiversity and Ecosystem Research at the Bulgarian Academy of Sciences. This new book is entitled „**An atlas of sphagnum-dwelling testate amoebae in Bulgaria**”.

This atlas is specifically dedicated to the numerous species of testate amoebae trophically associated with widespread and environmentally important sphagnum mosses in Bulgaria. The first chapters of the atlas are introductory and are particularly useful for beginning researchers of this interesting and diverse group. They are mainly devoted to the external morphology of the test as a major taxonomic character, the structure of the cytoplasm, the nature and type of the movement organelles, of reproduction, cysts and feeding of the sphagnophilic testate amoebae. A brief useful section is devoted to the microscopic and statistical methods used by the authors as well as to the main troves of the studied sphagnum mosses in the country. Finally, at the end of the general section, the new contemporary classification of testate amoebae developed by a big international team of researchers (Adl et al. 2019) is presented. This classification has been adopted by the authors and used in the complete list of 175 species of sphagnophilous species of testate amoebae identified so far in Bulgaria.

The main section of the atlas is entitled “Species description and illustrations” (pages 31–171). It contains the morphological descriptions, morphometric characteristics and figures with light and scanning micrographs of 120 species of sphagnophilous testate amoebae from Bulgaria, personally studied by the

authors over the last three years (2017–2019). Data on each testate amoeba included in the atlas follow the same scheme and include information on the author (authors) of the original description of the species, its synonyms in the literature, brief comparative taxonomic notes on morphologically similar species of tecamoebae, notes on ecology, general geographical distribution and detailed information on the sites and authors of their records in Bulgaria. Particularly useful are the 120 original tables with morphometric data on the tests of the established sphagnophilous species, which are the necessary basis for their correct taxonomic identification. Important and useful advantages of the atlas are the meticulously prepared auxiliary sections for the used and cited literature (pages 273–285) as well as the index of amoeba species illustrated through microphotographs (page 286).

The excellent design and printing of the atlas by the creative team of the renowned Bulgarian publishing house Pensoft Publishers ([www.pensoft.net](http://www.pensoft.net)) should also be highly evaluated. The electronic version of the monograph is accessible at the internet site of the publisher (<https://ab.pensoft.net/article/38685/>).

The published monograph of the two Bulgarian researchers Milcho Todorov and Nikola Bankov is a significant original achievement of Bulgarian protozoologists in the study of testate amoebae.

*Vassil Golemansky*  
Institute of Biodiversity and Ecosystem Research  
Bulgarian Academy of Sciences