



# Observations on

## *Pyxidicula operculata* (Agardh, 1827) Ehrenberg, 1838

**Most likely ID:** n. a.

**Synonyms:** n. a.

EOL Phylogenetic tree: [Pyxidicula operculata](#)

The overview in Fig. 1 shows a bacterial lawn, a number of circular structures, which on closer inspection are hourglass-shaped, and naked amoebae. The small watch glasses turned out to be shell amoebae (testaceans) from the group of Arcellinida, genus *Pyxidicula* Ehrenberg 1938.

Figures 2 to 5 show several optical sections through the observed cells. In the group of four in Fig. 2, the focus is on the level of the bacterial layer. In Fig. 3 the focus is on the nuclei. Figure 4 presents the vesicular (ellipsoidal) nucleus with its large central nucleolus together with the contractile vacuoles, next to it an empty shell, where one can even see the fine granulation of the shell material (pseudochitin with sandpaper structure) and its beaded rim. In order to be able to display the surface structure of the shell material and the beaded rim equally sharply, several optical sections were combined using DOF image technology.

Sample from Pond Suploch, Hiddensee (Germany) Latitude: 54.538638, Longitude: 13.097802.

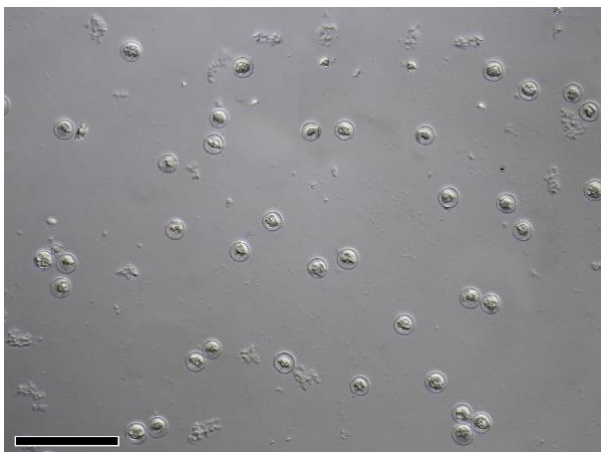


Fig. 1: Overview photo of the surface membrane with bacterial lawn, shell and naked amoebae.  
Scale bar indicates 100  $\mu\text{m}$ .

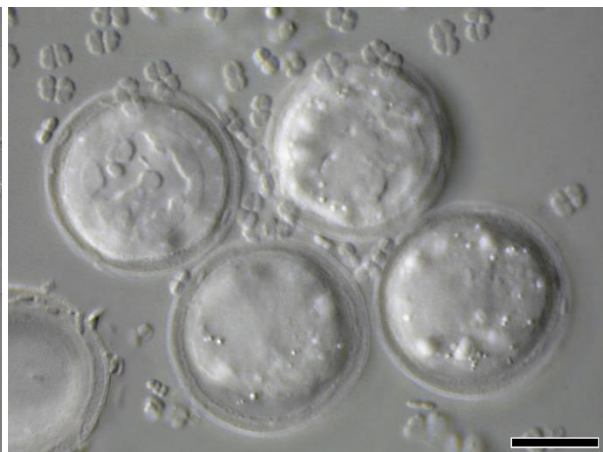


Fig. 2: *Pyxidicula operculata* amongst bacteria.  
Scale bar indicates 10  $\mu\text{m}$ .



Fig. 3: *Pyxidicula operculata*, focused on the level of the nuclei (arrow) and the contractile vacuoles (arrowhead). Scale bar indicates 10  $\mu\text{m}$ .



Fig. 4: *Pyxidicula* with the typical vesicular nucleus and the two contractile vacuoles next to an empty shell (DOF image). Scale bar indicates 10  $\mu\text{m}$ .



Fig. 5: Detail from Fig. 3. Nucleus with extraordinary structured nucleolus. Scale bar indicates 10  $\mu\text{m}$ .

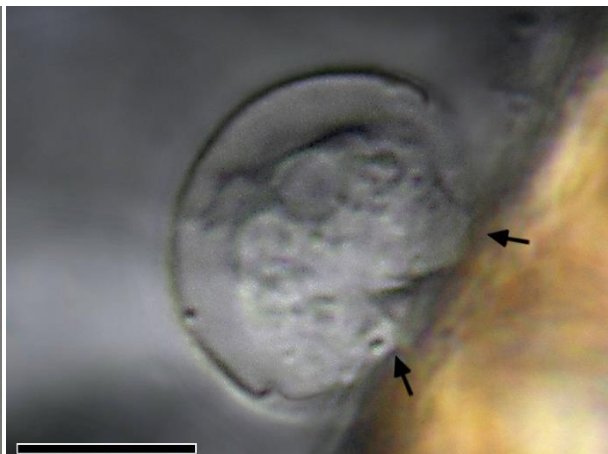


Fig. 6: Lateral view of a *Pyxidicula* showing the conical (v-shaped) pseudopodia (arrow). Scale bar indicates 10  $\mu\text{m}$ .

The aperture (the pseudostome, the shell opening) is almost as large as the shell diameter. The shells are shaped like a flattened hemisphere. Fig. 5 shows a rarely observed nucleus figure with the additional zone of aberrant optical density in the center of the nucleolus.

The larger dots in the cell plasma are mitochondria. A piece of chitin from a mosquito that hatched in the sample container and then accidentally fell into the water and died opened up the opportunity to photograph a *Pyxidicula* cell in lateral view (Fig. 6). The shell cross section and the aperture are clearly visible. The observer can discover the way of attachment to the substrate and the shape of the pseudopodia.