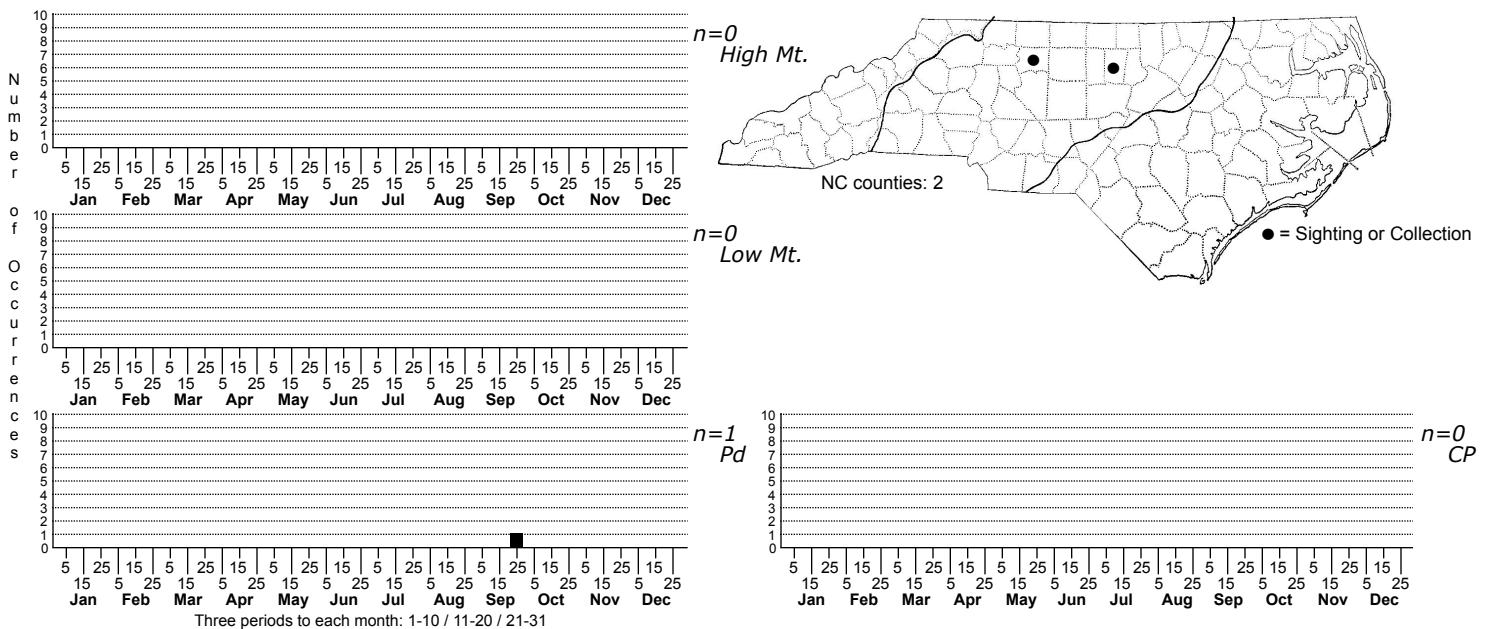


## Paramacrobiotus aff. areolatus



### FAMILY: Macrobiotidae

**TAXONOMIC COMMENTS:** Transferred from *Macrobiotus* by Guidetti et al. 2009, amended by Stec et al. 2020. *Paramacrobiotus areolatus* is part of the *P. areolatus* species complex with three rows of macroplacoids and no microplacoid. The complex has been separated into several genetically distinct species (Stec 2020).

**SPECIES COMMENTS:** Terrestrial. *P. areolatus* s.s. is only known to occur for certain in Svalbard and Greenland. The species reported here was originally called *P. areolatus*, but should be referred to as "*Paramacrobiotus aff. areolatus*."

**ID COMMENTS:** For *Paramacrobiotus areolatus* s.s.:

In live animals, body almost transparent in juveniles and white in adults; after fixation in Hoyer's medium body transparent (Fig. 1A). Eyes present in live animals but absent in Hoyer's. Body cuticle smooth, i.e. without pores or sculpturing, but legs with visible granulation (Fig. 1B, C, E, F). On legs I&ndash;III, the patch of granulation extends from the external through the posterior and to the internal surface of the legs (Figs 1B, D, E, G, 2A, C), whereas the granulation on legs IV spreads from the claws onto the entire dorsal surface of legs (Fig. 1C, F). The leg granulation is composed of microgranule aggregations (Fig. 2E). A cuticular bulge/fold (pulvinus) is present on the internal surface of legs I&ndash;III (Fig. 1D, G). Claws slender, of the hufelandi type. Primary branches with distinct accessory points, a long common tract and with an evident stalk connecting the claw to the lunula (Fig. 2A&ndash;D). The end of the common tract apparently thickened in all claws (Fig. 2A&ndash;D). Lunulae on legs I&ndash;III smooth (Fig. 2A, C), whereas on legs IV clearly dentate and larger (Fig. 2B, D, F). Bars with irregular margins under claws I&ndash;III (Fig. 2A, C). Paired muscle attachments just below cuticular bars on legs I&ndash;III often visible in both PCM/NCM and SEM (Fig. 2A, C), whereas the horseshoe-shaped structure under claws IV visible only in PCM/NCM (Fig. 2F). Mouth anteroventral. Buccopharyngeal apparatus of the Macrobiotus type, with the ventral lamina and ten small peribuccal lamellae. The oral cavity armature well developed and composed of three bands of teeth (Fig. 3A&ndash;D). The first band of teeth is composed of numerous small granules arranged in several rows situated anteriorly in the oral cavity, just behind the bases of the peribuccal lamellae (Fig. 3B&ndash;D). The second band of teeth is situated between the ring fold and the third band of teeth and comprised of ridges parallel to the main axis of the buccal tube and granules, bigger than those in the first band (Fig. 3A&ndash;D). Several additional teeth are often present between the second and the third band, especially in larger animals (Fig. 3B, D). The teeth of the third band are located within the posterior portion of the oral cavity, between the second band of teeth and the buccal tube opening (Fig. 3A&ndash;D). The third band of teeth is divided into the dorsal and the ventral portion. Under PCM/NCM, the dorsal teeth are seen as three distinct transverse ridges whereas the ventral teeth appear as two separate lateral transverse ridges between which one big tooth or up to three smaller median teeth are visible (Fig. 3A, B). Also, in SEM, both dorsal and ventral teeth are clearly distinct with indented/sharp margins (Fig. 3C, D). Pharyngeal bulb spherical, with triangular apophyses, three rod-shaped macroplacoids and without microplacoid (Fig. 3E, F), but in 33 of 65 analysed individuals (51%) we observed a small and irregular but evident cuticular thickening in the place where the microplacoid in individuals of the *Paramacrobiotus richtersi* complex is present (Fig. 3E); thus this thickening could be seen as an rudimentary microplacoid. The macroplacoid length sequence is 2 < 1 < 3. The first macroplacoid is anteriorly narrowed and the third has a subterminal constriction (Fig. 3E, F).

**Eggs** (measurements and statistics in Table 4): Laid freely, white, spherical with elongated conical processes (Figs 4A, B, 5A). Process apices are sometimes bi- or trifurcated (Fig. 4D). The labyrinthine layer between the process walls is visible under PCM/NCM as a reticular pattern with sinuous margins (Fig. 4B&ndash;E). The elongated meshes decrease in size from the base to the processes top (Fig. 4B&ndash;E). The surface of processes and their elongated apices smooth under SEM (Fig. 5B&ndash;F). Eight to ten flat areoles around each process (Figs 4B, C, 5A, B). Areoles smooth inside under PCM/NCM (Fig. 4B, C), but delicately wrinkled in SEM (Fig. 5B, C). Only occasionally are the areoles underdeveloped (Fig. 4C).

-Stec et al. 2020

**DISTRIBUTION:** Please refer to the dot map.

**HABITAT:** Moss.

**OBSERVATION METHODS:** DIC and PC.