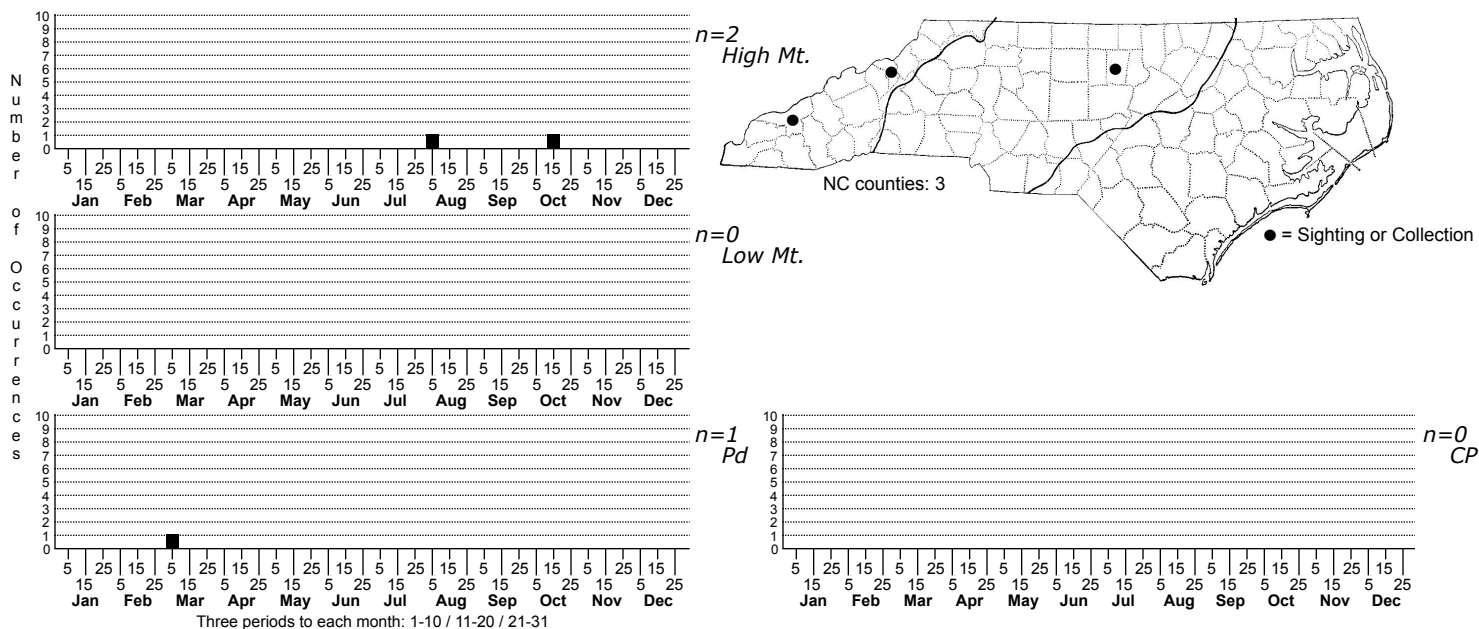


## *Mesobiotus harmsworthi*



FAMILY: Macrobiotidae

TAXONOMIC COMMENTS: Transferred from Macrobiotus by Vecchi et al. 2016. Redescribed with integrative taxonomy and split into pseudocryptic species by Kaczmarek et al. 2018.

SPECIES COMMENTS: Terrestrial. *M. harmsworthi* proper is a northern Eurasian species. These old records from North Carolina are likely to be *Mesobiotus* n. species which needs fresh specimens for a complete description. See *Mesobiotus* n. species account.

ID COMMENTS: Body white in living specimens and transparent after fixation (Fig 2A and 2B). Eyes present. Cuticle smooth, i.e., without gibbosities, papillae, spines, sculpture or pores. Granulation present only on the external surface of all legs (Fig 2C2F). Bucco-pharyngeal apparatus of the *Macrobiotus* type (Fig 3A and 3B), with the ventral lamina and ten peribuccal lamellae. Mouth antero-ventral. The oral cavity armature well developed and composed of three bands of teeth (Fig 3C&ndash;3F). 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 3C and 3F; arrowhead). The band is hardly detectible under PCM in small specimens and clearly visible in large individuals. The second band of teeth is situated between the ring fold and the third band of teeth and comprises ridges parallel to the main axis of the buccal tube and additional teeth between and below them, larger than those in the first band (Fig 3C, 3E and 3F; arrow). 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 3C&ndash;3F; indented arrowhead). The third band of teeth is divided into the dorsal and the ventral portion. Under PCM, both dorsal and ventral teeth are visible as two lateral and one median transverse ridges (Fig 3C&ndash;3F; indented arrowhead). Pharyngeal bulb spherical, with triangular apophyses, three rod-shaped macroplacoids and a triangular microplacoid. Macroplacoid length sequence 2<3 1. The first macroplacoid narrower anteriorly, the second without constrictions and the third with a small, subterminal constriction (Fig 3G and 3H; empty arrowhead). Claws of the *Mesobiotus* type, robust (Fig 4A&ndash;4D). Primary branches with distinct accessory points. Accessory point on claws IV are larger and more protruding than in most macrobiotids (Fig 4B and 4D; arrowheads). Lunules under claws I&ndash;III smooth and slightly dented under claws IV (Fig 4B and 4D; empty arrowhead). Thin cuticular bars under claws I&ndash;III present (Fig 4A, arrow). Other cuticular structures on legs absent.

Eggs: Laid freely, white, spherical and ornamented, with processes and delicate areolation (Figs 5&ndash;7). Egg processes in the shape of wide cones (Fig 6A6H). The cones can be slightly concave (Figs 5B, 5C, 6B and 6C) or sigmoidal, i.e., with a slightly swollen base and a narrowed apex (Fig 6D). The processes with a single sharp (Fig 6A and 6E) or slightly blunt (Fig 6B and 6F) apex, only occasionally bifurcated (Fig 6D, 6G and 6H). In PCM, processes reticulated with mesh size 0.5&ndash;2.0 μm in diameter, evidently larger near the process base and apex (Fig 6A&ndash;6D). Sometimes, instead of several large meshes, a single very large bubble is present in the apex (Fig 6A&ndash;6D, arrows). In SEM, processes smooth, but with well visible small pores at the bases and inside the areoles close to the processes (Figs 6E&ndash;6H, 7C and 7D, arrows). Each process surrounded by five or six areolae delimited by thin brims (Fig 7A&ndash;7D). The brims are very often discontinuous, thus areolae are not always fully formed (Fig 7A and 7C, arrowheads). Surface inside the areolae with clearly visible wrinkles, both in PCM (Fig 7A and 7B) and in SEM (Fig 7C and 7D). Occasionally, the wrinkles may form a small whirl in the areola centre (Fig 7C, empty arrowhead).

-Kaczmarek et al. 2018

DISTRIBUTION: Please refer to the dot map.

HABITAT: Moss and other terrestrial habitats.

OBSERVATION METHODS: PC, DIC, and SEM.