Macrobiotus margoae

n=934
High Mt.

n=19
Low Mt.

n=0
Pd

n=0
CP

NC counties: 2

● = Sighting or Collection

Three periods to each month: 1-10 / 11-20 / 21-31
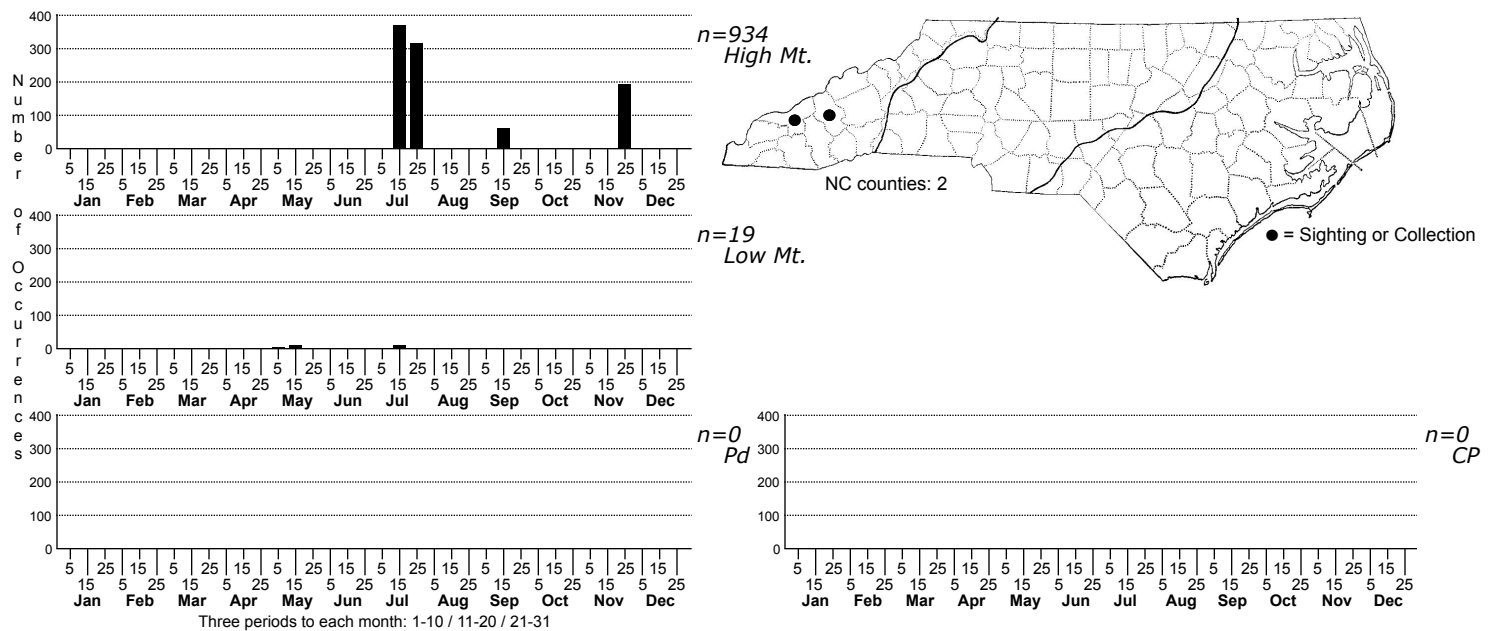
FAMILY: Macrobiotidae

TAXONOMIC COMMENTS: This is a new species discovered in the GSMNP. The species was delineated from the Macrobiotus pallari complex using integrative taxonomy by Stec et al. 2021. It is named in honor of Margo Nottoli, Paul Bartels' life partner, as a partial thank you for her infinite (?) tolerance of his tardigrade obsession.

SPECIES COMMENTS: Terrestrial. So far this species has only been reported from the GSMNP, though Bartels has also observed it in the Asheville area.

ID COMMENTS: In live animals, body almost transparent in smaller specimens and whitish in larger animals; transparent after fixation in Hoyer's medium (Fig. 30). Eyes present in live animals and after fixation in Hoyer's medium. Small round and oval cuticular pores (0.7–1.7 µm in diameter), visible under both LCM and SEM, scattered randomly throughout the entire body (Figs. 31a–d,32a –d). Patches of fine granulation on the external surface of legs I– III as well as on the dorsal and dorsolateral sides of leg IV visible under LCM (Fig. 2,31b, d) and SEM (Fig. 32b, d). A pulvinus is present on the internal surface of legs I–III (Figs. 31c,32c). In addition to the typical patches of leg granulation, other types of cuticular granulation are absent. Claws slender, of the hufelandi type. Primary branches with distinct accessory points, a long common tract, and an evident stalk connecting the claw to the lunula (Fig. 33a–d). Lunulae on legs I–III smooth, whereas those on legs IV clearly dentate (Fig. 33a–d). Dark areas under each claw on legs I–III faintly visible under LCM (Fig. 33a). Paired muscle attachments and internal strengthening above them on legs I–III were often visible under both LCM (Fig. 24a) and SEM, whereas the horseshoe-shaped structure connecting anterior and posterior claws IV was visible only with LCM (Fig. 33b). Mouth antero-ventral. Buccal apparatus of the Macrobiotus type (Fig. 35a), with the ventral lamina and ten peribuccal lamellae (Fig. 35a–b). The oral cavity armature was composed of three bands of teeth, from which only the second and third bands were always clearly visible under LCM (Fig. 34b–c), whereas the first band was only visible under SEM (Fig. 35a–b). The first band of teeth is composed of numerous small teeth visible as globular cones with SEM (Fig. 35a–b), arranged in several rows, and situated anteriorly in the oral cavity, just behind the bases of the peribuccal lamellae. The second band of teeth is situated between the ring fold and the third band of teeth and comprises 3–4 rows of teeth visible with LCM as granules (Fig. 34b–c) and with SEM as cones (Fig. 35a–b) but larger than those in the first band. The posterior row of teeth within the second band seems to comprise larger teeth than the previous anterior rows (Fig. 34b–c). 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 (Figs. 34b–c,35a –b). The third band of teeth is divided into the dorsal and ventral portions. Under both LCM and SEM, the dorsal teeth are seen as three distinct transverse ridges, whereas the ventral teeth appear as two separate lateral transverse ridges, between which one large tooth (sometimes circular in LCM) is visible (Figs. 34b– c,35a –b). In SEM, only teeth of the dorsal portion in the third band have clearly indented margins (Fig. 35a). Pharyngeal bulb spherical, with triangular apophyses, two rod-shaped macroplacoids (2<1) and a microplacoid positioned close to them (i.e., the distance between the second macroplacoid and the microplacoid is shorter than the microplacoid length; Fig. 34d–e). The first macroplacoid is anteriorly narrowed and constricted in the middle, whereas the second has a subterminal constriction (Fig. 34d–e).
-Stec et al. 2021

DISTRIBUTION: Please refer to the dot map.

HABITAT: Tree moss and lichen, and also in all other terrestrial habitats.

OBSERVATION METHODS: PC and DIC.