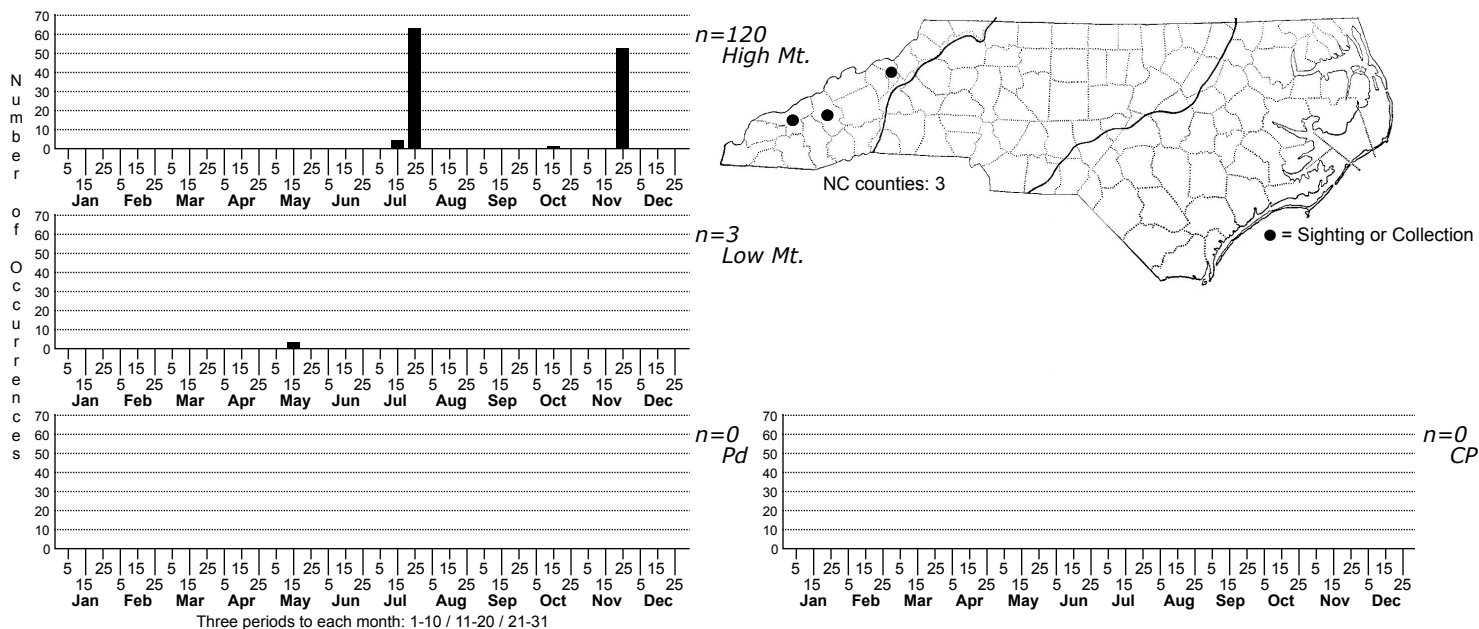


## *Hypechiniscus daedalus*



FAMILY: Echiniscidae

TAXONOMIC COMMENTS: This is a new species from the GSMNP. The species was recently described with integrative taxonomy methodology by Gasiorek et al. 2021. Type locality is Purchase Knob, GSMNP. Old records of *H. gladiator* from N. Am. are likely to be this new species.

SPECIES COMMENTS: Terrestrial. Appears to be a North American endemic.

ID COMMENTS: Females: Body whitish and stout (Figs 3A, C, 4), with spheroid or ovoid black eyes, persisting also after mounting. Elongated, dactyloid cephalic papillae (secondary clavae) and (primary) clavae (Figs 3A, C, 5A, B); peribuccal cirri without cirrophores (Fig. 5B). Cirrus A short, with cirrophore (Figs 3A, 5A). Long cirrus dorsalis with a triangular base inserted posterior to median plate 2 (Figs 3A, C, 4), the flagellum occasionally subdivided into two cirri. Dorsal plates poorly sclerotized, with the Pseudechiniscus-type sculpturing, that is endocuticular pillars protruding through the epicuticle and visible as densely packed dark dots in PCM (Fig. 3A), bumps in NCM (Fig. 3C) or weakly elevated protrusions (granules) in SEM (Fig. 26C). Epicuticular ornamentation in the form of ridges visible in LCM and SEM (Figs 3A, C, 4, 26C). Generally, the sculpture is well-developed and evident in LCM. The cephalic plate is large and pentapartite, with two small anterior portions, a central keel-like portion and two larger trapezoid portions (Figs 3A, 4A, 5A). The cervical (neck) plate is not visible in LCM, indistinctly merged with the anterior margin of the scapular plate in SEM (Fig. 5A). The scapular plate falsely divided in two parts by a central longitudinal suture and by numerous epicuticular ridges (Figs 3A, 4A, 5A, 6A). Three median plates, all pseudobipartite, falsely subdivided by transverse sutures (Fig. 6A) and with six pairs of lateral intersegmental platelets flanking their borders (Figs 3A, 4A, 6A). Two pairs of large segmental plates without marginal incisions, but with a complicated system of epicuticular ornamentation giving an impression of false subdivisions (Figs 3A, 6A). Caudal (terminal) plate large, with long incisions (Figs 3A, 4A, 6A). Ventral cuticle with a clear species-specific pattern of ornamentation reaching the lateroventral sides of the body (Figs 3A, 4B). Ornamentation composed of epicuticular thickenings and endocuticular pillars of variable sizes, which are tightly arranged and closely adjacent to each other (Figs 4B, 6B). The largest and most evident pillars occur between legs II and legs III, and in the gonoporal zone, where pillars are densely aggregated and form pseudoplates. Subcephalic zone with a pair of large pseudoplates, and the subcervical area with a slender columnar or pedestal shaped aggregation or plate (Fig. 6B). Sexpartite gonopore placed between legs III and legs IV and a trilobed anus between legs IV. Pedal plates and dentate collar IV absent, instead large belts of pillars are present on the outer central part of each leg (Fig. 5D). Weak pulvini present on all legs. Markedly sclerotized areas present at the inner side of each leg below the claws (Fig. 3C). A small papilla on leg I present and visible in SEM (Fig. 5A); a papilla on leg IV present (Fig. 4A). Claws I–IV of equal heights. External claws on all legs smooth (Fig. 5C–D). Internal claws with massive spurs positioned at c. one-quarter of the claw height and strongly bent downwards. Fragments of upwardly bent epicuticle formed as pseudoaccessory points on all claws (visible only in SEM; Fig. 5C, arrowheads). -Gasiorek et al. 2021

DISTRIBUTION: Please refer to the dot map.

HABITAT: Tree moss and less often tree lichen. Rarely in rock moss and soil.

OBSERVATION METHODS: DIC, PC, and SEM.