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HALACARUS CTENOPUS GOSSE, 1855 (ACARI, HALACARIDAE),
DESCRIPTION OF THE NEOTYPE

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INTRODUCTION

For mites from tidal low water edge, GOSSE (1855a) introduced the genus Halacarus, a name derived from halos (Greek), the sea, and acaros (Greek), a mite. GOSSE (1855a) presented a short diagnosis and described and illustrated two species, Halacarus ctenopus and H. rhodostigma. The description of H. ctenopus was based on a single specimen, a second one was mentioned in GOSSE (1855b). The description, figures and collecting data are sufficient to recognize the species as being conspecific with Acarus basteri Johnston, 1836, now called Thalassarachna basteri. When MURRAY (1876) introduced the family Halacaridae, for ‘mites living habitually under the sea’, Halacarus GOSSE was designated the type genus.

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1. Idiosoma, dorsal
2. Idiosoma, ventral
3. Genitoanal plate
4. Gnathosoma, ventral
5. Tibia II, ventral
6. Leg I, dorsal (ventral setae in broken line)
7. Leg II, lateral (ventral setae in broken line)

Scales = 50 µm
In 1893 Lohmann presented a detailed ‘redescription’ of Halacarus ctenopus Gosse. The description was based on a single male from algae taken off the Bermuda Islands. The male had a length of 420 µm, a wide frontal spine, large gland pores, and the genua of the legs were longer than the tibiae and tibiomera. This specimen is not conspecific, not even congeneric with the species described by Gosse.

In the past century diagnoses and figures referring to Halacarus ctenopus (e.g. Viets, 1927, 1936; Andrè, 1946; Newell, 1947; Green & MacQuitty, 1987) were either based directly on the description presented by Lohmann (1893) or on specimens from the western Atlantic. For the purpose of maintaining stability in the diagnosis of the genus Halacarus, Bartsch (1991) recommended the usage of H. ctenopus Lohmann (1893) for the mite generally named H. ctenopus. But the usage of H. ctenopus Lohmann (1893), being the type species of the genus Halacarus, would conflict with the date of the family name Halacaridae Murray, 1876, the latter predating its type genus. Accordingly, Bartsch (2001) proposed conservation of the usage Halacarus ctenopus Gosse by designation of a neotype for Halacarus ctenopus according to Article 75.6 of the International Code of Zoological Nomenclature (1999). As the halacarid from the Bermuda Islands described by Lohmann (1893) must be regarded lost, a neotype from Florida was chosen, which is housed in the United States National Museum of Natural History, Collection I. M. Newell. According to present knowledge, corresponding habitats of Florida and Bermuda contain similar faunas.

ABBREVIATIONS: AD, anterior dorsal plate; AE, anterior epimeral plate; ds-1 to ds-6, first to sixth pair of dorsal setae; GA, genitoanal plate; GO, genital opening; OC, ocular plate(s); P-2 to P-4, second to fourth palpal segment; pas, parambulacr al setae; PD, posterior dorsal plate; PE, posterior epimeral plate(s).

Description

Halacarus ctenopus Gosse, 1855
(Figs 1-13)

Halacarus ctenopus Gosse, 1855 — Lohmann, 1893: 82, 83, Pl. 9, Figs 2, 4, 5; Viets, 1927: 16, Fig. 1; Viets, 1936: 542, 543, Fig. 636; André, 1946: 58-60, Figs 26, 27; Newell, 1947: 82-87, Figs 83-93; Sokolov, 1952: 70.

Material examined: Neotype male, United States of America, Florida, from Soldier’s Key, Biscayne Bay, on Halimeda opuntia, July 1st, 1944, coll. H. W. Baird.


Other material. One female, two deutonymphs. Same slide as above.

Description: Male. Idiosoma 457 µm long, 239 µm wide. Major portions of idiosoma covered by mainly parallelly striated epicuticula, striae rarely anastomosing. Idiosoma with five pairs of large gland pores (Fig. 1); first pair on PD, second pair marginally within membranous integument, third pair on OC, fourth and fifth pair of pores on PD. AD 162 µm long, 94 µm wide, with triangular frontal process. That process and lateral portions of plate bearing striated epicuticula. Gland pores large. OC 85 µm long, 42 µm wide; with cornea, gland pore and pore canaliculus as illustrated. PD oblong, 210 µm long, 92 µm wide; anterior margin rounded, extending almost to the level of insertion of leg III. PD with pair of costae; median and lateral portion of PD faintly reticulated, costae covered by striated epicuticula. Posterior pair of gland pores extending beyond median margin of PD. Dorsal setae short; ds-1 on PD posterior to pair of gland pores; ds-2, ds-3 and ds-4 within membranous integument, ds-5 and ds-6 on PD medial to fourth and fifth gland pores, respectively.

Ventral plates AE and PE, as well as anterior and marginal portions of GA covered by striated epicuticula (Fig. 3). AE 117 µm long, 220 µm wide. Ventral setae long; AE with three pairs of setae, PE with one dorsal and three ventral setae (Fig. 2). GA slender, 222 µm long, 102 µm wide. Anterior margin ovate and extending to the level of insertion of leg III. GO 45 µm long, 32 µm wide. GA with 11 long outlying setae, and 28 slightly shorter setae around the GO. Genital sclerites with four pairs of subgenital setae. Spermatopositor extending beyond GO.
Gnathosoma slender, 147 μm long, 62 μm wide. Rostrum 85 μm long, 35 μm wide, longer than gnathosomal base (Fig. 4). Gnathosomal base and palps covered by striated epicuticula. Basal pair of maxillary setae long, near base of rostrum; apical pair of setae shorter and near end of rostrum. Two pairs of rostral setae, one pair lamelliform, the other short, seta-like and seen only at dorsal aspect. Tectum concave. P-2 with two setae, basal seta at 0.6 (relative to length of P-2), distal one at apex of P-2. P-3 with spiniform, pointed medial seta. P-4 with three setae in basal whorl.

Legs, from trochanter to tibia, covered by striated epicuticula. Leg I longer than other legs and much larger than leg II. Number of setae from trochanter to tarsus (paramulacral setae, solenidia and fами-ulus omitted): Leg I, 1, 2, 8, 10, 13, 7; leg II, 1, 4, 7, 8, 11, 5; leg III, 2, 2, 3, 4, 7, 4; leg IV, 1, 2, 3, 4, 7, 3. Telofemur to tarsus I with spiniform though slender ventral setae (Fig. 6). Genu I with one pair and tibia I with two pairs of ventral setae, these setae longer than two short setae on each of telofemur and tarsus I. Tibia II with four ventral setae, one seta bipectinate, two setae long, tapering and smooth, and one seta conspicuously short when compared with the other setae (Figs 5 and 7). Tibiae III and IV each with four bristle-like ventral setae (Figs 8 and 9). Claws on tarsus I with delicate tines on accessory process but no distinct pecten. Pectines of claws II and III extending to base of claws and bearing numerous tines. Claws of tarsus IV with tines on accessory process but not on shaft of claws.

**Female.** Larger than male. Idiosoma 538 μm long, 295 μm wide. AD 172 μm long, 107 μm wide. OC more slender than in male, 82 μm long, 37 μm wide. PD distinctly shorter and more slender than plate of male (Fig. 10); PD 207 μm long, 84 μm wide, its anterior margin ovate. AE 107 μm long, faintly excava- te. GA 178 μm long, 140 μm wide. Anterior triangular portion with striated epicuticula; bean-shaped lateral areas with thick epicuticular layers (Fig. 11). One pair of setae within triangular portion and one pair between GO and bean-shaped areas. Each genital sclerite with four slender subgenital setae (one anterior and three posterior setae).

**Deutonymph.** Idiosoma 380-420 μm long. PD distinctly smaller than that of adults, slightly extending beyond fourth pair of gland pores (Fig. 12). Genital plate small; with two pairs of perigenital setae (Fig. 13).

**Remarks**

Almost 80 species of *Halacarus* are presently known. On the base of the plates and position of gland pores, the ornamentation of the plates, gnathosoma and legs, the shape of the genital plate, and the shape and number of setae on the legs. *Halacarus* species can be attributed to species groups. One of them, the *ctenopus* group, is characterized by the combination: AD, OC and PD well developed. Stri-ated epicuticula covering dorsal and ventral plates, gnathosoma and legs. Fourth pair of gland pores within the PD. Female GA with two pairs of peri-genital setae; integument on either side of GO swelled and set off from anterior portion of GA. Tibia I with two pairs of tapering spiniform setae. Ventromedial spine on tibia II bipectinate. Tarsi III and IV each with four and three dorsal, but no ventral setae.

Species of this group are spread world-wide, from tropical to cold temperate shores. The species described and their localities are:

*H. borealis* Trouessart, 1893, northern Atlantic, Iceland (TROUSSART, 1894).

*H. ctenopus* Gosse, 1855, northwestern Atlantic, Bermuda Island and Caribbean Sea (LOHMANN, 1893, NEWELL, 1947) (records from the northeastern Atlantic are in need of verifica- tion).


*H. oblongus* Lohmann, 1893, southwestern Pacific, southeastern Australia, off Sydney (LOHMANN, 1893).


*H. subtilis* Viets, 1940, Mediterranean (VIETS, 1940).

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