

First record of *Halacarus actenos* Trouessart, 1889 (Halacaridae, Acari) from Portugal

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Abstract

In this study, the genus *Halacarus* Gosse, 1855 with the species *H. actenos* Trouessart, 1889 is recorded from Algarve region of Albufeira coast, Portugal for the first time. Diagnoses for the genus *Halacarus* and the description of male and deutonymph of *H. actenos* are given with original illustrations. The body illustrations of deutonymph of the *H. actenos* given in the present study for the first time.

Keywords: Halacaridae, Acari, *Halacarus actenos*, Portugal.

Halacarus actenos Trouessart, 1889 (Halacaridae, Acari)' un Portekiz'den İlk Kaydı

Özet

Bu çalışmada, *Halacarus* Gosse, 1855 cinsine ait *H. actenos* Trouessart, 1889 türünün Portekiz'in Algarve bölgesindeki Albufeira kıyılarından kaydı ilk kez verilmektedir. *Halacarus* cinsinin teşhisi, erkek ve deutonymph bireylerin tanımları özgün çizimleri ile birlikte verilmiştir. *H. actenos*'un deutonymph bireyinin vücut çizimleri ilk kez bu çalışmada verilmiştir.

Anahtar kelimeler: Halacaridae, Acari, *Halacarus actenos*, Portekiz.

INTRODUCTION

The cosmopolitan halacarid genus *Halacarus* Gosse 1855 with more than 70 species have been described worldwide (Bartsch, 2009). Most of the *Halacarus* species lack a posterior dorsal plate. The idiosoma length of *Halacarus* species is between 250-1500 µm with most species distinctly exceeding 400 µm in length (Bartsch, 2011). Anterior dorsal plate (AD) often with frontal spine. Ocular plate (OC) and/or posterior dorsal plate (PD) absent in several species. The majority of species with 5 pairs of distinct gland pores. Dorsum with 5-6 pairs of setae. Gnathosoma longer than wide. Palps 4-segmented. Leg I longer than wide in most species. One free-living larval and two nymphal stages before adult. More records have been recorded in the southern oceans. The genus inhabits from shallow to the deep-sea (Bartsch, 2006).

MATERIAL and METHODS

Specimens were collected on 11 May 2013 at Praia da Falésia (Albufeira-Portugal) (37.077578°N; 8.275076° W), among various intertidal macroalgae (Fig.1). The samples were sorted at the University of Algarve, CCMAR, Ecology and Restoration of Estuarine

and Coastal Habitats laboratory, Faro, Portugal. Microscopy studies, drawings and identification of the mites were done in University of Süleyman Demirel, Fisheries Faculty, Ecology and Limnology Laboratory, Isparta, Turkey. The specimens were cleared in lactic acid, mounted in Hoyers medium and deposited in the first author's personal collection (FD-PORHAL/01) (colls. P. Range and F. Durucan).



Figure 1. Map of showing the sampling station.

RESULTS

Systematics

Family Halacaridae Murray, 1877

Genus *Halacarus* Gosse, 1855

Halacarus actenos Trouessart, 1889

Material examined. One male (Fig. 2) and one deutonymph (Fig. 3)

Male. Idiosoma 625 μm long to the tip of the frontal spine and 375 μm wide. AD 200 μm long, 87 μm wide, extending to cornea, bearing a pair of well-developed pores and a pair of setae. OC reduced very much. ds-1 on AD. ds-2 to ds-6 striated integument (Fig. 2A). AE 63 μm long, 300 wide with three pairs of setae. PE 175 μm long, 95 μm wide with 1 dorsal, and 3 ventral setae. GA 145 μm long, 164 μm wide (Fig. 2B). GO surrounded by 94 pgs and four pairs of sgs (Fig. 2C). Length of gnathosoma 195 μm long, 80 μm wide. Palps 4 segmented. Total palp length is 150 μm . P-2 with 2 setae. P-3 short, with a medial spine. P-4 with 3 setae (Fig. 2D). Leg I and I chaetotaxy (from basifemur to tarsus): leg I, 2, 11, 10, 10, 8; leg II, 2, 9, 9, 11, 9 (Figs. 2F,G). Leg III and IV lost.

Deutonymph. Idiosoma 437 μm long and 330 μm wide. AD 137 μm and 87 μm wide with a pair of well-developed pores (Fig. 3A). AE 63 μm long, 300 μm wide with three ventral setae. PE 150 μm long, 87 μm wide with one dorsal and two pairs of ventral setae. Two pairs of genital acetabula with a pair of sgs (Fig. 3B). Gnathosoma 165 μm long, 88 μm wide. Palps 4 segmented. Total palp length is 137 μm (Figs. 3C,D). Leg I-IV chaetotaxy (from basifemur to tarsus): leg I, 3, 6, 8, 10, 6; leg II, 3, 6, 9, 9, 8; leg III, 2, 3, 7, 9, 8; leg IV, 1, 3, 5, 7, 7 (Figs. 3E-H).

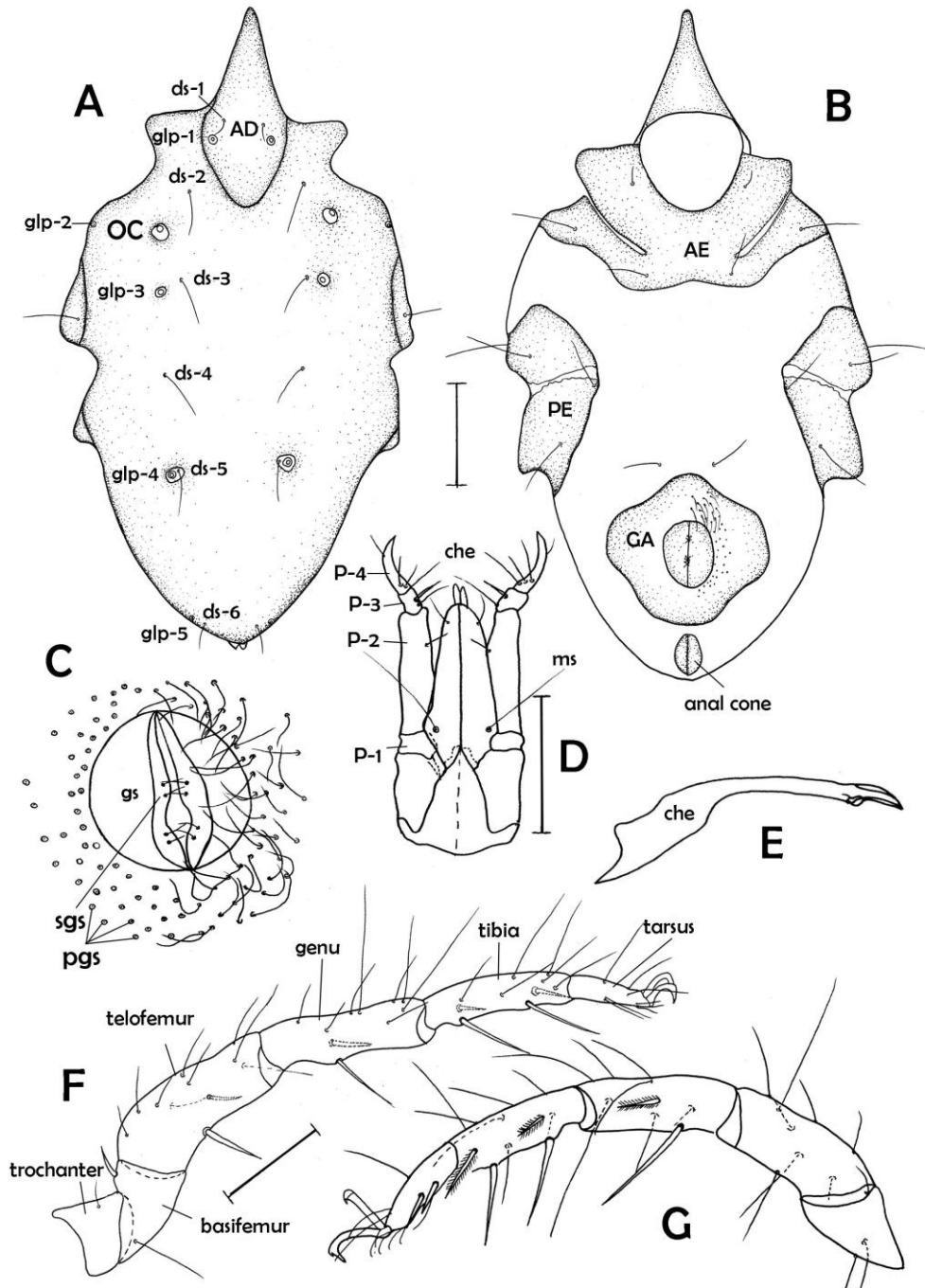


Fig. 2: *Halacarus actenos* (♂). **A.** idiosoma, dorsal, **B.** idiosoma, ventral, **C.** GA, genital opening, **D.** gnathosoma, ventral, **E.** chelicerae, lateral, **F.** leg I, lateral, **G.** leg II, lateral, **AD.** anterior dorsal plate, **AE.** anterior epimeral plate, **che.** chelicerae, **ds-1 to ds-6.** first to sixth dorsal setae, **GA.** genitoanal plate, **glp.** gland pore, **gs.** genital sclerite, **ms.** maxillary setae, **OC.** Ocular plate, **PE.** posterior epimeral plate, **pgs.** perigenital setae, **P-1 to P-4.** first to fourth palpal segments, **sgs.** subgenital setae. Scale bars: 50 µm.

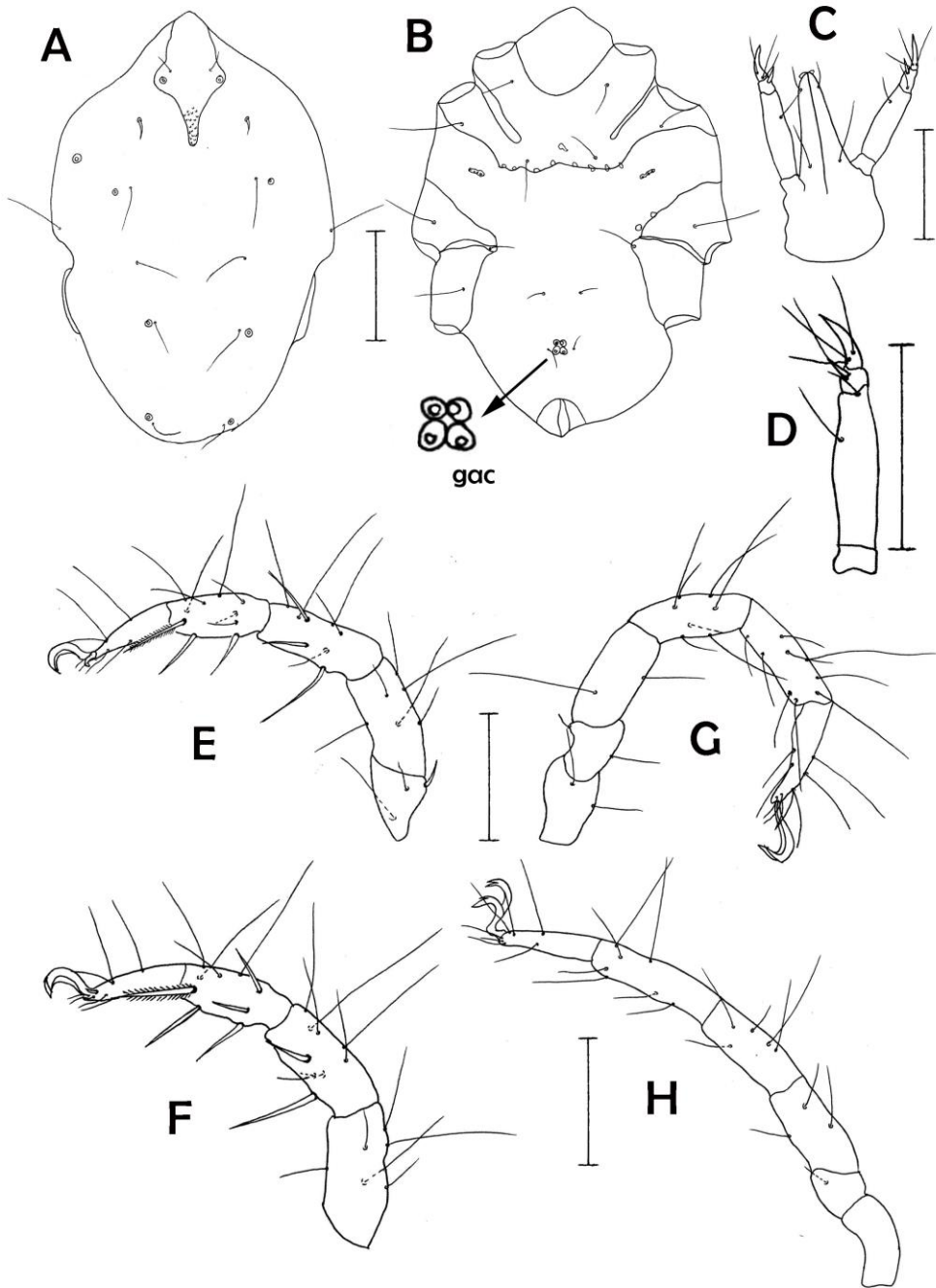


Fig. 3: *H. actenos* (deutonymph): **A.** idiosoma, dorsal, **B.** idiosoma, ventral, **C.** gnathosoma, ventral, **D.** palp, lateral, **E.** leg I, lateral, **F.** leg II, lateral, **G.** leg III, lateral, **H.** leg IV, lateral, **gac.** genital acetabula. Scale bars: 100 μ m.

DISCUSSION

Research on halacarid mites in Portugal is almost unknown. There are some records from the Great Meteor Seamount near to the Portuguese coast and a few records from Azores, too (personal communication with Prof Dr Almir Pepato, Universidade Federal de Minas Gerais, Brazil). The species, *Halacarus actenos* has been recorded from calcareous algae from Praia de Vidreiro and Barqueiro (Galicia, Spain) as a listed by (Pepato, 2009). *H. actenos* was previously recorded from UK, Ireland, The Netherlands, France Atlantic coasts (Bay of Morlaix, Le Croisic, Baie de Port-lin, Arcachon, Saint Jean-de-Luz), Spain and USA (Florida). But, Bartsch (2009;2011) outlined that record from USA (Florida) by (Newell, 1947) is need confirmation.

This is the first record of *H. actenos* from Portugal and constitutes the second record for the Iberian Peninsula. Our specimens found in this study fit well the description of those reported by (Lohmann, 1893), (Viets, 1940) and (Bartsch, 1980;2011). The illustration of the deutonymph specimen of the species for the first time given with the present study.

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