

# BULLETIN

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## **BRADYAGAUE STOCKI NOV. SPEC., A DEEP-SEA HALACARID MITE (HALACARIDAE, ACARI) FROM THE ATLANTIC OCEAN**

I. Bartsch

### **ABSTRACT**

*Bradyagaue stocki* nov. spec., taken from 1200 meters depth off the Cape Verde Islands, is described and compared with *B. alberti* (Trouessart) and *B. meteoris* Bartsch.

### **INTRODUCTION**

Ninety years ago, a short description of *Halacarus (Leptospathis) alberti* Trouessart, 1902, taken off Spitsbergen (Svalbard), was published. The species was later on referred to the genus *Bradyagaue* (Newell, 1971). Recently, a second species from the northern Atlantic Ocean, *Bradyagaue meteoris*, was described (Bartsch, 1991). *Bradyagaue stocki* is the third species from the Northern Atlantic.

### **SYSTEMATICS**

*Bradyagaue stocki* nov. spec.

### **Material examined**

One female holotype, deposited in the Zoölogisch Museum Amsterdam, Section Entomology. Cape Verde Islands, south of Raso (16°35'N, 24°36'W), 1200 m, 4 Sept. 1986 (CANCAT - VII, Sta. 7.140).

### **DESCRIPTION**

Female. Length of idiosoma 595 µm. Plates and striated integument covered with a dense, villose cerotegument; in top view, it gives the impression of a coating with delicate droplets (Fig. 1c). Anterior dorsal plate (AD) 125 µm long, 142 µm wide, with anterior cerotegumental lamella 17 µm wide (Fig. 1a); posterior AD broadly rounded. First pair of gland pores placed at lateral margin at level of insertion of leg I. Ocular plate (OC) 135 µm long, 87 µm wide, broadly rounded anteriorly and posteriorly. The slightly raised lateral edge with 2 small corneae which are obscured under thick integument, and with a gland pore; eye pigment lacking. Posterior dorsal plate (PD) 206 µm long, 110 µm wide, anteriorly ovate, posteriorly rounded and with a pair of gland pores. First pair of dorsal setae (ds-1) distinctly shorter than posterior setae. Setae ds-2, ds-3 and ds-4 inserted within the

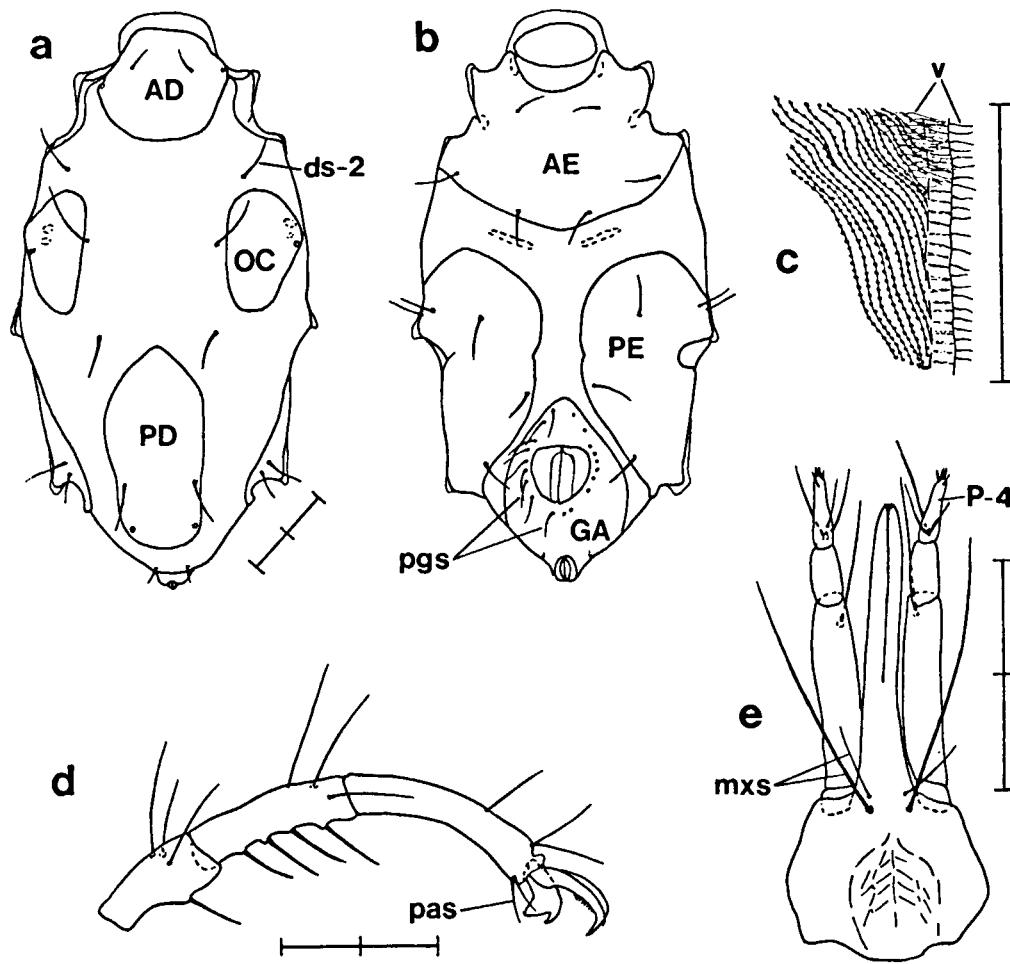


Figure 1. *Bradyagaue stocki* nov. spec., holotype female. a, idiosoma, dorsal; b, idiosoma, ventral; c, idiosomal margin with striated integument, lateral to OC; d, genu to tarsus III, medial; e, gnathosoma, ventral. (AD anterior dorsal plate; AE anterior epimeral plate; ds-2 2nd pair of dorsal setae; GA genitoanal plate; mxs maxillary setae; OC ocular plate; P-4 4th palpal segment; pas parambulacral seta; PD posterior dorsal plate; PE posterior epimeral plate; pgs perigenital setae; v cuticular villi) Each scale division = 50  $\mu$ m

striated integument. Posterior epimeral plate (PE) with 1 dorsal seta anterior to leg III, and 2 dorsal setae anterior to leg IV.

Ventral plates, as well as the striated integument, with a dense droplet-like coating. Anterior epimeral plate (AE) 142  $\mu$ m long, 248  $\mu$ m wide; posterior margin rounded (Fig. 1b). Posterior epimeral plate (PE) large, with 1 marginal seta and 3 ventral setae in addition to the dorsal setae anterior to insertion of legs III and IV. Genitoanal plate (GA) 193  $\mu$ m long, 137  $\mu$ m wide; its anterior margin ovate, almost acuminate. Genital opening (GO) 63  $\mu$ m long, 55  $\mu$ m wide, placed in middle of the GA, distance to anterior GA about equal that to base of anal sclerites. Nine to 10 perigenital setae on either side of the GO; subgenital setae lacking.

Gnathosoma length 199  $\mu$ m, width 85  $\mu$ m. Rostrum 132  $\mu$ m long, 15  $\mu$ m wide; palps slender, slightly surpassing the rostrum. Maxillary setae dissimilar, the basal pair of setae long and stout, the other pair short and slender (Fig. 1e). Second palpal segment (P-2) with 1 stout dorsal seta. No seta on P-3. P-4 with 3 setae in the basal whorl, with the dorsal seta long; tip of P-4 with 4 spur-like setae.

Telofemora distinctly villose. Leg I remarkably slender, slightly longer than the idiosoma. All telofemora longer than the tibiae (Figs 2a-c); tibia I distinctly longer than posterior tibiae. Number of setae (or bristles) from trochanter to tarsus (solenidia and parambulacral setae excluded): leg I, 1, 2, 8, 5, 11-12, 4; leg II, 1, 2, 6, 5, 10, 3; leg III, 2, 2, 4, 4, 7, 3; leg IV, 2, 2, 4, 4, 7, 3. Tibia I with 3 ventromedial and 2 ventro-

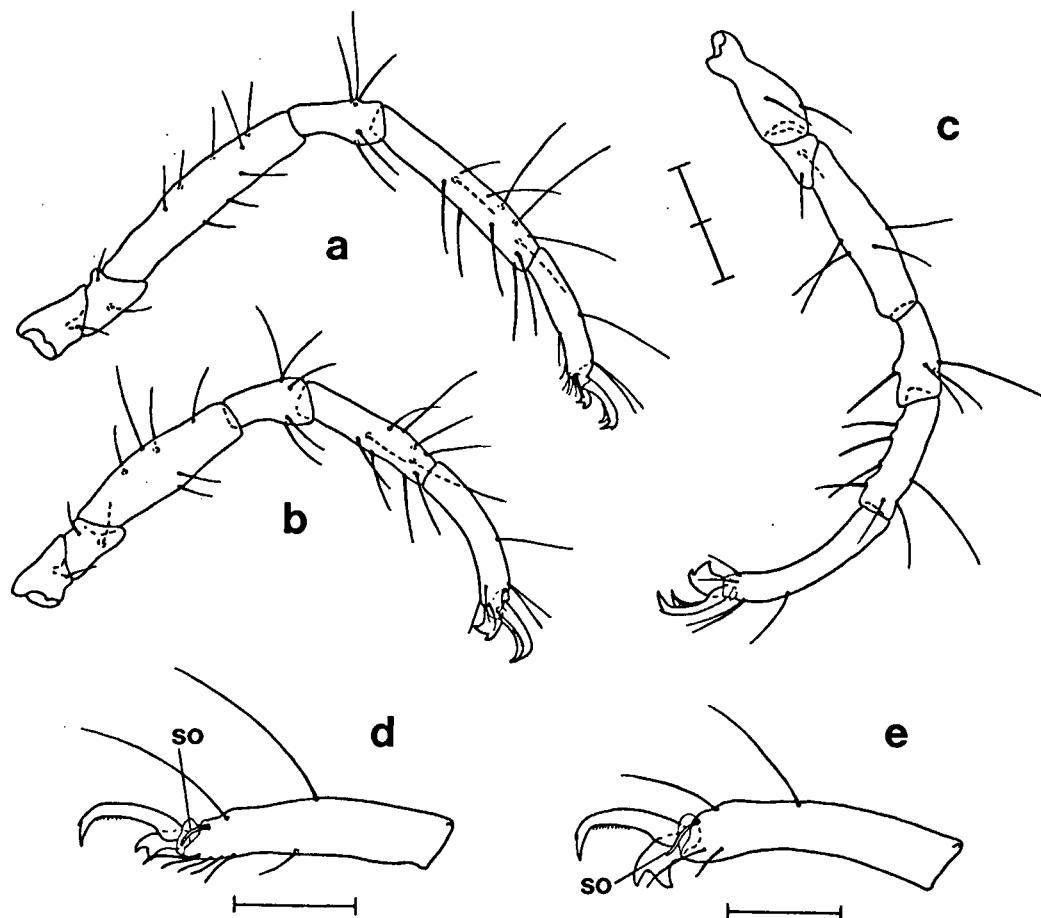


Figure 2. *Bradyagaue stocki* nov. spec., holotype female. a, leg I, medial; b, leg II, medial; c, leg IV, medial; d, tarsus I, lateral (medial setae and claw omitted); e, tarsus II, medial (lateral setae and claw omitted). (so solenidion) Each scale division = 50  $\mu\text{m}$

lateral bristles. Tibiae II to IV each with 4 ventral bristles; bristles on tibiae III and IV arising from setigerous processes, though, the basal setigerous process is rather inconspicuous. Genua I and II each with a pair of ventral bristles, genua III and IV each with a single ventral bristle arising from a setigerous process (Figs 1d and 2c). Tarsus I with 1 ventral seta; tip of tarsus ventrally with 3 pairs of single and a pair of doubled eupathidia (small, hollow setae). Tip of tarsus II with a pair of parambulacral setae (pas) and a single ventromedial seta, tarsi III and IV each with a pair of single pas. Bacilliform solenidion on tarsus I dorsolateral in position (Fig. 2d), on tarsus II dorso-medial (Fig. 2e). Tarsi II to IV curved. Median claw on tarsus I small when compared with the large one on the posterior tarsi. Lateral claws slender, claw pecten with 10-15 delicate tines.

Males and juveniles unknown.

#### Remarks

From the Northern Atlantic Ocean, three species of the genus *Bradyagaue* are now known. *Bradyagaue alberti* is much larger (idiosomal length 880  $\mu\text{m}$ ), its OC are hardly longer than wide, the anterior PD is broadly rounded (Trouessart, 1907: fig. 1; Bartsch, 1991: fig. 25), the legs are stout. *B. alberti* is recorded from Spitsbergen (Svalbard). *Bradyagaue meteoris*, with a length of 520-600  $\mu\text{m}$ , is about as long as *B. stocki*, but, *B. meteoris* has almost smooth cerotegument, it is not villose as in *B. stocki*; eye pigment and corneae are distinct; the PD is much larger, extending beyond the third pair of dorsal setae; the legs are not as long and slender as in *B. stocki*. *B. meteoris* has been taken on the Great Meteor Bank (29°50'-

30°07'N, 28°30'-29°24'W).

*B. stocki* is most similar to *B. gracilis* Newell, 1984 a species recorded from the southern South America. *B. gracilis* has an idiosomal length of 620 µm; the dorsal plates give the impression of a delicate and dense punctation, this may be due to a pilosity similar to that in *B. stocki*. *B. stocki* differs from *B. gracilis* in having a PD distinctly shorter (compared to length of OC) and anteriorly more obtuse, and ds-3 inserted within the striated integument.

### BIOLOGICAL REMARKS

The genus *Bradyagaue* is distributed world-wide, though, more species are known from the southern than from the northern hemisphere.

Most species live in sublittoral waters. Deep sea records are rare; species found in depths beyond 1000 m are *B. aspidionis* Newell, 1984, taken from 1400 m near Victoria Land, Antarctica (Newell, 1984) and *B. drygalskii* (Lohmann, 1907), from 1670 m near Cape Hallett, Antarctica (Newell, 1984). *B. stocki* is the first deep sea species from the North Atlantic. Representatives of the genus *Bradyagaue* are also found in intertidal and shallow subtidal habitats, for instance, *B. medialis* Newell, 1984, is reported from South Africa (Newell, 1984), *B. grandiphora* Newell, 1984 is common in southern South America (Newell, 1984; Bartsch, 1990), *B. simushiriensis* (Makarova, 1977) has been found in the lower littoral zone on the

Kuril Islands (Makarova, 1977).

The majority of the species lives on stolonaceous hydrozoans (Newell, 1971; Bartsch, 1973).

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