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A new *Thalassacarus* species from New Caledonia (Halacaridae, Acari)

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(With 14 figures)

Abstract

Thalassacarus longirostris n. sp. is described. The species is characterized by its very long and slender gnathosoma with both pairs of maxillary setae inserted adjacent in the midrostrum.

Introduction

Until now, only few halacarids are recorded from the tropical and subtropical western Pacific. On one of a Solomon Islands, in a beach with coarse to very coarse particles, Challis (1969) found two halacarid species in fairly large numbers. Ten species from reef areas of the Society Islands, extracted from dead coral blocks and coral debris, are described in Bartsch (1992a, b). One species each, presumably inhabitants of shallow water algae, are known from Guam and New Guinea (Bartsch 1989a). From New Caledonia only deep water halacarids were hitherto recorded (Bartsch 1989b).

Material and Methods

Meiofaunal samples, taken by C. Erséus in September 1993 in beaches on the east coast of New Caledonia, near Touho, contained halacarid mites, amongst others also a new species which is thought to belong to the genus *Thalassacarus*.

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The mite is cleared in lactic acid and mounted in glycerine jelly. The holotype is deposited in the Zoologisches Museum Hamburg (ZMH), Entomological Division.

Abbreviations used in the description: *AD*, anterior dorsal plate; *AE*, anterior epimeral plate; *ds*, dorsal setae on idiosoma, *ds-1*, first pair of dorsal setae; *GA*, genitoanal plate; *GO*, genital opening; *OC*, ocular plate(s); *P*, palp, *P-2*, second palpal segment; *pas*, parambulacral setae; *PD*, posterior dorsal plate; *PE*, posterior epimeral plate.

Description

Thalassacarus longirostris sp. n.
(Figs 1-14)

MATERIAL. Holotype male (ZMH, Reg. No. 49/94), east coast of New Caledonia, near Touho, east of Ilot Ain, south end of Grand Récif Mengalia, 20°45.1' S, 165°16.0' E, barely subtidal, coarse greyish sand, September 1993, coll. C. Erséus.

MALE. Idiosoma 533 µm long, 290 µm wide. Dorsal plates evenly pierced by very delicate canaliculi. Major part of plates with foveae, 10-15 µm in width (Fig. 7). *AD* 167 µm long, 148 µm wide. Anterior margin truncate, posterior margin evenly rounded (Fig. 1). Median portion raised above anterior area of *AD*. Lateral portions of plate with few small though deep canals. Pair of gland pores in anterolateral corners of *AD*. *OC* elongate, 198 µm long, 56 µm wide; caudiform projection as long as the somewhat rectangular anterior portion. Intense eye pigment present but no distinct corneae. Lateral margin with two small gland pores and a pore canaliculus. *PD* 317 µm long, 180 µm wide. Pair of longitudinal costae not raised but distinct because of absence of foveae (Fig. 7). A pair of gland pores within costae on level with insertions of legs IV. Integument of and lateral to costae pierced by small and deep canals. Setae *ds-1* present on *AD* near anterior margin of raised portion; *ds-2*, *ds-3* and *ds-4* inserted within striated integument, *ds-2* between *AD* and *OC*, *ds-3* between *AD* and *PD*, and *ds-4* between *OC* and *PD*; *ds-5* on *PD* lateral to costae on a level with insertions of legs IV. Adanal setae on anal cone in dorsolateral position.

Ventral plates very evenly pierced by delicate canaliculi. *AE* 217 µm long, 248 µm wide. Cervical epimeral processes fused to a collar that extends distinctly beyond level with insertions of legs I (Fig. 2). Coxal epimeral processes small. Epimera anterior to insertions of legs II wide and lamellar. Lateral and posteriormost portion of *AE* with pit-like ornamentation, marginal parts of *PE* reticulate. *AE* with three pairs of setae, *PE* with one dorsal and three ventral setae. *GA* 260 µm long, 158 µm wide. Anterior, anterolateral and posterior margins of *GA* with reticulate or pit-like sculpturing. *GO* 50 µm long and 10 µm wide. Distance from anterior margin

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of *GA* to that of *GO* almost 2.5 times the length of *GO*, and distance from posterior edge of *GO* to that of anal cone almost 1.5 times the length of *GO*. Genital sclerites very slender; with two pairs of seta-like anterior and three pairs of spur-like posterior subgenital setae. Spermatopositor rather small, extending beyond anterior edge of *GO* for somewhat less than length of *GO*. *GA* with 31 perigenital setae, 9-10 pairs of these setae inserted near *GO* (Fig. 4).

Gnathosoma very slender, 354 µm long, 72 µm wide. Integument of gnathosomal base with delicate canaliculi. Rostrum 142 µm long, 25 µm wide. Both pairs of maxillary setae inserted adjacent in midrostrum (Fig. 5). Palps slender, only slightly longer than rostrum (Fig. 8). *P-2* with dorsal seta. *P-3* with very delicate medial seta (Fig. 6). *P-4* with three basal setae, a distolateral seta and apically a minute seta and two spurs. Chelicera elongate. Dorsal margin of claw delicately dentate, basal portion of claw widened and with somewhat larger dents (Fig. 3).

Legs slender. Integument with delicate canaliculi. Telofemora I to IV 3.6, 3.4, 3.0 and 3.0 times longer than wide respectively. Tibiae shorter than telofemora. Tibia I with very small ventrolateral carina. Tarsi with large lateral and medial membranes of claw fossa. Number of setae from trochanter to tibia: leg I, 1, 2, 3, 5, 9-10; leg II, 1, 2, 4, 5, 9; leg III, 1, 2, 3, 3, 7; leg IV, 0, 2, 3, 3, 6. Tibia I with two ventral and two ventromedial slender and smooth bristles (Fig. 9). Tibiae II and III each with two long and wide, densely bipectinate ventromedial bristles and one long and smooth ventral bristle (Figs 10, 11). Both ventral and ventromedial bristle on tibia IV smooth (Fig. 12). Tarsus I with three dorsal setae, two of which are paired and inserted on membranes of claw fossa. Dorsolateral membrane of claw fossa also with seta-like solenidion and cap-like famulus (Fig. 13). Ventrally, tarsus I with a basal unpaired seta and a row of 9 pairs of eupathia (doubled parambulacral setae included). Tarsus II with three dorsal setae, seta on dorsolateral membrane of claw fossa slightly more slender than preceding seta (Fig. 14); solenidion inserted on dorsomedial membrane of claw fossa. That membrane traversed by canals both on level and immediately distal to solenidion. Tarsus II with strong ventral bristle; apically with pair of single eupathid parambulacral setae. Tarsi III and IV with three dorsal setae, the two apicalmost setae paired, inserted near basis of membrane of claw fossa. Ventrolateral parambulacral seta on III-6 slender, ventromedial *pas* shorter and with blunt tip. Tarsi IV with both lateral and medial *pas* being slender and tapering.

Paired claws on tarsi I smaller than those of succeeding tarsi. Claws on tarsi II to IV with about 12 long tines along the shaft and several minute tines apically. Median claw on all tarsi reduced to small sclerite that lacks a dent.

EPIZOA. A small suctorian, with a 10 µm long stem and a 10 µm long and 12 µm wide body was fixed laterally on the cervical epimeral process.

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REMARKS. General characters of this species are: Plates delicately porose. Longitudinal costae of *PD* lack foveae. Elongate *OC* each with two gland pores. Setae *ds-6* inserted on the anal plates. Palps four-segmented, *P-2* with a dorsal seta, *P-3* with a medial seta and *P-4* with three basal setae. Both pairs of maxillary setae inserted adjacent on the rostrum. Claw of chelicera basally widened. Tibiae II and III each with bipectinate ventromedial bristles. Solenidion of tarsus I on dorsolateral membrane of claw fossa, solenidion of tarsus II on dorsomedial membrane. Tarsus I ventrally with an unpaired seta and numerous eupathidia. Tarsus II with a single ventral seta, tarsi III and IV lack setae.

With the dorsal and ventral plates being delicately porose and tarsus I having an unpaired ventral seta and numerous eupathidia, this species resembles representatives of *Agaue* and *Halacarellus*. However, wide and densely bipectinate bristles as present on tibiae II and III of this New Caledonian species are not described for the two other genera. Numerous ventral eupathidia on tarsi I and elongate ocular plates are present in *Bathyhalacarus*, but adults of that genus have three dorsal setae on the *PE*. The halacarid species from New Caledonia is for the present assigned to the genus *Thalassacarus*, a genus until now represented by a single species.

Diagnosis of *Thalassacarus*, according to Newell (1949): Dorsum with five pairs of setae; adanal setae ventrolateral to anal papilla. Genital sclerites of female without setae. Palpi four-segmented, lateral in position; *P-2* with distodorsal seta, *P-3* with dorsomedial seta, *P-4* with three setae in basal whorl. Chelicera with heavy dentate basal process. Solenidion of tarsus I on lateral membrane of claw fossa, that of tarsus II on medial membrane. Type species is *T. commatops* Newell, 1949, a species taken from intertidal calcareous algae on the Alaskan coast (Newell 1949).

The species from New Caledonia does not in all characters agree with that diagnosis. The claw of the chelicera is basally widened, but its dents are not as enlarged as in *T. commatops*. The adanal setae are in dorsolateral position, though, in both *T. longirostris* and *T. commatops* the setae insert on the anal cone.

Unique is the position of the maxillary setae, with both pairs inserted adjacent in the midrostrum. The majority of halacarid genera has one pair of the maxillary setae on the base of the gnathosoma, the other pair on the rostrum. Genera which have both pairs of maxillary setae on the rostrum are *Acarochelopodia* Angelier, *Actacarus* Schulz, *Anomalohalacarus* Newell, *Arenihalacarus* Abé, *Camactognathus* Newell, *Halacaroides* Bartsch, *Halacarus* Gosse, *Lohmannella* Trouessart, *Mictognathus* Newell, *Scaptognathus* Trouessart, and the rhombognathines *Isobactrus* Newell, *Rhombognathides* Viets and *Rhombognathus* Trouessart. Both pairs of setae are almost adjacent in *Actacarus*, *Isobactrus*, *Rhombognathides* and

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Rhombognathus, and more or less adjacent and near the apex of the rostrum in *Lohmannella* and *Scaptognathus*. Adjacent pairs of maxillary setae are also present in *Agaue* Lohmann, *Bradyagaue* Newell and *Halixodes* Brucker & Trouessart, but in these genera one of the pairs of the maxillary setae is on the gnathosomal base and the other pair near the basis of the rostrum.

Thalassacarus longirostris is longer than *T. commatops*, gnathosoma and telofemora are distinctly more slender. Tarsus I of *T. longirostris* has a higher number of ventral eupathidia, and tibiae III and IV have one smooth and two bipectinate bristles each whereas in *T. commatops* all tibiae have a single pair of ventral bristles.

Zusammenfassung

Thalassacarus longirostris n. sp. wird beschrieben. Kennzeichen dieser Art ist das sehr lange und schmale Gnathosoma, wobei die zwei Paar Maxillarhaare dicht nebeneinander in der Mitte des Rostrums inserieren.

Acknowledgement

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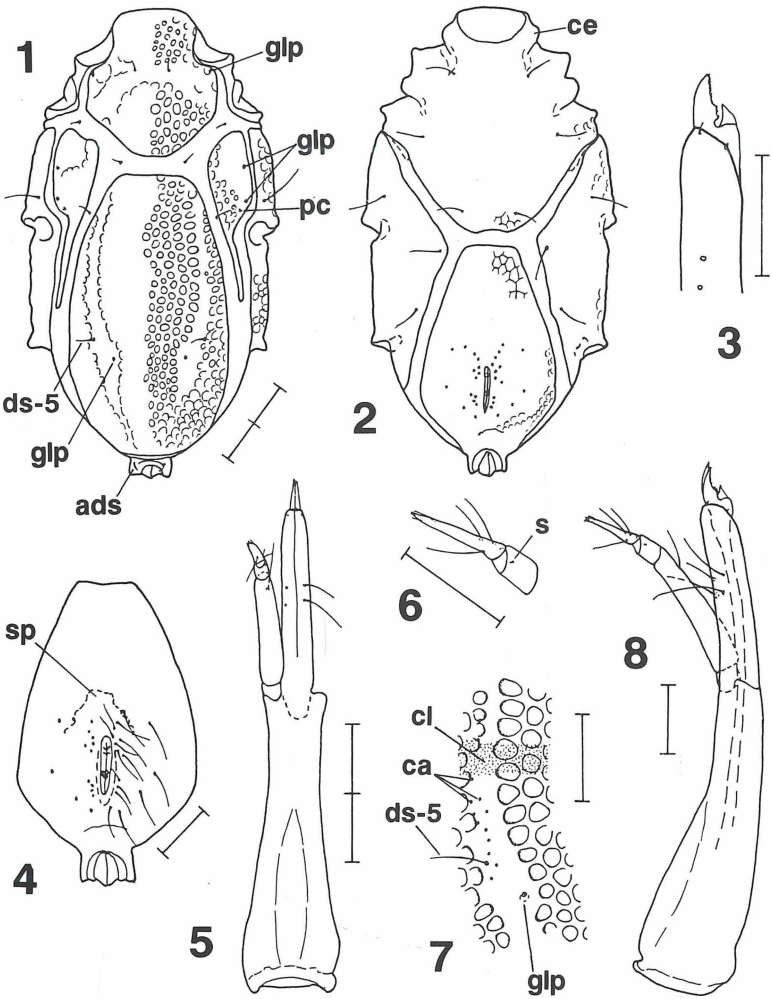

Figs 1-8: *Thalassacarus longirostris* n. sp., male. 1. Idiosoma, dorsum; 2. idiosoma, venter; 3. tip of rostrum and chelicera; 4. genitoanal plate; 5. gnathosoma, ventral; 6. *P-3* and *P-4*, medial; 7. portion of left *PD* on level with *ds-5* (canaliculi omitted in major parts); 8. gnathosoma, lateral. (*ads*, adanal setae; *ca*, canals in the integument; *ce*, cervical epimeral process; *cl*, canaliculi in the integument; *ds-5*, fifth pair of dorsal setae; *glp*, gland pore; *pc*, pore canaliculus; *s*, seta; *sp*, spermatopositor). Each scale division = 50 μm.

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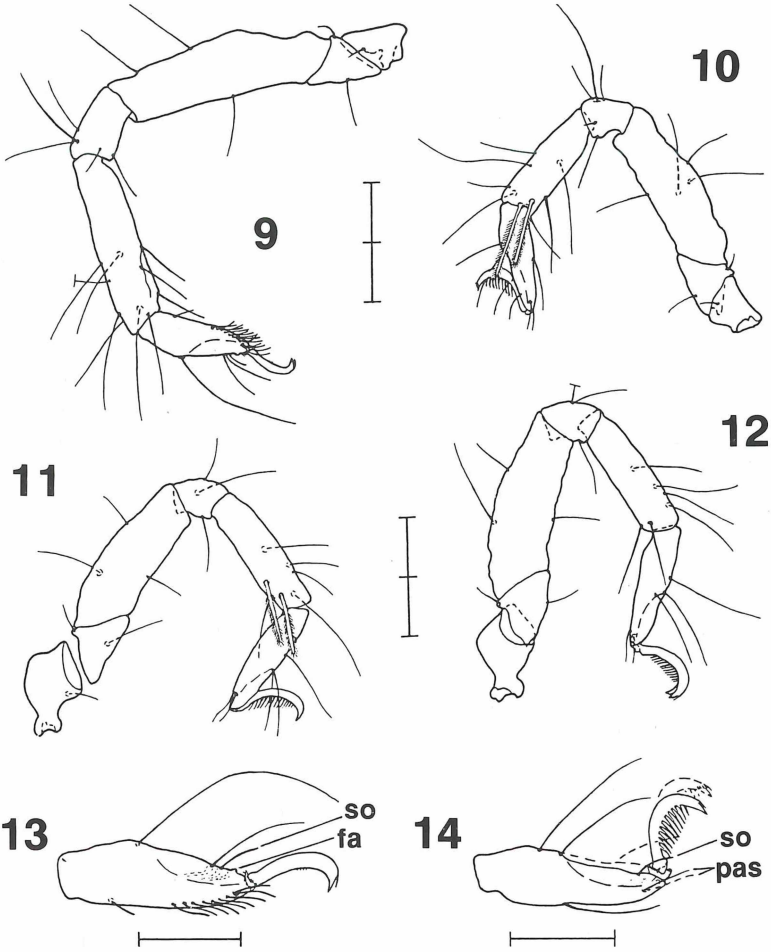

Figs 9-14: *Thalassacarus longirostris* n. sp., male. 9. Leg I, medial; 10. leg II, medial; 11. leg III, medial; 12. leg IV, medial; 13. tarsus I, lateral (medial setae and claw omitted); 14. tarsus II, medial (lateral setae and claw in broken line). (*fa*, famulus; *pas*, parambulacral setae; *so*, solenidion). Each scale division = 50 μm.

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