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**A NEW RECORD AND REDESCRIPTION
OF *PARALAOPHONTODES ECHINATA* (WILLEY)
(COPEPODA, HARPACTICOIDA, ANCORABOLIDAE)**

by

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ABSTRACT

Paralaophontodes echinata (WILLEY, 1930) found in a sand sample from Yucatan (Mexico) is redescribed. As far as known this is the second record of the species. The occurrence of *P. echinata* along the coasts of Mexico illustrates the strong West Indian affinities of the Bermuda fauna.

Keywords : *Paralaophontodes echinata*, *Laophontodes* Harpacticoida, Mexico.

RÉSUMÉ

Paralaophontodes echinata (WILLEY, 1930), trouvé dans un prélèvement provenant du Yucatan (Mexique), est redécrit. *P. echinata* n'était connu que de sa localité type. La présence de cette espèce le long de la côte Mexicaine illustre l'étroite affinité de la faune des Indes Occidentales avec celle des Bermudes.

INTRODUCTION

The harpacticoid copepod, *Paralaophontodes echinata*, originally described by WILLEY (1930) as *Laophonte echinata*, was thought by LANG (1936, 1948) to be conspecific with *Laophontodes armatus* LANG. However, in his outstanding work on the Californian harpacticoid copepods (LANG, 1965), he revised his former assumption and erected the genus *Paralaophontodes*. Up to now, two more species, *P. robustus* (BOZIC, 1964) and *P. exopoditus* MIELKE, 1981, have been added to this genus.

As far as I know, *Paralaophontodes echinata* is only recorded from Bermuda, the type-locality of the species. The occurrence of this species in the coastal waters of Mexico illustrates once again the strong West Indian affinities of the Bermuda fauna.

MATERIAL AND METHODS

The sand sample was collected by skin diving in three meters deep water off Akumal in the neighbourhood of Mocche (Yucatan province, Mexico). In the sample one ovigerous female and one adult male were found. Before dissecting the specimens, drawings of the habitus were made. The dissected parts of the female are

mounted in lactophenol, on four slides; the cover-glass is sealed with glyceel. Because of the strong reductions of the legs, drawings of the male appendages could be made without dissection. Abbreviations used in the text are P_1 to P_6 = first to sixth leg. The specimens are deposited with the collections of the Koninklijk Belgisch Instituut voor Natuurwetenschappen at Brussels, numbered COP 1507 and COP 1508.

SYSTEMATICS

Family Ancorabolidae Sars, 1909, Lang, 1948

Genus *Paralaophontodes* Lang, 1965

Paralaophontodes echinata (WILLEY, 1930)

Synonymy :

- 1930 — *Laophonte echinata*, sp. n. — WILLEY : Harpact. Cop. Bermuda : 109.
 1936 — *Laophontodes armatus* Lang — Lang : Die Familie Anchorabolidae Sars : 154.
 1936a — *Laophontodes armatus* Lang — Lang : Cop. Harpact. Swed. Ant. Exp. : 65.
 1948 — *Laophontodes armatus* Lang — Lang : Monographie der Harpacticiden : 1455, 1465.
 1965 — *Paralaophontodes echinata* WILLEY — Lang : Harp. Californian Pac. Coast : 538.

Female — Habitus (Fig. 1 : a and b) : length, including rostrum and furcal rami, 530 μ m; cephalothorax medio-laterally and postero-laterally extended in triangular wing-shaped structures; dorsal surface of the cephalothorax with strong ridges extended in two posteriorly directed blunt conical elevations; anterior part of the dorso-median structure furnished with a few small hairs; thoracic segments each with a lateral triangular process and two dorsal blunt elevations (Fig. 3 : d); genital segments entirely fused; lateral extensions with some sharp spinules; penultimate segment not laterally extended and with two sharp medio-dorsal elevations; anal operculum furnished with fragile spinules along the posterior margin; anal region with two flat and curved structures, furnished with long hairs; ventral side of the abdominal segments (Fig. 2 : a) smooth and sealed with minute spinules along the posterior margin.

Furcal rami (Fig. 2 : c) about seven times as long as wide, without integumental structures but with two tubular pores; three lateral setae; dorsal seta articulating on two basal parts; apical setae fused; outermost apical one short; innermost apical seta about 75 μ m long and smooth; inner apical seta small.

Genital field (Fig. 2 : g) represented as a small star-shaped impression; clasping organs developed bearing two small setae; one egg-sac, containing nine eggs, 38 μ m in diameter.

Rostrum (Fig. 2 : d) fused with the cephalothorax; triangular, bearing two sensillae.

Antennule (Fig. 2 : f) four-segmented; first segment with two, second segment with one row of long hairs; aesthetasc implanted on the apical margin of the third segment and measuring 80 μ m; ultimate segment with five setae articulating on a basal part; three apical setae fused near their basis.

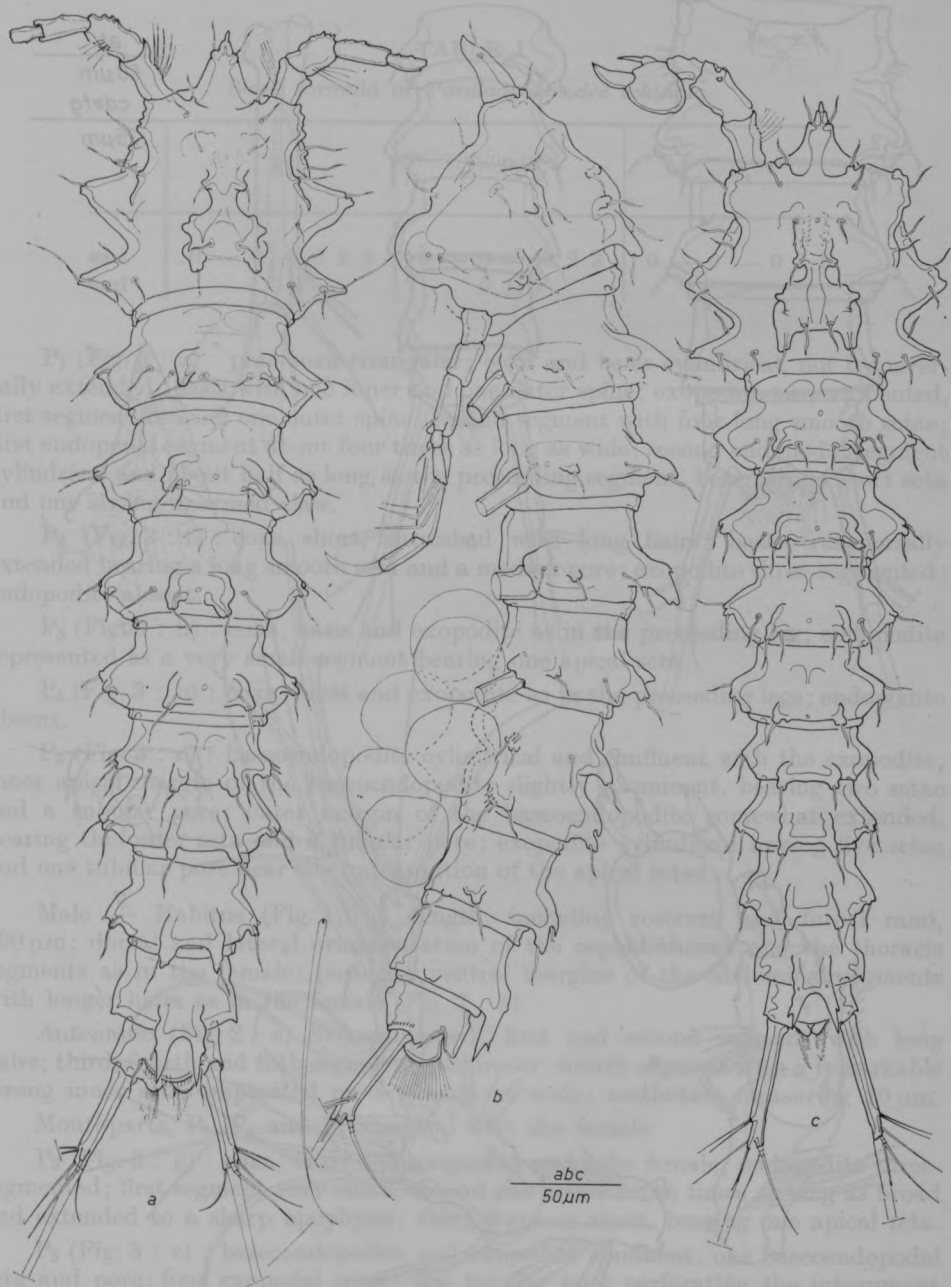


Fig. 1. — *Paralaophontodes echinata* : a, habitus of the female in dorsal view; b, habitus of the female in lateral view; c, habitus of the male in dorsal view.

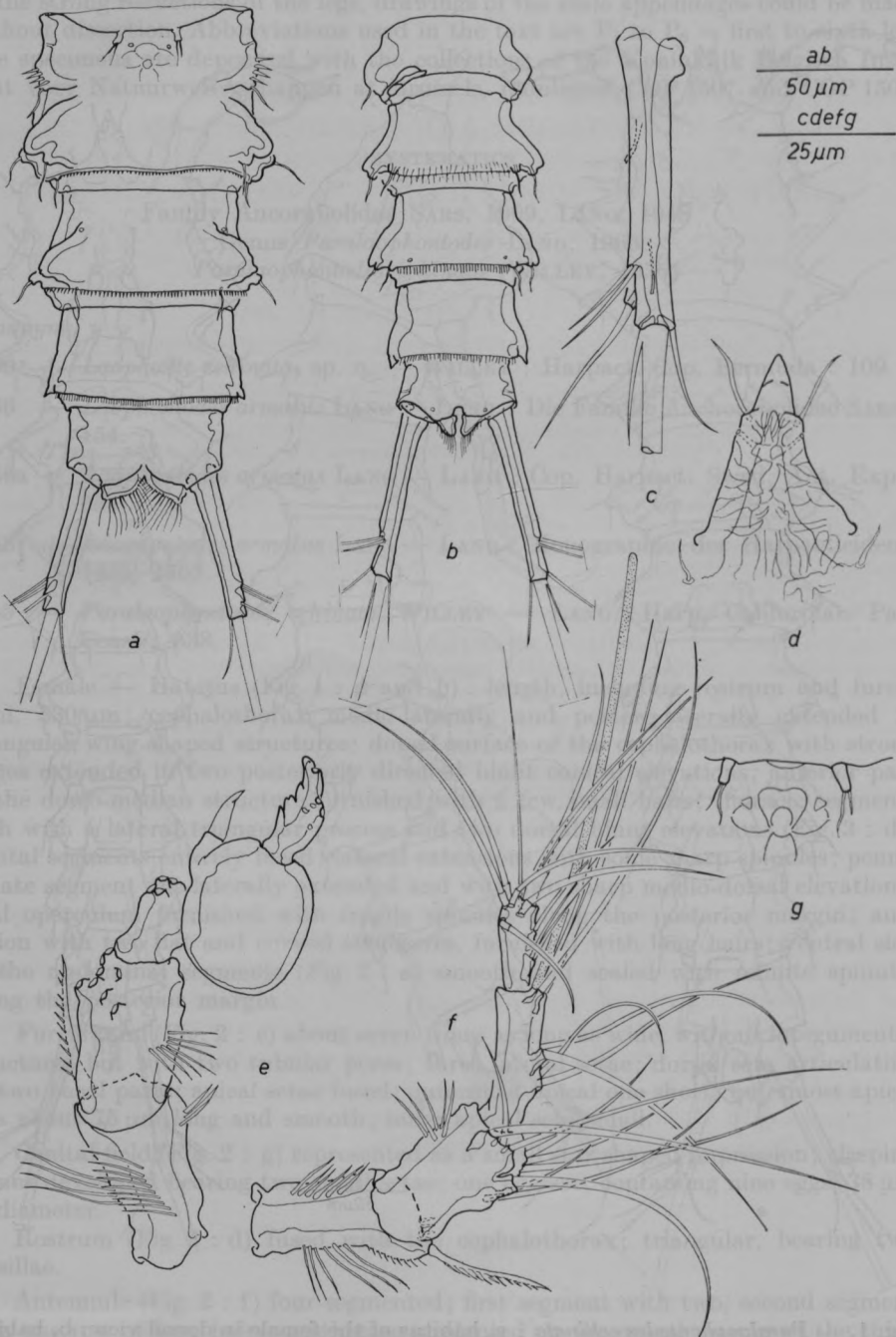


Fig. 2. — *Paralaophontodes echinata* : a, abdomen of the female in ventral view; b, abdomen of the male in ventral view; c, furcal ramus in ventral view; d, rostrum; e, antennule of the male; f, antennule of the female.

Antenna, mandible, maxillule, maxille and maxilliped as in *Laophontodes hedgpethi* LANG, 1965.

TABLE I

Setal formula of *Paralaophontodes echinata*

	P ₂	P ₃	P ₄
exo	0 — 0 — 0 2 3	0 — 0 — 0 2 3	0 — 0 — 0 2 3
end	—	0 1 0	—

P₁ (Fig. 3 : a) : prae-coxa triangular; coxa and basis cylindrical, not transversally extended; basis with one inner and one outer spine; exopodite two-segmented, first segment bearing one outer spine; second segment with four long smooth setae; first endopodal segment about four times as long as wide; second endopodal segment cylindrical and about half as long as the preceeding segment, bearing one short seta and one strong unarmed claw.

P₂ (Fig. 3 : f) : coxa short, furnished with long hairs; basis transversally extended bearing a long smooth seta and a median pore; exopodite three-segmented; endopodite absent.

P₃ (Fig. 3 : h) : coxa, basis and exopodite as in the preceeding leg; endopodite represented as a very small segment bearing one apical seta.

P₄ (Fig. 3 : b) : coxa, basis and exopodite as in the preceeding legs; endopodite absent.

P₅ (Fig. 3 : c) : baseoendopodite cylindrical and confluent with the exopodite; inner apical margin of the baseoendopodite slightly prominent, bearing two setae and a tubular pore; outer margin of the baseoendopodite somewhat extended, bearing the outer seta and a tubular pore; exopodite cylindrical having five setae and one tubular pore near the implantation of the apical setae.

Male — Habitus (Fig. 1 : c) : length, including rostrum and furcal rami, 490 μ m; dorsal and lateral ornamentation of the cephalothorax and the thoracic segments as in the female; posterior ventral margins of the abdominal segments with longer hairs as in the female (Fig. 2 : b).

Antennule (Fig. 2 : e) five-segmented; first and second segment with long hairs; third, fourth and fifth segment subchirocer; fourth segment with a remarkable strong inner seta, implanted on a prominent socle; aesthetasc measuring 70 μ m.

Mouthparts, P₁, P₂ and P₄ identical with the female.

P₃ (Fig. 3 : g) : coxa, basis and exopodite as in the female; endopodite three-segmented; first segment very small, second one about seven times as long as broad and extended to a sharp apophysis; third segment short, bearing one apical seta.

P₅ (Fig. 3 : e) : baseoendopodite and exopodite confluent; one baseoendopodal seta and pore; four exopodal setae; one tubular pore perforating the integument near the implantation of the most apical exopodal seta.

P₆ (Fig. 2 : b) not represented as setae but as a small assymmetrical plate along the right side of the postero-ventral margin.

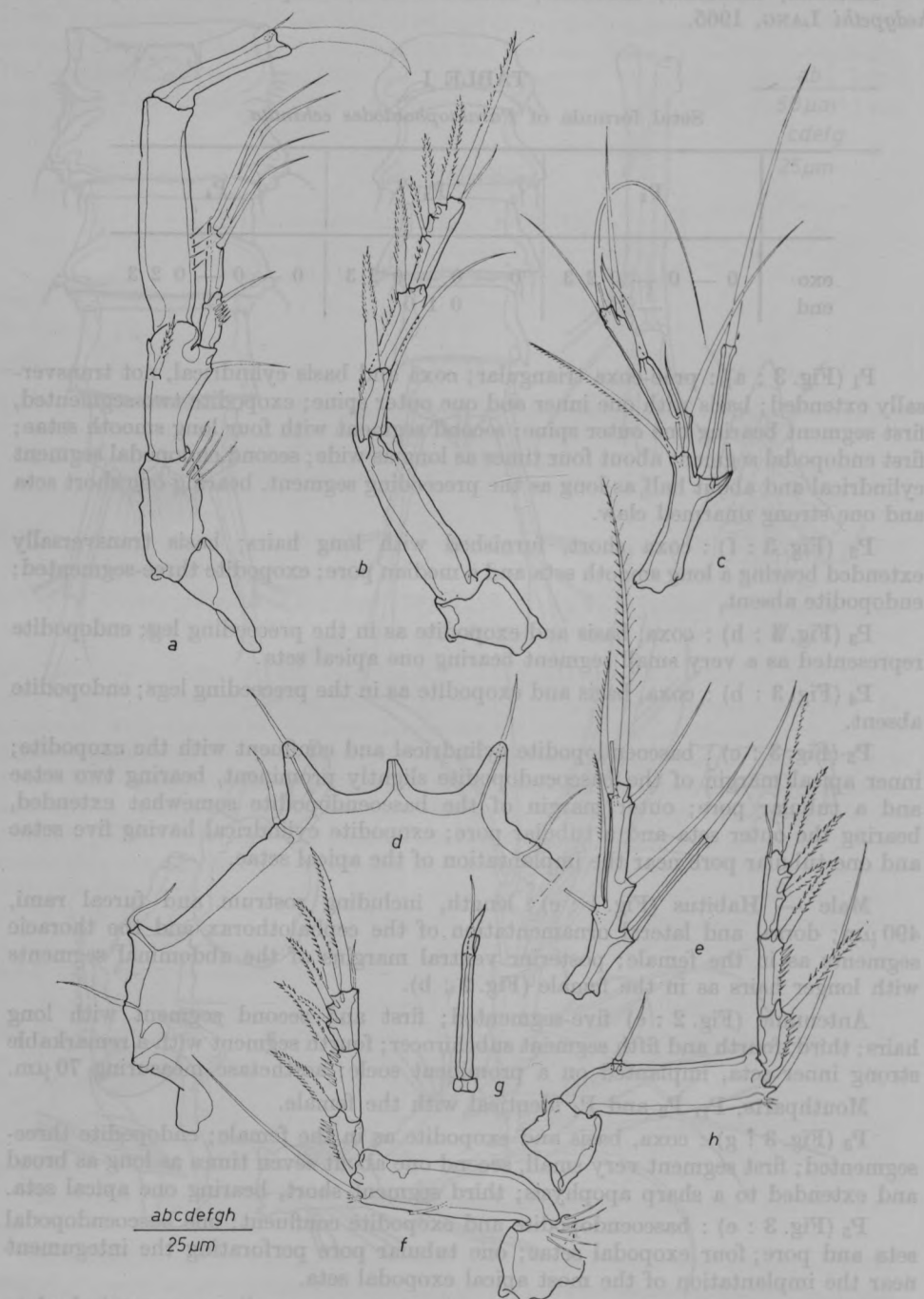


Fig. 3. — *Paralaophontodes echinata* : a, P_1 ; b, P_4 ; c, P_5 of the female; d, transversal section through the third thoracic segment; e, P_5 of the male; f, P_2 ; g, endopodite of the P_3 of the male; h P_3 of the female.

DISCUSSION

Up to now, three species have been designated to the genus *Paralaophontodes*: *P. echinata* (WILLEY, 1930), *P. robustus* (BOZIC, 1964) and *P. exopoditus* MIELKE, 1981. Those three species share a lot of common characters in habitus, mouthparts and legs, illustrating their close affinity.

P. echinata is easily distinguishable from *P. exopoditus* in the absence of an exopodal segment on the antenna and in the reduced setal formula of the ultimate exopodal segments of P₂, P₃ and P₄ (0-2-3 in *P. echinata* and 1-2-3 in *P. exopoditus*). *P. robustus* differs from both other members of the genus by the absence of the endopodite of the third leg.

Paralaophontodes and the *armatus*-group of the genus *Laophontodes* (*L. armatus* LANG, 1936; *L. hedgpethi* LANG, 1965 and *L. psammophilus* SOYER, 1975) are sister groups. The reduction of the endopodites of P₂ and P₄ and the reduction of the exopodite of the P₁ in the genus *Paralaophontodes* allows a clear discrimination of both groups. The recognition of distinct species-groups in the genus *Laophontodes* indicates that it is probably possible to define more genera within the genus *Laophontodes* as defined by LANG (1948). Unfortunately, several species are insufficiently known, making an objective revision of the genus rather hazardous, at this moment.

Some comments, however, on the morphology of the P₅ of *Laophontodes hedgpethi* LANG, should be made. LANG (1965) considered the P₅ of the female having ten setae at all and the P₅ of the male bearing eight setae. As I have convinced myself in observing the fifth legs in *L. hamatus*, *L. bicornis*, *P. echinata* and two unnamed (new) species, the place of the tubular pores on the P₅ (and on the other legs) is always the same. Therefore I am convinced that in *L. hedgpethi* the fifth leg of the female has only eight setae and that of the male only six setae. The « very thin setae » (*sensu* LANG, 1965) on the baseoendopodite, near the digitiform process and at the inner distal edge of the exopodite should be considered as tubular pores (« Hyaliner Schlauch » *sensu* MIELKE, 1981).

This correction implicates that all the species in the *armatus*-group and its sister group, *Paralaophontodes*, bear eight setae on the female P₅ and six setae on the male P₅ (the male of *L. psammophilus* is at present unknown).

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