

Geconcerteerde Akties Oceanografie
Technisch Rapport Benthos 81/01

This paper not to be cited without prior reference to the authors

Arctopontia brachea n.gen. n. spec., a harpacticoid copepod from
the Southern Bight of the North Sea.

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INTRODUCTION

During a comprehensive study of the macro- and meiobenthos of the Kwintebank, a sandbank in the Southern Bight of the North Sea, eleven female specimens of a *Cylinodropsyllid* belonging to a new genus, were collected from one of the stations sampled. The coordinates are N.lat. 51°18'00", E.long. 2°40'10".

The sediment at this station is a pure, very well sorted, coarse sand (median grain size, 517 μm ; sorting 0.24 ; mud < 63 μm : 0%) with a harpacticoid community similar to the *Leptastacus laticaudatus* - *Paramesochra helgolandica* - community from the "Open Sea" zone described by Govaere *et al.* (1980).

All specimens have been deposited at the "Koninklijk Belgisch Instituut voor Natuurwetenschappen" Vautierstraat, 31, B-1040 Brussel : nr. I.G.26 228.

DESCRIPTION

The following description is based on the dissection of one female (holotype) with additional observations from three others (paratypes).

Length : 0.46-0.53 mm (with rostrum and caudal rami ; 0.41-0.47 mm (without) ; n = 11.

Body cylindrical and elongated, tapering gently towards the posterior end. Rostrum prominent, triangular with a sensory seta on either side at some distance from the tip (Fig. 2A). Genital double segment somite without any trace of subdivision. Dorsal and ventral posterior edges of the abdominal somites 1-3 spinulose, dorsal surface also ornamented with rows of minute spinules. Last abdominal somite bears a row of spines on the ventral posterior edge (Fig. 1D). Anal operculum provided with four dentiform processes. Furcal rami 2.5 times as long as broad, with one well developed terminal seta. Distal outer corner extended into a strong process. Distal edge with three setae ; one short, spiniform at inner corner ; one on dorsal surface with articulated base.

Antennule (Fig. 2A) : composed of six segments, the first being the longest. Fourth segment bears an aesthetasc.

Antenna (Fig. 2B) : coxa short, bare. Allobasis with a single seta on the proximal part. Exopodite very small, one-segmented, with two setae, one terminal, one subterminal. Endopodite with two lateral spines, a single terminal spine and four terminal setae : three of the latter are geniculate while the fourth is very strong, irregular and furnished with some spinules in the middle.

Mandible (Fig. 2C) : praecoxa long with bidentate pars incisiva ; lacinia mobilis consisting of small teeth ; no pars molaris ; coxa-basis bearing three setae at distal lateral edge ; endopodite with five setae : four terminal and one subterminal.

Maxillula (Fig. 2D) : arthrite of praecoxa with five setae laterally provided with spinules ; coxa with single terminal seta ; basis with five distal setae and one lateral seta.

Maxilla (Fig. 2E) : syncoxa with one endite bearing a single armed seta ; basis with one armed seta and one strong claw. Endopodite represented by a single seta.

Maxillipeda (Fig. 2F) : basis provided with a row of spinules. First segment of endopodite bare, furnished with two triangular chitinous structures on the distal and proximal part respectively. Second segment short with a long and strong claw.

Leg 1 (Fig. 3A) : coxa furnished with a row of spinules along the distal edge ; basis bare with a single outer spine. Exopodite bi-segmented ; first segment shortest with a single outer spine ; second segment bearing three terminal setae, two of which are geniculate. Endopodite bi-segmented, prehensile. First segment almost two times as long as exopodite, ornamented with a single long seta. Second segment short, with one terminal claw and one long seta.

Leg 2-4 (Fig. 3B-C-D) : coxa bare. Basis with two rows of spinules, one transverse and one at the distal edge. Outer lateral edge with one seta. Exopodites three segmented, distal edge of first and second segments spinulose and elongated with spines. Each segment spinulose and prolonged with spines. Each segment with one outer spine, last segment with two terminal setae. Endopodites one-segmented. Second leg with one long lateral seta and two terminal spines ; the inner spine is about two times as long as the outer. Third leg with one lateral seta and a single apical spine. Fourth leg with two terminal spines, the inner longer than the outer (Table 1).

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Leg 5 (Fig. 3E) : fifth leg with both segments completely fused. A chitinous edge, indicating baso-endopodite and exopodite, is present in varying degrees of development. Inner corner produced into one strong spur-shaped process, well developed and entirely bare. Outer distal edge forming separate process with two long setae, one on each side of a strong apical spine.

Leg 6 (Fig. 3F) : forming a common plate ; each leg with a single outer, slender seta.

Variability : no differences were found between the four dissected females except for the anal operculum. Two individuals bear four spines and two five spines on the distal edge of the anal operculum.

DISCUSSION

The foregoing description reveals the most important characters of the *Cylindropsyllidae* : small elongated body, genital double segment without subdivisions, antennule of the female 6-7 segments, aesthetasc on fourth segment, exopodite of the antenna at most one-segmented, reduction of the endopodites of legs 2-4.

Fourteen genera are assigned to the family *Cylindropsyllidae* (Bodin, 1979) : *Cylindropsyllus* Brady, 1880 ; *Evansula* T. Scott, 1906 ; *Stenocaris* Sars, 1909 ; *Leptastacus* T. Scott, 1906 ; *Paraleptastacus* Wilson, 1932 ; *Psammastacus* Nicholls, 1935 ; *Arenocaris* Nicholls, 1935 ; *Leptopontia* T. Scott, 1902 ; *Arenopontia* Kunz, 1937 ; *Psammopsyllus* Nicholls, 1945 ; *Sewellina* Krishnaswamy, 1956 ; *Cylinula* Coull, 1971 ; *Ischnusella* Cottarelli, 1971 and *Notopontia* Bodiou, 1977.

Judging from the segmentation of legs 2-4, our specimens seem to be most closely related to *Evansula*, *Ischnusella* and *Psammopsyllus*. However they differ in the structure of the first leg.

The two-segmented exopodite and the two-segmented, prehensile endopodite of the first leg, undoubtedly distinguish our specimens from most of the above genera. A two-segmented exopodite is found in *Arenocaris* and *Notopontia*, however the former genus lacks the prehensile endopodite. As far as the structure of the first and fourth leg is concerned, our specimens most closely resemble *Notopontia stephanieae* Bodiou, 1977, the only species within this genus, and *Tetragoniceps trispinosus* Scott, 1896. *T. trispinosus* was considered as belonging to the Cyliropsyllidae by Lang (1948) as species incerta sedis due to its original inaccurate description. Bodiou (1977) stressed the great similarity between *N. stephanieae* and *T. trispinosus* on the basis of the structure of the first and fourth leg, but there are important differences in the fifth leg, the furca and the number of antennule segments. Since the description of Scott (1896) was inaccurate Bodiou (1977) was not able to resolve the exact status of *T. trispinosus*. Our specimens are almost identical with *T. trispinosus* in all the characteristics described by Scott : general habitus, structure of the antennule, antenna, maxillipede, fifth leg and the furcal rami, segmentation of first and fourth leg. However, the following differences were noticed : the antenna bears five terminal setae instead of six ; the endopodite of the fourth leg has two terminal setae instead of three ; the fifth leg bears two hair-like setae and one spine instead of one hair-like seta and two short, stout setae ; the furcal rami are ornamented with setae instead of being naked.

The anal operculum of our specimens differ in the number of spines. However the varying number of spines observed in our specimens indicate that this character is variable. Whether the other differences, being constant within our specimens, are entirely or partly due to the less accurate description by Scott, is difficult to decide, since type material of *T. trispinosus* does not exist.

Although no topotypes of *T. trispinosus* were studied, our specimens are considered to be a new species to science, closely related to *T. trispinosus* but differing from it in the characters listed above. Based on the differences with the existing genera and in agreement with LANG (1948) both species are to be placed in a new genus within the Cylindropsyllidae which we name *Arctopontia* (from Arctos, the north and Pontos, the sea), with the following diagnosis : *Arctopontia* n.gen. ; Cylindropsyllidae ; body cylindrical ; urosome four-segmented in the female ; anal operculum provided with dentiform processes ; caudal rami extended into a strong process ; rostrum triangular and well defined at the base ; antennule six jointed ; antenna with an allobasis and a small one-segmented exopodite ; mandible with a distinct, two-segmented exopodite ; maxillipede normally built, a terminal claw without accessory spinules ; first leg with a two-segmented exopodite ; endopodite prehensile, first segment much longer than exopodite ; second to fourth leg with three jointed exopodites, endopodites all with one segment ; fifth leg forming a common plate. Type species : *Arctopontia brachea* n.gen. n.sp. (from brachea, sandbank). Other species : *A. trispinosa* (SCOTT, 1896) n.comb.

ACKNOWLEDGMENTS

The authors gratefully acknowledge Professor Dr. A. Coomans and Dr. C. Heip for critical review of the manuscript. Special gratitude is extended to Rudy Herman and Dirk Van Gansbeke for sampling in the field and to Anita Van Bost for sorting the samples. This study was supported by the "Beheerseenheid Mathematisch Model Noordzee" of the Ministry of Public Health. The first author acknowledges a grant from the Beyerinck-Popping fund.

SUMMARY

Arctopontia brachea n.g. n.sp. belonging to the family Cyliindropsyllidae Sars (sensu Lang, 1948) is described from a sandbank in the Southern Bight of the North Sea. The species is closely related to *Tetragoniceps trispinosus* (Scott, 1896), formerly considered species incerta sedis within the Cyliindropsyllidae and now recognized as a member of the new genus, thus renamed *Arctopontia trispinosa* (Scott, 1896) n.comb.

RÉSUMÉ

Description d'*Arctopontia brachea* n.g. n.sp., une forme de copépode harpacticoïde appartenant à la famille des Cyliindropsyllidae Sars, (sensu Lang, 1948) provenant de la Mer du Nord. L'espèce décrite est considérée comme très proche de *Tetragoniceps trispinosus* (Scott, 1896), considérée species incerta sedis dans la famille des Cyliindropsyllidae, et maintenant transférée dans le nouveau genre comme *Arctopontia trispinosa* (Scott, 1896) comb.n.

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P ₂			P ₃			P ₄		
Exp.		Exp.	Exp.		Exp.	Exp.		Exp.
1	2	3	1	2	3	1	2	3
0	0	0.2.1	0	0	0.2.1	0	0	0.2.1
		Enp.			Enp.			Enp.
		1			1			1
		1.2.0			1.1.0			0.2.0

Table 1 : *Arctopontia brachea* n.g. n.sp. Female. Seta and spine formula.

FIGURES

Fig. 1. - *Arctopontia brachea* n.g. n.sp. Female : A. Abdomen, dorsal ;
B. Last somite, anal operculum and furca, dorsal ; C. Anal
operculum with five spines ; D. Last somite and furca, ventral.

Fig. 2. - *Arctopontia brachea* n.g. n.sp. Female : A. Antennula ; B. An-
tenna ; C. Mandibel ; D. Maxillula ; E. Maxilla ; F. Maxilli-
peda.

Fig. 3. - *Arctopontia brachea* n.g. n.sp. Female. Legs : A. P₁ ; B. P₂ ;
C. P₃ ; D. P₄ ; E. P₅ ; F. P₆.

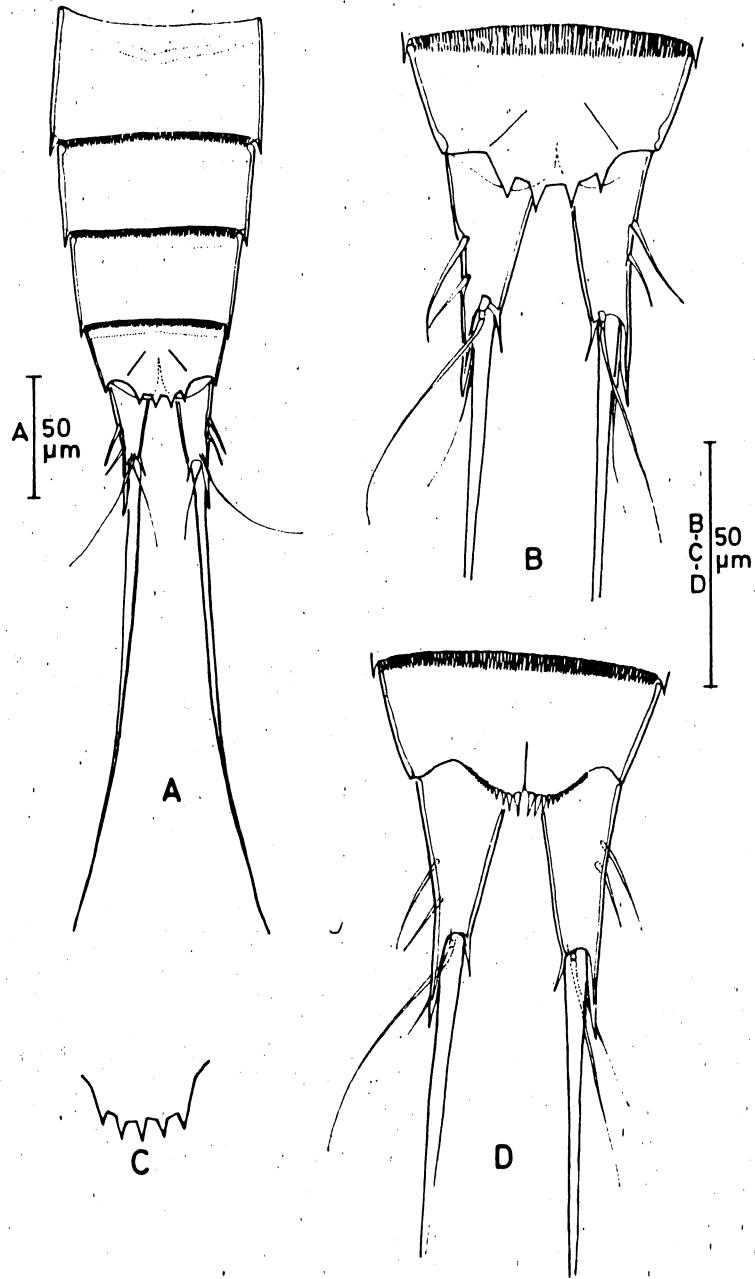


Fig. 12

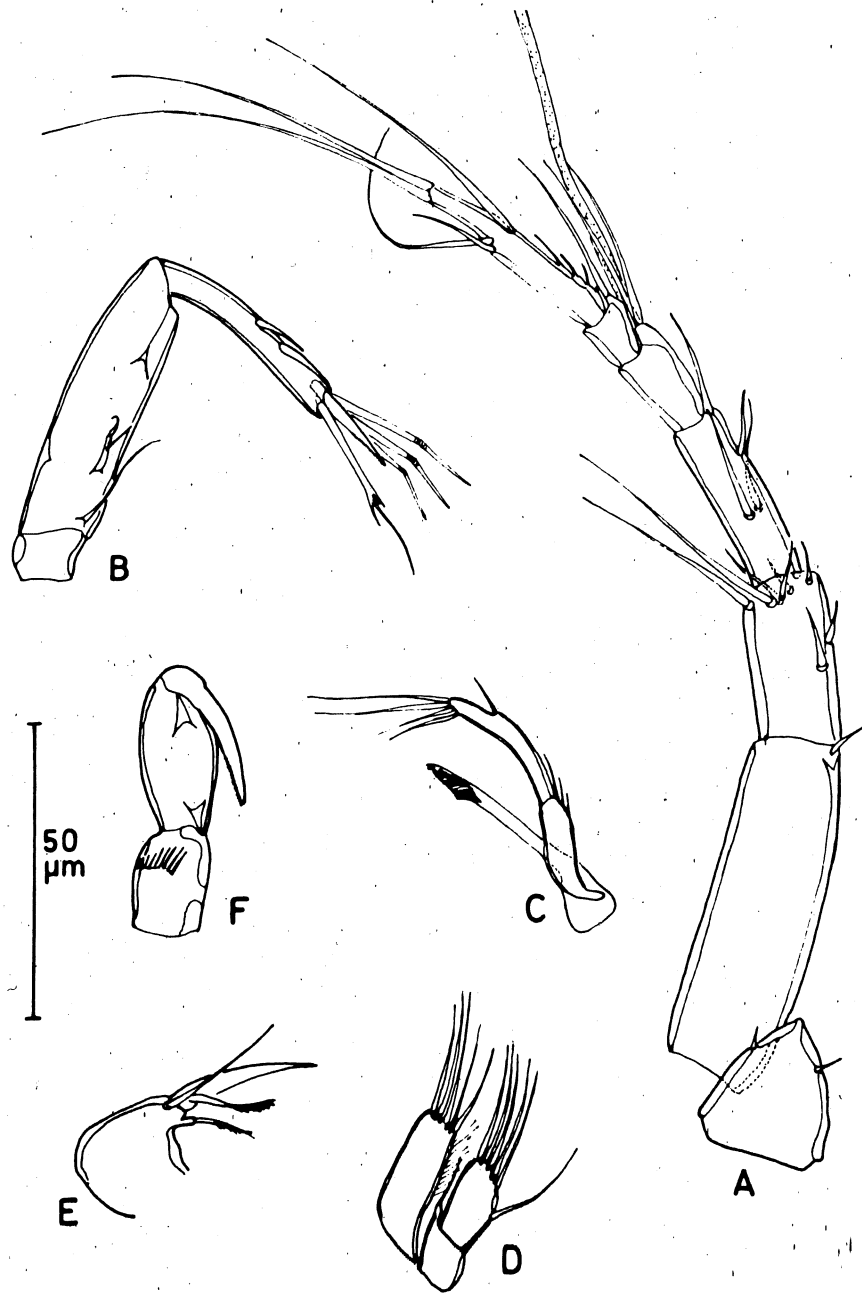


Fig. 2.

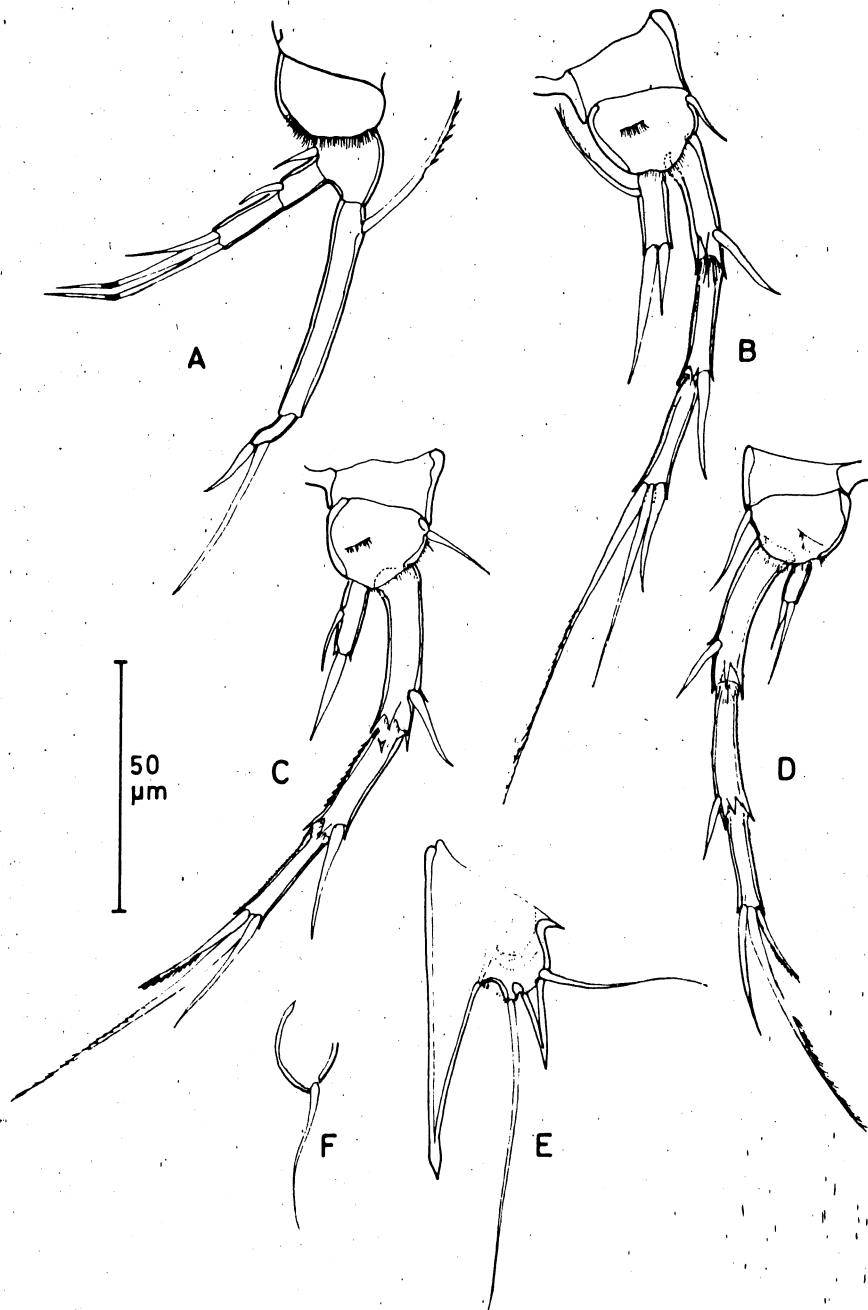


Fig. 3.