

**PROALES CHRISTINAE (ROTIFERA, PROALIDAE) :
A NEW SPECIES FROM THE LITTORAL
OF THE NORTH SEA**

by

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SUMMARY

A new rotifer species, *Proales christinae* sp. nov. (Rotifera, Monogononta : Proalidae), collected from hydroids washed ashore on the beach of the North Sea, Belgium, is described.

Keywords : *Proales christinae*, Rotifera, North Sea, hydroids.

INTRODUCTION

The marine rotifer fauna of Belgium is virtually undocumented (see DE RIDDER, 1961, 1989, 1992). For this reason, I recently started sampling different marine littoral habitats along the Belgian coast. The new species described here, was obtained from a collection of miscellaneous hydroids.

DESCRIPTION

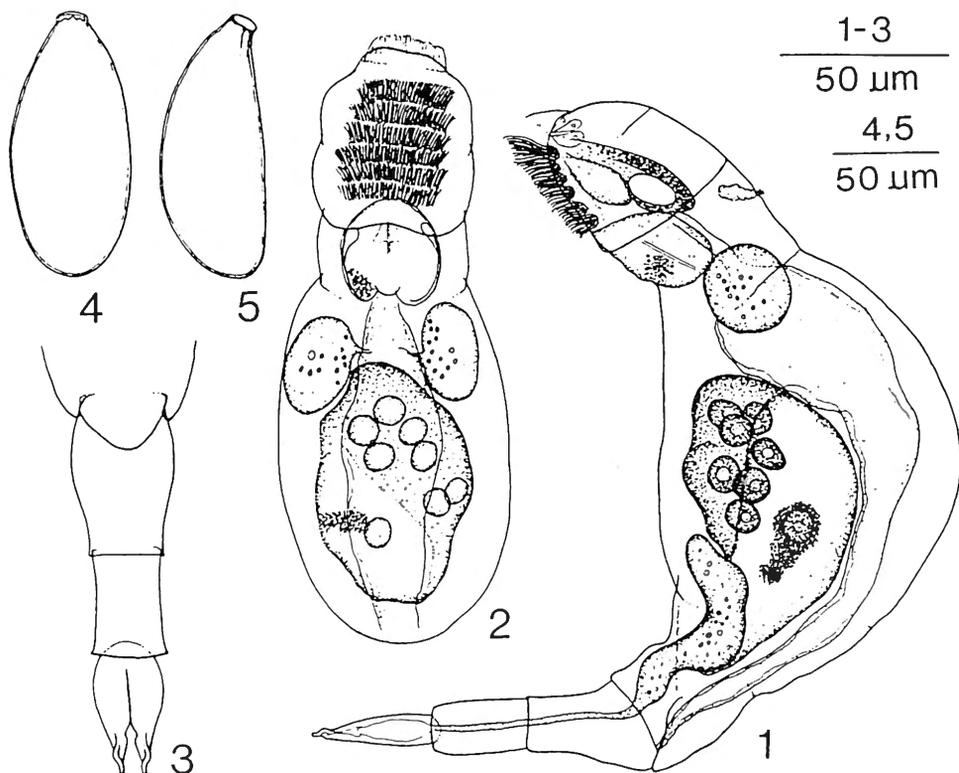
Proales christinae sp. nov.
(Figs 1-9)

Type locality. Westende, Belgium, beach of the North Sea. Coordinates : 51°09'35"N, 2°46'10"E.

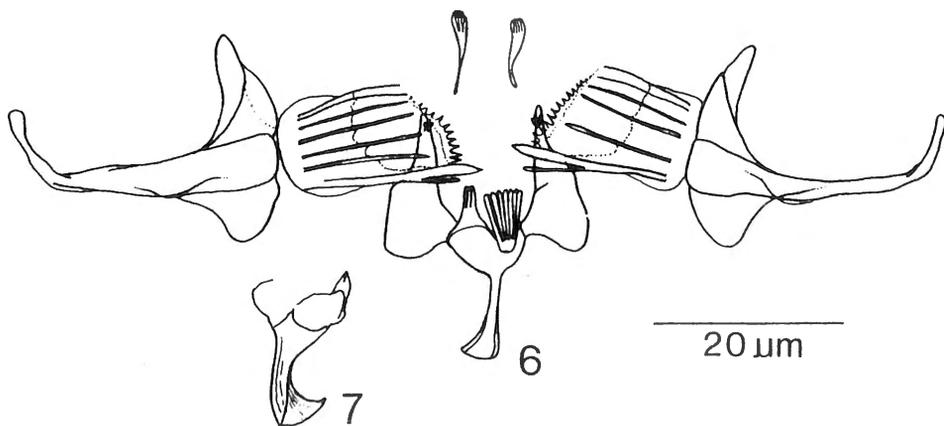
Type material. All specimens obtained from unidentified hydroids washed ashore on the beach ; April 1993.

Holotype : a female mounted in glycerine, deposited in the Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussels, Belgium, N° AI. 28.040.

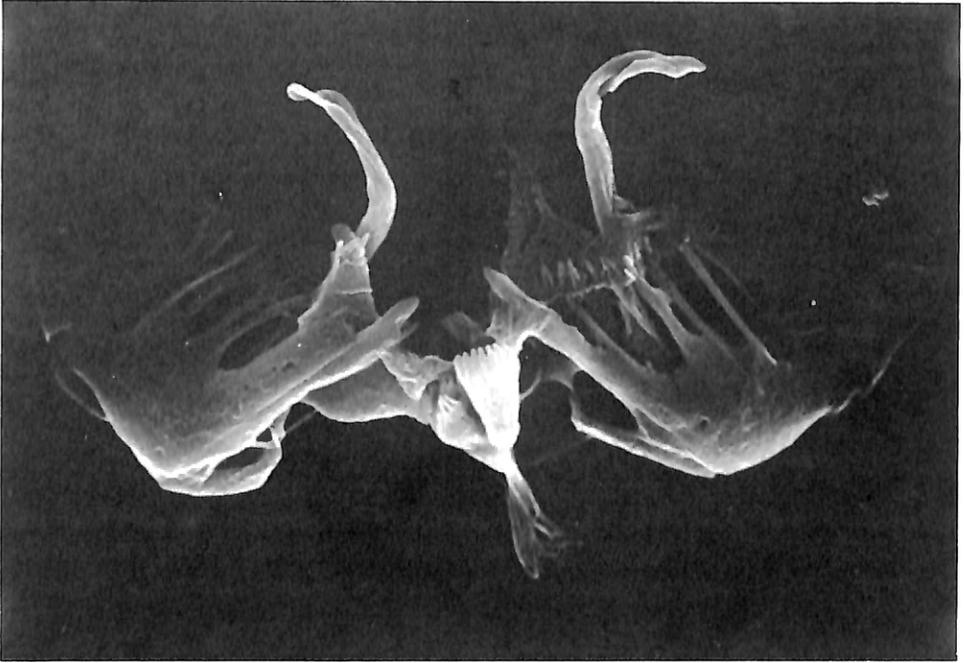
Paratypes : 5 females, one trophi preparation and one subitaneous egg mounted in glycerine in the K.B.I.N. ; 25 females mounted in glycerine, 5 trophi preparations in glycerine and 3 trophi mounted for SEM with the author in the Department of Biology, R.U.C.A.



Figs 1-5. — *Proales christinae* n. sp. — 1. Lateral view, ♀ holotype. — 2. Ventral view, ♀ paratype (foot omitted). — 3. Foot with toes, holotype. — 4. Subitaneous egg, dorsal view. — 5. Ibidem, lateral view.



Figs 6-7. — *Proales christinae* n. sp. — 6. Trophi. — 7. Fulcrum, lateral view.



Figs 8-9. — *Proales christinae* n. sp., SE micrographs of trophi, different views. Scale bar 10 μ m.

Body elongate, stout, fusiform in dorsal view, ventrally bent in lateral view; broadly oval in cross-section, higher than wide, greatest diameter near mid-length, fairly hyaline. Head and neck region narrower than trunk; head offset by dorsal transverse fold, occasionally with dorsal transverse fold anteriorly; neck offset from trunk by shallow, dorsal transverse fold. Trunk arched dorsally, more or less abruptly narrowing posteriorly; tail distinct, rounded posteriorly. Foot moderately short, c. 1/5 total length, two pseudosegments of equal length. Toes straight, more or less lanceolate in lateral view, abruptly ending in tubular points, in dorsal view with straight inner margins and curved outer margins; inner margins with short indentation prior to tubules, tubules laterally outcurved prior to their free end. Corona ventral, an anterior row of close-set cilia (reduced circumapical band?) and at some distance (reduced apical field?) from the latter six transverse, pre-oral bands of close-set cilia; lateral ciliary tufts absent. Dorsal antenna unpaired, short. Mouth near posterior edge of corona. Retrocerebral organ with sac and a pair of subcerebral glands. Brain egg-shaped, surrounded by large retrocerebral sac, two ducts, sac and ducts granular. Eyespots absent? No distinct constriction between stomach and intestine. Gastric glands of medium size, globular, slightly compressed laterally, short-stalked. Pedal glands large, elongated, extending into trunk, with reservoir in toes. Vitellarium rounded, 8 nuclei.

Trophi modified malleate. Rami triangular, inner margins, smooth, three to four short projections prior to tip at underside of rami; basal apophyses asymmetric: right apophyse small, 3-toothed, left large, triangular, 7-toothed. Fulcrum short, in ventral view rod-shaped; slightly expanded posteriorly; in lateral view with expanded, ventrally recurved, hook-shaped posterior end. Left and right uncus with one principal and 5-6 subsidiary teeth; principal tooth with single accessory toothlet; principal teeth slightly clubbed, others linear; a supplementary comb of sharp, delicate teeth behind tips of uncinal teeth. Manubria long, slender, strongly incurved posteriorly, head with broad inner and shorter outer lamella. Two small, club-shaped epipharyngeal elements.

Subitaneous egg elongate oval in dorsal view, ventrally flattened in lateral view; short-stalked; smooth.

Measurements

Body length 270-320 μm , height 74-88 μm , width 65-70 μm ; toe 32-36 μm .

Trophi: ramus 12-14 μm , fulcrum 6-7 μm , uncus 12-15 μm , manubrium 16-20 μm .

Subitaneous egg (L \times W \times H): 114-122 \times 45-55 \times 45-51 μm .

Derivation of name. The species is named after doctoranda Christine Friedrich (Institut für polarökologie, Kiel), in reminiscence of the time spent with the attractive rotifers from arctic sea ice.

Differential diagnosis. *Proales christinae* n. sp. is close to *P. gonothyraeae* described by REMANE (1929). It differs from the latter in the following characters: trunk much more arched; a posteriorly rounded tail, vs. tail absent; longer (about

twice) and more lanceolate toes; two subcerebral glands, vs. subcerebral glands absent; rami with denticulate basal apophyses, vs. basal apophyses absent; unci 6-7-toothed, vs. thin uncinal plates with 4-5 ribs; lamellae on head of manubria larger; dome-shaped epipharynx absent, vs. present.

Proales christinae and *P. gonothyraeae* are easily distinguished from all other *Proales* species displaying a long foot, by the ventrally placed corona. The trophi of *P. christinae* show some resemblances with those of *P. reinhardti* (EHRENBERG, 1834), but the latter has smaller manubrial lamellae, less (4-5) uncinal teeth and smooth basal apophyses.

Biology

So far, *P. christinae* has been found only in collections of hydroid polyps, which suggests a close association with a hydroid host. It remains to be established if it is associated with a single species, or whether it occurs on a wide variety of hosts. At the moment we can only guess about the type of relationship involved: is it parasitic, symbiotic, commensal or epizoic? The related *P. gonothyraeae* lives on the epidermis of the hydroid polyp *Laomedea loveni* (ALLMANN). It is considered (REMANE, 1929) to be an ectoparasite that pierces the skin with its acute rami, and feeds on the epidermal cells. Instead of the cardate trophi type as found in *P. gonothyraeae*, *P. christinae* shows a modified malleate type, which suggests another mode of feeding and maybe another host relationship.

REFERENCES

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