

# BEAUFORTIA

INSTITUTE FOR SYSTEMATICS AND POPULATION BIOLOGY  
(ZOOLOGICAL MUSEUM) UNIVERSITY OF AMSTERDAM

Vol. 49, no. 10

December 27, 1999

## A NEW SPECIES OF *PARAONELLA* (PARAONIDAE: POLYCHAETA) FROM MARION AND PRINCE EDWARD ISLANDS, INDIAN OCEAN

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### ABSTRACT

*Paraonella subantarctica* n. sp. is described from sandy bottoms of subantarctic islands studied during the oceanographic expedition MD/08 BENTHOS. *Paraonella subantarctica* n. sp. is compared with the other species of the genus *Paraonella*, Strelzov, 1973 and differs in having four prebranchial segments and 9 to 11 branchial segments.

### INTRODUCTION

After the Marion Dufresne MD/03 Expedition in 1974, a new expedition was necessary to study the benthic invertebrates from the South West Indian Ocean. Polychaetes collected during the MD/08 BENTHOS Expedition from Marion and Prince Edward Islands were studied by Gillet (1991). His *Paraonella* sp. A is described herein as *P. subantarctica* n. sp. and is compared with the other species of the genus *Paraonella*, Strelzov, 1973.

### MATERIALS AND METHODS

A description of sampling sites of the MD/08 BENTHOS Expedition was given by Arnaud

and Hureau (1979). Various sampling methods were used: Charcot dredge, Okean grab, Lithods nets and Trawl. Specimens were conserved in ethanol 70% and observed by light microscopy with Olympus CHT2 and by scanning electron microscopy on Olympus JSM 5200 using the critical point drying method.

Material is deposited in the Institut de Recherche Fondamentale et Appliquée, Angers, France and a duplicate collection in the Museum National d'Histoire Naturelle de Paris, France and in the South African Museum Cape Town, South Africa.

Family Paraonidae Cerruti, 1909

The family Paraonidae is a group of small polychaetous annelids, tubicolous or errantiate. The

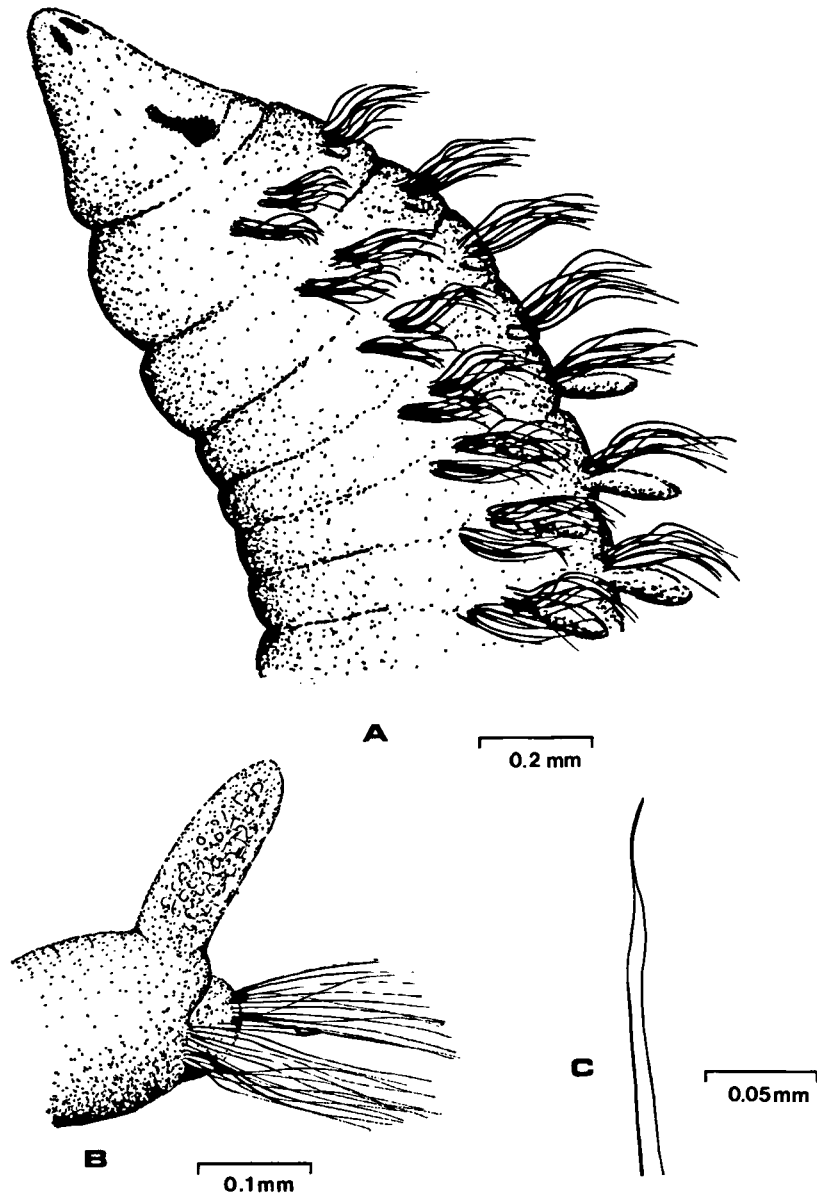


Fig. 1. *Paraonella subantarctica* n. sp. (Holotype, I.R.F.A. PAR.008). A, anterior region; B, parapodium; C, capillary chaeta.

first species of paraonids were referred to different families, Spionidae and Ariciidae. Cerruti (1909) has given the diagnose of the family with two genera: *Paraonis* Grube, 1873 and *Aricidea* Webster, 1879 with the subgenus *Cirrophorus* Ehlers, 1908. Generic characters in paraonids are the presence or absence of an unpaired cephalic antenna, the presence or absence of modified chaetae and the position of modified chaetae. The classification (Strelzov, 1979) of the family

presents six genera: *Aricidea* Webster, *Paraophorus* Ehlers, *Paraonis* Cerruti, *Paraonella* Strelzov, *Sabidius* Strelzov and *Tauberia* Strelzov.

Genus *Paraonella* Strelzov, 1973

Type species: *Paraonides nordica* Strelzov, 1968: 176-178, fig. 67.

The genus *Paraonella* is distinguished by the absence of median antenna and modified chaetae. The genus *Paraonella* is very similar to

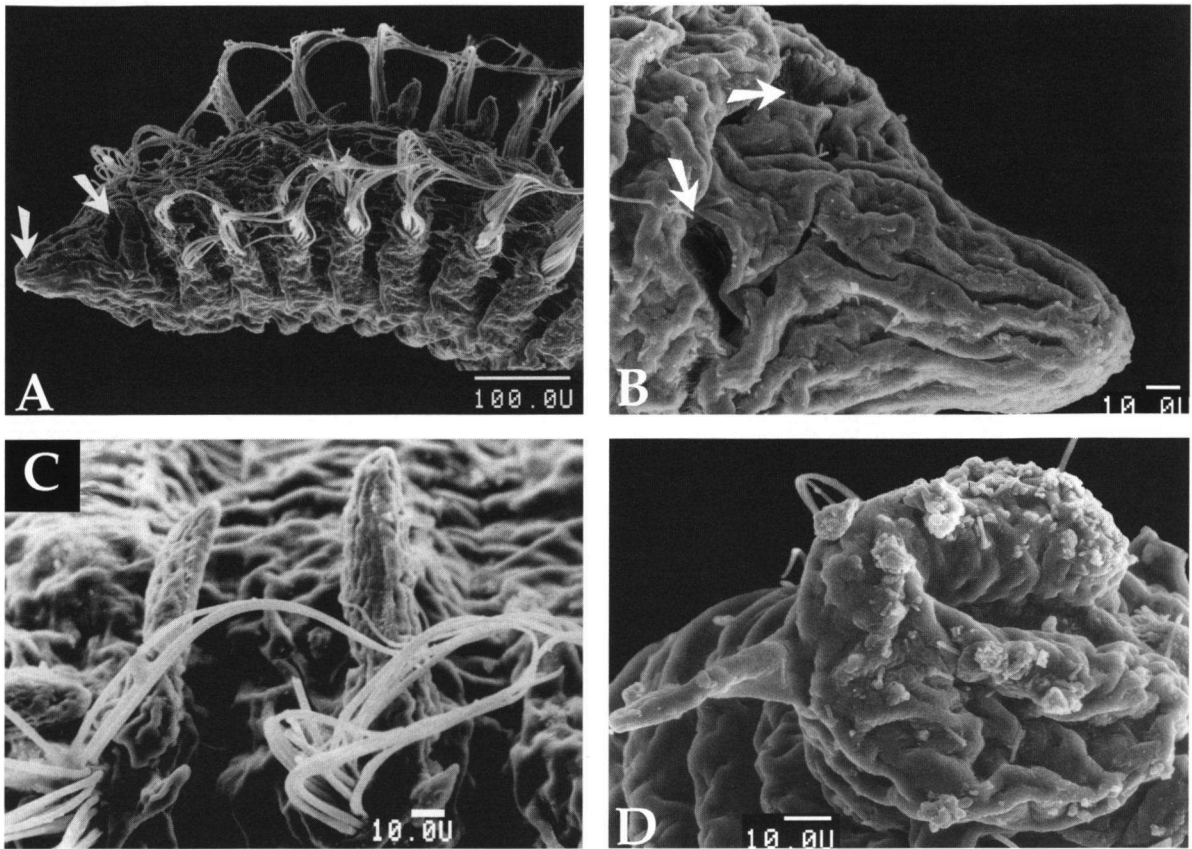


Fig. 2. Scanning electron microscope photographs of *Paraonella subantarctica* n. sp. A, anterior region with sense and nuchal organs x 200; B, prostomium with sense and nuchal organs x 660; C, parapodium x 660; D, Pygidium x 940.

*Tauberia* Strelzov (1979), as they share a similar shaped prostomium with a pair of nuchal organs in the buccal segment; however, they differ in the structure of the modified chaetae which occur in the genus *Tauberia*.

***Paraonella subantarctica* n. sp.**

Fig. 1 A-C, 2 A-D; Table 1

**MATERIAL EXAMINED.**- *Paraonella* sp. A Gillet, 1991. *Holotype*: Marion Island, 26.03.1976, st. 18 (BB 108) 46° 49.8'S 37° 56.2'E, complete, more than 80 chaetigers, 10 mm long, 0.4 mm wide. *Paratypes*: Marion Island st. 12 (BB 79) 46° 55.7'S 37° 54.1'E 1 ex.; st. 15 (BB 88) 46° 57.7'S 37° 59.9'E, 3 ex.; st. 18 (BB 108) 46° 49.8'S 37° 56.2'E 19 ex.; st. 22 (BB 125) 46° 52.4'S 37° 51.9'E, 6 ex.; st. 31 (BB 157) 46° 59.5'S, 37° 46.8'E, 6 ex. Materials deposited in IRFA Angers

IRFA-PARA 008.

*Diagnosis*: Body size 10 mm long and 0.4 mm wide. Complete specimens have about 80 chaetigers. Color is white. Sensory organs are situated in the prostomium. The terminal sense organs, which have a tactile character, are situated in the anterior part of the prostomium. The nuchal organs appears retracted in fixed specimens and form a long and deep slit in the posterior part of the prostomium. Prostomium without medium antenna and lacking eyes (Fig. 1A, 2A, 2B). Specimens all have four prebranchial segments and 9 to 11 pairs of branchiae with a dorsal lobe (Fig. 1B, 2C). Chaetae are all capillary along the entire body. Chaetae are short anteriorly and longer posteriorly. Chaetae are clearly positioned in two handles which are placed in the middle of each segment. Notochaetae and neuro-

Table 1. A comparison of some important characters in existing species of the genus *Paraonella* Strelzov, 1973.

Species	Type locality Depth	Eyes	Number of prebranchial segments	Number of branchial segments	Podial lobes	Anal cirri
<i>P. monilaris</i> Hartman and Fauchald, 1971	Atlantic Ocean 2864-4825 m	0	-	absent	absent	3
<i>P. nordica</i> Strelzov, 1968	Barents Sea 6-92 m	0	4	4 to 6	short	3
<i>P. platybranchia</i> Hartman, 1961	California 5.5 m	2	3	25 to 29	long	2
<i>P. rubriceps</i> Hartman and Fauchald, 1971	Atlantic Ocean 1102-3753 m	0	3	5 to 11	long slender	?
<i>P. subantarctica</i>	Marion Islands 30-210 m	0	4	9 to 11	medium	3

chaetae are the same in shape. The number is about 10 chaetae per handle. (Fig. 1C). Pygidium has three anal cirri, one long and two short (Fig. 2D).

*Habitat:* At depths from 30 to 210 meters on sand or clay-sand associated with another paraonid, *Cirrophorus lyra* (Southern, 1914).

*Subantarctic distribution:* Marion and Prince Edward Islands.

*Etymology:* The specific name *subantarctica* refers to the geographical distribution and is a Latin adjective.

## DISCUSSION

Modified setae are absent in the genus *Paraonella*, but the prostomium has sense organs as in the genus *Tauberia*, very similar to *Paraonella*. *Paraonella subantarctica* n. sp. differs from *P. nordica* (Strelzov, 1968) (Barents Sea, depth 6-92 m) by the number of pairs of branchiae, 9 to 11 instead of 4 to 6 and by the presence of a longer dorsal lobe. *P. platybranchia* (Hartman, 1961) (from grey sand near the United States Mexican border, depth 5.5 m) has a prostomium with two eyes, 3 pre-

branchial segments and 25 to 29 pairs of branchiae. *P. monilaris* (Fauchald and Hartman, 1971) from the Atlantic Ocean from 2864 to 4825 meters depth lacks branchiae and the dorsal lobe is absent. *P. rubriceps* (Fauchald and Hartman, 1971) from the Atlantic Ocean from 1102 to 3753 meters depth has only 3 prebranchial segments and 5 to 11 pairs of branchiae (Table 1).

## KEY OF THE GENUS *PARAONELLA* STRELZOV, 1973

1. Branchiae and dorsal podial lobes present ..... 2  
Branchiae and dorsal podial lobes absent ..... *P. monilaris*
2. Branchiae starting from chaetiger 4 ..... 3  
Branchiae starting from chaetiger 5 ..... 4
3. Branchial segments 25 to 29, prostomium with a pair of eyes ..... *P. platybranchiae*  
Branchial segments 5 to 11, prostomium without eyes ..... *P. rubriceps*
4. Branchial segments 4 to 6 ..... *P. nordica*  
Branchial segments 9 to 11 ..... *P. subantarctica* n.sp.

## ACKNOWLEDGEMENTS

I would like to thank the Comité National Français des Recherches Antarctiques (T.A.A.F.), Dr. Patrick Arnaud, Station Marine d'Endoume, Marseille and Dr. Michel Segonzac, Centob IFREMER, Brest. This study could not have been carried out without the loans of specimens by Dr. Renaud-Mornant, at that time Museum National d'Histoire Naturelle de Paris, France and by the South African Museum, Cape Town, South Africa.

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Received: March 24, 1999