

## On two abyssal Myriotrochidae new to the South Atlantic (Holothuroidea: Apodida)

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**ABSTRACT:** In the course of the DIVA I expedition (RV "Meteor", cruise M48/1) to the Angola Basin (South Atlantic) two rare Myriotrochidae were brought up from abyssal depths – *Siniotrochus myriodontus* Gage & Billett, 1986 and *Lepidotrochus* cf. *parvidiscus* Belyaev & Mironov, 1980. Until now only few specimens of *S. myriodontus* are known from the northeast Atlantic. The single specimen of *L. parvidiscus* is a posterior fragment from the southern Indian Ocean. These new records for the South Atlantic Ocean indicate a wide geographical distribution of both taxa.

### 1 INTRODUCTION

A rich variety of abyssal Holothuroidea was collected in the course of the DIVA I expedition with RV "Meteor" (cruise M48/1) to the Angola Basin (south-eastern Atlantic Ocean). The aim of this expedition was to investigate the biodiversity of this oceanic abyssal plain. Along a transect of about 700 km six stations were sampled with an Agassiz trawl (AGT) and an epibenthic sledge (EBS). Among the Holothuroidea collected were also two Myriotrochidae. Until now only five species of this family are known from the southern Atlantic Ocean, one from the equatorial mid Atlantic Ocean and four from the Scotia Sea area (Belyaev & Mironov 1978, 1980, 1982). No records have been published for the area in between.

*Siniotrochus myriodontus* Gage & Billett, 1986 is hitherto only known from few specimens from the north-eastern Atlantic Ocean (Gage & Billett 1986). The other species is a *Lepidotrochus* with close affinities to *L. parvidiscus* Belyaev & Mironov, 1980 known from the southern Indian Ocean (Belyaev & Mironov 1980).

The investigated material is deposited in the Zoologische Staatssammlung München (ZSM).

### 2 TAXONOMY

#### 2.1 *Siniotrochus myriodontus* Gage & Billett, 1986

**Material.** 1 posterior fragment (ZSM 20020016), station M 48/1–347, 28.07.2000, AGT, 16°14'00"S, 5°26'42"E, 5389–5387 m. 2 posterior fragments (ZSM

20020015), station M 48/1–351, 30.07.2000, AGT, 16°25'12"S, 5°27'01"E, 5387–5385 m.

**Characteristics.** Specimens are cylindrical posterior fragments, 17–31 mm long and 6–7 mm wide. Most internal organs are missing, only remnants of digestive tract with loop are present.

Body wall with single layer of siniotrochid type wheels (Fig. 1A), closely packed on dorsal side and at posterior end, getting scarce towards ventral side, almost absent in median body region of mid ventral radius, and completely missing at the extreme posterior end around anus.

Siniotrochid type wheels have diameter of 414 µm (284–560 µm), hub about half the diameter of the wheel and perforated by several holes, spokes 17 (12–25), inward-pointing teeth 42 (30–67), outward-pointing primary teeth 18 (11–31), outward-pointing secondary teeth 6 (0–29).

Additionally, simple rods are present at the extreme posterior end of the body around the anus.

**Distribution.** Porcupine Seabight (type locality), north-eastern Atlantic Ocean, 3490–4000 m; Angola Basin, south-eastern Atlantic Ocean, 5385–5389 m.

#### 2.2 *Lepidotrochus* cf. *parvidiscus* Belyaev & Mironov, 1980

**Material.** 1 specimen (ZSM 20020017), station M 48/1–340, 23.07.2000, EBS, 18°17'18"S, 4°41'12"E, 5394–5396 m.

**Characteristics.** Specimen cylindrical in outline, 7.2 mm long and 1.1 mm wide (near calcareous ring). Tentacles 12, with digits, but number of digits per tentacle could not be confirmed due to contraction of

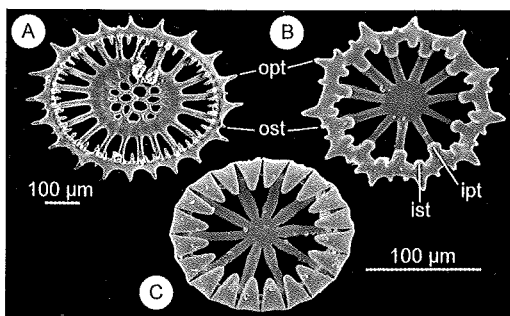


Figure 1A. Wheel of *Simiotrochus myriodontus*. B-C. Wheels of *Lepidotrochus cf. parvidiscus*. B. Lepidotrochid type wheel. C. Myriotrochid type wheel. opt: outward-pointing primary teeth, ost: outward-pointing secondary teeth, ipt: inward-pointing primary teeth, ist: inward-pointing secondary teeth

tentacles. Radial and interradial plates of calcareous ring with anterior processes, radial canal pore of radial plate placed higher than base of anterior process. Polian vesicle single, digestive tract with loop. Gonads not developed (juvenile?).

Deposits of the body wall are wheels of two types, lepidotrochid type wheels (Fig. 1B) and myriotrochid type wheels (Fig. 1C). Lepidotrochid type wheels from anterior and posterior body differ.

Lepidotrochid type wheels from anterior body have diameter of 111 µm (95–129 µm), mean ratio of hub diameter to wheel diameter 40% (30–47%), spokes 12 (10–16), number of outward-pointing primary and inward-pointing primary and secondary teeth about same as number of spokes, outward-pointing secondary teeth 2 (0–14).

Lepidotrochid type wheels from posterior body larger (diameter: 140 µm [127–158 µm]), have lower mean ratio of hub diameter to wheel diameter (29% [22–36%]), spokes 11 (9–13), number of outward-pointing and inward-pointing primary teeth same as number of spokes, inward-pointing secondary teeth 13 (10–24), outward-pointing secondary teeth 5 (0–16). The edge of the rim between two outward-pointing primary teeth is roughly straight in lepidotrochid type wheels from anterior and posterior end of body.

Myriotrochid type wheels have a diameter of 130 µm (75–166 µm), ratio of hub diameter to wheel

diameter is 21% (18–26%), spokes 10 (8–14), inward-pointing teeth 21 (18–27).

*Remarks.* The current specimen has close affinities to *L. parvidiscus* Belyaev & Mironov, 1980 (only posterior fragment known). Both have lepidotrochid type wheels with small sized hubs and the rim between two outward-pointing primary teeth is roughly straight. But both also differ: the myriotrochid type wheels as well as the lepidotrochid type wheels in *L. parvidiscus* are smaller. Furthermore, secondary outward-pointing teeth projecting from the rim of lepidotrochid type wheels are missing in *L. parvidiscus*. This secondary series of teeth is not present in all lepidotrochid type wheels in the current specimen, but in the majority.

*Distribution.* Off Cocos Island, southern Indian Ocean, 4150 m; Angola Basin, south-eastern Atlantic Ocean, 5394–5396 m.

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