

On the species of *Abyssianira* Menzies, 1956 (Isopoda: Asellota: Paramunnidae) from the South-West Atlantic Ocean



Brenda L. Doti¹, Daniel Roccatagliata¹ and Peter Rehm²



⁽¹⁾ Departamento de Biodiversidad y Biología Experimental, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Ciudad Universitaria, C1428EHA, Buenos Aires, Argentina. E-mails: bdoti@bg.fcen.uba.ar, rocca@bg.fcen.uba.ar

⁽²⁾ Alfred Wegener Institute for Polar and Marine Research (AWI), Benthic Ecosystems Comparative Ecosystem Research, Columbusstrasse, D-27568 Bremerhaven, Germany. E-mail: prehm@awi-bremerhaven.de

INTRODUCTION

Until now the genus *Abyssianira* Menzies, 1956 included two Atlantic species from abyssal depths (*A. dentifrons* Menzies, 1956; *A. argentenensis* Menzies, 1962) and two Australian species from upper to mid-bathyal depths (*A. bathyalis* Just, 1990; *A. tasmaniensis* Just, 1990). Except for *Abyssianira dentifrons*, which has been found in both hemispheres, the remaining ones are only known from the southern hemisphere. In the present contribution the Atlantic species of *Abyssianira* are redescribed, and two new species are described: *A. acutilobi* n. sp. from off Argentina and *A. lingula* n. sp. from off Brazil, raising the total number of species known for this genus to six.

MATERIAL AND METHODS

A. dentifrons and *A. argentenensis* are redescribed based on the type material of these two species (both deposited in the American Museum of Natural History, AMNH), some additional specimens collected by the Woods Hole Oceanographic Institution, WHOI (in custody at the Australian Museum, Sydney), and a sample taken by the Dirección Nacional de Recursos Acuáticos (DINARA, Montevideo). The two new species herein described were also collected by the WHOI and loaned from the Australian Museum.

Specimens were stained with Chlorazole Black E[®] and drawn using a microscope equipped with a camera lucida. For SEM photos specimens were critical point dried and examined under a Philips XL30 TMP.

RESULTS AND DISCUSSION

The geographic distribution of the four species studied is shown in Fig. 1. The bathymetric ranges of these species are: *A. acutilobi* n. sp. (2707 m), *A. lingula* n. sp. (587-1007 m), *A. dentifrons* (4588-5293 m) and *A. argentenensis* (129-2681 m). *A. argentenensis* is the first species of *Abyssianira* recorded from shallow waters.

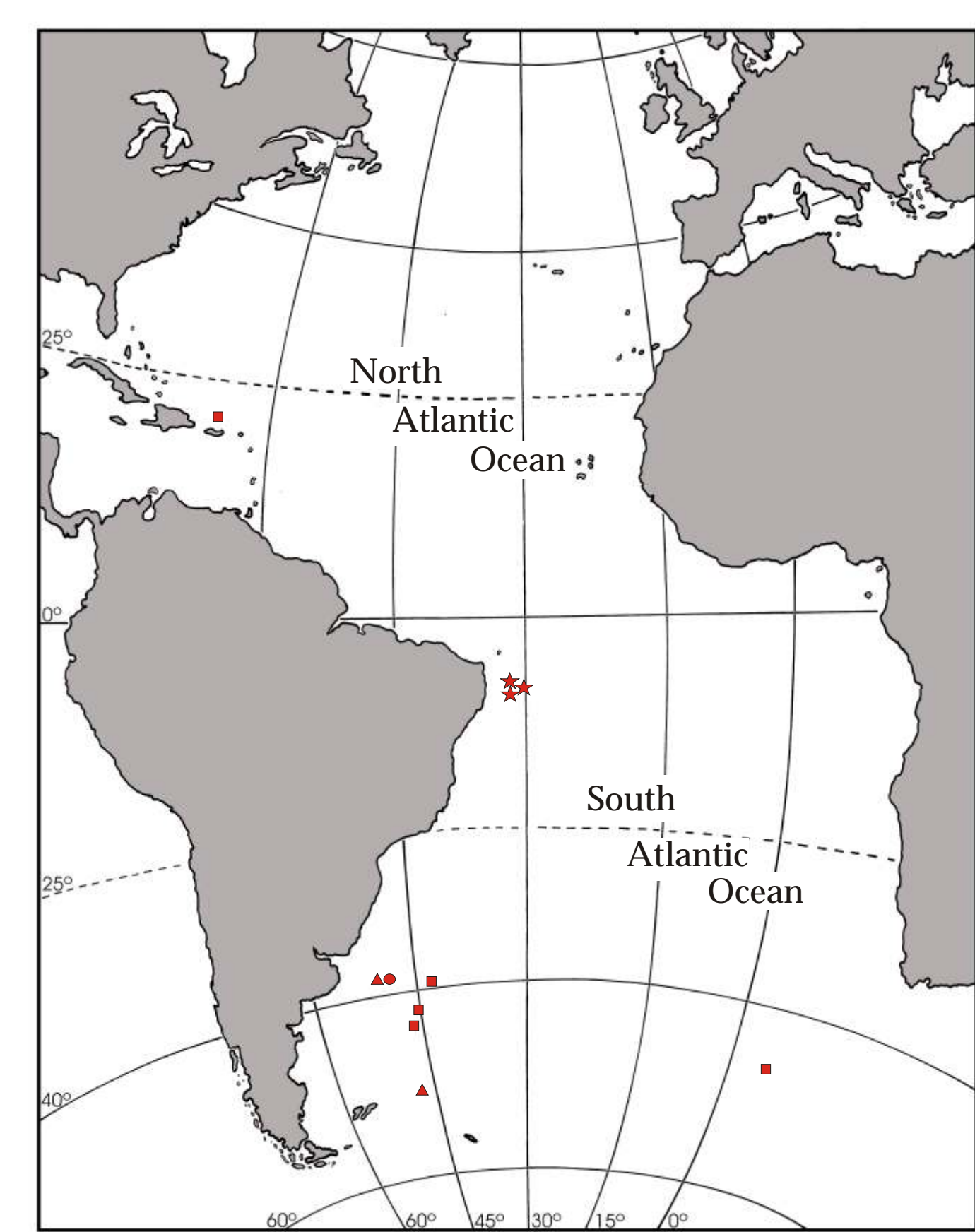


Fig. 1: Geographic distribution of the Atlantic species of *Abyssianira*.

- *A. acutilobi* n. sp.
- ★ *A. lingula* n. sp.
- *A. dentifrons* Menzies, 1956
- ▲ *A. argentenensis* Menzies, 1962

The two new species herein described, together with *A. dentifrons*, have four groups of dorsal wart-like elevations on the pereon which are arranged in a rectangular pattern. These “warts” seem to be composed of agglutinated sand grains.

The four species above mentioned are easily distinguished from each other: *A. acutilobi* has large and subtriangular eyestalks (Figs. 2A, 3A, 4A), *A. lingula* shows a distinct thin tongue-like frontal plate (Figs. 2B, 3B; 4B, C), *A. dentifrons* has rounded flat eyestalks and antennulae with a long third article (Figs. 2C, 3C) and *A. argentenensis* has a thick subpentagonal frontal plate and shows no “warts” (Figs. 2D, E; 3D, 4D).

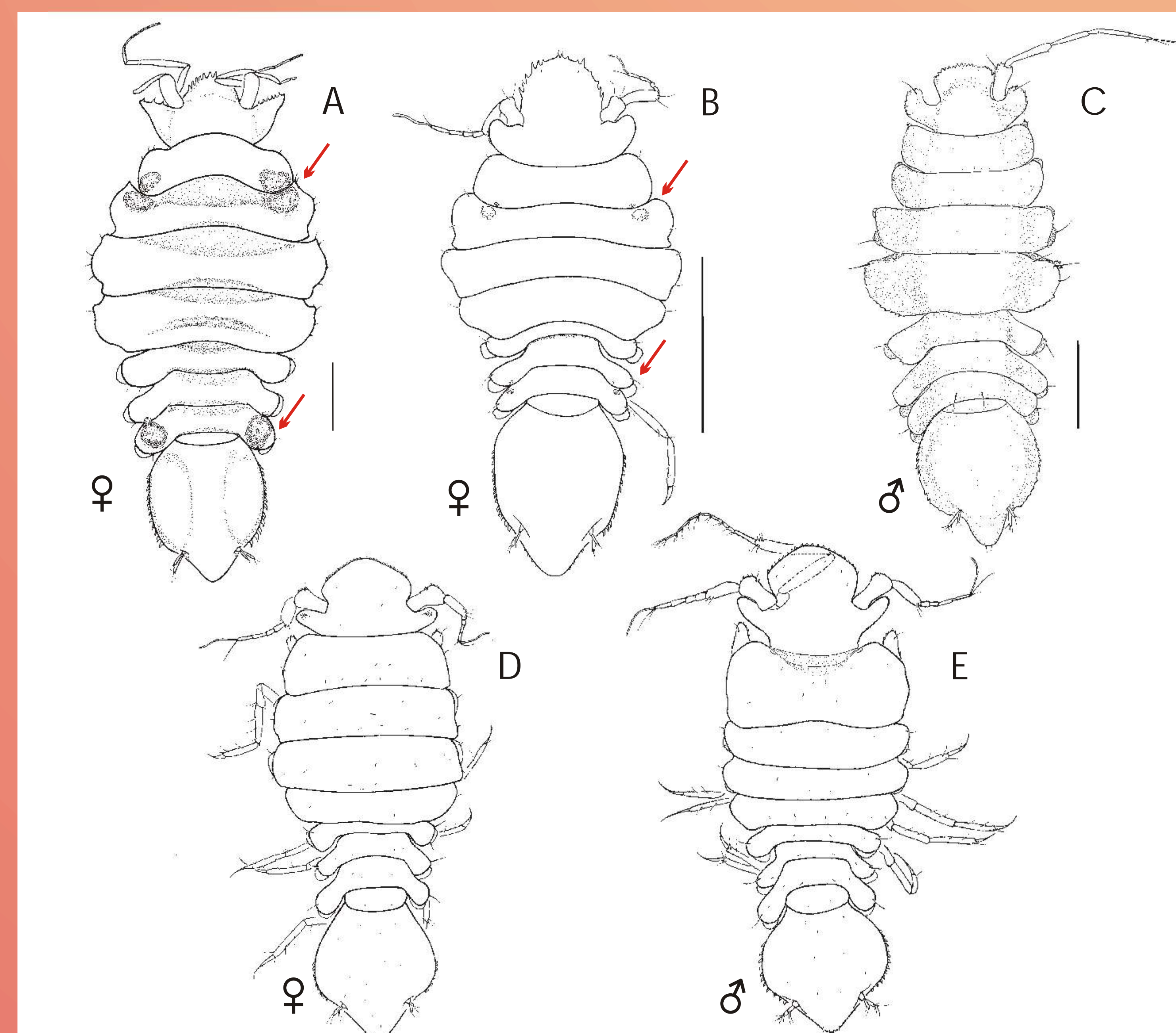


Fig. 2: Habitus of the Atlantic species of *Abyssianira* in dorsal view. **A**, *A. acutilobi* n. sp. **B**, *A. lingula* n. sp. **C**, *A. dentifrons* Menzies, 1956 (after Menzies, 1962; “warts” were not described by this author). **D**, **E**, *A. argentenensis* Menzies, 1962. Scales equal 0.5 mm (B, D and E share the same scale). Arrows point the anterior and posterior wart-like elevations.

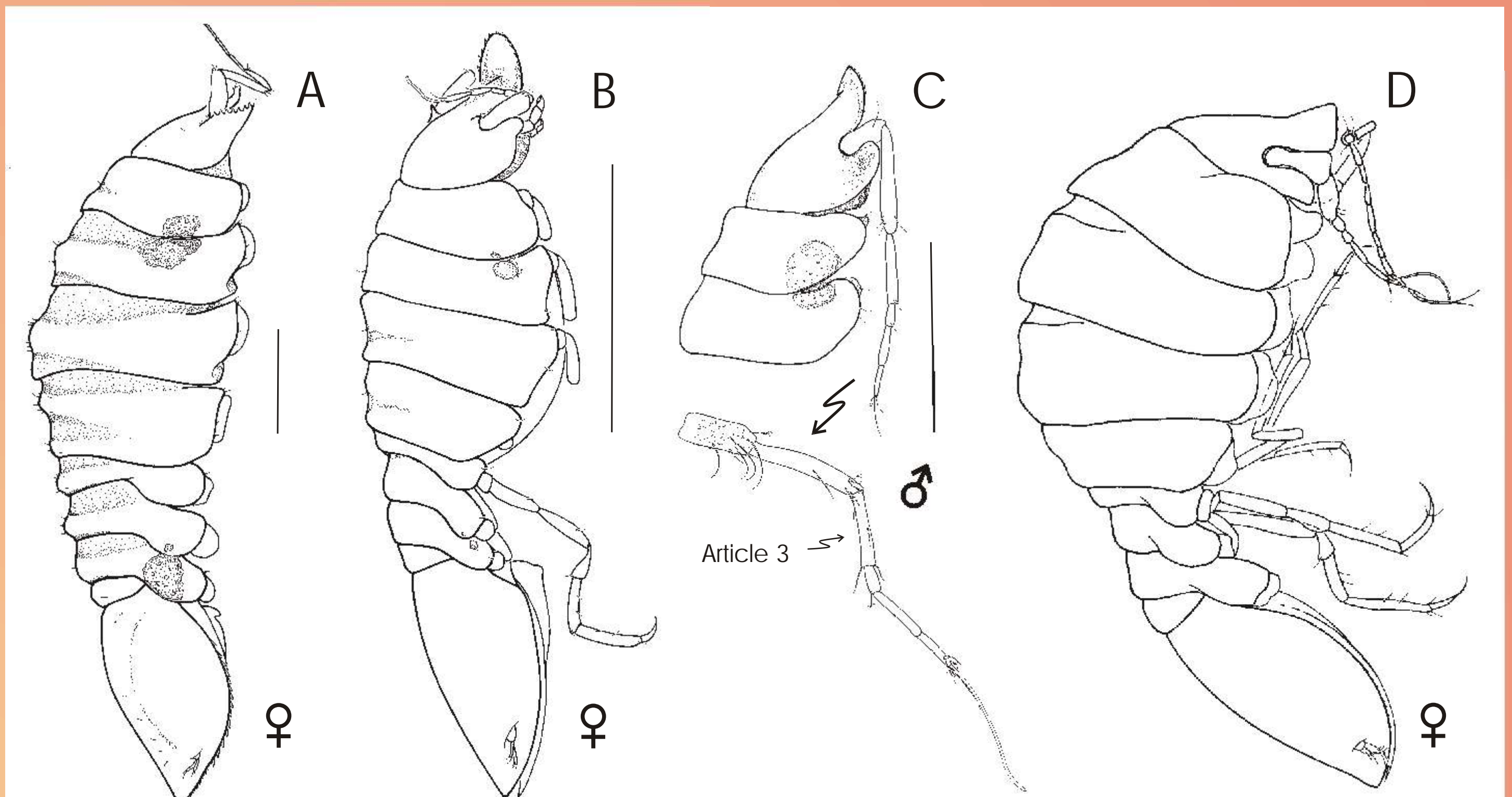


Fig. 3: Habitus of the Atlantic species of *Abyssianira* in lateral view. **A**, *A. acutilobi* n. sp. **B**, *A. lingula* n. sp. **D**, *A. argentenensis* Menzies, 1962. **C**, Lateral view of the anterior part of the body and a detail of the first antenna of *A. dentifrons* Menzies, 1956. Scales equal 0.5 mm (B and D share the same scale).

The two new species herein described fit well into the diagnosis of the genus prepared by Just (1990). Although this author included “a thin frontal plate” among the diagnostic characters of this genus, *A. argentenensis* has a thick frontal plate, a feature that was confirmed after examining the holotype.

None of the species of the genus *Abyssianira* has ocelli, but some specimens of *A. argentenensis* have some dense material inside their eyestalks (light sensory cells?). Just (1990) also observed some scattered dark matter (pigment?) in the eyestalks of *A. bathyalis*. However, the absence of ommatidia in all the species of *Abyssianira* seems to support the hypothesis of a deep-sea origin for this genus, and that *A. argentenensis* subsequently invaded the outer margin of the South American continental shelf.

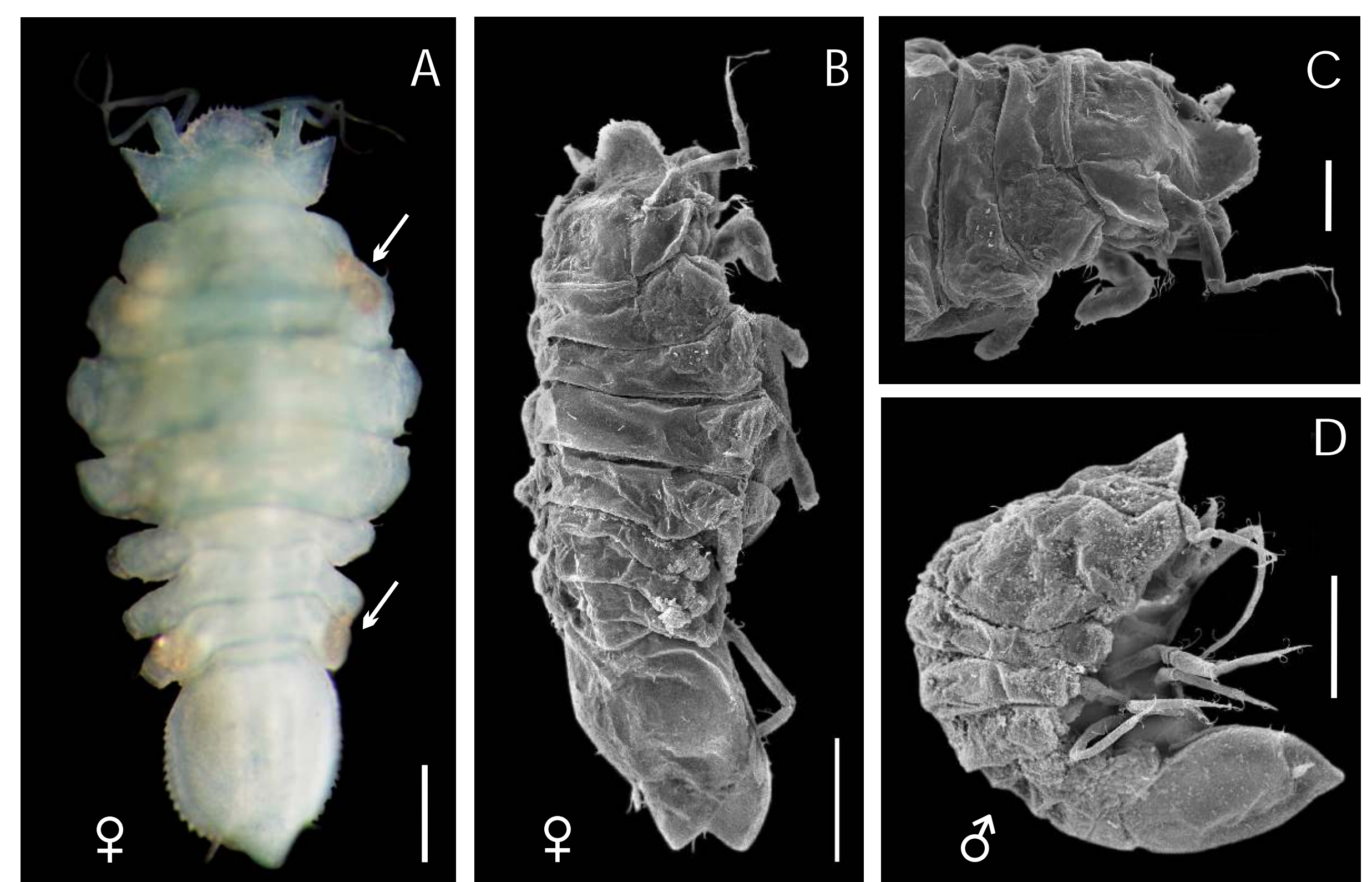


Fig. 4: **A**, Habitus of *A. acutilobi* n. sp. in dorsal view, arrows point anterior and posterior wart-like elevations. **B-D**, SEM photos: **B**, Habitus of *A. lingula* n. sp. in lateral view. **C**, Anterior part of the body of *A. lingula* n. sp. in lateral view. **D**, Habitus of *A. argentenensis* Menzies, 1962 in lateral view. Scales equal 0.5 mm (A), 200 μm (B, D) and 100 μm (C).

LITERATURE CITED

- Just, J. 1990. Abyssianiridae, a synonym of Paramunnidae (Crustacea: Isopoda: Asellota), with two new species of *Abyssianira* from south-eastern Australia. *Memoirs of the Museum of Victoria* 50(2): 403-415.
- Menzies, R. J. 1956. New abyssal tropical Atlantic isopods, with observations on their biology. *American Museum Novitates*, 1798: 1-15.
- Menzies, R. J. 1962. The isopods of abyssal depths in the Atlantic Ocean. *Abyssal Crustacea*. Vema Research Series, 1: 79-206.

This research was partially supported by the ANPCyT (PICT 02-11180) and the Universidad de Buenos Aires (UBACyT X162).