

# Southernmost record of *Bathypathes galathea*

(Cnidaria, Antipatharia)

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The third and southernmost record of the rare deep-sea black coral *Bathypathes galathea* Pasternak, 1977 is presented, based on one specimen collected off Caldera (27°S), northern Chile by commercial fishermen. This record extends the known geographical range of the species by about 32° (more than 3700 km), being the southernmost record for the species, and the first record of the species for Chile.

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## Introduction

Antipatharians (Cnidaria, Anthozoa) or black corals, as commonly known, are ahermatypic colonial hexacorals; most species are azooxanthellate and they have branched (bushy, pinnate or fan-shaped) or unbranched (whip-like) rigid black skeletons with small spines or knobs with polyps with non-retractile tentacles (Wagner et al 2012). They live in areas with strong and consistent currents, and most of them are found at depths well below 50 m. Most of the black coral species (Anthozoa, Antipatharia) recorded in Chilean waters have been documented from the bycatch of the Patagonian Toothfish *Dissostichus eleginoides* Smitt, 1898, fisheries conducted in deep waters from about 550 to 2000 m depth (Häussermann & Försterra 2007, Araya et al 2018a); however, the presence of these corals in shallower waters on the continental margin has recently been confirmed by ROV imaging along northern Chile, and from near

Easter Island (Gorny et al 2018). In this work, as part of ongoing studies documenting bycatch macroinvertebrates (see Araya et al 2018a), we present the first record of the schizopathid black coral *Bathypathes galathea* Pasternak, 1977 from Chilean waters based on a single specimen, collected entangled in a longline of the Patagonian Toothfish fisheries at a depth of about 1800 m off Caldera (27°S, 70°W), northern Chile. *Bathypathes galathea* Pasternak, 1977 is a deep-sea species, originally described from two specimens collected in deep water (2950–3190 m) in the Gulf of Panama (5°44'N, 79°20'W), and recorded most recently in the southwestern Atlantic, Brazil, in Bacia de Campos at a depth of 755 m (Lima et al. 2019). The present record, the third record for the species, extends considerably its distribution in the eastern Pacific by about 32° (more than 3700 km), being the southernmost record for the species, and the first record of the species for Chile.

## Material and methods

The single specimen of *B. galathea* is deposited, unnumbered, in the collections of the Museo de la Pesca Artesanal de Caldera, at Caldera, northern Chile. Measurements of the structures discernible to the naked eye were taken with a Vernier caliper, while the microscopic structures were measured with light microscopy. The definition of the diameter of the pinnules, height of the spines and the spine spacing follows Araya et al. (2018a).

## Results

Order Antipatharia Milne-Edwards & Haime, 1857  
Family Schizopathidae Brook, 1889

### Genus *Bathypathes* Brook, 1889

Type species: *Bathypathes patula* Brook, 1889 by original designation.

### *Bathypathes galathea* Pasternak, 1977

Fig. 1

*Bathypathes galathea* Pasternak, 1977: 159, fig. 2. Lima et al. 2019: 38, figs 19, 20.

## Description

Corallum monopodial, pinnulate with two rows of pinnules arising on the stem, unbranched, about 860 mm tall without a basal attachment plate. The unpinnulated portion of the stem is 160 mm long and about 2.6 mm in diameter near the base. The 70 cm long pinnulated section contains 104 and 97 pinnules on either side. Pinnules simple, arranged nearly oppositely along the stem in two anterolateral rows, up to 28 cm long and about 5.4–11.9 mm apart in each row; they are similar in length along most of the corallum, being shorter near the apical part. The distance between the pinnules is irregular, from 5.2 to 12 mm, being slightly shorter towards the apical part of the corallum. Most of the pinnules are arranged in one plane with the stem, with only a slightly curve towards the apical part of the corallum.

Spines on stem are simple, smooth, triangular, laterally compressed. Pinnular spines are concavely triangular, laterally compressed and with an acute apex (only occasionally bifurcated); their base is flared out along the axis distally and proximally. Abpolypar spines are about 0.034–0.093 mm tall, polypar spines about 0.109–0.277 mm tall, about

0.34–0.95 mm apart and arranged in 5–6 irregular longitudinal rows. Spine height is constantly higher in the polypar side and towards the distal end of pinnules, being also more closely spaced towards the distal part of the pinnules. All spines are nearly vertical, but they become inclined towards the distal end of pinnules. No additional small secondary spines are observed. Due to the poor condition of the remaining soft tissue (the specimen is an almost clean skeleton), no characteristics of the polyps could be determined.

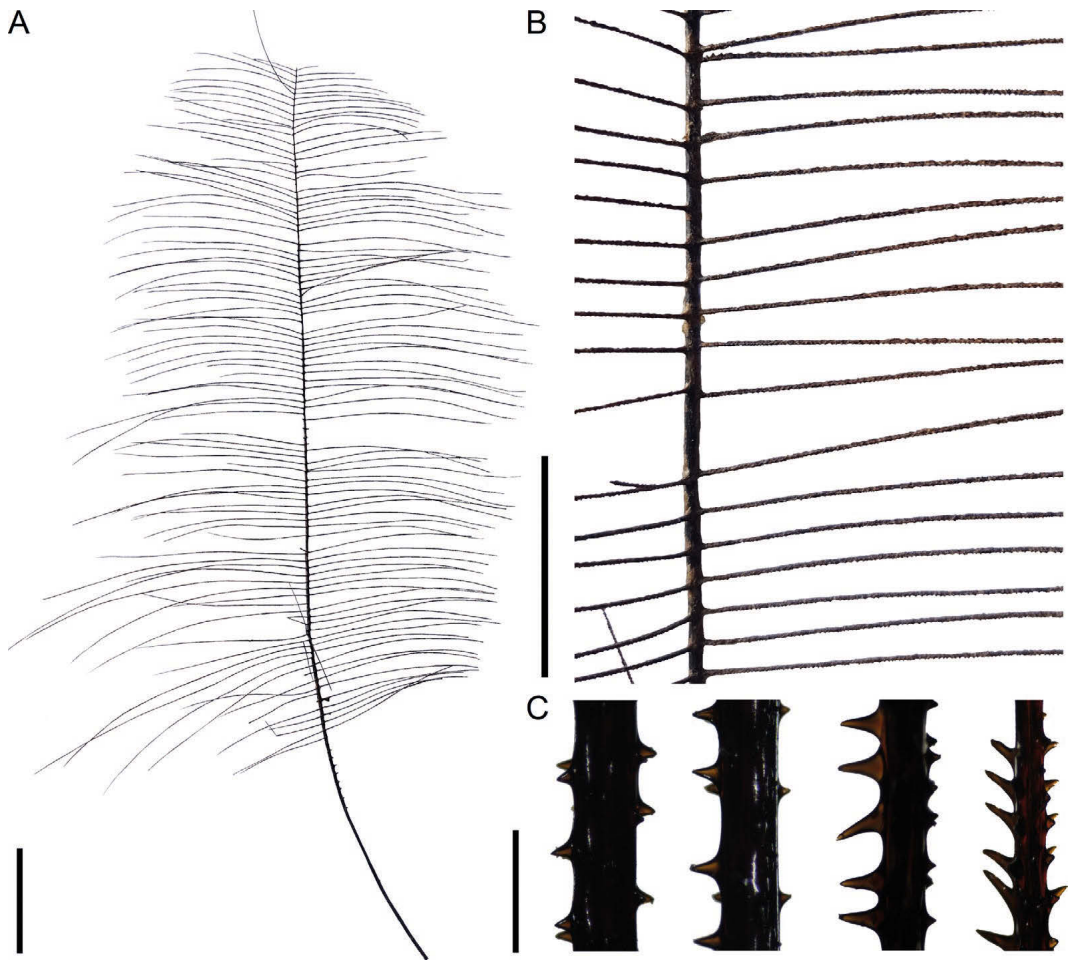
## Discussion

In general, apart from the presence of a few sub-pinnules in the examined specimen (Fig. 1B), the characteristics of the pinnules and of the very large spines (up to 0.277 mm) agree well with the original description of the species, and with the description of the Brazilian specimen by Lima et al. (2019), even when considering the considerable larger size of the Chilean specimen (about 860 mm in length) in comparison with the type specimens measuring about 265 mm and 82 mm (Pasternak 1977), and with the 171 mm tall Brazilian specimen.

Taken in account this species, thirteen antipatharians identified to species level have been documented along the southeastern Pacific off Chile, most of them collected from the bycatch of deep-water fisheries. Unfortunately, there is scarce research on the deep-water fauna found in northern Chile, and this is reflected in the rather modest number of species reported for the area. Given the wide geographical distributions of similar deep-sea anthozoans, some of which have already been reported for the area (see Araya et al 2018a, 2018b), it would not be surprising if additional deep-sea research in the southeastern Pacific reveals new records for additional black corals.

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**Fig. 1.** *Bathypathes galathea* Pasternak, 1977, MPC280617. **A.** Complete specimen; **B.** detailed view of middle portion of the corallum (polypar view); **C.** detail of spines from medial to distal (left to right) part of a pinnule. Scale bars: 10 cm for A, 5 mm for B and 0.5 mm for C.

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