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## New records hidden in museum collections – the case of *Acrothoracica* (Arthropoda, Cirripedia, Crustacea) at Madeira Island (NE Atlantic Ocean)

BY DIANA RAMOS <sup>1</sup>, SARAH AYUSO CANDAL <sup>1</sup>, BEATRIZ GOMES <sup>1</sup>, MARIANA SOUSA <sup>2</sup> & PETER WIRTZ <sup>3</sup> \*

With 3 figures

<sup>1</sup> Biology students at the University of Madeira.

<sup>2</sup> Biology student at the University of Porto.

<sup>3</sup> Centro de Ciências do Mar, Universidade do Algarve, Campus de Gambelas, 8005-139 Faro, Portugal.

\* Corresponding author: [peterwirtz2004@yahoo.com](mailto:peterwirtz2004@yahoo.com)

**ABSTRACT:** Burrows of *Acrothoracica* were found in a gastropod shell in the collection of Funchal Natural History Museum (MMF). No *Acrothoracica* have previously been recorded from Madeira. The species recorded belongs to the family Lithoglyptidae but no further identification is currently possible.

**Keywords:** hermit crab symbionts, Seine Seamount, Lithoglyptidae.

**RESUMO:** O presente trabalho relata a presença de *Acrothoracica* na concha de um gastrópode da coleção do Museu de História Natural do Funchal (MMF). É a primeira vez que os *Acrothoracica* são assinalados para a Madeira. Os espécimes encontrados pertencem à família Lithoglyptidae, mas não é possível de momento identificar a espécie.

**Palavras-chave:** simbioses, caranguejo-eremita, Banco Seine, Lithoglyptidae.

## INTRODUCTION

The marvellous publication by CHAN *et al.* (2021) on the evolutionary diversity of barnacles made us realize that no Acrothoracica have as yet been recorded from Madeira Island. Acrothoracicans are known from Norway to the tropics in the eastern Atlantic (KOLBASOV, 2015). They were therefore unlikely to be truly absent from Madeira – they were merely awaiting their discovery.

## MATERIAL AND METHODS

Acrothoracica are mostly burrowers in calcareous substrata, including rocks, calcareous shells of other invertebrates and also in corals. When associated with molluscs they leave visible traces in the shells they inhabit. These shells are mostly from gastropods inhabited by hermit crabs, whence they are in this case truly hermit crabs associates. We therefore searched the shell collection of the Funchal Natural History Museum (MMF) for traces of acrothoracican burrows in the mouth area of gastropod shells occupied by hermit crabs. We did not break open the shells and thus did not check for Acrothoracica that live in the columella of gastropod shells.

## RESULTS

A *Charonia lampas* (Linnaeus, 1758) shell, originally occupied by a large individual of *Dardanus arrosor* (Herbst, 1796), had several acrothoracican burrows visible in the inner, dorsal side of the mouth area (Fig. 1, 2 and 3). The specimen has the collection number MMF 36241 and is preserved in alcohol. It was collected with a trap in 200 m depth at Seine Seamount (33° 45.60' N, 14° 22.80' W) on 03-11-2004.

## DISCUSSION

There are approximately 70 species of Acrothoracica in 11 genera and three families (KOLBASOV, 2015). No species of Acrothoracica has previously been recorded from the Azores, from Madeira Island or from the Canary Islands; one species has been recorded from the Cape Verde Islands (KOLBASOV, 2015).

The three acrothoracid families can be recognized by burrow shape (TOMLINSON, 1969). The Lithoglyptidae have burrow apertures in the shape of slits several times longer than wide; the Cryptophialidae have short, almost round slits; the species of the family Trypetesidae usually

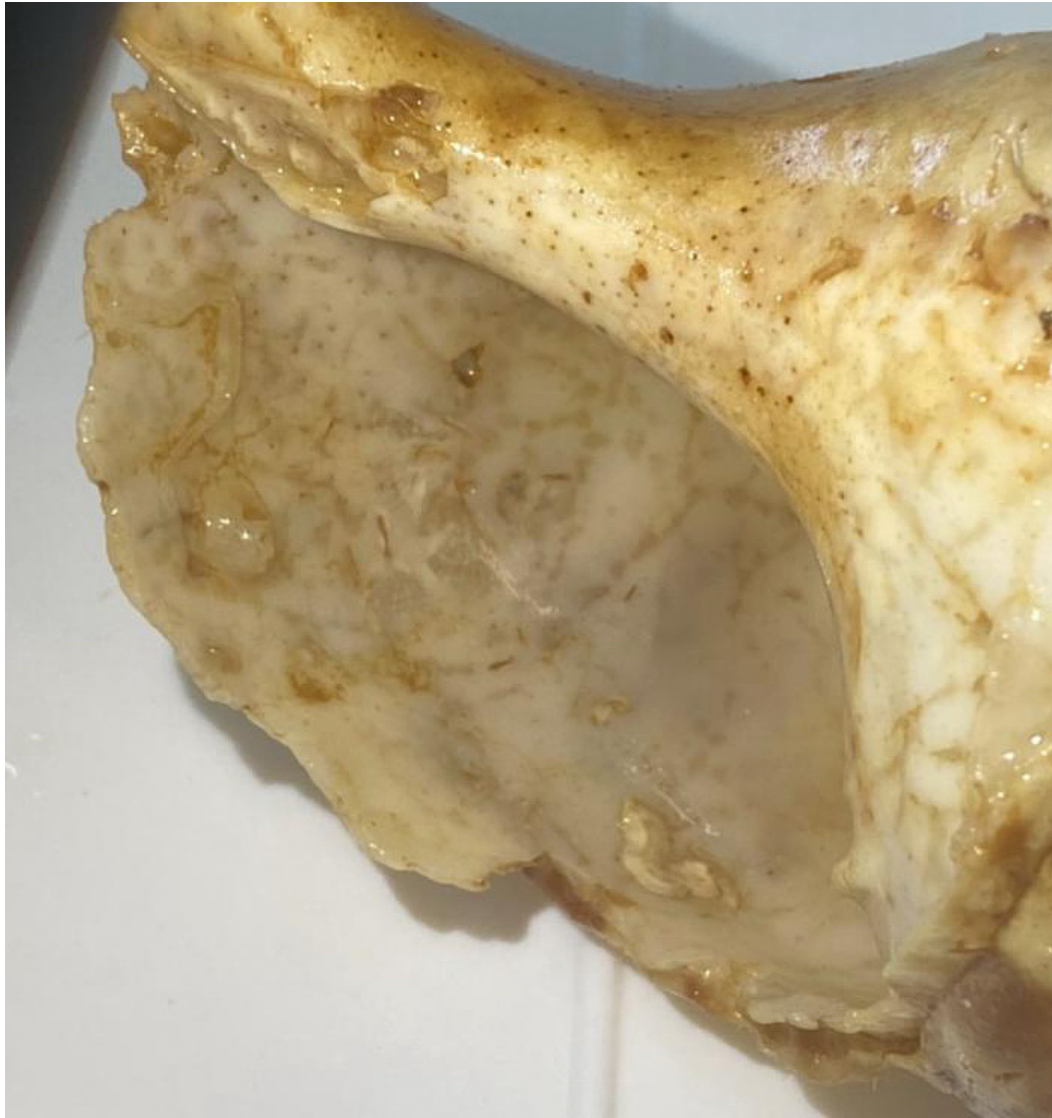
live in the columella of gastropod shells occupied by hermit crabs and have long slits bent at the end. The acrothoracids found by us clearly belong to the family Lithoglyptidae but no further identification is currently possible.

## ACKNOWLEDGEMENTS

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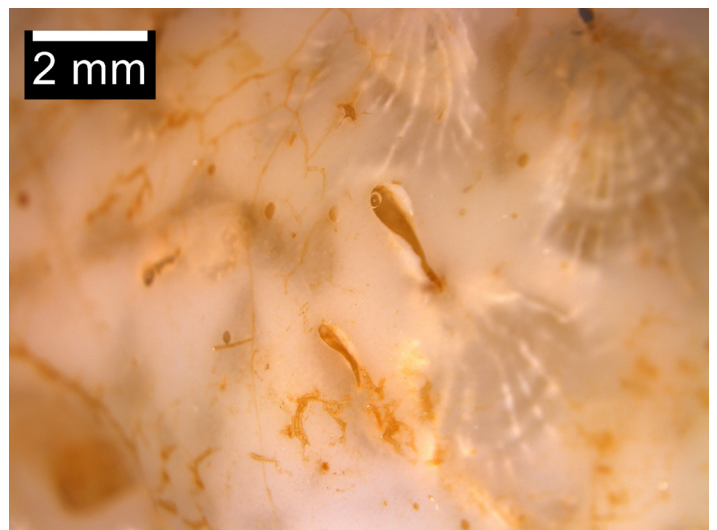
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**Fig. 1** – Interior of mouth area of *Charonia lampas* shell (MMF 36241) with burrows of *Acrothoracica* (photo: Diana Ramos).



**Fig. 2** – Traces of *Acrothoracica* in the mouth area of a *Charonia lampas* shell (MMF 36241) (photo: Pedro Neves).



**Fig. 3** – Openings of *Acrothoracican* burrows in the mouth area of a *Charonia lampas* shell (MMF 36241) (photo: Pedro Neves).