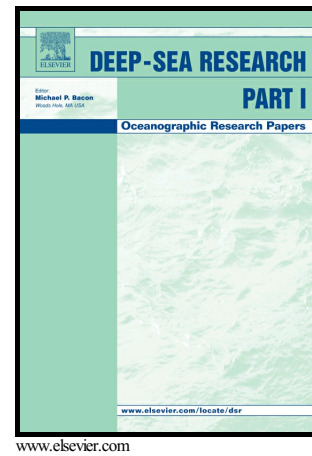


Author's Accepted Manuscript

New evidence of brooding in the deep-sea brittle star *Astrotoma agassizii* Lyman, 1876 from a South Western Atlantic Canyon

Juan José Berecoechea, Martín I. Brogger, Pablo E. Penchaszadeh



PII: S0967-0637(17)30123-1
DOI: <http://dx.doi.org/10.1016/j.dsr.2017.08.007>
Reference: DSRI2823

To appear in: *Deep-Sea Research Part I*

Received date: 2 April 2017
Revised date: 3 August 2017
Accepted date: 16 August 2017

Cite this article as: Juan José Berecoechea, Martín I. Brogger and Pablo E. Penchaszadeh, New evidence of brooding in the deep-sea brittle star *Astrotoma agassizii* Lyman, 1876 from a South Western Atlantic Canyon, *Deep-Sea Research Part I*, <http://dx.doi.org/10.1016/j.dsr.2017.08.007>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

New evidence of brooding in the deep-sea brittle star *Astrotoma agassizii* Lyman, 1876 from a South Western Atlantic Canyon.

Juan José Berecoechea^{a*}; Martín I. Brogger^b; Pablo E. Penchaszadeh^a

^aLaboratorio de Ecosistemas Costeros, Museo Argentino de Ciencias Naturales “Bernardino Rivadavia” – CONICET. Av. Ángel Gallardo 470 (C1405DJR), Buenos Aires, Argentina.

^bLaboratorio de Reproducción y Biología Integrativa de Invertebrados Marinos, Instituto de Biología de Organismos Marinos – CONICET. Bvd. Brown 2915 (U9120ACD), Puerto Madryn, Argentina.

*Corresponding author: jjbereco@gmail.com

Abstract

The reproduction of the brittle star *Astrotoma agassizii* was studied from deep waters of the South Atlantic Ocean, based on samples collected in August 2012, and May and September 2013. Ten samples from 800 to 1400 m depths off Mar del Plata Canyon were studied. The species was found to be a brooding simultaneous hermaphrodite. Hermaphroditic gonads contained testis and ovaries inside the same sacs. Both, ovary and testis contained different stages of gametogenesis development simultaneously. Gonads contained several stages of oocytes in different stages of gametogenesis. The largest oocyte recorded was 800 µm diameter. Free spermatozoa were observed in the lumen of the testis, together with spermatogenic columns. Five individuals, from a total of 30 examined, resulted brooding, and most contained mature ovotestis at the same time. Incubation occurs in five of the ten bursal sacs, containing 15 to 20 young juveniles each. Maximum disc diameter recorded for a brood was 1100 µm. Herein we hypothesize that *Astrotoma agassizii* could be continuous breeder species in the deep-sea.

Key words: Echinodermata; Ophiuroidea; reproduction; brooding; deep-sea.

INTRODUCTION

Echinoderms are among the most abundant and diverse organisms of the megafauna in the deep sea (Grassle *et al.* 1975; Gage and Tyler 1991; Tyler 2003; Rex and Etter 2010). The reproductive biology of some deep-sea echinoderms has been investigated through the histological observations of their gonads (Tyler 1988; Gage and Tyler 1991;

Download English Version:

<https://daneshyari.com/en/article/5764670>

Download Persian Version:

<https://daneshyari.com/article/5764670>

[Daneshyari.com](https://daneshyari.com)