

First observation on *Cirrothauma* sp. in the Colombian Southern Caribbean

Abstract

First observation of a cirrated octopus of the genus *Cirrothauma* in the southern Caribbean of Colombia (9°12'25,732"N; 76°49'55,091"W). A specimen of this cirrated octopus was observed by a Remote Operated Vehicle (ROV) during an exploratory drilling survey for hydrocarbons at 1,798.28 meters (m) depth. This is the second observation of the genus registered for the Great Caribbean, being the first an observation made in the Cayman Rise in 2016.

Keywords: *cephalopoda*, *cirrothauma*, deep sea, observation, caribbean

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Introduction

During usual inspection of an exploratory well by a Remote Operated Vehicle (ROV) approximately 57 kilometers (km) off the coast of Arboletes (Colombian coast) (9°12'25,732"N; 76°49'55,091"W), one individual of a cirrated octopus species was observed swimming around the well. This deep-sea octopus was reported at the Old Purple Angel exploratory well on February 17th, 2017 at 1798.28 meters (m) depth, 08:43 hours.

Preliminary analysis for the identification showed that according to the morphology of the specimen it belongs to the family *Cirroteuthidae* and to the genus *Cirrothauma*. This genus is composed of two recognized species *C. magna* Hoyle, 1885 and *C. murrayi* Chun, 1911.¹ *Cirrothauma magna* has functional eyes (with lenses) and the tip of the arms are sucker free. *C. murrayi* has reduced eyes, lacking lenses; arms may have three types of suckers and the arm tips bear suckers. The distal web attachments to each arm are asymmetrical in both species. The *Cirrothauma* species is reported to inhabit the Arctic Ocean, Central and Eastern Northern Atlantic Ocean (off the coasts of west Africa), Southern Indian Ocean, and Pacific Ocean; with it being suspected to exist off the coast of New Zealand between 2,430 and 4,846m depth.² The genus has been reported in the Caribbean near the Cayman Islands in the Cayman Rise,³ making this the second observation of the *Cirrothauma* genus in the Great Caribbean, and the first report in the Colombian Caribbean.

The specimen was sighted in a drift position (Figure 1) with its web (with several holes) and arms completely expanded perpendicular to its head. At one point, it retracted its arms towards its head, and later closed its arms together behind its head, allowing it to swim moving its fins attached to its head. Its eye was clearly identified and not protuberant in respect to its head.

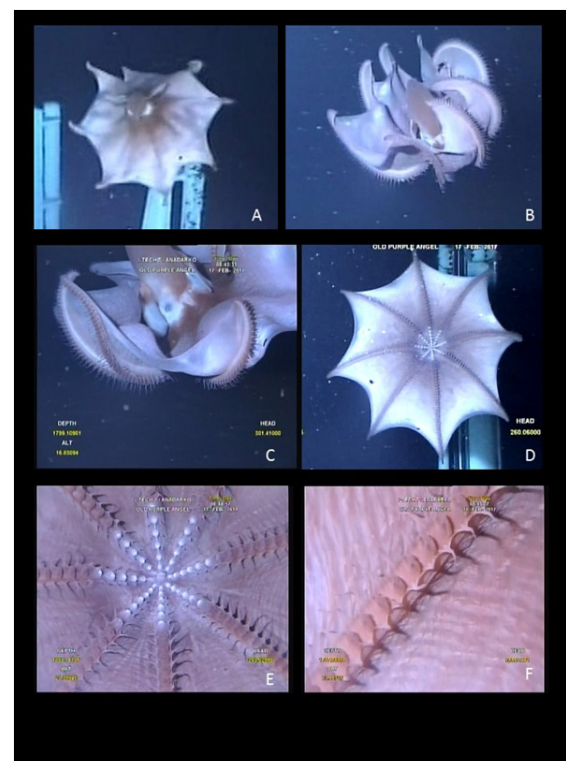


Figure 1 Specimen of *Cirrothauma* sp. observed by ROV in the Colombian southern Caribbean Sea. (A) Dorsal view drifting near well. (B) Specimen contracting hiding in web. (C) Close up of lateral view showing eye and cirri. (D) Ventral view showing suckers, web. (E) Close up of oral surface showing bioluminescent suckers near mouth. (F) Close up of cirri and sessile suckers at mid portion of one arm.

The estimated size of the animal, based on comparison with the riser (the set of tubes that connect the well to the drilling unit), is approximately 1,800 millimeters (mm) total length, with a mantle length of approximately 310 mm, and a fin length of 350 mm; making it a large octopod. The species resembles *C. murrayi*, but with some special features. The first six suckers are sessile and show some degree of bioluminescence. From what can be seen in the images, the remaining suckers suggest that all suckers are sessile, which differs from *C. murrayi*. It's possible that this may be an undescribed species of *Cirrothauma*.³ In this case, suckers other than the proximal set appear very strange, flattened and unlike those of either *C. murrayi* or *C. magna*. The bases of the trabeculae almost form a trabecular membrane, like in many squids; and it can be seen how the octopod closes the membranes protectively over the suckers.³ Octopods known in Colombia mostly originate from shallow water.^{4–8} The only known cirrate octopus from the area is *Ophisthoteuthis agassizii* Verrill, 1883.⁵

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Conflict of interests

Author declares that there is no conflict of interest.

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