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Research note

First record of *Ophiura ljungmani* (Echinodermata: Ophiuroidea) from an anchialine cave in the Mexican Caribbean

Primer registro de Ophiura ljungmani *(Echinodermata: Ophiuroidea) de una cueva anquihalina en el Caribe mexicano*

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Abstract

One specimen of *Ophiura ljungmani* Lyman, 1878 was collected in an anchialine cave in Cozumel Island, Quintana Roo. The finding represents the first record of this ophiuroid in an anchialine cave, and also the shallower record for the species in any habitat.

Keywords: New record; Ophiuroid; Anchialine cave; Quintana Roo; Aerolito; Caribbean Sea

Resumen

Un espécimen de *Ophiura ljungmani* Lyman, 1878 fue recolectado en una cueva anquihalina en la isla de Cozumel, Quintana Roo. Este es el primer registro de dicho ofiuroideo en una cueva anquihalina y también la menor profundidad documentada de dicha especie en cualquier ambiente.

Palabras clave: Nuevo registro; Ofiuroideo; Cueva anquihalina; Quintana Roo; Aerolito; Mar Caribe

The genus *Ophiura* Lamarck, 1801 (family Ophiuridae Müller & Troschel, 1840) is distinguished by having a disc low, flat, covered by small imbricating plates, primary rosette usually distinct. Radial shields more or less separated. Arms not stout, gradually tapering, usually deep incisions next to arm bases, bursal slits distal. Dorsal arm plates well developed, adjacent plates usually contiguous, several proximal dorsal plates included in disc, separating radial shields. Genital papillae well developed, arm combs present. Second oral tentacle pore opens into mouth slit, beset with numerous small papillae, which often form a continuous row with oral papillae. Ventral arm plates much wider than long, usually separated, at least outside disc (Stöhr, Jagt, & Klompmaker, 2011). Currently, 286 child taxa are recognized in the genus *Ophiura* according to the latest census of the Ophiuroidea (Stöhr, 2014).

On July 30, 2011, 1 specimen of *O. ljungmani* was collected in the Yucatán Peninsula in a shallow water habitat (12 m depth) (Fig. 1), living on muddy bottoms in an anchialine cave. This record from cenote Aerolito de Paraíso, Cozumel

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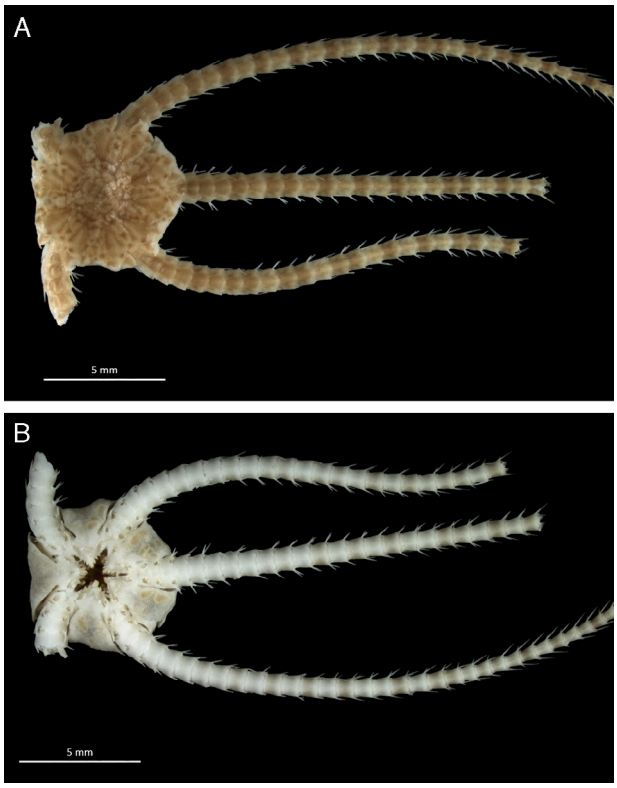

Figure 1. *Ophiura ljungmani* Lyman, 1878. ICML-UNAM 10929. A, aboral side; B, oral side.

Island, Quintana Roo, Mexico, constitutes the first time that *O. ljungmani* has ever been collected in an anchialine cave habitat. Cenote Aerolito is located close in the western coast of Cozumel (20°27′58.4″ N, 86°58′41.2″ W) and has a longitude of 6,100 m. The maximum depth of the cave is 27 m and the average is 12 m. It has a connection with the sea at 240 m from the main entrance. The cave passageways were formed mainly by rock dissolution. The dominant type of sediment at 14–18 m depth is clay and mud. The average water temperature is 25 °C, with a halocline at 7 m of depth (Mejía-Ortíz, 2008).

The collected specimen was identified using the diagnosis by Lyman (1878) and deposited in the Colección Nacional de Equinodermos de México, Instituto de Ciencias del Mar y Limnología, Universidad Nacional Autónoma de México (ICML-UNAM).

Systematics order OPHIURIDA Müller & Troschel, 1840
Family OPHIURIDAE Müller & Troschel, 1840
Genus Ophiura *Lamarck, 1801*
Ophiura ljungmani Lyman, 1878

Ophioglypha ljungmani: Lyman, 1878: 71, Plate 3, figure 7 (diagnosis). *Ophiura ljungmani*: Clark, 1954: 376; Farran, 1913: 31 (mention); *Ophiura* (*Ophiura*) *ljungmani*: Paterson, 1985: 118–20, figure 44 (diagnosis); Laguarda-Figueras, Hernández-Herrejón, Solís-Marín, and Durán-González, 2009: 74; Hernández-Herrejón, Solís-Marín, and Laguarda-Figueras, 2008: 101.

Geographical distribution. Ophiura ljungmani Lyman, 1878 occur throughout the Atlantic Ocean, the Gulf of Mexico and

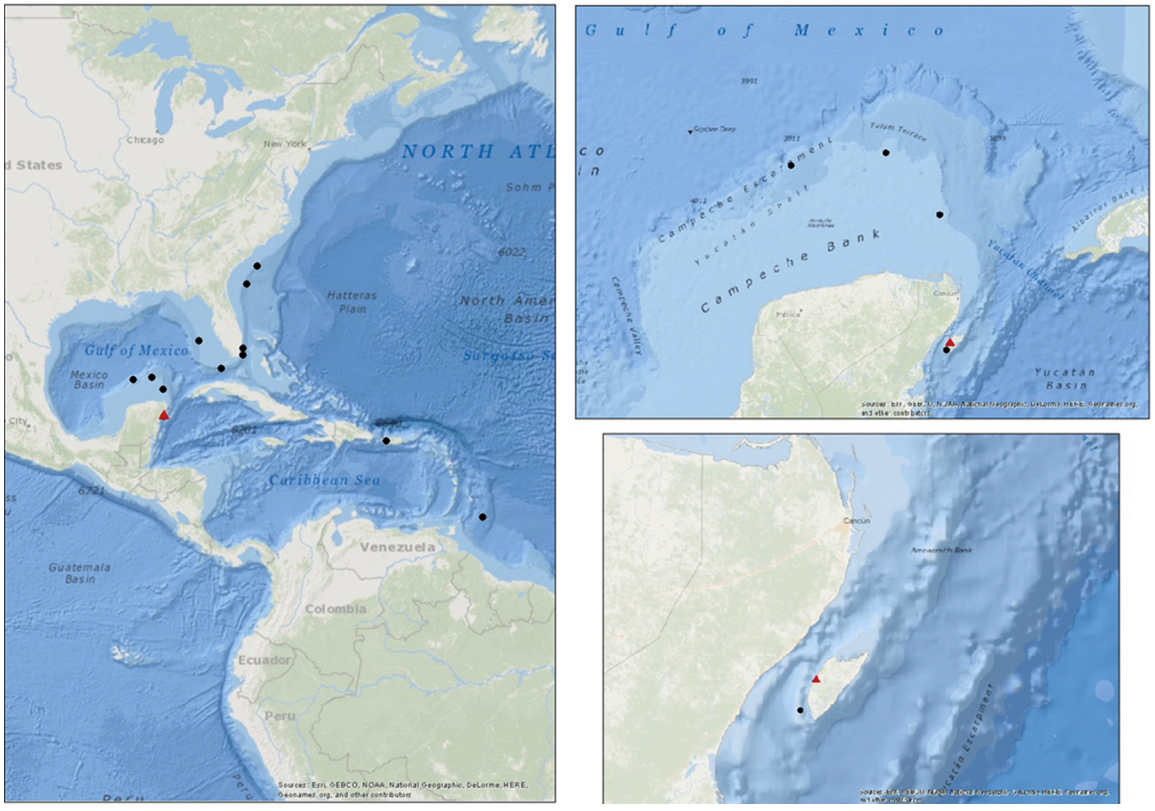

Figure 2. Distribution map of *O. ljungmani* in the Caribbean, red spot, new record on Cozumel Island.