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Taxonomy and systematics

First records and range extension of *Ophioblenna antillensis* (Echinodermata: Ophiuroidea) in the Gulf of Mexico

Primeros registros e intervalo de distribución de Ophioblenna antillensis (Echinodermata: Ophiuroidea) en el golfo de México

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Abstract

The geographic distribution of *Ophioblenna antillensis* Lütken, 1859 is extended inside the Gulf of Mexico. This species is otherwise known in the Caribbean region as the “slimy snake of the Antilles”, and is recognizable by soft skin covering the entire body, arms 5 times the disc diameter with big dorsal arm plates, and 7 completely naked, pointed and thin arm spines.

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Keywords: New record; Alacranes Reef; *Ophioblenna*

Resumen

La distribución geográfica de *Ophioblenna antillensis* Lütken, 1859 se extiende dentro del golfo de México. Esta especie es bien conocida en la región caribeña como la “ofiuro serpiente de las Antillas” y es reconocible porque su disco está cubierto por piel delgada, sus brazos son 5 veces el diámetro del disco con placas dorsales grandes, 7 espinas braquiales completamente desnudas, puntiagudas y delgadas.

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Palabras clave: Nuevo registro; Arrecife Alacranes; *Ophioblenna*

The family Ophiomyxidae comprises 28 genera, among which *Ophioblenna* is a monotypic genus, with the species *Ophioblenna antillensis* Lütken, 1859. The distribution of this species is off The Bahamas, Puerto Rico, Saint Thomas, Belize, and Panama (Hendler, Miller, Pawson, & Kier, 1995). However,

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the bathymetrical distribution of *Ophioblenna* suggests that it could be more widespread in the Caribbean and Gulf of Mexico. Although recent studies in this area (Laguarda-Figueras, Hernández-Herrejón, Solís-Marín, & Durán-González, 2009) and recent detailed checklists of the Gulf of Mexico echinoderms have been published (Pawson, Vance, Messing, Solís-Marín, & Mah, 2009), this species has never been reported in Mexican waters. On August 2009 and April 2013, *O. antillensis* was found as part of the shallow brittle-star assemblages of the Gulf of Mexico in Alacranes Reef at 2 m, and Blake Reef, occurring at 24 m depth.

Ophioblenna antillensis lives under rubble on shallow reef flats, beneath dead coral slabs in the turbulent spur and groove zone, and in the interstices of corals on the fore reef slope (Hendler et al., 1995).

The specimens collected were compared with the diagnosis published by Lütken (1859) and deposited in the Colección Nacional de Equinodermos de México, Instituto de Ciencias del Mar y Limnología, Universidad Nacional Autónoma de México (ICML-UNAM).

Order Ophiurida Müller and Troschel, 1840

Family Ophiomyxidae Ljungman, 1867

Genus *Ophioblenna* Lütken, 1859

Ophioblenna antillensis Lütken, 1859 (Fig. 1A–F)

Ophioblenna antillensis Lütken, 1859: 239–240, Pl. 4, Fig. 4; 4; Ljungman, 1866: 327; Verrill, 1899: 379; H. L. Clark, 1901: 251; A. H. Clark et al., 1920: 41; Maddocks, 1987: 727; Hendler et al., 1995: 37, 98–99, Fig. 33; Hernández-Díaz, 2011: 27, 29, 30, 40, 17.

Diagnosis (from Lütken, 1859)

Disc pentagonal, covered with soft skin, lacking disc scales. Oral shields covered by soft skin, large and wide, proximally pointed and distally rounded. Seven oral papillae, outermost small, next pair wider and innermost one more pointed; teeth are narrower. Arms 5 times disc diameter. Dorsal arm plates of great size, on younger specimens oval, in adults broader, more arched with rounded margins. Arm spines 7 in number, about half as long as the joint, completely naked, pointed, thin, strongly serrated and hyaline, resembling *Ophiothrix*.

Description

Disc small (diameter 15 mm in specimen from Blake Reef, 19 mm in specimen from Alacranes Reef), pentagonal, covered with smooth skin. Radial shields covered by skin. Each jaw with 6–7 oral papillae, outermost rectangular with rounded tips, next 3 pairs pointed, infradental thicker and pointed. Oral shields elliptical, much broader than long, touching first lateral arm plate, with rounded tips. Adoral shields narrow. Genital slits prominent, thicker, not reaching periphery of disc. Five arms, longest one 95 mm long. Dorsal arm plates large, oval, twice as wide as long; some arm segments fragmented. Ventral arm plates quadrangular, covered by skin. Lateral arm plates enlarged and flared at distal ends; second lateral arm plate

particularly enlarged, nearly reaching edge of disc. Six to 7 arm spines proximally in Blake Reef specimen and 7–8 arm spines in Alacranes Reef specimen, ventralmost the largest (2.5 mm), reaching almost 1 and one-half arm segments, distally 5–6 arm spines, terminal part of arms with 4–5 arm spines; pointed, hyaline, serrated, directed downwards. Tentacle pores large, widely open; each one armed with 2 large, elongated tentacle scales, outermost pore thicker and shorter than innermost one.

Color variation. The dorsal side of the Blake Reef specimen has a brown disc with yellow spots, the arms are also dark brown, and some arm segments and arm spines possess yellowish bands. The ventral surface of the disc is dark brown with yellow spots larger than those of the dorsal side. The disc of the Alacranes Reef specimen has a uniform purplish color, the arms are light purple; distally, some arm segments possess a yellowish band; spines are banded with yellow stripes; ventrally the mouth area is beige with brown interradian areas spotted with beige motes (Fig. 1).

Geographical distribution

Off The Bahamas, Belize, Puerto Rico, Saint Thomas and Panama (these localities lack precise geographical coordinates; Hendler et al., 1995; Hotchkiss, 1982), Veracruz and Yucatán, Mexico (Fig. 2). The latter 2 records expand its geographic distribution to the southwest Gulf of Mexico.

Bathymetric distribution. 1–24 m (Hendler et al., 1995; Hernández-Díaz, 2011).

Material examined

ICML-UNAM 3.197.0, 1 specimen; Blake Reef, Gulf of Mexico (20°45'37.5" N, 96°59'31.1" W); 14 April 2013; 24 m depth. ICML-UNAM 10162, 1 specimen; Alacranes Reef, Gulf of Mexico, Yucatán, Mexico (22°27'09.8" N, 89°45'44.9" W), coral rubble on shallow reef flat; 13 August 2009, 2 m depth.

The genus *Ophioblenna* is poorly known and not well documented. Lütken (1859) described the genus for the West Indies, with *O. antillensis* as the only species. However, it has also been mentioned as *Ophialcaea glabra* H. L. Clark, 1901 and *Ophiomitrella glabra* H. L. Clark, 1901, but further information is needed regarding the systematic position of this species and the latter ones. Clark (1901) mentioned that the oral papillae of *Ophialcaea glabra* were very similar to those of *Ophiacantha*, but the taxon differed sharply from that genus in the arrangement of the dorsal arm plates, the arm spines, and the covering of the disc. In fact, the soft skin covering the disc, the pointed oral papillae and the number of arm spines characterized the genus *Ophioblenna*.

It has been reported that the ostracod *Pontocyprina hendleri* is a commensal of this species (Hendler et al., 1995; Maddocks, 1987).

Ophioblenna antillensis was already reported for Mexico (Solís-Marín et al., 2013). However, recent analysis of the material deposited at ICML-UNAM shows that these records correspond to *Ophiomyxa flaccida*, hence these are the first records of *O. antillensis* for the Gulf of Mexico; they extend the

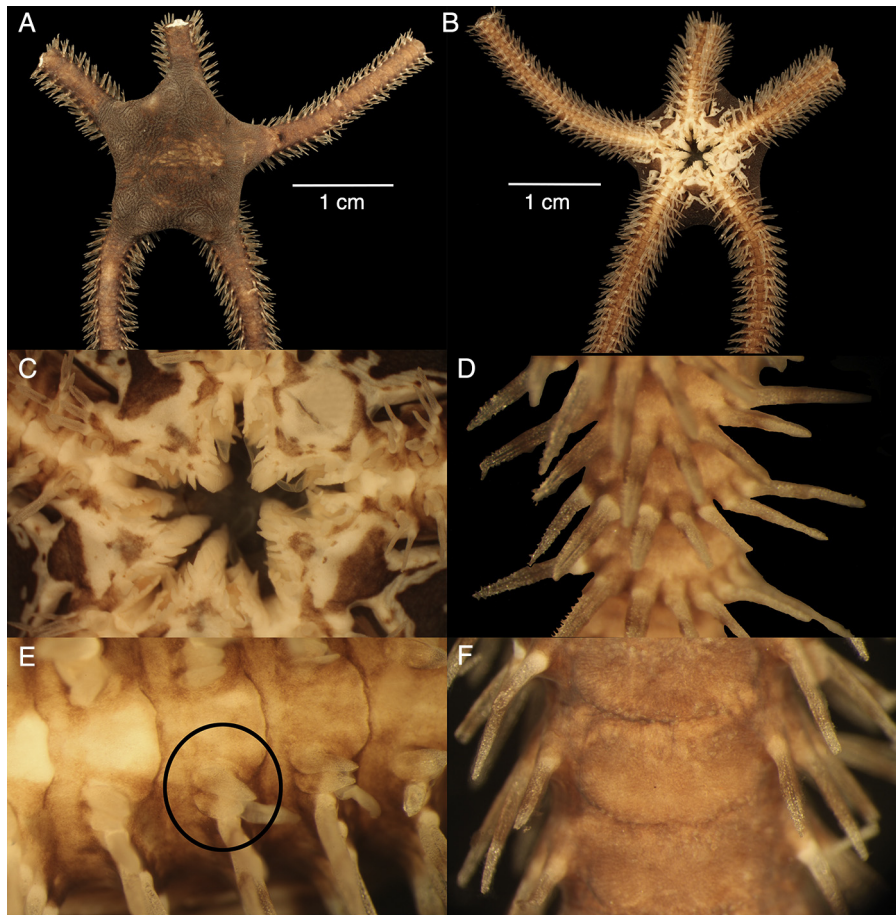


Figure 1. *Ophioblennia antillensis*: A, dorsal side; B, ventral side; C, detail of the ventral side showing the mouth and jaws; D, lateral view of the fan shaped arm spines; E, ventral side of an arm showing the tentacle scales and shape of the ventral arm plates; F, dorsal side of an arm showing the dorsal arm plates.

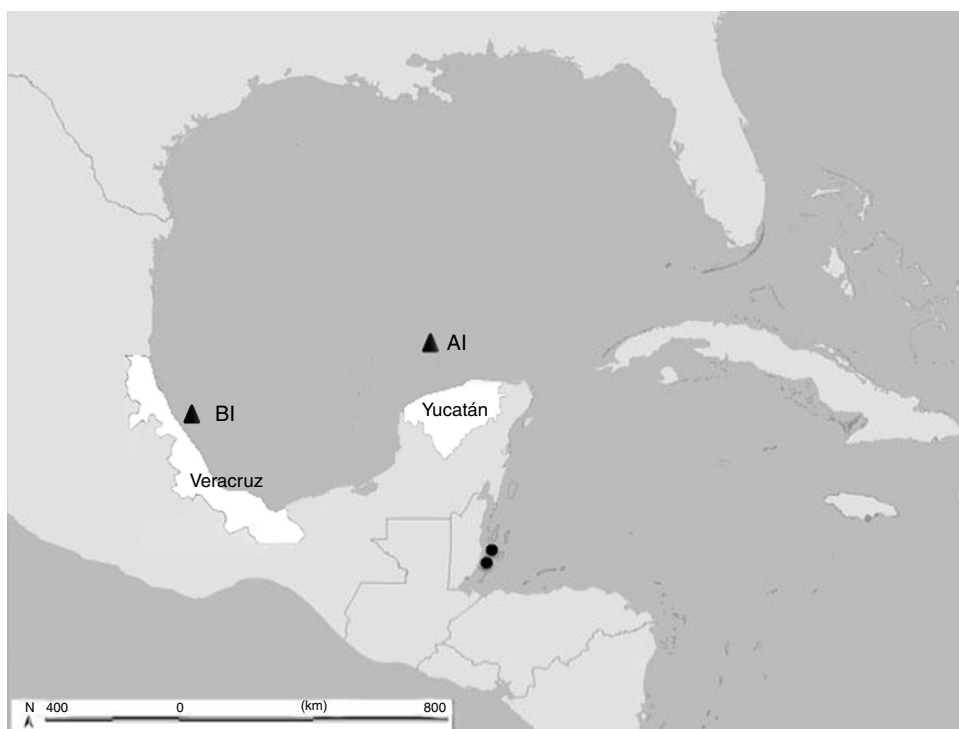


Figure 2. Distribution map of the species in the Gulf of Mexico (▲ new records: AI, Alacranes Reef; BI, Blake Reef).

geographic distribution of the species and highlight the need for further studies on the taxonomy and diversity of the echinoderm fauna of the Gulf of Mexico.

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References

- Clark, A. H. (1920). Report on the Ophiurans. In C. Cleveland (Ed.), *University of Iowa Studies in natural history* (Vol. 9) *Reports on the Crinoids, Ophiurans, Brachyura, Tanaidacea and Isopoda, Amphipods and Echinoidea of the Barbados-Antigua expedition of 1918* (pp. 29–64). Iowa City: University of Iowa.
- Clark, H. L. (1901). The echinoderms of Puerto Rico. *U. S. Commission of Fish and Fisheries Bulletin*, 2, 231–263.
- Hendler, G., Miller, J. E., Pawson, D. L., & Kier, P. M. (1995). *Sea stars, sea urchins and allies: Echinoderms of Florida and the Caribbean*. Washington, DC: Smithsonian Institution Press.
- Hernández-Díaz, Y. Q. (2011). *Zoogeografía de equinodermos (Echinodermata) de los Bajos de Sisal y arrecife Alacranes, Yucatán, México* (Master's thesis). México, DF: Posgrado en Ciencias del Mar y Limnología, Universidad Nacional Autónoma de México.
- Hotchkiss, F. H. C. (1982). Ophiuroidea (Echinodermata) from Carrie Bow Cay, Belize. In K. Rützler, & I. C. Macintyre (Eds.), *The Atlantic Barrier Reef Ecosystem at Carrie Bow Cay, Belize, structure and communities* (pp. 387–412). Washington, DC: Smithsonian Contributions to Marine Sciences, Smithsonian Institution Press.
- Laguarda-Figueras, A., Hernández-Herrejón, A., Solís-Marín, F. A., & Durán-González, A. (2009). *Los ofiuroides del Caribe mexicano y golfo de México*. México, DF: Conabio-UNAM.
- Ljungman, A. (1866). Ophiuroidea vivientia huc usque cognita enumerat. *Öfversigt af Kongl. Vetenskaps Akademiens Förhandlingar*, 9, 303–336.
- Lütken, C. F. (1859). Additamenta ad historiam Ophiuridarum. *Anden Afdelning. Det kongelige danske Videnskabernes Selskaps Skrifter. 5 Raekke, Naturvidenskabelig og matematisk Afdelning*, 5, 177–271.
- Maddocks, R. L. (1987). An ostracode commensal of an ophiuroid and other new species of *Pontocyprina* (Podocypida: Cypridacea). *Journal of Crustacean Biology*, 7, 727–737.
- Pawson, D. L., Vance, D., Messing, C. G., Solís-Marín, F. A., & Mah, C. L. (2009). 71. Echinodermata of the Gulf of Mexico. In D. L. Felder, & D. K. Camp (Eds.), *Harte Research Institute for Gulf of Mexico studies series Gulf of Mexico, origin, waters, and biota. Biota: Volume 1. Biodiversity* (pp. 1177–1204). College Station: Texas A&M University Press.
- Solís-Marín, F. A., Honey-Escandón, M. B. I., Herrero-Pérezrul, M. D., Benítez-Villalobos, F., Díaz-Martínez, J. P., Buitrón-Sánchez, B. E., et al. (2013). Echinoderms from Mexico: Biodiversity, distribution and current state of knowledge. In J. J. Alvarado-Barrientos, & F. A. Solís-Marín (Eds.), *Echinoderm research and diversity in Latin America* (pp. 11–65). Heidelberg Germany: Springer.
- Verrill, A. E. (1899). VII. North American Ophiuroidea. I. Revision of certain families and genera of West Indian ophiurans. II. A faunal catalogue of the known species of West Indian ophiurans. *Transactions of the Connecticut Academy of Arts and Science*, 10, 301–386.