

A NEW GONIASTERID SEASTAR, *EVOPLOSOMA SCORPIO* (ECHINODERMATA: ASTEROIDEA), FROM THE NORTHEASTERN ATLANTIC

Maureen E. Downey

Abstract.—*Evoplosoma scorpio*, a new species of starfish (Family Goniasteridae) from the western approaches to the English Channel, is described. It is chiefly characterized by its complete covering of irregular granules and acute, conical spines, and by tall, spatulate, denticulate pedicellariae.

A new goniasterid starfish collected by the *Sarsia* in the western approaches to the English Channel (48°N, 10°W) in ca. 1600 meters represents a genus hitherto unknown from the Atlantic. Of the two species previously described in this genus, *Evoplosoma forcipifera* Fisher (1906) is known from Hawaii, and *E. augusti* (Koehler (1909) from the Indian Ocean.

The genus *Evoplosoma*, described by Fisher in 1906, belongs to the subfamily Hippasteriinae, of the family Goniasteridae. The other Atlantic genus in this subfamily, *Hippasteria*, is abundant north of ca. 40° in both the eastern and western Atlantic.

Evoplosoma scorpio, new species

Fig. 1

Holotype.—Deposited in the British Museum (Natural History).

Type locality.—*Sarsia* Station 2/19, 48°28.6'N, 10°20.1'W, in western approaches, west of English Channel and south of Ireland; 1600 m.

Description.—Disc pentagonal, inflated; arms 5, long, narrow, cylindrical; abactinal plates small, irregularly circular, flat, of varying sizes, completely covered by irregular, tumid granules (usually with 1 or more tiny conical "pimples") and bearing each 1-2 short, acute, conical spines, often accompanied by a small feliped pedicellaria; granules covered with thin skin; abactinal disc surface larger than actinal surface, marginals not visible from above; marginal plates corresponding throughout length of arm, moderate, broader than long, rectangular, covered with granules and bearing 1-5 conical spines slightly longer than those on abactinal plates; actinal areas rather small, with ca. 6 rows of actinal plates, row adjacent to adambulacrals extending more than halfway out arm; actinal plates irregularly polygonal, armed as abactinals but with larger, more abundant pedicellariae; adambulacral plates more or less square, furrow margin straight or slightly curved,

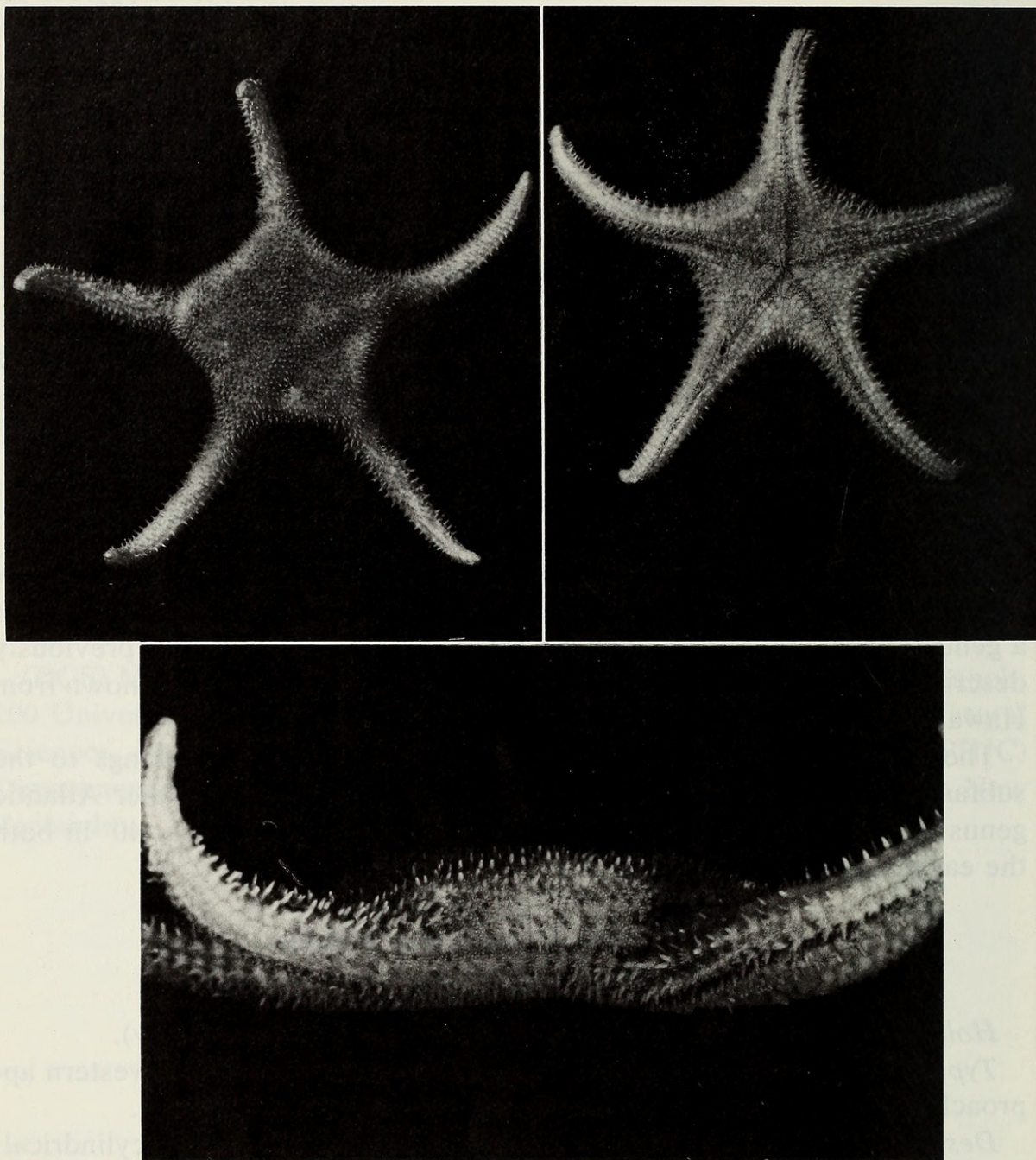


Fig. 1. *Evoplosoma scorpio*, abactinal, actinal, and lateral views.

bearing 5–6 stout, blunt furrow spines, somewhat flattened laterally; behind furrow spines, 1 large conical subambulacral spine, 1 pedicellaria, several granules; mouth plates large, rhomboid, bearing ca. 5 large, sturdy, flattened oral spines on each half, first spine largest, and ca. 2 rows of angular granules on either side of furrow; pedicellariae taller than broad, spatulate, felipedal, bearing blunt, spaced teeth across apex and down each side of valves; madreporite ordinary, of moderate size, closer to margin of disc than center. $R = 110$ mm, $r = 33$ mm, height of disc = 20 mm, number of superomarginals = 33.

Color.—Bright orange-red, center of disc paler, madreporite white.

Etymology.—Named for the constellation Scorpio.

Discussion.—The form of this species is exactly that of *Evoplosoma forcipiferum* Fisher, from Hawaii, with an abrupt demarcation between the pentagonal disc and the narrow arms. It differs from that species in having a much thinner, less conspicuous membrane, in having fairly uniform abactinal spines (not “spines and spinelets,” as Fisher describes *E. forcipifera*), and the adambulacral spines are straight, slightly flattened, of the ordinary goniasterid type, not “remarkably thin and compressed . . . with expanded chisel-like tips” as in *E. forcipifera*. The marginal plates, though not large, are quite distinct, the opposite being true for *E. forcipifera*. There are twice as many superomarginal plates in *E. scorpio*, but this may be due to the difference in size. The valves of the pedicellariae, somewhat fluted and with irregular denticulation in Fisher’s species, are much smoother and more regular in *E. scorpio*. The actinal interradial areas are smaller, but the first row of actinal plates extends further out on the arm in *E. scorpio* than in *E. forcipifera*.

Evoplosoma augusti Koehler, from the Indian Ocean, differs in form from the other two species, being of the more conventional stellate shape, without the inflated disc; Koehler says (1909:96): “edge of disc notably thinner than center.” The abactinal plates bear fat tubercles, rather than conical spines, and there is a bare space between the tubercles and the surrounding granules. As in *E. forcipifera*, the actinal areas are larger than in *E. scorpio*. *Evoplosoma augusti* has ca. 8 truncate, lamelliform adambulacral spines; the pedicellariae are exactly like those of *E. forcipifera*. The peculiar body form of *Evoplosoma scorpio* is also not uncommon in north Atlantic specimens of *Hippasteria phrygiana*, to which the genus *Evoplosoma* is closely related.

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Literature Cited

- Fisher, W. K. 1906. The starfishes of the Hawaiian Islands.—Bull. U.S. Fish Comm. 1903, 23(3):987–1130, pls. 1–49.
Koehler, R. 1909. Astéries recueillies par l’Investigator dan l’Ocean Indien. I. Les Astéries de Mer profonde.—Calcutta: Indian Museum, Pp. 5–143, pls. I–XIII.

Department of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560.



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