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Asteroschema sampadae (Ophiuroidea: Asteroschematinae), a new deep-sea brittle star from the continental slope off the southern tip of India

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Abstract

A new species of deep-sea euryalid ophiuroid, *Asteroschema sampadae* is described from the continental margin off the southern tip of India. This species is distinguished from others in having scattered, distinctly conical epidermal ossicles throughout the aboral surface of the disc and arms and minute, scattered granular ossicles on the oral side. This is the fourth report of the genus *Asteroschema* from Indian waters (including Andaman & Nicobar Islands) and the first report of this genus from around the Indian peninsula since the report of *Asteroschema flosculus* from a coral bank off Nellore, Andhra Pradesh by Alcock in 1893.

Key words: Ophiuroidea, Asteroschematinae, *Asteroschema*, India, continental slope

Introduction

The genus *Asteroschema* Örsted and Lutken, 1856 under the subfamily Asteroschematinae in family Euryalidae falls in order Euryalida of class Ophiuroidea. The characters of this order include the presence of thick skin over the disc and arms, below which regularly arranged plates are absent. The skin may also be variously ornamented with tubercles, granules or spines. The disc is usually small with a rounded or scalloped edge, and the arms are slender and long or may be branched. The arms roll in vertical coils, the lateral arm plates are located on the oral side of arms, with the arm spines borne at the ventro-lateral margin of the arms and oriented downwards. The jaws are simple and comprised of an unpaired oral plate, paired adoral shields and oral plates. The oral plates, which extend into the mouth, are often, but not always bordered with oral papillae on the sides and always bear tooth papillae at the apex (Mortensen, 1933; Baker, 1980; Smith *et al.*, 1995; Martynov, 2010; Okanishi *et al.*, 2011b).

The subfamily Asteroschematinae Verrill, 1899, sensu Okanishi *et al.*, 2011b is composed of two genera: *Asteroschema* Örsted and Lutken, 1856 and *Ophiocreas* Lyman, 1879, both with body covered by naked or tuberculated skin, simple arms, gonads extending into the proximal part of the arm, ventral groove of the vertebrae open, lateral arm plates in contact along the entire length of the arm (Okanishi & Fujita, 2011b), and presence of two arm spines throughout the arm, which in the distal end of the arm are represented as hook-shaped spines without regularly arranged perforations. The genus *Asteroschema*, comprising 34 species, is differentiated from *Ophiocreas* by the presence of conical (cone-shaped), granular (granule shaped) or plate-like (plate-shaped) epidermal ossicles embedded in the skin. Fifteen species of *Asteroschema* were described before 1900 (*Pallas, 1788; Lyman 1872, 1875, 1878, 1879; Ljungman 1872; Alcock 1893; Verrill 1894, 1899; Lütken & Mortensen 1899*), from the Gulf of Mexico, Bay of Bengal, the Atlantic and Pacific oceans; and 14 species were described between 1904 and 1949 (*Koehler 1904, 1907, 1914; Matsumoto 1915; A. H. Clark, 1917; Mortensen, 1925; H. L. Clark, 1939; Murakami, 1944; A. H. Clark, 1949*), from the Gulf of Mexico, the Indo-west Pacific, Pacific and Atlantic Oceans. Since then, four new species have been described, 3 from around New Zealand (Baker, 1980; McKnight, 2000) and one from off Amami-oshima Island, south of Japan (Okanishi & Fujita, 2009). A subsequent re-evaluation has led to the transfer of the species collected from Amami-oshima Island to a new genus *Squamophis* (Okanishi *et al.*, 2011a). The systematics of the order Euryalida has been subjected to recent revision based on molecular phylogenetics of mitochondrial and nuclear ribosomal genes (Okanishi *et al.*, 2011b).

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