

**A New Species of *Asteroschema* (Echinodermata:
Ophiuroidea: Asteroschematidae)
from Southwestern Japan**

Masanori Okanishi and Toshihiko Fujita

*National Museum of Nature and Science,
Hyakunin-cho 3-23-1, Shinjuku-ku, Tokyo, 169-0071 Japan
E-mail: okanishi@kahaku.go.jp (MO); fujita@kahaku.go.jp (TF)*

(Received 15 August 2008; Accepted 23 December 2008)

A new species of brittle star, *Asteroschema amamiense*, is described from off Amami-oshima island, southwestern Japan. *Asteroschema amamiense* is distinguished from its congeners in having a single arm spine in each tentacle pore, both polygonal and elongated flat, plate-shaped dermal ossicles on the aboral periphery of the disc and basal portions of the arms, and radial shields composed of a single ossicle. Three species of *Asteroschema*, including this new species, and all the species of *Astrocharis* have plate-shaped dermal ossicles; a close relationship between all of these species is indicated. Moreover, single ossicle radial shields, which have not previously been reported for any species of *Asteroschema*, are found both in this new species and two species of *Astrocharis*.

Key Words: Ophiuroidea, Asteroschematidae, *Asteroschema amamiense*, *Astrocharis*, dermal ossicle, radial shield, SEM, taxonomy, new species, Japan.

Introduction

Örsted and Lütken (in Lütken 1856) erected the monotypic genus *Asteroschema* (Asteroschematidae) for the Caribbean species *Asterias oligactes* Pallas, 1788. Over the next 50 years, 25 congeners were described (H. L. Clark 1915). Since 1915, 10 additional species have been added to the genus (H. L. Clark 1917, 1939; Mortensen 1925; Döderlein 1930; Murakami 1944; A. H. Clark 1949; Baker 1980; McKnight 2000). With the transfer of *Asteroschema rousseaui* Michelin, 1862 and *A. koehleri* Döderlein, 1898 to the genus *Asteromorpha* (Mortensen 1933; Baker 1980), *Asteroschema* comprises 34 species (Table 1). Of these, five species are known from Japanese waters: *A. ferox* Koehler, 1904, *A. tubiferum* Matsumoto, 1911, *A. glaucum* Matsumoto, 1911, *A. hemigyllum* Matsumoto, 1912, and *A. yaeyamense* Murakami, 1944 (Matsumoto 1915; Murakami 1944; Fujita and Irimura 2005).

The body of all species of *Asteroschema* is covered by an integument with embedded dermal ossicles. In the distal portions of the arms, these ossicles are circular and domed or granule-shaped, and either separated or slightly in contact with each other (Fig. 1A, B). In the disc and basal portions of the arms, there is some variation in the shape of the dermal ossicles (Table 1). Nineteen species of *Asteroschema* have only granule-shaped dermal ossicles there (Figs 1C, D, 2A) and 13 have only cone-shaped dermal ossicles (Figs 1E, F, 2B) or both cone-shaped and