

A New Asterinid Sea Star, *Disasterina akajimaensis* (Echinodermata: Asteroidea) from the Ryukyu Islands, Japan, with Notes on the Genus *Disasterina*

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A new asterinid, *Disasterina akajimaensis* sp. nov., is described from a specimen collected at Akajima Island, the Ryukyu Islands, Japan. It is clearly distinguishable from its five congeners by the following diagnostic characters: body relatively low and flat, uncalcified interradial areas conspicuous on ventral interradial areas, papulae numerous in center of disc, abactinal plates mostly lacking spinelets, inferomarginal plates with 2–4 spinelets, actinolateral plates with 1 spine, oral plates with 4–5 oral spines and no suboral spine, adambulacral plates with 1–3 furrows and 1 subambulacral spine. This is the first report of this genus from Japanese waters. Notes on the genus *Disasterina* and a tabular summary of the characters of the currently known species are also given.

Key Words: Asterinidae, *Disasterina*, new species, Japan.

Introduction

The genus *Disasterina* Perrier, 1875 of the family Asterinidae was established for *Disasterina abnormalis* Perrier, 1875 as a relative of *Asterina* Nardo, 1834, but distinguished from the latter by thick integument covering the body and by the abactinal plates being loosely imbricated, leaving papular spaces. The uncalcified skin distal to each pair of oral plates in the type species is also characteristic for *Disasterina*, but it varies among species; for example, *D. longispina* (H. L. Clark, 1938), originally considered as a species of the separate genus *Manasterina* H. L. Clark, 1938, has no uncalcified skin (H. L. Clark 1938; O'Loughlin and Waters 2004). In the latest revision of the genera of Asterinidae, O'Loughlin and Waters (2004) revised *Disasterina*, which thus currently has five valid species (see also A. M. Clark 1993; O'Loughlin 2009; Mah 2010). All of the species are distributed in the Indo-West Pacific region (Döderlein 1888; Koehler 1910; H. L. Clark 1916, 1938; Livingstone 1933; Mortensen 1933; A. M. Clark and Rowe 1971; Liao 1980). No species of *Disasterina* has ever before been found in Japanese waters.

In this study we collected one specimen of *Disasterina* from the intertidal zone of Akajima Island in the Ryukyu Islands of southwestern Japan. This specimen is described here as the holotype of a new species. It has been deposited in the National Museum of Nature and Science, Tokyo (NSMT). Terminology follows the glossary and illustrations of A. M. Clark and Downey (1992).

Genus *Disasterina* Perrier, 1875

[New Japanese name: Numeri-itomaki-hitode-zoku]
(Table 1; Fig. 1)

Disasterina Perrier, 1875: 289 [reprinted in 1876: 209–210]; Livingstone 1933: 5–7; H. L. Clark 1946: 138; Spencer and Wright 1966: U69; A. M. Clark 1993: 218; Liao and A. M. Clark 1995: 131–132; Rowe and Gates 1995: 35; O'Loughlin and Waters 2004: 19–20.
Habroporina H. L. Clark, 1921: 34. Synonymized by A. A. Livingstone (1933).
Manasterina H. L. Clark, 1938: 157–158; H. L. Clark 1946: 139; A. M. Clark 1993: 220; Rowe and Gates 1995: 36. Synonymized by O'Loughlin and Waters (2004).
Type species: *Disasterina abnormalis* Perrier, 1875 (by monotypy).

Comparative material. *Disasterina ceylanica* Döderlein, 1888: 1 alcohol specimen, Naturhistorisches Museum Basel (NMB), réf. 2, probably one of the syntypes; Trincomali, Ceylon, collected by Paul Sarasin and Fritz Sarasin; R/r=20/8 mm. *Disasterina odontacantha* Liao, 1980: 1 dry specimen, NSMT E-4218; Ambon Island, Indonesia, 0–16 m deep; R/r=11/6 mm.

Remarks. O'Loughlin and Waters (2004) included five species in *Disasterina*: *D. abnormalis* (type species), *D. odontacantha*, *D. ceylanica*, *D. longispina*, and *D. spinosa* Koehler, 1910. *Disasterina odontacantha* is clearly congeneric with *D. abnormalis*, sharing an uncalcified interradial