Zootaxa 3367: 252–260 (2012)
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

A new species of *Neoferdina* and three new records of sea stars (Echinodermata: Asteroidea) collected from Kumejima Island, southwestern Japan*

YOICHI KOGURE[1] & YOSHIHISA FUJITA[2]

[1]*Japan Sea National Fisheries Research Institute, 1-5939-22 Suido-cho, Chuo-ku, Niigata 951-8121, Japan. E-mail: seastar@affrc.go.jp*
[2]*University Education Center, University of the Ryukyus, 1 Senbaru, Nishihara-cho, Okinawa 903-0213, Japan*

* *In*: Naruse, T., Chan, T.-Y., Tan, H.H., Ahyong, S.T. & Reimer, J.D. (2012) Scientific Results of the Marine Biodiversity Expedition — KUMEJIMA 2009. *Zootaxa*, 3367, 1–280.

Abstract

Sea stars were collected at depths ranging from 91 to 160 m around Kumejima Island situated in the middle of the Ryukyu Islands chain in the Western Pacific. Sampling was carried out using a dredge or beam trawl in November 2009, as part of the KUMEJIMA 2009 Expedition. The specimens included an undescribed species of the genus *Neoferdina*, and three species that have never been reported in Japanese waters. Features that characterise this new species, *Neoferdina longibrachia*, include: extremely long and narrow arms, no alternating arrangement of large and small superomarginal plates, body surface (except for the marginal plates) completely covered with granules, and an adambulacral armature with 3 furrow spines.

Key words: starfish, *Neoferdina longibrachia*, Ryukyu Islands, taxonomy

Introduction

The Ryukyu Islands chain, an arc of islands extending 1,200 km between Kyushu and Taiwan, stretches from the northern edge of the tropical region to the southern edge of the temperate region. The islands form a coastal ecosystem with an extraordinary diversity of marine organisms. An analysis of species richness based on fish, corals, snails, and lobsters has shown that the South Japan region is an important marine biodiversity hotspot (Roberts *et al*. 2002).

In terms of the species richness of asteroids in the waters around the Ryukyu Islands, there is little or only fragmentary information, with the exception of the shallow-water common species (Djakonov 1930; Goto 1914; Hayashi 1930). The latest guidebook dealing with asteroid and ophiuroid fauna in the Japanese coastal region (Saba & Irimura 2002) refers to tropical/subtropical species in southern Japan; however, the asteroids dealt with in the book are mainly members of shallow-water species. Furthermore, recent scientific evidence provided by trawls or remotely operated vehicles has indicated the possible presence of numerous asteroids that are new to Japan in the relatively deep waters around the Ryukyu Islands (Kogure 2008; Kogure *et al*. 2009; Kogure & Kaneko 2010). Therefore, most of the remaining unknown species probably inhabit the bottoms beyond the depth limit of scuba diving technology; a faunal survey that includes the deep-water bottom has become imperative.

An international project was started in 2009 to examine the marine fauna between the intertidal and sublittoral zone in the Ryukyu Islands, where the maximum depth exceeds 150 m. In November, an intensive marine faunal survey of Kumejima Islands, the KUMEJIMA 2009 Expedition was undertaken. The survey collected three species of asteroids, which are new records for Japan as well as a new species of *Neoferdina*. These four newly-discovered species from relatively deep waters contribute to the ongoing discovery of marine biodiversity in the Ryukyu Islands.

 Accepted by T. Naruse: 16 Sep. 2011; published: 4 Jul. 2012