

Description of a New Species of Butterflyfish, *Roa australis*, from Northwestern Australia (Pisces: Perciformes: Chaetodontidae)

RUDIE H. KUITER

Ichthyology, Museum Victoria, Melbourne VIC 3001, Australia
rudie.kuiter@zoonetics.com · syngnathiformes@zoonetics.com

ABSTRACT. A new species of butterflyfish (genus *Roa*) is described from the North-West Shelf of Western Australia and the Arafura Sea. *Roa australis* n.sp., the only known species of the *Roa modesta*-complex in the southern hemisphere, is most similar to *Roa excelsa* from the Hawaiian Islands, differing from it most noticeably in having narrower and fainter brown bars, white instead of brown anterior dorsal spines, and subequal 3rd and 4th dorsal spines rather than a distinctly longer 3rd spine.

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The new species and three close relatives comprise the small Indo-Pacific genus *Roa* (Jordan, 1923), and as a group they are often referred to as the “*modestus* species complex” of the genus *Chaetodon*. They have widely separated distributions: *R. jayakari* (Norman, 1939) occurs in the northwestern Indian Ocean from the west coast of India to the Red Sea; *R. excelsa* (Jordan, 1921) is known from the Hawaiian Islands and Guam; *R. modesta* (Temminck & Schlegel, 1844) occurs in subtropical waters of Japan, ranging south into the China Seas, Taiwan and the Philippines. Records of *R. modesta* from northwestern Australia are based on the new species *R. australis*. The species of this small butterflyfish genus are normally confined to moderate depths, usually in excess of 100 m, and reported to almost 300 m. Only *R. modesta* regularly enters shallow depths in Japanese waters. *Roa excelsa* has been reported as shallow as 20 m in Hawaii (Allen *et al.*, 1999), but the species normally lives at depths greater than 100 m. *Roa jayakari* has been photographed from a submersible in the Red Sea at a depth of 180 m (Kuiter, 2002), and an unidentified species of butterflyfish, photographed from a submersible in the Comoro Island at

about 200 m, although differently coloured, may belong to this genus (Kuiter, 2002). The four species share a banded pattern of alternating broad brown and pale bands, and have a distinctive, about eye-sized, black spot on the soft dorsal fin. All have been referred to *Roa modesta* (or, more often as *Chaetodon modestus*) by various authors, because the various species are so similar.

In contrast to most other butterflyfishes, that are popular with divers and aquarists, the species of *Roa* have received little attention. Specimens are generally collected by trawl and are of no interest to fisheries, and regarded as a trash species. In compiling information for a book on the butterflyfishes of the world (Kuiter, 2002), it became clear that there was a great deal of confusion about the identities of this small group of butterflyfish species referred to as the *modestus* species complex. Most authors have considered Jordan’s genus *Roa* to be, at best, a subgenus of *Chaetodon* Linnaeus. Blum (1989), however, reinstated *Roa* to generic status, based on an unpublished cladistic analysis in his PhD thesis. Ferry-Graham *et al.* (2001) reanalysed Blum’s previously unpublished data, and agreed that *Roa* was a monophyletic group of 3 species distinct from