



## A new deep-water goatfish of the genus *Upeneus* (Mullidae) from Vanuatu, South Pacific

FRANZ UIBLEIN<sup>1,2,4</sup> & ROMAIN CAUSSE<sup>3</sup>

<sup>1</sup>Institute of Marine Research, P.O. Box 1870 Nordnes, N-5817 Bergen, Norway. E-mail: [franz@imr.no](mailto:franz@imr.no)

<sup>2</sup>South African Institute of Aquatic Biodiversity, Grahamstown, South Africa

<sup>3</sup>UMR BOREA, MNHN, CNRS 7208, UPMC, IRD 207, 43 rue Cuvier, Muséum national d'Histoire naturelle, 75005, Paris, France

<sup>4</sup>Corresponding author

### Abstract

A new goatfish, *Upeneus vanuatu* (Mullidae), is described based on five specimens collected off two islands of Vanuatu (South Pacific), at depths of 191–321 m, and compared with five closely related species: *Upeneus davidaromi* (Red Sea), *U. mascareinsis* (Western Indian Ocean), *U. stenopsis* (northern Australia, Philippines, 127–275 m), and the more shallow-occurring Indo-West Pacific species *U. subvittatus* (26–120 m) and *U. vittatus* (<100 m). The new species can be distinguished from all other congeneric species by the combination of four characters: number of gill rakers on lower limb, caudal-peduncle depth, interorbital length, and interdorsal distance. Strong allometric variation in body form between the holotype and the four smaller paratypes was found. Based on the lack of lateral body stripes, a rather narrow caudal peduncle depth, and large eyes in adults as common characteristics for *U. subvittatus* and the four deep-water *Upeneus* species, the so-called “*stenopsis*” species group can be distinguished from four other species groups that were established in earlier studies in order to facilitate intrageneric comparisons. The ecological and evolutionary significance of deep-water goatfishes is briefly discussed.

**Key words:** *Upeneus vanuatu*, new species, ocean margin habitats, ontogeny, *Parupeneus*

### Introduction

The goatfish genus *Upeneus* (Mullidae) consists of 30 recognized species (Uiblein & McGrouther, 2012), most of which typically occur in coastal waters less than 100 m (Uiblein & Heemstra, 2010). Three species, however, occur at deeper levels of the lower shelf and upper slope, the so-called ocean-margin (Huthnance 1995): *Upeneus davidaromi* Golani, 2001 of the Red Sea occurs at 150 to 600 m depth; *U. mascareinsis* Fourmanoir & Guézé, 1967 of the Western Indian Ocean proper at 100–400 m depth, and *U. stenopsis* Uiblein & McGrouther, 2012 from northern/northeastern Australia (Timor Sea, western Coral Sea) and the Philippines (Quezon) at 127–275 m depth. The fact that all three species have been described within the last 45 years only, points to the need for further fish-taxonomic exploration of ocean margin habitats (Uiblein & McGrouther, 2012).

During a visit at the Muséum National d'Histoire naturelle, Paris in March 2011, the first author encountered two specimens of a yet unidentified *Upeneus* collected at 254–321 m off Espiritu Santo Island, Vanuatu (South Pacific), that clearly differed from the recently described *U. stenopsis*, but appeared to be rather similar in morphometric, meristic and colour characters to *U. mascareinsis*. Shortly after the description of *U. stenopsis*, in November 2012, three more MNHN specimens from similar depths and adjacent areas off Vanuatu became available allowing detailed comparisons.

Based on examination of a large set of meristic, morphometric and colour characters a new species is described and compared with the closely related deep-water dwellers *Upeneus davidaromi*, *U. mascareinsis*, and *U. stenopsis*, and the shallow-water Indo-West Pacific species *U. subvittatus* and *U. vittatus* (Forsskål, 1775). Because goatfishes show considerable changes in body form during ontogeny, special attention to allometric relationships is paid. The occurrence of a distinct species group of *Upeneus* consisting of mostly deep-water fishes (see also