Short note

Western Indian Ocean
JOURNAL OF
Marine Science

Open access

Citation:
Fricke R, Mulochau T, Barathieu G (2023) New record of the Bluntnose scorpionfish, *Neomerinthe erostris* (Alcock 1896) (Teleostei: Scorpaenidae) from Mayotte, southwestern Indian Ocean. Western Indian Ocean Journal of Marine Science 22(1): 25-29 [doi: 10.4314/wiojms.v22i1.3]

Received:
December 06, 2022

Accepted:
March 10, 2023

Published:
May 12, 2023

* Corresponding author:
ronald.fricke@smns-bw.de

New record of the Bluntnose scorpionfish, *Neomerinthe erostris* (Alcock 1896) (Teleostei: Scorpaenidae) from Mayotte, southwestern Indian Ocean

Ronald Fricke[1]*, Thierry Mulochau[2], Gabriel Barathieu[3]

[1] Staatliches Museum für Naturkunde Stuttgart, Rosenstein 1, 70191 Stuttgart, Germany

[2] BIORECIF – 3 ter rue de l'albatros, 97434 La Saline Les Bains, La Réunion, France

[3] Deep Blue Exploration – 2 B SQ PAPAYE 97600 MAMOUDZOU, Mayotte, France

Abstract

The Bluntnose scorpionfish *Neomerinthe erostris* is recorded for the first time from Mayotte, southwestern Indian Ocean, based on a specimen photographed in November 2022, at a depth of 115 m. The live colour pattern of this species is described for the first time.

Keywords: biodiversity, scorpionfishes, new record, Mayotte, distribution

Introduction

The scorpionfishes of the genus *Neomerinthe* Fowler 1935 are distributed in tropical and temperate seas in the Atlantic Ocean, Red Sea and Indo-West Pacific (east to Hawaiian Islands and French Polynesia). They inhabit benthic habitats, mostly dwelling on rocky or coral reefs. The genus includes a total of 14 valid species (Fricke *et al.*, 2022) (Tab. 1). It is characterised within the family Scorpaenidae by the dorsal rays XII, 9-11, the last split from the base; dorsal-fin spines short, usually less than 1/2 body depth; dorsal-fin membranes not incised nearly entire length of all spines; anal-fin rays normally III, 5; at least some pectoral-fin rays branched; pectoral fins rounded or elongate, but not strongly notched or bilobate; vertebrae 24 (rarely 23); scales on flank ctenoid, particularly above lateral line; scales on breast ctenoid or cycloid, small, but never absent; bones of cranium strongly or moderately ossified; occiput inclined, but flat or slightly convex, never concave; palatine teeth present on roof of mouth; lacrimal and suborbital bones (infraorbital bones 1 to 3) relatively narrow and usually somewhat convex laterally and usually strongly ossified; lacrimal bone with strong spines along ventral margin; ventral margin of lacrimal bone usually with numerous spines; lacrimal bone relatively immobile, strongly bound to the lateral-ethmoid; posterior lacrimal spine relatively strong, pointing postero-ventrally (not hooked forward); third infraorbital bone (suborbital 2) extends nearly straight posteriorly and relatively broadly connected to preopercle; skin at gill openings connected to each other or connected to isthmus only narrowly anteriorly, not broadly connected to isthmus; opercle with 2 distinct ridges that diverge at an acute angle, both usually strongly developed and bearing spines; lateral line normal, continuing onto or near base of caudal fin; lateral-line scales forming relatively complete tubes, that are sometimes buried; peritoneum pale; caudal peduncle at base of caudal fin without scattered large melanophore (Eschmeyer, 1969; Poss, 1999; Poss and Motomura, 2022; modified).

Species of the genus Neomerinthe were first discovered by Alcock (1896), who described two species,

Table 1. Species of the genus *Neomerinthe* Fowler 1935 and their distribution.

Species	Primary types	Synonyms	Distribution
N. amplisquamiceps (Fowler 1938)	Holotype: USNM 98883		Eastern Indian Ocean, western Pacific
N. bauchotae Poss & Duhamel 1991	Holotype: MNHN 1989-0273		Southern Indian Ocean: Saint-Paul Island
N. beanorum (Evermann & Marsh 1900)	Holotype: USNM 49534		Western Atlantic
N. bucephalus (Alcock 1896)	Syntypes: ZSI F13737 (1), F14084 (1)		Indo-West Pacific
N. erostris (Alcock 1896)	Lectotype: ZSI F 12977 [selected by Motomura *et al*. (2015: 530)]	*Scorpaena gibbifrons* Fowler 1938; *Neomerinthe rotunda* Chen 1981; *N. bathyperimensis* Zajonz & Klausewitz 2002	Red Sea, Indo-West Pacific
N. folgori (Postel & Roux 1964)	Holotype: MNHN 1963-0600		Eastern Atlantic
N. hemingwayi Fowler 1935	Holotype: ANSP 63482	*Neomerinthe tortugae* Hildebrand 1940	Western Atlantic
N. kaufmani (Herre 1952)	Holotype: USNM 202511		Western Pacific
N. megalepis (Fowler 1938)	Holotype: USNM 98897		Southwestern Pacific
N. naevosa Motomura, Béarez & Causse 2011	Holotype: MNHN 2010-0952		South Pacific: Marquesas Islands
N. nielseni (Smith 1964)	Holotype: ZMUC P79192		Western Indian Ocean
N. pallidimacula (Fowler 1938)	Holotype: USNM 98889		Western Pacific
N. procurva Chen 1981	Holotype: CAS 47306		Eastern Indian Ocean, western Pacific
N. rufescens (Gilbert 1905)	Holotype: USNM 51628		Central Pacific: Hawaiian Islands and Johnston Atoll

Scorpaena bucephalus from India, and *S. erostris* from Sri Lanka. The species description of *N. erostris* by Alcock in 1896 (as *Scorpaena erostris*) was based on two specimens collected off southern Sri Lanka, at 62 or 77 metres depth. The species was redescribed by Motomura *et al*. (2015), recently revised by Poss and Motomura (2022), and recorded from the southern Red Sea and the Indo-West Pacific, at depths of 52-505 m.

A specimen of *N. erostris* was photographed in the mesophotic zone of Mayotte (France), Western Indian Ocean. This new record is reported and discussed in the present paper.

Materials and methods

On 11 Nov. 2022, a *ca*. 100 mm SL specimen of *N. erostris* was photographed by Gaby Barathieu in the mesophotic zone east of Mayotte at 12°52.964'S, 45°16.557'E, at a depth of 115 m. The specimen was photographed while diving, using a rebreather with trimix gas. The size of the specimen was estimated by the diver, according to his experience.

Counts and measurements followed Hubbs and Lagler (1947); the standard length is abbreviated SL. The genus and species classification follows Fricke *et al*. (2022), the family classification follows van der Laan *et al*. (2014), the head spine terminology follows Eschmeyer (1969), fin-ray counts follow Fricke (1983). Collections are abbreviated according to Fricke and Eschmeyer (2022).

Specimens of *Neomerinthe erostris* used as comparative material included: MNHN 1988-1528 (1), Madagascar; MNHN 1991-0752 (2), La Réunion; MNHN 2004-0061 (Madagascar); MNHN 2004-0056 (2), Madagascar.

Results

Neomerinthe erostris (Alcock 1896)

Description

Proportions shown in Table 2 are part of this description.

Dorsal-fin spines XII, third spine longest, dorsal-fin soft rays 9 (last divided at base); pectoral-fin rays ca. 17 (left side), with 3rd to 5th rays branched, membranes strongly incised. Lateral lacrimal spine absent; anterior lacrimal spine simple, directed ventrally; posterior lacrimal spine simple, directed postero-ventrally;

Figure 1. *Neomerinthe erostris* (Alcock, 1896). Specimen photographed in the mesophotic zone at Mayotte at 115 m depth on 11 November 2022. Photograph: Gaby Barathieu.

suborbital ridges with 3 spines. Preopercle with 5 spines. Pored lateral-line scales ca. 25 (left side); vertical scale rows in longitudinal series ca. 39; predorsal scale rows ca. 8; scales on sides of body ctenoid; scale rows above lateral line 6, below lateral line 12. Occiput flat. Supraorbital tentacle large, posteriorly with 7 branches. Head with numerous additional tentacles; also numerous dermal tentacles on back and sides of body. Standard length *ca*. 100 mm.

Live colouration (Fig. 1): Head and body pale orange, snout pale, eyes with 7 orange bars; back with white saddles below 4th dorsal-fin spine, end of spinous and beginning of soft dorsal fin, and end of soft dorsal-fin to caudal peduncle. Fins translucent, dorsal fin with basal and distal scattered white spots, pectoral fin with two indistinct distal white bars; caudal fin orange, with indistinct, narrow, vertical white bars.

Table 2. Proportions of Mayotte specimen of *Neomerinthe erostris* (Alcock, 1896) (ca. 100 mm SL), compared with values given by Motomura *et al.* (2015).

	Mayotte specimen [% of SL]	Motomura *et al.* (2015) [% of SL]
Head length	46.2	46.3-53.9
Orbit diameter	13.1	13.0-19.5
Preorbital length	13.4	10.1-13.8
Orbital tentacle length	9.7	
Maxillary length	23.0	21.8-26.6
Predorsal length	41.6	39.1-45.9
Prepectoral length	42.5	
Length of 1st dorsal-fin spine	6.6	6.9-12.9
Length of 2nd dorsal-fin spine	12.8	12.5-21.6
Length of 3rd dorsal-fin spine	18.9	16.8-25.5
Length of 4th dorsal-fin spine	18.5	17.3-23.7
Length of 5th dorsal-fin spine	15.4	16.6-21.6
Longest dorsal-fin ray	15.6	18.1-21.0
Length of 5th dorsal-fin ray	11.5	
Length of last dorsal-fin ray	6.6	
Pectoral-fin length	27.1	27.1-38.1

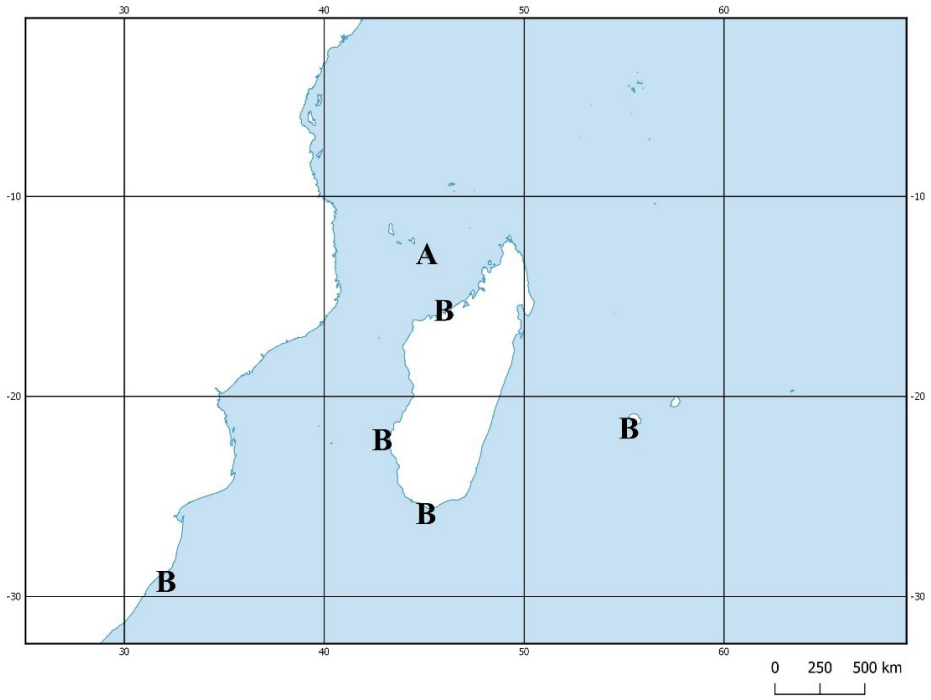

Figure 2. Geographical distribution of *Neomerinthe erostris* (Alcock, 1896) in the southwestern Indian Ocean. A - New record from Mayotte; B - Other records based on examined specimens and literature.

Discussion

Neomerinthe erostris was revised by Motomura *et al.* (2015), who treated *Scorpaena gibbifrons* Fowler 1938, *Neomerinthe rotunda* Chen 1981, and *N. bathyperimensis* Zajonz and Klausewitz 2002 as junior synonyms, and reported the species based on specimens from Madagascar, La Réunion, Yemen, Sri Lanka, Taiwan, Philippines, Indonesia, Solomon Islands, New Caledonia, Vanuatu, and Wallis and Futuna Islands. They also listed a literature reference from Hong Kong (China). The known distribution of *N. erostris* in the southwestern Indian Ocean is illustrated in Figure 2.

During the CORCOMA project, a specimen of *N. erostris* was photographed in the mesophotic zone of Mayotte. This represents a range extension from the closest known locality (northwestern Madagascar) of ca. 300 km to the northwest, and the first record of this species from the Comoros Archipelago. Although the lower parts of the specimen are not visible on the photographs, it is clearly identifiable as a species of *Neomerinthe*, and distinguished from *N. nielseni* by its different head shape, higher dorsal fin, more numerous scales, and absence of a black spot on the spinous dorsal fin. The characters of the specimen on the photograph agree well with those of *N. erostris*; the proportions visible on the photograph are compared with those provided by Motomura *et al.* (2015) in Table 2.

Motomura *et al.* (2015: Fig. 1F) illustrated a freshly dead specimen of *N. erostris* from Taiwan, which was overall mostly red, dorsally speckled with orange. The present photograph (Fig. 1) is the first documentation of the live colouration of this species. Here, the fish is rather pale orange, dorsally variegated with white, and with white saddles.

The present specimen of *N. erostris* was photographed at a depth of 115 m, on a steep, sloping rock surface covered with yellow sponges, directly above a drop-off (Fig. 3). At this depth, the habitat is characterized by hard substrate colonized by Porifera, Hydrozoa, Antipatharia and Octocorallia. These are the dominant hard substrate benthic communities in the lower mesophotic zone of mesophotic coral ecosystems in Mayotte and along coral reef drop-offs (Mulochau *et al.*, 2021). That depth record is not unusual for the species, which was previously reported from 52-505 m (Motomura *et al.*, 2015). The preferred depth may be related to the water temperature; the depth of the Mayotte specimen is similar to that of the northwestern Madagascar and La Réunion specimens deposited at MNHN, which were collected at depths of 90-130 m.

Acknowledgements

We would like to thank the DEAL of Mayotte and the French Office of Biodiversity, for supporting the CORCOMA programme.

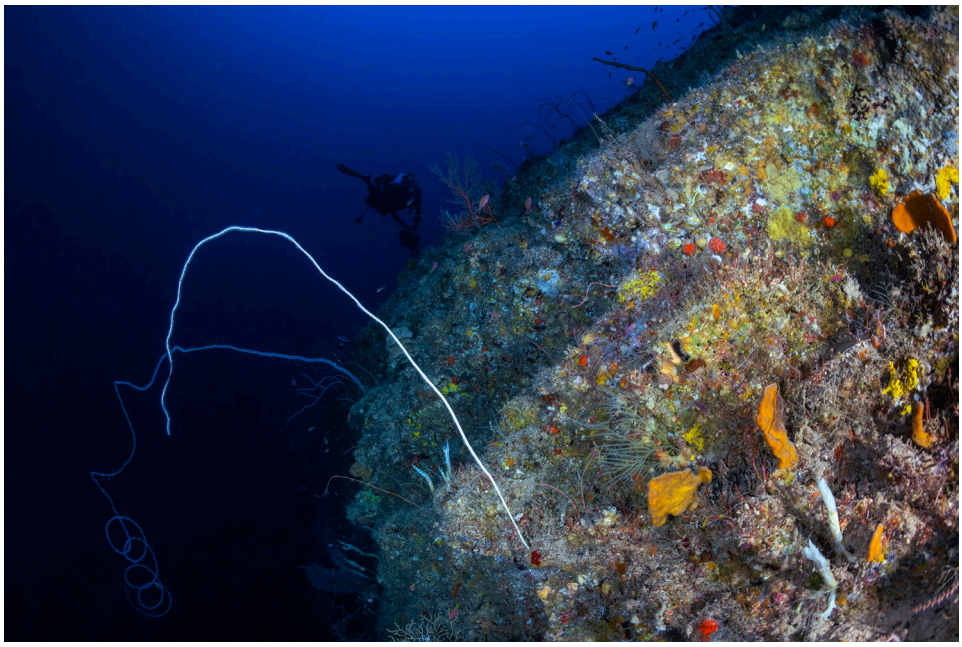

Fig. 3. Habitat of *Neomerinthe erostris* (Alcock 1896), off Mayotte, southwestern Indian Ocean. Photograph: Gaby Barathieu.

References

Alcock AW (1896) Natural history notes from HM Indian marine survey steamer `Investigator,' Commander C F Oldham, RN, commanding. Series II. No. 23. A supplementary list of the marine fishes of India, with descriptions of two new genera and eight new species. Journal of the Asiatic Society of Bengal 65 (2, 3): 301-338

Eschmeyer WN (1969) A systematic review of the scorpionfishes of the Atlantic Ocean (Pisces: Scorpaenidae). Occasional Papers California Academy of Sciences 79: iv + 143 pp

Fricke R (1983) A method of counting caudal fin rays of actinopterygian fishes. Braunschweiger Naturkundliche Schriften 1 (4): 729-733

Fricke R, Eschmeyer WN (2022) A guide to fish collections in Eschmeyer's catalog of fishes. Online version of 1 November 2022 [https://researcharchive.calacademy.org/research/ichthyology/catalog/collections.asp]

Fricke R, Eschmeyer WN, van der Laan R (2022) Eschmeyer's catalog of fishes: Genera, species, references. Online version of 1 November 2022 [https://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp]

Hubbs CL, Lagler KF (1947) Fishes of the great lakes region. Bulletin Cranbrook Institute of Science. Bloomfield Hills, Michigan 26: i-vi + 1-186

Motomura H, Causse R, Béarez P, Mishra SS (2015) Redescription of the Indo-West Pacific scorpionfish (Scorpaenidae), *Neomerinthe erostris* (Alcock 1896), a senior synonym of *Scorpaena gibbifrons* Fowler 1938, *N. rotunda* Chen 1981, and *N. bathyperimensis* Zajonz and Klausewitz 2002. Zootaxa 4021 (4): 529-540

Mulochau T, Durville P, Mathey J (2021) Exploration de la zone mésophotique de quelques pentes externes de Mayotte à l'aide d'un ROV - Inventaire faunistique non exhaustif. Rapport de recherche. BIORECIF, Mayotte (for 2020): 1-47, annexes

Poss SG (1999) Scorpaenidae (scorpionfishes, also: lionfishes, rockfishes, stingfishes, stonefishes, and waspfishes). In: Carpenter KE and Niem VE (eds) Species identification guide for fisheries purposes. The living marine resources of the western central Pacific. Bony fishes part 2 (Mugilidae to Carangidae), volume 4. FAO, Rome. pp 2291-2352, pls 3-5

Poss SG, Motomura H (2022) Family Scorpaenidae, Scorpionfishes and lionfishes. In: Heemstra PC, Heemstra E, Ebert DA, Holleman W, Randall JE (eds) Coastal fishes of the western Indian Ocean. Volume 2. South African Institute for Aquatic Biodiversity, Makhanda, South Africa. pp 506-549, pls 101-110

Van der Laan R, Eschmeyer WN, Fricke R (2014) Family-group names of recent fishes. Zootaxa 3882 (2): 1-230