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New record of the pygmy pipehorse *Cylix* sp. from La Réunion, southwestern Indian Ocean (Teleostei: Syngnathidae)

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Abstract

The pygmy pipehorse *Cylix* sp. is recorded for the first time from La Réunion, southwestern Indian Ocean, based on a specimen photographed off Sainte-Rose in August 2024, at a depth of 12-18 m. The specimen is described, and compared with other species of the genus. The live colouration is described for the first time.

Keywords: biodiversity, seahorses, new record, Mascarenes, distribution

Introduction

The pygmy pipehorses of the genus *Cylix* Short and Trnski 2021 are currently known only from the western Indian Ocean and New Zealand. They inhabit benthic habitats, often attached to seagrass or algae with their tail. The genus includes a total of two valid species in the western Indian Ocean and New Zealand (Fricke *et al*., 2024); however, "*Hippocampus tyro*" Randall and Lourie 2009 will be reclassified into genus *Cylix* in an upcoming paper (Graham Short, personal communication, Nov. 2024) (Table 1). The genus is similar to *Hippocampus* Linnaeus 1758, *Acentronura* Kaup, 1853 and *Idiotropiscis* Whitley, 1947, but characterized by its cup-like crest present anterodorsally on the supraoccipital; and large conspicuous midventral conical spines on the cleithral symphysis and first trunk ring between the pectoral-fin bases (Short and Trnski 2021).

Hippocampus tyro Randall and Lourie 2009 was described by Randall and Lourie (2009) based on a single specimen from the Amirantes Islands (Seychelles), dredged at 43-48 m depth. Another individual was recently observed in Mauritius, western Mascarenes (Anonymous, 2023), on a dive cruise near Rivière du Rempart.

A specimen of *Cylix* sp. was photographed on a sand bottom with macroalgae, at 5 m depth, off Sainte-Rose, La Réunion (France), western Indian Ocean. This new record is reported and discussed in the present paper.

Materials and methods

On 24 August 2024, a *ca.* 30 mm TL, female specimen of *Cylix* sp. was photographed by David Pleuret and Miguel Ramírez on a sand bottom with macroalgae, off Sainte-Rose, La Réunion (France), at ca. 21°07'29.20"S, 55°47'12.19"E, at 12-18 m depth of water. The specimen was photographed when diving. The size of the specimen was estimated by the diver, according to his experience.

Counts and measurements followed Hubbs and Lagler (1947); the total length is abbreviated TL. The genus and species classification follows Fricke *et al*. (2024), the family classification follows Van der Laan *et al*. (2014), the head spine terminology follows Randall and Lourie (2009). Collections are abbreviated according to Fricke and Eschmeyer (2024).

Specimens of seahorses used as comparative material: *H. borboniensis*: NHMI uncat. (1), Mauritius. -- *H. jayakari*:

Table 1. Species of the genus *Cylix* Short & Trnski, 2021, and their distribution.

Species	Primary types	Distribution
Cylix nkosi Short, Smith, Harastio & Claasens, 2024	SAM F041935	South Africa (KwaZulu-Natal)
Cylix tupareomanaia Short, Trnski & Ngātiwai in Short & Trnski, 2021	AIM MA122274	New Zealand (Northland)
Cylix sp.	--	Western Mascarenes (La Réunion, Mauritius)
"Hippocampus" tyro Randall & Lourie, 2009	BPBM 35555	Seychelles

MNHN 1073 (1), La Réunion; NHMI uncat. (1), Mauritius; SMNS 3476 (2), Red Sea; SMNS 9921 (1), Red Sea. -- *H. tyro*: BPBM 35555 (holotype), Amirantes.

Results

Description

Proportions (Table 2) are part of this description.

Dorsal-fin rays 15; pectoral-fin rays ca. 15 (left side). Trunk rings 14. Subdorsal rings 3; superior trunk ridge ending under dorsal fin with 2 enlarged subdorsal spines that angle posterolaterally; lateral trunk ridge continuous with inferior tail ridge; spines of trunk and tail ridges moderate in size and blunt; first 7 dorsal trunk spines as double spines; head at right angle to trunk (ca. 85°); one suborbital, two supraorbital, and two nose spines; coronet oval and cuplike, with a rugose spine on the side; two supraorbital spines; one suborbital spine; two very small, median dorsal nose spines. Head length 16.1 % of TL; snout length 7.3 % of TL; eye diameter 1.7 % of TL; maximum trunk depth 8.5 % of TL; trunk length 31.2 % of TL. Total length *ca.* 30 mm.

Live colouration (Fig. 1): Snout carmine read, head yellow, covered with whitish dots, posteriorly bright orange, ventrally olive green; eye whitish rose; trunk orange, with three wide brown bars, all covered with tiny white dots, ventrally olive green; dorsal fin translucent, with a submarginal red band, tips of fin rays whitish.

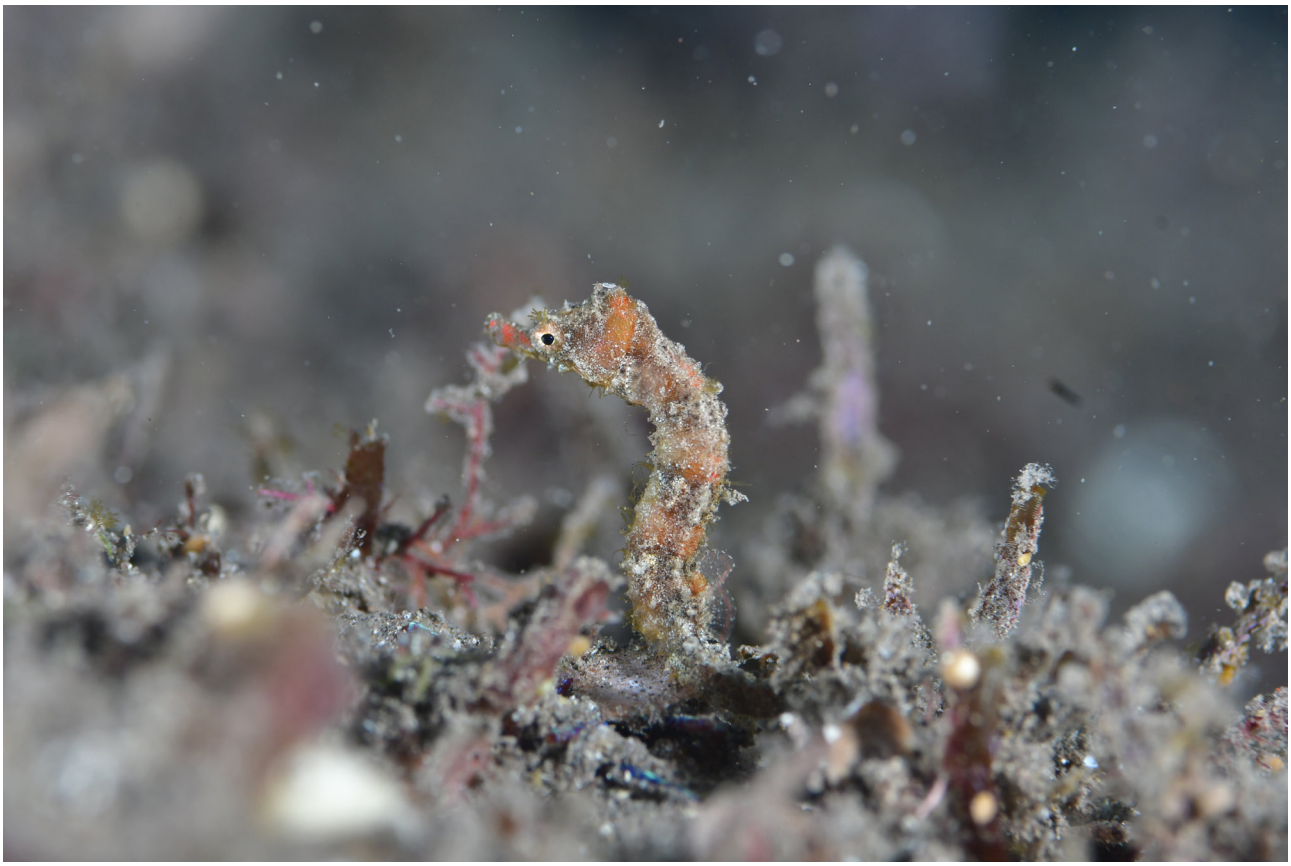

Figure 1. *Cylix* sp., specimen photographed off Sainte-Rose, La Réunion, at 5 m depth, August 2024. Photograph: David Pleuret and Miguel Ramírez.

Table 2. Proportions of the La Réunion specimen of *Cylix sp* (*ca.* 30 mm TL), compared with values of other species of the genus.

	***Cylix* sp. (La Réunion) (present specimen)**	***Cylix nkosi*, Short *et al*. (2024)**	***Cylix tupareomanaia*, Short *et al*. (2021)**	***"Hippocampus" tyro*, Randall & Lourie (2009)**
Head length [in TL]	6.2	5.1-6.2	5.1-6.7	6.2
Maximum trunk depth [in TL]	11.8	13.0-13.8	11.2-13.6	11.2
Trunk length [in TL]	3.2	2.9-3.5	3.2-3.7	3.2
Eye diameter [in head length]	9.8	4.0-6.1	5.1-6.3	6.25
Head depth [in head length]	1.45	1.46-1.68	1.48-1.68	1.65
Snout length [in head length]	3.1	2.7-3.1	2.4-3.1	2.2
Maximum snout depth [in head length]	5.7	5.9-7.3	5.3-5.8	4.5
Coronet height [in head length]	7.0	1.2-2.0	1.9-2.1	9.4
Longest dorsal-fin ray [in head length]	4.2	--	--	3.1
Longest pectoral-fin ray [in head length]	4.3	3.2-3.6	4.8-6.5	4.2

Discussion

Cylix nkosi was described by Short *et al*. (2024) from two specimens, a male (46.6 mm TL) and a female (45.9 mm TL), collected at 22-50 m depth off KwaZulu-Natal (South Africa). *"Hippocampus" tyro* was originally described by Randall and Lourie (2009) from a single, female specimen of 61 mm TL, dredged at 43-48 m depth off the Amirantes (Seychelles). The present paper reports a female specimen, which documents a new record of the genus *Cylix* from La Réunion, differing in the shape of the coronet from all other described species (G. Short, pers. comm., Nov. 2024). Its specific identity remains uncertain as it differs from *Cylix nkosi* and *"Hippocampus" tyro*, but likely represents an undescribed species within the genus. A slightly indistinct photograph of a second specimen

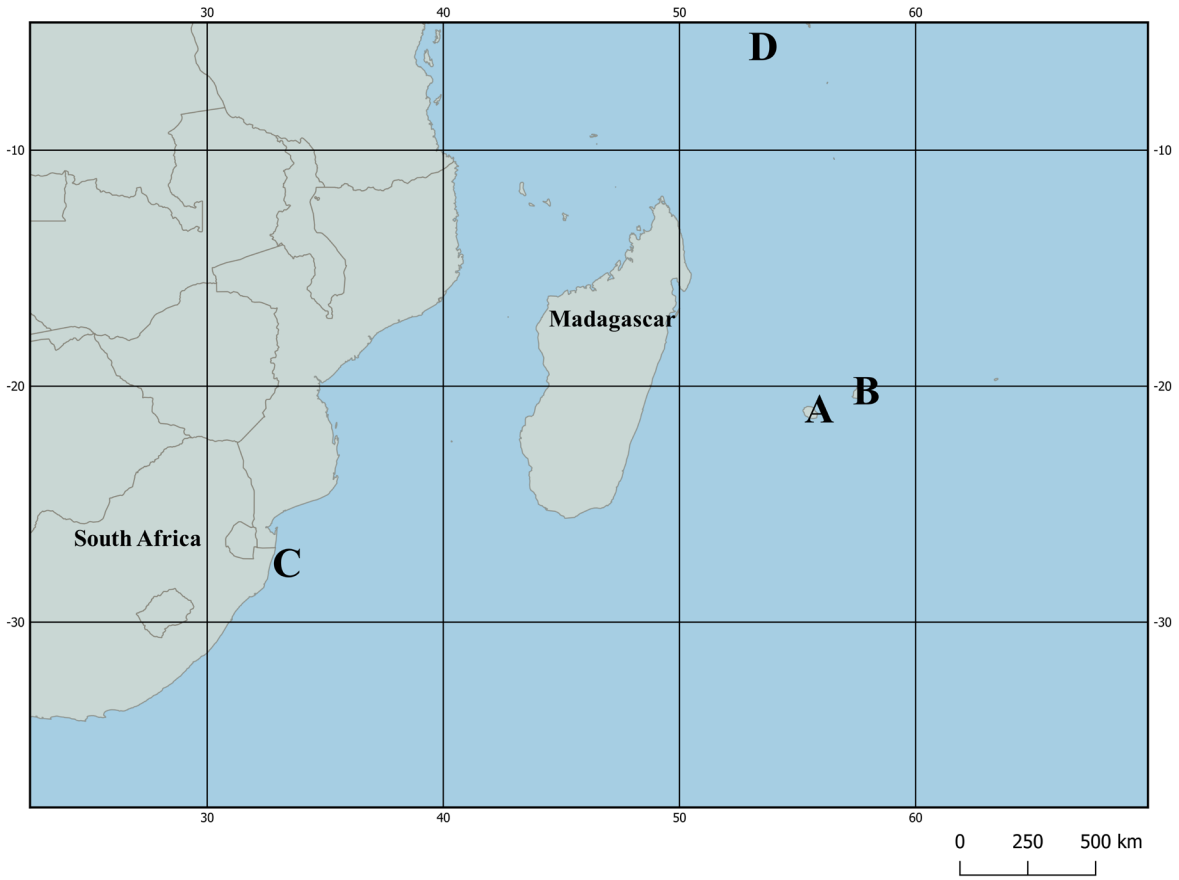

Figure 2. Geographical distribution of genus *Cylix* in the western Indian Ocean. A - New record of *Cylix* sp. from La Réunion; B - record of *Cylix* sp. by Anonymous (2023) from Mauritius (as *Hippocampus tyro*); C - *Cylix nkosi*; D - *"Hippocampus" tyro.*

from Mauritius was published by Anonymous (2023); the sex is indistinguishable, and the depth of occurrence is unknown, but it was photographed during a regular dive session in the lagoon. The known distribution range of *Cylix* sp. in the western Indian Ocean is illustrated in Figure 2.

During an exploration of the fish fauna, a specimen of *Cylix* sp. was photographed off Sainte-Rose, La Réunion. This represents a range extension from the type locality (Amirantes Islands) of ca. 1,710 km to the south, and a confirmed record of this species from the western Mascarenes. From another recent, unconfirmed record from Mauritius, this is an extension of 235 km to the southwest. Although the tail of the specimen is not visible on the photographs, it is clearly identifiable as a species of *Cylix*, and distinguished from other species by several features, including its unusual head shape with a very high crown and characteristic spination, and 14 trunk rings. The characters of the specimen in the photograph agree well with those of *H. tyro*; the proportions visible in the photograph are compared with those provided by Randall and Lourie (2009) in Table 2.

Randall and Lourie (2009: Fig. 1) illustrated a freshly dead specimen of *H. tyro* from the Amirantes Islands, which was overall orange brown with white spots, and the belly whitish; three dark bands were vaguely distinguishable, mainly by dark spots on the back. The present photograph (Fig. 1) is the first detailed documentation of the live colouration of *Cylix* sp. from La Réunion. Here, the snout carmine read, the head yellow, covered with whitish dots, posteriorly bright orange, ventrally olive green; the trunk orange, with three wide brown bars, all covered with tiny white dots, ventrally olive green; and the dorsal fin translucent, with a submarginal red band, tips of fin rays whitish.

The present specimen of *Cylix* sp. was photographed at a depth of 12-18 m (Fig. 3). The habitat is characterized by sand bottom with macroalgae of the species *Amansia detrichiana* Grunow, 1874 (family Rhodomelaceae Horaninow 1847); next to it was a rocky reef of about 15 x 5 m. This reef, extending from 18-28 m depth, was highly diverse, with anemones, nudibranchs, a few sponges, and numerous fish species.

Figure 3. Habitat of *Hippocampus tyro* Randall & Lourie 2009, off Saint-Rose, La Réunion, southwestern Indian Ocean. Photograph: David Pleuret and Miguel Ramírez.

Cylix sp. was photographed in relatively shallow water at 12-18 m depth, while the holotype of "*Hippocampus tyro*" was reported from 43-48 m (Randall and Lourie 2009), and *Cylix nkosi* is known from 22-50 m and *C. tupareomanaia* from 12-17 m. The preferred depth may be related to the water temperature, or, alternatively, the age of the specimen, or the availability of suitable habitats may play a role. Additional research on this rare and elusive species is necessary to gain more information about its biology, and depth distribution.

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