Indian Journal of Geo Marine Sciences
Vol. 53 (08), August 2024, pp. 581-585
DOI: 10.56042/ijms.v53i08.11815

Short Communication

Range extension of Günther's waspfish, *Snyderina guentheri* (Boulenger, 1889) (Synanceiidae: Tetraroginae) from Gujarat, Northeastern Arabian Sea

J B Solanki[a], H L Parmar[b], P V Parmar[c], H V Parmar[c] & S Ragul*[,b]

[a]Department of Fish Processing Technology, College of Fisheries Science, Kamdhenu University, Veraval, Gujarat – 362 265, India
[b]Department of Fisheries Resource Management, College of Fisheries Science, Kamdhenu University, Veraval, Gujarat – 362 265, India
[c]Department of Aquaculture, College of Fisheries Science, Kamdhenu University, Veraval, Gujarat – 362 265, India
*[E-mail: nivinragulsiva@gmail.com]

Received 14 April 2024; revised 09 August 2024

From May 2023 to May 2024, a regular fishery survey was conducted to evaluate the trawl bycatch of Veraval fishing harbour, on the northwestern coast of India. A total of five specimens of Günther's waspfish, *Snyderina guentheri* (Boulenger, 1889) (108.9 – 155.0 mm SL) were sorted out from the low-value bycatch. Previously, *S. guentheri* was only known from the south (Quilon, Kerala) and east (Vishakhapatnam, Andhra Pradesh) coast of India. This study reports its range extension towards the north-eastern coast of the Arabian Sea with detailed morphometric measurements, meristic counts, distribution and radiograph of the reported species, along with a key to its genera.

[**Keywords**: Arabian Sea, Bottom trawler, Bycatch, Gujarat, Waspfish]

Introduction

Waspfish family Synanceiidae (Swainson, 1839), comprises nine subfamilies, 52 valid genera, and about 141 valid species[1]. Subfamily Tetraroginae (Smith, 1949), commonly known as waspfishes or sailback scorpionfishes, consists of 17 valid genera and about 44 valid species[1,2]. Indo-Pacific genus *Snyderina* Jordan & Starks, 1901 comprises only two species, such as *S. guentheri* (Boulenger, 1889) (Northern Indian Ocean) and *S. yamanokami* Jordan & Starks, 1901 (North-western Pacific). Genus *Snyderina* is diagnosed by having the following key characteristics[3]: (i) absence of palatine teeth; (ii) XII–XIII dorsal-fin spines; (iii) last four pectoral-fin rays attached; (iv) cirri, papillae and tentacles are absent on body and eyes; and (v) absence of cleithral spines.

Snyderina guentheri is known for its rarity, and only a few known reports have been documented in the Indian Ocean as well as on the Indian coast. Previously, it was reported from Quilon[4] and Visakhapatnam, the central eastern coast of India[5]. During regular fishery survey, authors collected five specimens of Günther's waspfish, *Snyderina guentheri*, from Veraval fishing harbour for the first time from off Gujarat waters, Northeastern Arabian Sea.

Materials and Methods

From May 2023 to May 2024, a regular fishery survey was conducted at Veraval fishing harbour (20°54'27" N; 70°23'02" E), Gujarat, Northeastern Arabian Sea to document the bycatch species assemblage[4–6]. A total of five specimens of waspfishes belonging to the genus *Snyderina* (108.9 – 155.0 mm *SL*) were sorted out from the multiday trawler bycatch landed at Veraval. The collected specimens were brought to the laboratory and photographed. The species-level identification was done by using previously published keys by Talwar[7] and Chungthanawong & Motomura[3]. The measurements were made using Mitutoyo 150 mm Vernier callipers to the nearest 0.1 mm. The specimen was preserved in 10 % formalin for further studies. Material has been catalogued and deposited in the Department of Fisheries Resource Management museum, College of Fisheries Science, Kamdhenu University, Veraval, for future reference.

Results and Discussion

Systematic position

Family: Synanceiidae Swainson 1839
Subfamily: Tetraroginae Smith 1949
Genus: *Snyderina* Jordan and Starks 1901
Snyderina guentheri (Boulenger 1889)
Günther's waspfish (Fig. 1a, b, c & Table 1, 2)

Type locality: Muscat, Oman, Gulf of Oman, Arabian Sea, North-western Indian Ocean.

Tetraroge guentheri — Boulenger 1889: pp 239, pl. 25

Snyderina guentheri — Randall 1995: pp. 112; — Mandrytsa 2001: pp. 279; — Manilo & Bogorodsky 2003: S102; — Psomadakis *et al.* 2015: pp. 186; —

Naranji & Kandula 2017: pp. 10130 – 10132, Fig. 1, Table 1; — Psomadakis *et al.* 2020: pp. 364; — Poss 2022: pp. 556; — Moazzam & Osmany 2023: pp. 310, Fig. 21.

Material examined

4 specimens, KU/COFS/MUS/010236–39, 108.9 – 155.0 mm *SL* (Fig. 1), 10 June 2023, B. Sureandiran leg., and 1 specimen, KU/COFS/MUS/010245, 122.5 mm *SL*, 12 March 2024, Ashwin Solanki leg., Veraval fishing harbour, 20°54'27" N; 70°23'02" E; off Gujarat at depth range of ca. 120 – 140 m (pers. comm. with fishing crew), Northeastern Arabian Sea.

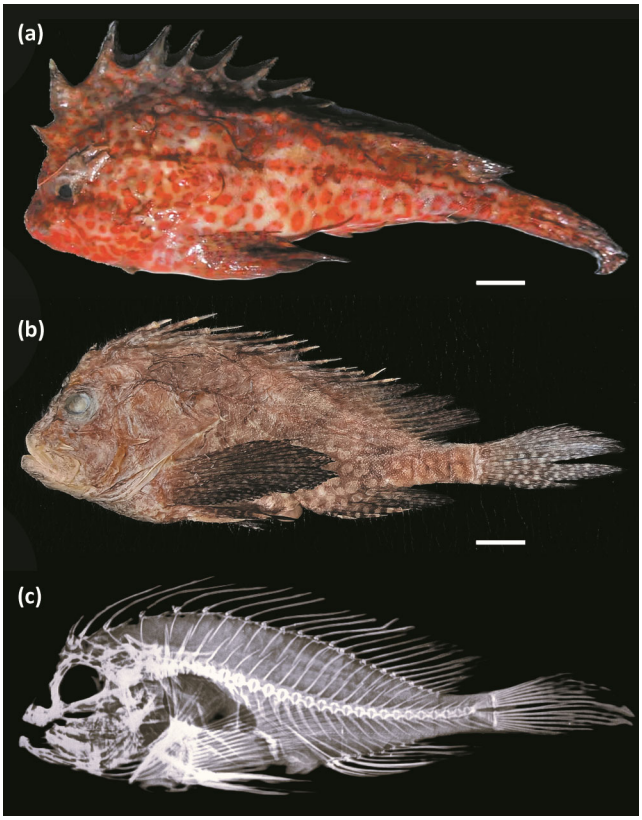

Fig. 1 — *Snyderina guentheri*: (a) Fresh specimen, KU/COFS/MUS/010236, 122.5 mm *SL*; (b) Preserved specimen, KU/COFS/MUS/010245, 155.0 mm *SL*; and (c) Radiograph, from Veraval fishing harbour, Northwestern coast of India: Gujarat. Scale = 20 mm

Description

Dorsal fin elements, XIII+11; anal fin elements, III+6; pelvic fin rays, I+5; pectoral fin rays, III+6; caudal fin rays, 14; lateral line pored tubes, 23 – 25;

Table 2 — Morphometric data for *Snyderina guentheri* from Gujarat, compared with previous studies

Parameters	***Snyderina guentheri* (Boulenger, 1889)**	
	Naranji & Kandula (2017)[8] *n* = 35	**Present study** *n* = 5
Total length (mm)	—	146.5–202.3
Standard length (mm)	85–164	108.9–155.0
Measurements in standard length		
Body depth	30.6–38.7	34.2–36.4
Head length	40–48.2	41.4–41.9
Pre-dorsal fin length	17.2–22.8	18.0–19.5
Pre-pectoral fin length	30.9–40.3	34.9–36.7
Pre-pelvic fin length	33.3–40.3	38.0–39.1
Pre-anal fin length	62.5–72.1	62.0–63.6
Dorsal fin base	80.4–88.7	86.4–87.1
Anal fin base	21.11–29.03	23.0–24.4
Longest dorsal spine height	21.55–29.03	22.0–23.8
dorsal fin height	20–25.80	20.6–22.8
Pectoral fin length	30.64–38.14	35.5–36.8
Pelvic fin length	21.77–30.64	22.5–26.1
Pelvic fin spine length	—	16.4–18.0
Anal spine height	17.77–23.85	17.0–18.3
Anal fin length	20.96–25.80	20.0–22.0
Caudal fin length	—	30.6–32.2
Measurements in head length		
Head depth	53.57–65.90	64.5–65.3
Head width	35.71–45.83	41.5–44.6
Eye diameter	17.85–25.80	16.9–17.9
Pre-orbital length	17.85–27.58	18.4–26.5
Post-orbital length	57.14–65.90	61.5–62.0
Inter orbital length	17.85–27.58	18.4–23.2
Upper jaw length	35.71–46.80	40.7–40.9
Lower jaw length	30.43–40.90	31.3–37.2
Maxillary width	12.5–19.04	12.3–14.1
Snout length	16.07–24.52	20.0–21.8
Caudal peduncle depth	7.54–12.90	11.8–13.0

Table 1 — Comparison of meristic data of *Snyderina guentheri* from current study with previous report and congeneric species, *Snyderina yamanokami*

Parameters	***S. yamanokami* Yamakawa (1976)[9]**	***S. guentheri* (Boulenger, 1889)**	
		Naranji & Kandula (2017)[8]	**Present study**
Dorsal-fin elements	XIII+11	XII–XIII+10–12	XIII+11
Anal-fin elements	III+6	III+5–6	III+6
Pectoral-fin rays	14	13	13
Pelvic-fin rays	I+5	I+5	I+5
Caudal-fin rays	10	13	14
Lateral line pored tubes	20	18–23	23–25
Gill rakers on first arch	3+1+11=15	3–5+1+8–13=13–18	4+1+10–11=15–16
Vertebrae	—	27	27

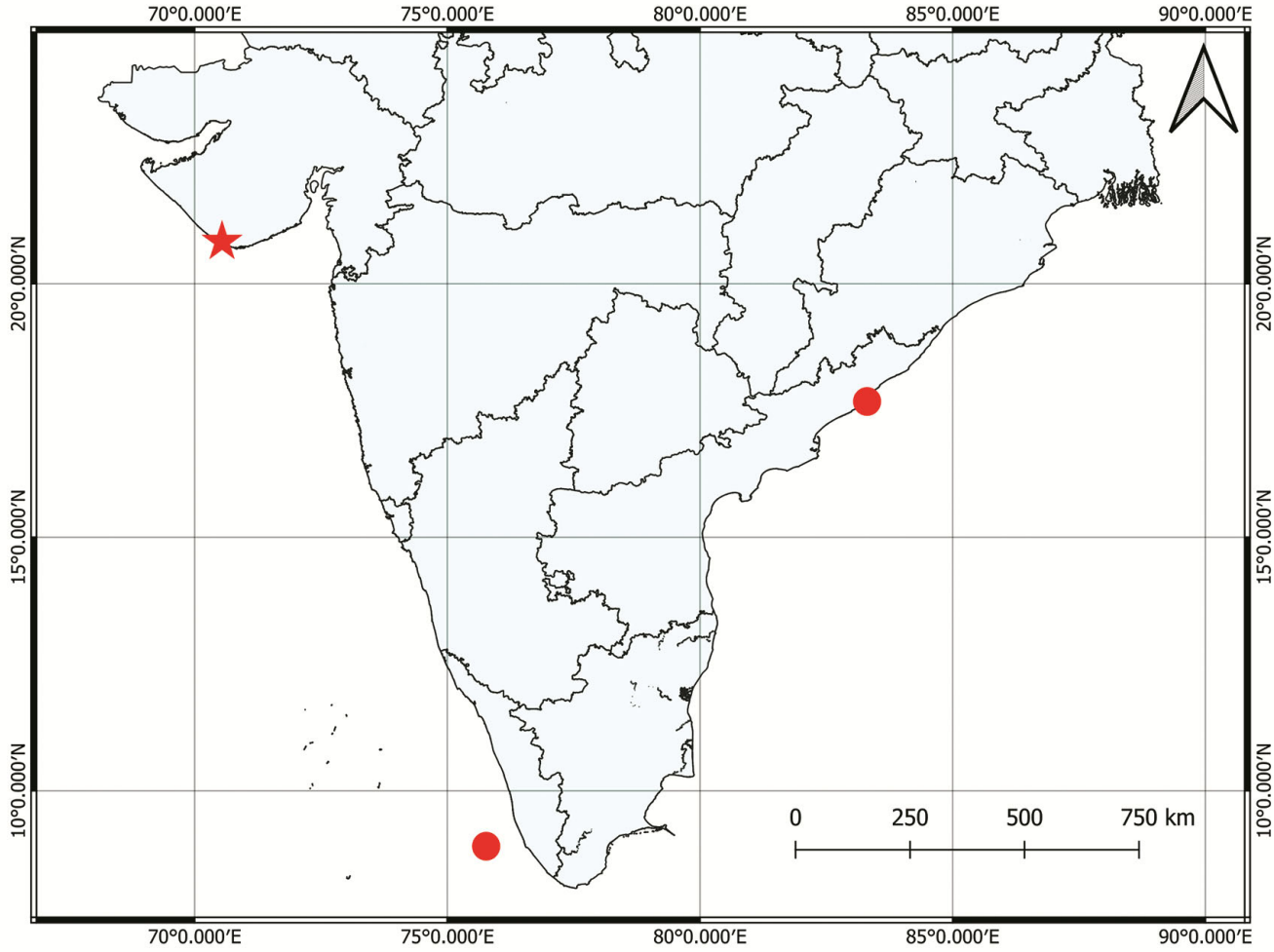

Fig. 2 — Distributional map of *Snyderina guentheri* in the Indian coastal waters. New record from Gujarat (star) and previous records (circle)

gill rakers on 1st arch, 4+1+10–11 = 15 – 16; vertebrae, 27 (Fig. 1c). For a detailed comparison of meristics and morphometrics see Tables 1 & 2.

Body moderately deep, its depth 34.2 – 36.4 % of SL and compressed laterally. Head length 41.4 – 41.9 % of SL. Body scales cycloid, small thin scales embedded on skin; scales absent at head, belly, pelvic, and anal fin bases. Distance between snout and origin of dorsal fin, 18.0 – 19.5 % of SL, between snout and origin of anal fin 62.0 – 63.6, between snout and origin of pelvic fins 38.0 – 39.1; between snout and origin of pectoral fin 34.9 – 36.7 % of SL; caudal peduncle tapered with a depth of 4.8 – 5.4 % of SL.

Almost vertically sloppy head profile, with depth, 64.5 – 65.3 and width, 41.5 – 44.6 % of HL at the posterior preopercular margin. Opercle with ctenoid scales, fully scaled cheek (*i.*e. behind the eye). Snout rounded, which occupied 18.4 – 26.5 % of HL. Eyes somewhat large, diameter width 16.9 – 17.9 % of HL. Large terminal mouth, jaws extended adjacent to mid-eye. Upper jaw length 40.7 – 40.9 % of HL, higher than the lower jaw length 31.3 – 37.2 % of HL. Broad and smooth maxilla with a length of 12.3 – 14.1 % of HL. Small villiform teeth in jaws, palatine teeth absent. A rounded smooth tongue. Two pairs of nostrils present just next to the upper jaw, the first pair short, round and the second pair somewhat elongated, tubular-shaped. Gill rakers are short and stumpy on small gill arches. A pair of pseudo-branchs of gill present at the opercle wall. Spines and ridges: Lachrymal spines, 2; suborbital without spines; preopercular spines, 4 (first strong and sharp then the rest covered with skin); opercle ridge, 2.

Comparatively, the continuous dorsal fin base is longer than the anal fin base 86.4 – 87.1 % of SL, with a longest spine length of 22.0 – 23.8 % of SL and a ray with a length of 20.6 – 22.8 % of SL. Dorsal fin is not attached to the caudal fin, but is not free like the anal fin; the last ray is connected with a

membrane at the caudal peduncle. Relatively very short anal fin base length (23.0 – 24.4 % of SL), with a longest spine length of 17.0 – 18.3 % of SL and ray with a length of 20.0 – 22.0 % of SL. Elongated oval-shaped pectoral fin, 35.5 – 36.8 % of SL. Short rhomboid-shaped pelvic fins with a length of 22.5 – 26.1 % of SL and with a spine, 16.4 – 18.0 % of SL. The last ray of the pelvic fin connected to the belly. Rounded caudal fin with the longest fin length of 30.6 – 32.2 % of SL (Table 2).

Colouration

Fresh specimen (Fig. 1a), reddish to pale brown colour body, on the lateral sides, dark red coloured small dot to comma-shaded blotches are present. Head reddish orange. Unpaired fins with darkened distal edges. Paired fins are somewhat darker than the rest. Pectoral fin with uniform small bright red coloured dots. A large black blotch is presented at the dorsal fin spines (X–VIII). Preserved specimen (Fig. 1b)**,** brown fainted body with dark spots on the lateral sides. Dark black blotch on the dorsal fin spines remains the same.

Remarks

Gunther's waspfish, *Snyderina guentheri*, differs from another representative of the same genus by the number of pectoral-fin rays and caudal-fin rays, especially by lateral line pored tubes and gill rakers on the first arch[3,7]. *Snyderina guentheri* is distinguished from *S. yamanokami* by its number of pectoral-fin rays, 13 (*vs.* 14 in *S. yamanokami*); by a higher number of caudal-fin rays, 14 (*vs.* 10 in *S. yamanokami*); relatively higher number of lateral line pored tubes, 23 – 25 (*vs.* 20 in *S. yamanokami*) and by number of gill rakers on first arch, 4+1+11=16 (*vs.* 3+1+11=15 in *S. yamanokami*).

Distribution

Günther's waspfish, *Snyderina guentheri* has been known from the type locality Muscat[10], Oman[11,12], Pakistan[13–15], and Myanmar[16]. In the Indian subcontinent (Fig. 2), it is reported from off Quilon[7], Visakhapatnam[8], and Veraval, Gujarat (present study).

Conclusion

The new record of *Snyderina guentheri* from the Gujarat coast, confirms the range extension of this species in the Northeastern Arabian Sea. This study indicates that this rare species with scanty records is apparently much more widespread than previously known localities, and is also expected to occur in the intermediate regions. Additional investigations on silty or muddy bottoms in the Western Indian Ocean are essential to document the diversity of such cryptic species.

Acknowledgments

The authors are grateful to the Principal, College of Fisheries Science, Kamdhenu University, for providing facilities enabling this work. The authors are also obliged to research scholar, Mr. B. Sureandiran and fisher, Mr. Ashwin Solanki, for their help in sorting the specimens from the bycatch.

Conflict of Interest

Authors declare no competing or conflict of interest.

Author Contributions

JBS & SR wrote the first version of the manuscript. JBS carried out field sampling and collected the specimens. HLP, PVP, & HVP contributed to the draft, provided critical feedback and helped shape the research. All authors read and approved the final manuscript.

References

1 Fricke R, Eschmeyer W N & Fong J D, Genera/species by family/subfamily in Eschmeyer's Catalog of Fishes, Available Online at: http://researcharchive.calacademy.org/research/ichthyology/catalog/SpeciesByFamily.asp, (Accessed on May 2024).

2 Murugan A, Mahadevan G, Subburaman S, Ragul S & Fricke R, First Record of the Spiny Waspfish, *Ablabys macracanthus* (Bleeker, 1852; Scorpaeniformes: Synanceiidae) from Indian Coastal Waters, *Thalassas*, 39 (2) (2023) 1033–1038. https://doi.org/10.1007/s41208-023-00561-6

3 Chungthanawong S & Motomura H, Review of the waspfish genus *Neocentropogon* (Tetrarogidae), with a key to genera in the family, *Ichthyol Res*, 68 (2021) 404–425. https://doi.org/10.1007/s10228-020-00796-w

4 Ragul S, Parmar H L, Mahadevan G & Fricke R, A new record of the small-headed flounder, *Laeops parviceps* Günther, 1880 (Pleuronectiformes: Bothidae) from India, Indian Ocean, *Zootaxa*, 5538 (3) (2024) 290–292. https://doi.org/10.11646/zootaxa.5538.3.6

5 Ragul S, Parmar H L, Mahadevan G & Fricke R, First record of two cardinalfishes (Teleostei: Apogonidae) from northwestern India, *J Mar Biol Assoc UK*, 104 (e117) (2024) 1–6. https://doi.org/10.1017/S0025315424001061

6 Ragul S, Parmar H L, Mahadevan G & Fricke R, Range Extension of the Round-Headed Flounder, *Parabothus rotundifrons* (Bothidae) in Indian Waters, *J Ichthyol*, 65 (1) (2025) 158–163. https://doi.org/10.1134/S0032945224700814

7 Talwar P K, The rare deep water scorpionfish *Snyderina guentheri* in Indian Seas, *Copeia*, 3 (1977) 580–581.

8 Naranji M K & Kandula S, A new record of Gunther's waspfish *Snyderina guentheri* (Boulenger, 1889)

(Scorpaeniformes: Tetrarogidae) from Visakhapatnam, India, *J Threat Taxa*, 9 (4) (2017) 10130–10132. https://doi.org/10.11609/jott.2879.9.4.10130-10132

9 Yamakawa T, The Record of Scorpaenoid Fish, *Snyderina yamanokami*, Collected from off Amami-Oshima, Kagoshima Prefecture, Japan, *Jpn J Ichthyol*, 23 (1) (1976) 60–61.

10 Boulenger G A, Second account of the fishes obtained by Surgeon-Major A. S. G. Jayakar at Muscat, east coast of Arabia, *Proc Zool Soc Lond*, 2 (1889) 236–246, Pls. 25–28.

11 Randall J E, *Coastal fishes of Oman*, (Crawford House Publishing Pty Ltd, Bathurst, Australia), 1995, pp. 439.

12 Manilo L G & Bogorodsky S V, Taxonomic composition, diversity and distribution of coastal fishes of the Arabian Sea, *J Ichthyol*, 43 (1) (2003) 75–149.

13 Psomadakis P N, Osmany H B & Moazzam M, *Field identification guide to the living marine resources of Pakistan*, FAO species identification guide for fishery purposes, (Food and Agriculture Organization of the United Nations, Rome), 2015, pp. 386, Pls. 1–42.

14 Poss S G, Family Tetrarogidae, Waspfishes, In: *Coastal fishes of the western Indian Ocean*, edited by P C Heemstra, E Heemstra, D A Ebert, W Holleman & J E Randall, (South African Institute for Aquatic Biodiversity, South Africa), Vol 2, 2022, pp. 550–558.

15 Moazzam M & Osmany H B, Scorpionfishes of families Scorpianenidae [sic], Tetrarogidae and Apistidae, from Pakistan, *Int J Biol Biotechnol*, 20 (2) (2023) 293–315.

16 Psomadakis P, Thein H, Russell B C & Tun M T, *Field identification guide to the living marine resources of Myanmar*, FAO species identification guide for fishery purposes, (Food and Agriculture Organization of the United Nations, and Department of Fisheries, Ministry of Agriculture, Livestock and Irrigation, Republic of the Union of Myanmar, Rome), 2020, pp. 694, pls. 1–58.

17 Mandrytsa S A, *Lateral line system and classification of scorpaenoid fishes (Scorpaeniformes: Scorpaenoidei)*, Ph.D. thesis, Perm University, 2001, pp. 393. [In Russian, English summary].