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FIRST OFFICIAL RECORD OF THE OCCURRENCE OF SNAKE MACKEREL *GEMPYLUS SERPENS* CUVIER, 1829 (FAMILY GEMPYLIDAE) IN PAKISTAN

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ABSTRACT

Landing of pelagic oceanic species are very rear specially rounded and elongate body shape fishes which normally escape in pelagic gillnets. This is the first confirmed record of pelagic oceanic species *Gempylus serpens* Cuvier, 1829 commonly called as snake mackerel from Pakistani waters. A sample measuring 83 cm collected from Karachi fish harbor on 20th February 2019.Unique character of the sample were larger lower jaw, dorsal and anal finlets, three large fang on upper jaw, two lateral lines. This document provides a short brief with supporting photograph of the sample and distribution.

Key words: Snake mackerel *Gempylus serpens*, Gempylidae, Swatch area, Pakistan

INTRODUCTION

Family Gempylidae includes the cutlassfish, escolares, oilfish and snake mackerels with twenty four species of sixteen genera found globally(Nelson 2006) only one species *Neoepinnula orentalis*, Gilchrist and von Bond, 1924 found in Pakistani water (Psomadakis *et al*., 2015). Members of this family have elongate and compressed body with strong teeth found in tropical and subtropical seas. Now *Gempylus serpens*is the second species of this family discovered from Pakistani water and the only species which has place in genus Gempylus. This species first time recorded from Jamaica, Western Atlantic. Previously it is described with synonyms by different ichthyologist as *Muraena compressa* (Walbaum, 1792); *Acinacea notha* and *Gempylus notha* (Bory de Saint –Vincent, 1804); *Lemnisoma thyrsitoides* (Lesson, 1831); *Gempylus coluber* (Cuvier, 1832); *Gempylus ophidianus* (Poey, 1860)

MATERIALS AND METHODS

According to concerned fisherman, this single specimen measuring 83 cm was collected on 15th February 2019 from the swatch area of Sindh, east of Karachi on 220 meter depth in pelagic gill net from where the first author obtained this specimen from Karachi fish harbor on 20th February 2019.

Relevant Information regarding capturing, area, net and depth obtained. Morphometric study conducted with photograph which sent to relevant expert for confirmation. After verification specimen fixed in 10 % formalin solution and kept in museum of Marine Fisheries Department, Karachi, Government of Pakistan.

DESCRIPTION

Deeply elongated compressed body. Pointed snout, both jaws ending on a fleshy growth, lower jaw larger then upper and sharply pointed, (Fig.**1**) large mouth, large teeth widely distance maxilla reached down to center of eye, (Fig.**2**) three large fangs on the roof of upper jaw, (Fig.**3**), palatine teeth minute, vomer toothless and rough, large eye interorbital area smooth, (Fig.**4**) two closed separate dorsal fins, first covered a long area with 28 spines, (Fig.**1**) second with one small spine and 11 soft rays with 6 finlets; anal fin with 2 spines and 10 soft rays with 6 finlets; (Fig.**5**) pectoral fins shorter then head length but somewhat longer than snout having 13 soft rays reaching between sixth and seventh dorsal spine; (Fig.**6**) pelvic fins very small just under pectoral fins with a single spine and 4 soft rays;(Fig.**7**) caudal fin extremely forked and small (Fig.**5**). Bifurcate lateral lines one started just under the first dorsal spine (Fig.**8**) run parallel to dorsal spines and end on to the just 25th spines. Second lateral line originated from the same place where the first start, comes down close to pectoral fin tip and run middle of the body up to caudal fin base. Few scale found on caudal fin base, remaining body is scale less. In fresh form the body color was dark brown from the top and lower part was white without lining or spots, all fins dark brown with fairly darker margins, Gillrakers minute, (Fig.**9**)

Morphometric and meristic analysis of this sample are accommodate well with the published description by Kiyomatsu and Iwai (1952), Jones (1960), Ameer Hamsa and Arumugam (1982) Nakamura and Parin (1993)and Myoung *et al*. (2013) and as a result it is identified as the species *G. serpens* with detailed description and measurement.

MEASURMENTS

Weight 570 g total length measured 83 cm, forked length 77 cm, standard length 73.5 cm, snout 6 cm, eye 2 cm, distance from the tip of the upper jaw to origin of first dorsal fin 12 cm, distance from the tip of upper jaw to the second dorsal fin base 56.5 cm, distance from the tip of the lower jaw to the ventral fin is 17cm, distance from the tip of lower jaw to anus 50 cm, pectoral length 7 cm, head length 14 cm, upper jaw 7 cm, lower jaw 8 cm, second dorsal base 6 cm, anal fin base 5 cm.

Fig.1. *Gempylus serpens*

Fig.2. Large conical teeth

Fig.3. Large fang

Fig.4. Interorbital area

Fig.5. Finlets

Fig.6. Pectoral fin

Fig.7. Pelvic fin

Fig.8. Bifurcate lateral line.

Fig.9.Gillrakers

DISTRIBUTION

An epipelagic, bathypelagic and mesopelagic oceanic species live individual widely spread in tropical and subtropical sea between the latitudes of 42° N and 40° S; longitude 180°W - 180°E to a depth of over 600 meters but

common on 200 meter frequently matured specimen found near the surface at night. Found on very low temperature 8°C (Abdussamad *et al*., 2011). In Indian Ocean it was found in the South Africa but first time recorded in 1960 in the central part of Indian Ocean (Jones, 1960).

DISCUSSION

According to Psomadakis *et al.* (2015), no previous record of this species is available and only one member of this family *Neoepinnula orentalis* (Sack fish) is reported from Pakistani water which is distinguished having more body depth and less elongated, two lateral lines found but one runs upper side along the dorsal fins and second on the lower part of the body, having much larger pelvic fin.

This species attained a size of 100 cm but common at 60 cm (SL).It shows carnivores behavior feeds mostly on fishes like Exocoetidae, Myctophidae, Mackerels and Sauries etc. with crustacean and cephalopods. Two specimens collected from Indian Ocean, Sebastian and Vedavyasa Rao (1963) and during study found flying fishes like *Oxyporhampus* sp., *Exocoetus volitans, E.mento, Cypselurus comatus* and *Prognicthys gibbifrons* in their stomach.

Other Scomberide fishes like tuna and marlin preyed upon him, mostly found in the stomach of skipjack tuna and yellow fin tuna (Dragovich, 1971), caught mostly in long line.

Spawning take place round the year and female lays 300,000 to 1,000,000eggs.Sexually ripped specimen male 43 cm and female 50 cm. After maturing fish moves to deeper water and due to non availability of sunlight fish lose con cell as compare to rod cell.

In other part of Indian Ocean this species is common and caught with deep sea trawlers or by large mesh size gill net up to 200 meter depth. Caught round the year but mostly in the month of November to March by trawlers and June to January by gillnets (Abdussamad *et al.*, 2011)

Studied specimen was 570 g whereas as per international game fish association, 15th October 2017, heaviest fish recorded of this species was 4.5 kg caught in costal water of Japan in 2008.

CONCLUSION

Single specimen of *Gempylus serpens* was collected first time from coast of Karachi.

ACKNOLEDMENT

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