

ORIGINAL RESEARCH ARTICLE

New Status on the Occurrence of Snake Eel *Pisodonophis cancrivorus* (Richardson 1844) from Parangipettai Coastal Waters along Southeast Coast of India

Peninal Samuel*, Kalaiselvam Murugaiyan

Centre of Advanced Study in Marine Biology, Faculty of Marine Sciences, Annamalai University, Tamil Nadu, India

Received 04 May 2013; Revised 21 Sep 2013; Accepted 01 Oct 2013

ABSTRACT

Snake eel, *Pisodonophis cancrivorus* is considered as a rare species and also a new addition to the eel distribution in Parangipettai coastal waters along southeast coast of India. This snake eel is occurred in maximum number in the month of December, 2012 throughout the year. Totally 30 specimen were collected as a mass population.

Key words: Snake eel, *Pisodonophis cancrivorus*, Parangipettai.

INTRODUCTION

In south west coast of India, younger stage of eels called Leptocephalai which are mainly belongs to five families viz., Congridae, Opichthidae and Muraenidae, Nemichthyidae and Synphobranchidae. Of the five families Congridae, Opichthidae and Muraenidae were distributed in Indian waters (Balu, 2004). The snake eel fauna of the western Indian Ocean is rich diverse and poorly known. Smith, (1962) included 55 species in his monograph of the Western Indian Ocean and Red Sea Opichthids.

Opichthids are predominant member of deep sea demersal fishes from the continental slope of abyssal plain (Alcock, 1899) the earlier synopsis of Opichthidiformes fishes in India reported 15 genera of the family Opichthidae. The first catalogue of Opichthidiformes focused at the genus level and species classification was not complete (Cohen *et al.*, 1978). Subsequently, catalogue published included all Opichthidiformes fishes of the world which describes 48 genera and 218 species of deep sea fishes under the family Opichthidae.

Most Opichthids occupy habitats shallower than 100m, ranging from coral reefs to sand and mud substrates, entering rivers and estuaries. Recent deep water trawling and submersible captures of Opichthids have uncovered a number of new species living at a depth as great as 1300m (Castle and McCosker 1999; McCosker and Chen 2000).

Although most Opichthids are undesirable as a human protein. They are readily consumed by other fishes and their role in marine ecosystem is poorly understood. McCosker, (2005) identified *Opichthus pullus* a new species of snake eel, subfamily Opichthidae is described from specimens trawled in deep water (106-154m) off Angola and Guinea-Bissau. McCosker and Chen, (2000) recorded a new species of deep water Snake eel, *Opichthus aphotistos* with comments on *Neechelys retropinna* (Anguilliformes, Opichthidae) from Taiwan.

MATERIALS AND METHODS



Totally 30 specimen of Snake eel (50cm in total length) were collected from Annan Kovil landing centre, Parangipettai (lat.11° 29'N long 79 °46'E) along south east coast of India (**Fig 1**)Specimens

were collected on December 2012 by using long line (baited with sardine head) at a depth of about 18m during the night (22:00hrs). The Snake eel were identified based on Morpho metric and meristic characteristics (Fischer and Whitehead, 1974).

RESULTS AND DISCUSSIONS

The description of the specimen examined is as follows: Body elongated almost cylindrical, Anterior nostril tubular, posterior nostril lower along the edge of lip; snout moderately protruding in front of lower jaw; teeth in jaws and on vomer (roof of mouth) granular to molariform, but sharper on jaws and pointed in young and on sides of lower jaw, multi serial; dorsal fin originating over front portion of pectoral fins which are well developed, pelvic fin absent. Total length 50cm, predorsal length 6cm, preanal length 25.2cm, and head length 4cm, body depth 2.5 all as percentage of total length. Eye diameter 0.7cm and snout length 1.2 cm, all as a percentage of head length. Body color was uniform brownish olive above and light yellow below, dorsal fin with a narrow black edge and a blackish spot anteriorly. Based on this characters sample was identified as *Pisodonophis cancrivorus* is belongs to the Order- Anguilliformes, Family Opichthidae. It is widely distributed in Indo-pacific: Red sea and East Africa to French Polynesia, North to the Ogasawara Islands, South to Australia.



This long fin Snake eel grows up to maximum size of about 50cm total length male/ unsexed; it is Reef associated, anadromous, freshwater, brackish, marine and it occurs in lagoons and estuaries, entering freshwater. Often in tidal channels where loose groups congregate and usually seen with just the head exposed. Caught most often in tidal areas and estuaries (ref.12693) by using bag nets and similar gear. Marketed fresh harmless to human being and very similar to *Pisodonophis semicinctus* vary in its color that

have dark patches (2 on head and 16 over body). The saddled Snake eel is a demersal species found on shallow coast of upto 30cm. Generally, snake eels use to burrow into sandy and muddy bottoms (Bauchot, 1986). It is distributed in the eastern Atlantic from morocco to Angola and the western Mediterranean sea (Algeria, France, Sicily, Ligurian sea, Tunisia) Bilecenoglu *et al.* (2009) reported a new data on the occurrence of the tropical Atlantic originated saddled Snake eel, *Pisodonophis semicinctus* (Richardson, 1848) and the Indian ocean originated striped piggy, *Pomadasystridens* (Forsskal, 1775) are being recorded for the first time along Turkish coast. Prokofiev, (2006) recorded eight species of morays from the soft grounds in the bay of Nha Trang (central Vietnam); one of these species obviously, new for science *Echidna delicatula*, *Echidna polyzona*, *Gymnothorax minor*, *Gymnothorax prolatus*, *Gymnothorax reeversii*, *Gymnothorax punctatofasciatus*, *Strophidon sathete*. McCosker, (2004) identified a new species of finless eel, *Ichthyapus acutinestrus* from the intertidal of Ascension Island. Alam and Islam, (2010) assessed the genetic structure of the fresh water mud eel that could be used as a baseline study for taking any program on conservation and stock improvement of *Monopterus albus*. Mathew, (1990) and Pillai *et al.* (1996) reported that the need for exploitation on deep sea fishes is gradually gaining importance in the recent years as the production from the present fishing grounds alone would be able to meet the future nutritional demand of the country. The specimen seems to have recently reached south coast, Porto novo, and the local fisherman also stated that the species was absent from landing until recently.

ACKNOWLEDGMENT

The authors would like to thank Dr. K. Kathiresan, Dean and Director, Centre of Advanced Study in Marine Biology, Faculty of Marine Sciences, Annamalai University for providing facilities and also to UGC, BSR Research fellowship for providing financial support during the study period.

REFERENCES

1. Alam, M.S and M.D.Islam, 2010. DNA fingerprinting of the Freshwater Mud Eel *Monopterus albus* (Hamilton) by Randomly Amplified Polymorphic DNA (RAPD) Marker. *International Journal of*

- Biotechnology and Biochemistry*, 16:271-278.
2. Alcock, (1899). A descriptive catalogue of the Indian deep sea fishes in the Indian Museum, *International Science publisher USA*.87pp
 3. Balu.S. (2004). Studies on the Leptocephalai of Deep Water Scattering Layer of the South West Coast of India .PhD thesis. Karnataka University.
 4. Bauchot, M.L. (1986). Ophichthidae. In: Fishes of the North-Eastern Atlantic and the Mediterranean, P.J.P. Whitehead, M.-L. Bauchot, J.-C. Hureau, J. Nielsen & E. Tortonese (Eds.), vol. 2, Paris, UNESCO. 577-585.
 5. Bilecenoglu, M., M.Kaya and A. Eryigit, 2009. New Data on the Occurrence of Two Alien Fishes, *Pisodonophis semicinctus*, *Pomadasys stridens*, from the eastern Mediterranean sea. *Mediterranean Marine Science*, 10 (2): 151-155
 6. Castle, P.H.J. and J.E. McCosker, 1999. A new genus and two new species of myrophine worm-eels, with Comments on *Muraenichthys* and *Scolecenchelys* (Anguilliformes: Ophichthidae). *Records of the Australian Museum*, 51 (2): 113–122.
 7. Cohen, D. M. and J.G.Nielsen, 1978. Guide to the identification of genera of the fish order Opichthidiformes with a tentative classification of the order, *NOAA technical reports NMFS Circularae*.417:1-72.
 8. Mathew, KJ. (1990). *Proceedings of the First Work Shop On Scientific Results of FORV Sagar Sampada*, Cochin, CMFRI, 465pp.
 9. Pillai, V.K., S.A.H.Abidi., V.Ravindran, K.K.Balachandran and V Agadi. 1996. Proc. Second Workshop Scient. Result. *FORV Sagar Sampada. Department of Ocean Development*, New Delhi, 564 pp.
 10. McCosker, J.E and Y.Chen, 2000.A New Species of Deep Water Snake Eel, *Opichthus aphotistos*, with comments on *Neenchelys retropinna* (Anguilliformes; Opichthidae) from Taiwan. *Ichthyological research*. 47(4):353-357.
 11. McCosker, J.E. (2005). A New Species of Deep Water Snake Eel *Opichthus pullus* (Anguilliformes; Opichthidae), from Angola and Guunea-Bissau. *Proceedings of the California Academy of Sciences*.56:669-674.
 12. McCosker, J.E.(2004). A new species of Finless Snake Eel (Anguilliformes: Opichthidae) from Ascension Island with comments on *Ichthyapus acutirostris* *Proceedings of the California academy of sciences*, 55: 169-173.
 13. Prokofiev, A.M. (2010). Additions to the species composition of Morays of the Bay of Nha Trang (South China Sea, Central Vietnam) *Journal of Ichthyology*, 50:38-43.
 14. Smith, J.L.B. (1962). Sand dwelling eels of the Western Indian Ocean and the Red Sea. *Rhodes University Ichthyology bulletin*, 24:447-466.