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THE SLENDER SUNFISH, *RANZANIA LAEVIS* (ACTINOPTERYGII: TETRAODONTIFORMES: MOLIDAE), IN THE COASTAL WATERS OF THE OMAN SEA

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Abstract. Captures of the slender sunfish, *Ranzania laevis*, are reported off the coastline of the cities of Sohar and Seeb, Oman Sea, Sultanate of Oman in February and March 2009. Their association with the environmental factors such as warming process is discussed.

Keywords: unusual occurrence, *Ranzania laevis*, slender sunfish, Sultanat of Oman, Oman Sea

In February and March 2009, an unusual occurrence of the slender sunfish, *Ranzania laevis* (Pennant, 1776) (Fig. 1), was recorded along the coasts of the Oman Sea. Two specimens were captured from the coasts of Oman Sea, one from the coast of Sohar city and the other from the coast of Seeb city, by a local fisherman in surface waters (< 10 m) using seine net. The fishes were 495 mm and 507 mm in total length (TL) and 3450 g and 3700 g respectively. Morphometric and meristic details following Jardas and Knežević (1983). The specimens were deposited in the fish collection of the Marine Science and Fisheries Centre, Ministry of Fisheries Wealth, Muscat, Sultanate of Oman, catalogue numbers OMMSFC 0633 and 0666, respectively. Morphometric and meristic details are given in Table 1.

Ranzania laevis, the monotypic type species of *Ranzania*, is epipelagic and cosmopolitan. Its distribution includes Florida (USA), Martinique, Venezuela, and Brazil in the Western Atlantic (Dennis et al. 2004); from Scandinavia to Sierra Leone in the Eastern Atlantic (Tortonese 1986, 1990), the Mediterranean Sea (Specchi and Bussani 1973, Parenzan 1978; central California, USA to Chile in the Eastern Pacific where it is rare north of Mexico (Eschmeyer et al. 1983), in the western central Pacific (Masuda et al. 1984, Shao unpublished**) and in the eastern Indian Ocean (Fujita and Hattori 1976, Hutchins 2003). Previous studies on the ichthyofauna of the Red Sea, the Arabian Sea, Oman Sea, and the Persian Gulf have not indicated the presence of *R. laevis* (see: Botros 1971, Kuronuma and Abe 1972, Chakraborty 1984, Al-Baharna 1986, Randall 1986, 1995, Hussain et al. 1988, El-Etreby 1993, Al-Sakaff and Esseen 1999).

Although several captures have been reported from temperate waters (Parin 1968), the capture reported herein is the first for the Oman Sea and the northernmost record of slender sunfish adult for the Indian Ocean.

Frasser-Brunner (1951) recognized two subspecies of the slender sunfish, *R. laevis laevis* in the Atlantic Ocean, and *R. laevis makua* in the North Pacific. The two subspecies differ in a number of characters such as the position of the axil of pectoral fin in relation to the level of centre of eye and height of anal fin relative to the head length. The external morphology of the specimens at hand agrees with the description provided by Frasser-Brunner (1951) and matches the characteristics of the subspecies *R. laevis laevis* in having axil of pectoral fin well below level of centre of eye and height of anal fin less than 3/5 length of head. The latter character fits one of the specimens, but not the other. Mixture of subspecific characters

Fig. 1. *Ranzania laevis*, 495 cm TL, Sohar, Sultanate of Oman, Gulf of Oman, OMMSFC 0633 (photo: Laith A. Jawad)

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** Shao K.-T. 1997. A checklist of fishes recorded in Taiwan and their distribution around Taiwan. Unpublished database.

Table 1

Morphometric and meristic characters of *Ranzania laevis* collected from the Gulf of Oman compared with the specimens obtained from the literature (NA = not available)

Character (mm) and ratios (%)	Present study specimens		Phillipps (1941)	Jardas and Knežević (1983)
	OMMSFC 0633	OMMSFC 0666		
Morphometrics				
Total length (TL)	495	507	374	420–560
Standard length	470	470	NA	490–528
% TL	94.9	92.7	NA	92.5–94.3
Head length (HL)	168	186	142	152–193
% TL	99.7	36.7	37.9	34.3–36.8
Prepectoral fin length	85	190	NA	200–220
% TL	17.2	31.8	NA	37.7–39.3
Predorsal fin length	443	450	NA	385–496
% TL	89.5	88.8	NA	88.4–91.7
Preanus length	370	356	NA	325–400
% TL	99.3	70.2	NA	76.9–77.4
Preanal fin length	379	418	NA	NA
% TL	99.2	82.9	NA	NA
Greatest body depth	250	230	152	168–280
% TL	50.5	45.4	40.6	38.6–50
Body depth at pectoral fin origin	235	218	NA	NA
% TL	47.5	43.0	NA	NA
Pectoral fin length (PFL)	102	106	66	103–110
% TL	20.6	20.9	17.6	194–196
Dorsal fin length (DFL)	127	129	NA	130–160
% TL	25.7	25.6	NA	24.5–28.6
Clavus length	182	170	104	NA
% TL	36.8	33.7	27.8	NA
Anal fin length (AFL)	110	130	84	137
% TL	22.2	25.8	22.5	25.8
Preorbital length	67	70	NA	55–73
% HL	39.9	37.6	NA	35–38.5
Eye diameter	28	30	NA	255–350
% HL	17	1.61	NA	13.4–18.1
Mouth diameter	25	15	NA	NA
% HL	15.2	8.1	NA	NA
Interorbital distance	50	59	NA	NA
% HL	25.8	31.9	NA	NA
Dorsal fin base	57	52	89	45–70
% DFL	1.2	40.3	NA	34.6–43.8
Pectoral fin base	26	24	NA	27–30
% PFL	25.5	22.6	NA	26.2–27.3
Anal fin base	62	48	NA	45
% AFL	56.4	34.6	NA	32.8
Meristics				
Number of dorsal fin rays	17	15	15	17–18
Number of pectoral fin rays	14	12	14	13–14
Number of anal fin rays	18	17	18	18–20
Number of clavus fin rays	19	18	19	17–19

in slender sunfish is not unusual event and was reported for a specimen collected from Mauritius (deposited in Natural History Museum, London) reported by Fraser-Brunner (1951), and it is also observed in the two slender sunfish specimens collected recently from marine waters of Iraq, northwestern Persian Gulf (Jawad et al., unpublished data).

As far as the authors are aware, few studies have given morphological measurements and meristic data for the recorded sunfish specimens collected from the seas around the world (Phillipps 1926, Jardas and Knežević 1983). These data are here compared with data obtained in the present study (Table 1). The maximum size reached by this species is 1000 mm in total length (TL) (Claro 1994). The size of our specimens fall near the upper maximum size limit given for a series of *R. laevis* specimens collected from various localities around the world (Phillipps 1926, Jardas and Knežević 1983, Castro and

Ramos 2002). The other body proportions agree well with those given by other authors (Table 1).

Although it could be several explanations for the presence of this fish in the coastal waters of Oman Sea (e.g., ballast water of ships playing between Europe and the Persian Gulf). Strictly marine and cosmopolitan, *R. laevis* is a taxon with different ecological preferences, one of which for example, has a larval pelagic existence in coastal waters (Robison 1975, Wan and Zhang 2005).

It could be related with changes in environmental factors such an increase of sea surface temperature. Warmer water masses might cause the slender sunfish to proceed further north of its native distribution. A sudden southern warming process of the sea surface in the Oman Sea area was evident during the period January–February 2009 where warm water masses were recorded entering through the Straight of Hurmoz (Al-Yamani, personal communication). The relation between a sudden rise in sea surface water temperature and the presence of *R. laevis* was also observed by Castro and Ramos (2002), who related the presence of *R. laevis* off Gran Canaria (Canary Islands) to the sudden west-east warming process of the sea surface in the central Atlantic.

Since only two specimens were collected and since no further individuals were obtained, it is premature at this stage to consider this species among the fish fauna of Oman. It should only be considered as such, if a breeding population of this species is maintained in the area.

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REFERENCES

Al-Baharna W. 1986. Fishes of Bahrain. Ministry of Commerce and Agriculture. Directorate of Fisheries, Manama, Bahrain.

Al-Sakaff H., Esseen M. 1999. Occurrence and distribution of fish species off Yemen (Gulf of Aden and Arabian Sea). Naga, the ICLARM Quarterly **22** (1): 43–47.

Al-Shaqsi H. 2007. Hydrography parameters for Omani waters 2001–2003. Ministry of Fisheries Wealth. Sultanate of Oman.

Botros G.A. 1971. Fishes of the Red Sea. Oceanography and Marine Biology Review **9**: 211–348.

Castro J.J., Ramos A.G. 2002. The occurrence of *Ranzania laevis* off the Island of Gran Canaria, the Canary Islands, related to sea warming. Journal of Fish Biology **60** (1): 271–273. DOI: 10.1006/jfbi.2001.1834 and DOI: 10.1111/j.1095-8649.2002.tb02407.x.

Chakraborty D. 1984. Fishery statistics in the People's Democratic Republic of Yemen. An expanded plan of development. FAO. Report No: FAO-FI—RAB/81/002/23, Fiche No: 85X00689.

Claro R. 1994. Características generales de la ictiofauna. Pp. 55–70. *In*: Claro R. (ed.) Ecología de los peces marinos de Cuba. Instituto de Oceanología Academia de Ciencias de Cuba and Centro de Investigaciones de Quintana Roo.

Dennis G.D., Hensley D., Colin P.L., Kimmel J.J. 2004. New records of marine fishes from the Puerto Rican Plateau. Caribbean Journal of Science **40** (1): 70–87.

El-Etreby S.G. 1993. Experimental trawl, fishing survey for the demersal fishes in the Red Sea coast of the Republic of Yemen. Journal of the Egyptian-German Society of Zoology **B 10**: 13–37.

Eschmeyer W.N., Herald E.S., Hammann H. 1983. A field guide to Pacific coast fishes of North America. Houghton Mifflin Company, Boston.

Fraser-Brunner A. 1951. The ocean sunfishes (Family Molidae). Bulletin of the British Museum (Natural History), Zoology Series **1**: 89–121.

Fujita K., Hattori J. 1976. Stomach content analysis of long-nose lancetfish, *Alepisaurus ferox* in the eastern Indian Ocean and the Coral Sea. Japanese Journal of Ichthyology **23** (3): 133–142.

Hussain N.A., Naima A.K., Al-Hassan L.A.J. 1988. Annotated check list of the fish fauna of Khor Al-Zubair, North West of the Arabian Gulf, Iraq. Acta Ichthylogica et Piscatoria **18** (1): 17–24.

Hutchins J.B. 2003. Fishes checklist for Western Australia. http://www.museum.wa.gov.au. Downloaded on 16 January 2010.

Jardas I., Knežević B. 1983. A contribution to the knowledge of the Adriatic ichthyofauna—*Ranzania laevis* (Pennant, 1776) (Plectognathi, Molidae). Bilješke-Notes, Institut za oceanografiju i ribarstvo, Split **51**: 1–8.

Kuronuma K., Abe Y. 1972. Fishes of Kuwait. Kuwait Institute for Scientific Research, Kuwait, Kuwait.

Masuda H., Amaoka K., Araga C., Uyeno T., Yoshino T. (eds.) 1984. The fishes of the Japanese Archipelago. Vol. 1. Tokai University Press, Tokyo, Japan.

Parin N.V. 1968. Ichthyofauna of the epipelagic zone. Israel Program for Scientific Translations, Jerusalem.

Phillipps W.J. 1926. New or rare fishes of New Zealand. Transaction and Proceeding of the Royal Society of New Zealand **71**: 237–245.

Randall J.E. 1986. Red Sea reef fishes. Immel Publishing, London.

Randall J.E. 1995. Coastal fishes of Oman. University of Hawaii Press, Honolulu, Hawaii.

Robison B.H. 1975. Observations on living juvenile specimens of the slender mola, *Ranzania laevis* (Pisces, Molidae). Pacific Science **29**: 27–29.

Tortonese E. 1986. Molidae. Pp. 1348–1350. *In*: Whitehead P.J.P., Bauchot M.L., Hureau J.C., Nielsen J., Tortonese E. (eds.) Fishes of the north-eastern Atlantic and the Mediterranean. Vol. III. UNESCO, Paris.

Tortonese E. 1990. Molidae. Pp. 1077–1079. *In*: Quero J.C., Hureau J.C., Karrer C., Post A., Saldanha L. (eds.) Check-list of the Fishes of the Eastern Tropical Atlantic (CLOFETA). Vol. 2. JNICT, Lisbon and UNESCO, Paris.

Wan R.-J, Zhang R.-Z. 2005. Spatial distribution and morphological characters of the eggs and larvae of the slender mola *Ranzania laevis* from the tropical waters of the western Pacific Ocean. Current Zoology **51** (6): 1034–1043.

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