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**NEW RECORD OF THE TOOTHPONY,
GAZZA MINUTA (OSTEICHTHYES: LEIOGNATHIDAE)
FROM THE COASTS OF MUSCAT CITY
AT THE SEA OF OMAN, SULTANATE OF OMAN**

RIASSUNTO

In questo lavoro si descrive il primo rinvenimento di *Gazza minuta* nelle acque dell'Oman. La segnalazione è stata effettuata sulla base del ritrovamento di 6 esemplari catturati lungo le coste della città di Mascate. Attraverso l'analisi morfometrica e meristica degli esemplari ed il confronto dei dati con quelli di individui provenienti da altre stazioni note, è stato possibile attribuire con certezza gli esemplari a *G. minuta*, rendendo questa segnalazione il primo record per tale specie nelle acque dell'Oman.

SUMMARY

The first record of the toothpony, *Gazza minuta* in Oman waters is reported based on 6 specimens. 60-72 mm standard length specimens were captured by seine net from coasts of Muscat City, Sea of Oman. This account is considering the first reliable record of *G. minuta* from the Oman Sea. Morphometric and meristic data are provided and compared with those recorded from different parts of the world.

INTRODUCTION

Members of the family Leiognathidae are characterised by a silver, small, and laterally compressed body, usually not exceeding 300 mm in standard length (SL)(KIMURA *et al.*, 2005). In their revision, SHEN and LIN (1985) have



Figure 1 - *Gazza minuta*, OMMSFC 1091, 65 mm Standard length, captured by seine net from coasts of Muscat City at the Sea of Oman, April 2011.

recorded three genera and 12 species belonging to the family Leiognathidae. Since then the ponyfish family passed through drastic changes including the discovery of novel taxa. At present, this family comprises 47 species belonging to 9 genera (CHAKRABARTY *et al.*, 2010). The genus *Gazza* was originally described by Rüppell in 1835-38 and the family Leiognathidae was composed primarily of this genus in addition to the genera *Leiognathus* and *Secutor* (DUNLAP and MCFALL-NAGAI, 1984). The genus *Gazza* comprises 13 species (ESCHMEYER and FRICKE, 2012) widely spread within the entire geographic range of the family.

In Oman waters in general, the family Leiognathidae consists of 8 species belonging to 3 genera (RANDALL, 1995). In the Arabian Sea coasts of Oman alone, this family comprises 6 species belonging to 3 genera (LAITH JAWAD, Unpublished data). In his book on the coastal fishes of Oman, RANDALL (1995) reported *Gazza minuta* from the waters of Oman. The record of RANDALL (1995) does not report any specific reference about the place in Oman where the fish was collected, which leads to consider this record as an incomplete record of its presence in the Oman Sea. Therefore, our record is the first reliable record of *G. minuta* from the Oman Sea.

Gazza minuta is distributed in the Red Sea, Zanzibar, Mossambique, Delagoa Bay, Natal Coast, Madagascar, Bourbon, Mauritius, Seychelles, India including Andamanes and Minicoy Islands, Sri Lanka, Siam, Formosa, southern Japan, Philippines, Indo-Australian Archipelago, Australia (Queensland), New Guinea, Solomon Islands, New Britain, Tahiti, Tanna and Rarotonga (FROESE and PAULY, 2010).

MATERIALS AND METHODS

During April 2011, 6 specimens of *Gazza minuta* (60-72 mm SL)(Fig. 1) were captured by seine net from coasts of Muscat City, Sea of Oman. The specimens were measured fresh to the nearest 0.1mm and fixed in formaldehyde/seawater solution 10% for three weeks and transferred to 70% ethanol/distilled water solution for long term preservation. The specimens were stored in the dark collection room of the Marine Science and Fisheries Centre, Ministry of Agriculture and Fisheries Wealth, Muscat, Oman, catalogue numbers OMMSFC 1091.

RESULTS

Measurements are given in Table 1. *Gazza minuta* exhibited the following set of characteristics: body rhomboid but somewhat slender, laterally compressed. The dorsal and ventral profiles are almost equally convex. The mouth protracts forward and can extend about 15-20% of the SL. The lower jaw profile is straight. The snout is short. The greatest body depth is reached at the vertical from the dorsal-fin origin to the pelvic-fin origin. The pelvic-fin origin is slightly anterior to the dorsal. The anal-fin origin is at the vertical from the last dorsal-fin spine. The dorsal head profile is straight. Lips are thick and broad. The posterior margin of the maxilla is exposed and reaches the vertical through the anterior margin of the pupil. The most anterior teeth are large and caniniform. The eyes are large. There are no scales on the chest or nuchal region and most of the remainder of the body appears scaled except the head. Lateral line is convex from the origin and parallel towards the dorsal profile, extending posteriorly to the base of the caudal fin.

Table 1. Morphometric measure and meristic characters of *Gazza minuta*.
TL= total length; SL=standard length. Mean value in parenthesis.

Morphometric characters	
Total length (TL)	79-91 (82.3)
Fork length (FL)	68-81 (72.7)
% in TL	86.9-89 (74.9)
Standard length (SL)	60-72 (64.3)
% in TL	77.2-79.1 (78.1)
Head length (HL)	20-23 (20.3)
% in SL	16.2-31.9 (28.9)
Preorbital length	5-7 (5.7)
% in HL	25-31.6 (27.9)
Postorbital length	12-16 (13.2)
% in HL	60-69.6 (64.7)
Predorsal fin length	23-28 (25.3)
% in SL	38.5-43.3 (39.5)
Postdorsal fin length	57-70 (61.2)
% in SL	92.3-98.4 (95)
Prepectoral fin length	21-23 (22.3)
% in SL	31.8-37.5 (34.7)
Pectoral fin length	11.6-16.2 (13.5)
% in SL	19-25.2 (19.9)
Preanal fin length	33-37 (35.8)
% in SL	51.5-59.7 (55.7)
Postanal fin length	53-68 (60.3)
% in SL	86.9-96.8 (92.9)
Preanus length	27-32 (29.8)
% in SL	44.4-50.8 (46.5)
Anal fin length	25.3-30.9 (29.2)
% in SL	41.5-48.9 (45.2)
Caudal peduncle length	2.9-4.9 (3.2)
% in SL	3.9-6.3 (4.9)
Body depth at opercle	21.9-26.9 (24.6)
% in SL	36.5-42.3 (42.4)
Body depth at the body midline	26.4-31.3 (28)
% in SL	30.1-45.8 (41.5)

Meristic characters	
Dorsal fin spines	8
Dorsal fin rays	15-16
Pectoral fin rays	13-14
Pelvic fin spines	1
Pelvic fin rays	5
Anal fin spines	3
Anal fin rays	13-14

Colour: the body is silvery-white. The pelvic-fin spine is silvery. The membrane of the spinous region of the dorsal fin has scattered melanophores, which extend from about 1/4 the length of the second dorsal-fin spine to its distal margin. There is no obvious dorsal flank pigmentation pattern. There is a black region along the posterior margin of the lower jaw in some specimens. The pectoral-fin axil is black and the pectoral fin is yellowish. The dorsal and anal-fin membranes are yellowish. The pelvic-fin axillary scale is large and silvery.

DISCUSSION

Due to the similarity in overall body shape and proportions, *Gazza minuta* and *Gazza dentex* (VALENCIENNES in CUVIER and VALENCIENNES, 1835) are likely to have been often confused. *Gazza dentex* generally has a slightly deeper body than *G. minuta*, although the proportional measurements of body depth may overlap in the two species (YAMASHITA *et al.*, 1998). *Gazza minuta* differs from the other congeneric species, *G. achlamts* Jordan and Starks, 1917, in having the following characters: dorso-lateral surface of body anterior to the base of sixth or seventh dorsal-fin spine naked (vs. almost scaled except for anteriormost part), and the tips of neural and haemal spines of the fifth pre-ural centrum forming oar-like plates (vs. pointed, not forming oar-like plates) (JAMES, 1975; YABUMOTO, 1980; JONES, 1985). As far as the authors know, few studies on *G. minuta* provided only information and data on standard length and are related to fish collections around the world (46.5-114.5 mm, Polk Bay and Gulf of Manar, India (JAMES, 1975); 121-146 mm, Tambaran, India (VASANITH and REDDI, 1984); 27-131 mm, various places around the world (YAMASHITA *et al.*, 1998); 76-93.5 mm, Sri Lanka (CHAKRABARTY *et al.*, 2008); 83-123 mm, West Coast of India (ABRAHAM *et al.*, 2011)). The range of standard length of the specimens examined in the present study is 61-72 mm falling into the middle range of the standard length of other specimens reported from different parts of the world.

The lack of previous confirmed records of *G. minuta* from the Sea of Oman can be due to the following three possible reasons: (i) lack of previous catches in the area that prevented the regular detection of this species overlooked in the past; (ii) due to global climate change, a recent colonisation along the northern coast of the Indian Ocean took place; (iii) the Sea of Oman is one of the busiest waterways in the world and ballast waters from ships is a possible mechanism of human-induced introduction.

ACKNOWLEDGEMENTS

We would also like to thank the Ministry of Fisheries Wealth, Marine Science and Fisheries Centre, Ministry of Fisheries Wealth and the directorate of Agriculture and Fisheries Developmental Fund for giving us the opportunity to work on the fish samples within the qualitative and quantitative distribution of marine organisms in Sultanate of Oman and to provide the appropriate financial support. Our thanks should go to Seishi Kimura, Fisheries Research Laboratory, Mie University, Japan for confirming the species identification and for reading the manuscript.

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