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FIRST RECORD OF THE BURROWING GOBY, *TRYPAUCHEN VAGINA* (ACTINOPTERYGII: GOBIIDAE: AMBLYOPINAE), IN THE MEDITERRANEAN

Pierre SALAMEH [1], Oren SONIN [1], and Daniel GOLANI [2*]

[1] *Department of Fisheries, Ministry of Agriculture, Kiryat Haim, Israel*

[2] *Department of Evolution, Systematics and Ecology, The Hebrew University of Jerusalem, Jerusalem, Israel*

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Abstract. The burrowing goby, *Trypauchen vagina*, is recorded for the first time in the Mediterranean. It is believed that it reached the Mediterranean from the Red Sea, despite the lack of a record from there, due to its well documented presence in the Arabian Gulf.

Keywords: *Trypauchen vagina*, Mediterranean, Lessepsian migration, first record

The ichthyofauna of the eastern Mediterranean, especially that of the Levant basin, is characterized as very dynamic. In contrast to most other marine regions of the world, that are characterized by a lessening of the fish biodiversity, the Levant is experiencing in the last few decades an impressive rise in the number of new fish species. Most new species enter the Levant from the Red Sea via the Suez Canal (Lessepsian migration) (Golani 2010, Golani et al. 2010). Others enter via Gibraltar (Sonin el al. 2009, Salameh et al. 2009) while other species extend their distribution from the western basin (Edelist et al. 2010). Additionally, there are species that reach the Levant by direct human activity, as for example, by release of ballast waters (Golani 2004, Goren et al. 2009).

On December 1, 2009 a 144 mm SL (164 mm TL) specimen of *Trypauchen vagina* (Bloch et Schneider, 1801) (Figs. 1, 2) was captured with the commercial trawler (*F/V SA'AR*, Captain S. Ben-Gal), on silty substrate at a depth of 90 m between Atlit and Hadera, Israel, ca. 75 km and 45 km north of Tel Aviv, respectively. This report is the first record of this species in the Mediterranean.

The specimen was deposited in the Hebrew University of Jerusalem Fish Collection (HUJ) and received the catalogue number 19900.

Description of the Mediterranean specimen. Body slender and compressed, its depth (under 5th dorsal spine) 12.1% in SL. Small head (14.6% of SL) slightly convex in its upper profile with median crest originating at vertical of anterior of orbit and terminating less than half predorsal distance. At anterior half of crest there are two smaller crests present on each side, joining central crest. Predorsal (19.0%), preanal (32.2%), prepectoral (15.3%) all from standard length. Mouth slightly oblique, reaching back to vertical of anterior of orbit. Lower jaw slightly protruding. In both jaws ten recurved canine teeth in outer raw and much smaller sharp teeth in inner row. Relatively large orbit cavity (42.0% in head length) covered with skin layer with very small rudimentary eyes. Narrow interorbital (17.1% in head length). A small pouch with a horizontal slit-like opening located at dorsal margin of operculum. Very long dorsal fin with 5 flexible spines and 53 rays, confluent with caudal fin. Anal fin with 48 rays, also confluent with caudal fin. Caudal fin slightly pointed with 16 rays. Pectoral fin crescent shaped with 18 rays,

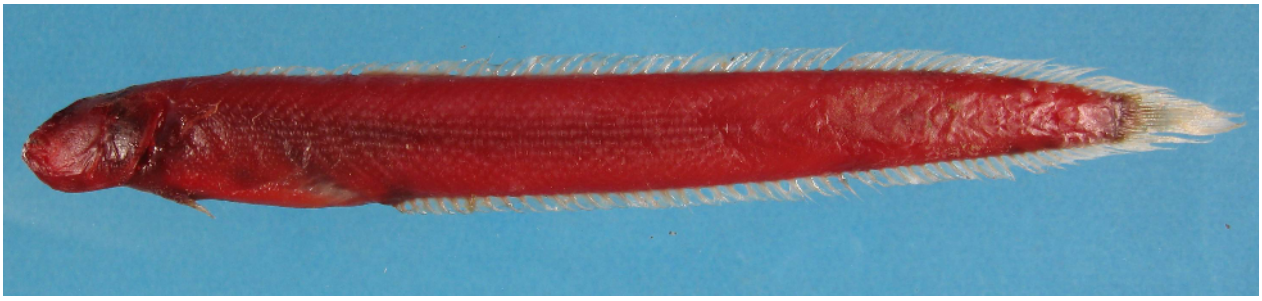

Fig. 1. *Trypauchen vagina* (144 mm SL) from the Mediterranean coast of Israel (HUJ 19900) (photograph: D. Golani)

* Correspondence: Dr. Daniel Golani, Department of Evolution, Systematics and Ecology, The Hebrew University of Jerusalem, 91904 Jerusalem, Israel, phone: +972-2-6585872, fax: +973-2-6584741 e-mail: *dgolani@cc.huji.ac.il* [E-mails of other authors: pierres@moag.gov.il (Salameh); orens@moag.gov.il (Sonin)]

5–7 rays are longest. Pelvic fin located under pectoral fin base, shaped like small funnel with interradial membrane, median rays being clearly longest. Body covered with cycloid scales, approximately 65 in longitudinal row. (It is difficult to count them with accuracy—Murdy 2006.) Very small scales on abdomen.

Colour of the fresh specimen: The entire body and head were uniformly red. All fins except the pectoral fin are translucent to off-white.

All counts and measurements agree with the identification of *Trypauchen vagina* given by Randall (1995), Rainboth (1996), and Murdy (2006). The colour pattern of the specimens shown by Randall (1995) from Cochin, India and Murdy (2006) from the Mekong Delta, Vietnam vary from light red to pinkish with a reddish cheek. These slight differences in colour pattern could be geographic variations within the species or the result of a much shallower environment than that where the Mediterranean specimen was collected.

Remarks. Bloch and Schneider (1801) described *Gobius vagina* from Tranquebar, India. Later, Valenciennes in Cuvier and Valenciennes (1837) erected the genus *Trypauchen* for this species based on its unique pouch at the dorsal margin of the operculum. According to Bleeker (1860) and Murdy (2006), *Gobioides ruber* Hamilton-Buchanan, 1822 is a synonym of *Trypauchen vagina* (Bloch et Schneider, 1801).

Trypauchen vagina is a demersal species inhabiting burrows in coastal waters and also entering estuaries. According Bauchot et al. (1989) this species is almost totally blind. It feeds on small invertebrates, mainly crustaceans. In the Cambodian Mekong region it sometimes serves as a commercial species (Rainboth 1996).

Trypauchen vagina has a wide Indo-Pacific distribution from the Arabian Gulf to the Philippines and China. There is no record of this species from the Red Sea; however it is likely that it occurs there. It possibly remained undetected until now due to its habit of staying close to its burrow and retreating quickly into its shelter when threatened (Murdy 2006). Although *T. vagina* has been recorded in the Mekong Delta in shallow water, it was found in relatively deep water (ca. 90 m) in the Mediterranean and in muddy silt-like substrate that has rarely been sampled in the Red Sea. There has been another case of a Lessepsian goby "*Papillogobius melanobranchus*" (=blackthroat goby, *Favonigobius melanobranchus* (Fowler, 1934)) that was reported in the Mediterranean by Kovačić and Golani (2007), prior to any record from the Red Sea (Kovačić, personal communication).

Trypauchen vagina is the 7th exotic gobid recorded in the eastern Mediterranean. It was preceded by five Lessepsian migrants: *Coryogalops ocheticus* (Norman, 1927), *Oxyurichthys petersii* (Klunzinger, 1871), *Favonigobius melanobranchus* (Fowler, 1934), *Silhouetta aegyptia* (Chabanaud, 1933), and *Vanderhorstia mertensi* Klausewitz, 1974. Recently Goren et al. (2009) recorded the (Far East) chameleon goby, *Tridentiger trigonocephalus* (Gill, 1859) from the port of Ashdod, Israel.

Fig. 2. Head of *Trypauchen vagina* from the Mediterranean coast of Israel (HUJ 19900) (photograph: D. Golani)

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