

Shrimp-gobies in the southern Gulf of Aqaba (Red Sea)

(Osteichthyes: Gobiidae)

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Abstract. Nine shrimp-goby species (*Amblyeleotris steinitzi*, *A. sungami*, *Cryptocentrus caeruleopunctatus*, *C. cryptocentrus*, *C. lutheri*, *Ctenogobius maculosus*, *Lotilia graciliosa*, *Tomiyamichthys latruncularius*, *Vanderhorstia delagoae*) were found at the fringing reefs around Dahab and in Nabq National Park, Egypt. Abundances vary, depending on the size of the biotope and the number of available microhabitats at five investigated scuba-diving spots.

Key words. Shrimp-gobies, Red Sea, association, microhabitats.

Introduction

LONGLEY & HILDEBRAND (1941) were the first to report on the partnership between gobies and shrimps. LUTHER (1958), KLAUSEWITZ (1960) and MAGNUS (1967) reported that gobies of the genera *Cryptocentrus* and *Amblyeleotris* live in the Red Sea in mutually beneficial partnerships with shrimps of the genus *Alpheus*. KLAUSEWITZ (1960) described some typical shrimp-gobies of the Red Sea and Indian Ocean such as *Lotilia graciliosa*. Up to now there are more than 130 species in 20 genera of gobiid fish known to occur in a mutualistic association with shrimps of the genus *Alpheus*, 20 of them in the Red Sea (Table 1) (DOR 1984, GOREN & DOR 1994, GOLANI & BOGORODSKY 2010, FROESE & PAULY 2011). Genera with the highest species richness are *Amblyeleotris* and *Cryptocentrus* (KARPLUS 1987). During a study on the ecology of bottom-dweller gobies in the Red Sea, GOREN & KARPLUS (1983) discovered a new species of a goby associated with a shrimp, *Tomiyamichthys randalli*. Recently RANDALL (2007) described *Vanderhorstia opercularis* as a new shrimp-goby species from Eilat in the Gulf of Aqaba (northern Red Sea), and JAAFAR & RANDALL (2009) described a sixth species of the genus *Amblyeleotris*, *A. neglecta*, as endemic to the Red Sea. The aim of the present investigation was to find out which shrimp-goby species can be found in various microhabitats at four scuba diving spots in the surroundings of Dahab and the mangroves of the National Park Nabq, Gulf of Aqaba, Red Sea.

Methods

Investigations were made by scuba-diving or skin-diving in five habitats around Dahab (Fig. 1): Masbat Bay (28°29'N, 34°31'E) is located in the centre of Dahab, beside the promenade. At depths of 3-15 m large areas of seaweed (*Halophila stipulacea*) cover the seabed. The borders as well as sandy patches form suitable microhabitats for shrimp-gobies around and between the meadows. A zone of 0.5-5 m is covered by a fringing reef in the north-western area. The bay is heavily influenced by anthropogenic impacts (scuba diving, deposition of waste). The 'Islands'