

# Occurrence of the large mangrove mud creeper *Terebralia palustris* (Linnaeus, 1767) (Gastropoda; Potamididae) within the Arabian Gulf, at and near Qeshm Island, Iran, in the Strait of Hormuz

by Gary R. Feulner

Naturalists and archaeologists familiar with the UAE know very well that, despite the frequent presence of shells of the Potamidid gastropod *Terebralia palustris* in coastal deposits and archaeological contexts along the Arabian Gulf coast of the UAE, at various sites of various ages (Feulner, 2000; Gruber *et al.*, 2005; Hellyer & Aspinall, 2006), this large and distinctive edible gastropod is not found alive in that area today. It is likewise absent in Qatar and Bahrain to the north, although it thrives at Khor Kalba on the Gulf of Oman coast of the UAE.

The reasons for the contemporary absence of *T. palustris* within the Arabian Gulf remain speculative. Elsewhere in the Indo-Pacific it is typically (Houbrick, 1991; Fratini *et al.*, 2004), although not always (Feulner, 2000; Fratini, *pers. comm.*), closely associated with mangrove forests, so the reduced presence of mangroves in Qatar and Bahrain, where they are near the margin of their winter frost tolerance, has been tentatively invoked to explain the absence of *T. palustris* there. However, alternative explanations cannot be ruled out, including, *inter alia*: (1) extreme water temperature and/or salinity (both significantly elevated in the Arabian Gulf summertime); (2) the role of ocean currents on the dispersal and recruitment of pelagic larvae; (3) the over-exploitation of *T. palustris* (and perhaps associated mangrove forests as well) by earlier human populations; and (4) reduced freshwater input to the Arabian Gulf in general and the UAE's coastal lagoons in particular, due to increasing regional aridity.

In order to attempt to test these alternative hypotheses, I have previously suggested the possibility of identifying a natural laboratory, specifically, by "confirm[ing] (or deny[ing]) the presence of *T. palustris* in the extensive mangroves inshore of Qeshm Island, Iran, in the Strait of Hormuz. This site is more northerly than Bahrain but it is situated between the delta of the seasonal Mehran River and the mouth of the Kol River, where freshwater influx may remain relatively high in comparison to other southern Gulf locations" (Feulner, 2000). In fact, I thereafter attempted to join in a proposed visit to Qeshm Island in company with a group of other amateur naturalists, but satisfactory arrangements proved elusive.

Happily, Dr. Peter J. Hogarth of the University of York was kind enough to keep this suggestion in mind when he visited Iran in early 2005 for purposes of coastal ecological research. His itinerary included Qeshm island and, although he was unable to visit the principal mangrove areas at a suitable tide, he made inquiries as a result of which he was able to report that *T. palustris* does occur in Iran, in two locations (Fig. 1). The eastern one is on the mainland side of Qeshm Island and corresponds to an extensive mangrove area. The western area, however, to the west of Bandar-e Lengeh, is said to have no mangroves. This distribution information comes from Hosseinzadeh *et al.* (2001) as well as conversations with people who were familiar with *T. palustris* (Hogarth, *pers. comm.*)

Study of the physical and historical parameters of the *T. palustris* localities on Qeshm Island would be potentially instructive in understanding the absence of that species along the present day Arabian Gulf coast of the UAE. The Iranian population is also interesting in its own right, because it is among the most northerly of extant populations, along with



Fig 1. Distribution of *Terebralia palustris* in Iran (from Hogarth, *pers. comm.*)

those of the northern Red Sea and Okinawa, Japan (Houbrick, 1991).

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