



First Record of the Mantis Shrimp *Lysiosquilla tredecimdentata* Holthuis, 1941 (Stomatopoda: Lysiosquillidae) in the Omani Waters of the Arabian Sea

KEYWORDS

Mantis shrimp, *Lysiosquilla tredecimdentata*, first record, Oman, Arabian Sea

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ABSTRACT The paper reports the first confirmed record of the banded mantis shrimp *Lysiosquilla tredecimdentata* Holthuis, 1941 from the southern Arabian Sea coast of Oman. In April 2013, female of the *L. tredecimdentata* with total length of 207 mm was collected by a local fisherman in fisherman harbour of Salalah. The specimen was identified, described, illustrated and measured. The known distribution of the species is from Yemen southward to South Africa and from India eastward to Australia and the central Pacific; the present record extends the species range to the Omani waters of the Arabian Sea.

Introduction

Marine crustaceans from order Stomatopoda, also called as mantis shrimp, are characterized by the greatly developed second maxilliped modified as large powerful raptorial claws. There are 485 species of mantis shrimp from 115 genera and 17 families have currently been described worldwide (WoRMs, 2013). About 250 species occur in the Indo-West Pacific region. Stomatopods are primarily tropical or subtropical crustaceans, living in the shallow waters, where they occupy burrows and crevices mainly in coral and rocky reefs or in soft substrate. Stomatopods are very aggressive predators feeding only on live prey, sometimes much larger in size than themselves. The adults wait in burrows until suitable prey passes, then strike and kill either by smashing or by spearing it using the claws. Many species that inhabit soft bottoms are fished commercially in many countries, though generally as bycatch with low economic value except for those very large species (e.g., *Harpisquilla raphidea* with maximum total length of 33 cm and *Lysiosquillina maculata* reaching a total length of 38 cm) (Ahyong et al., 2008).

So far fauna of stomatopods has not been studied in the Omani waters. One live specimen of the mantis shrimp was caught by a fisherman from the sea surface in the fisherman harbour of Salalah city in April 2013 and was presented in the Fisheries Research Center Salalah for classification. It was similar in appearance with an image of a mantis shrimp from Aden (Yemen, Red Sea) in collection of wildlife photography compiled by Heather Angel (<http://www.naturalvisions.co.uk>), where it is noted as *Lysiosquilla maculata*. This species known as the largest, the most common, and the most widely distributed species of the mantis shrimp in the Indo-West-Pacific region, it is fished artisanally and has commercial importance in some Asian countries. But the specimen that was found in Salalah and specimen from Natural Vision photocollection differed in body coloration from *L. maculata*. Furthermore, the common banded mantis shrimp *L. maculata* at present transferred to the genus *Lysiosquillina* (Manning, 1995). Therefore, the examination was performed to define the systematic identity of the collected mantis shrimp in Omani waters.

Materials and methods

The specimen of mantis shrimp was collected in the fisher-

man harbour (16°57'37" N, 53°59'56" E) of Salalah in the southern Omani waters of the Arabian Sea on 5 April 2013. The depth in the place was about 1 m, bottom sand and mud. The species was identified using stomatopod guides (Manning, 1978, 1998; Ahyong et al., 2008). Terminology, description and measurements generally follow Manning (1978) and Ahyong (2001). Specimen is deposited in the Fisheries Research Center Salalah, Oman.

Results

Family diagnostic characters. – Carapace, thorax, and abdomen smooth without longitudinal ridges or carinae; raptorial claw large and slender, with many teeth; eyes T-shaped, with large, bilobed cornea; propodi of 3th and 4th maxillipeds slender, beaded or ribbed ventrally; distal segment of endopod of walking legs elongate and strap-shaped; telson without median longitudinal carina (Figure 1).

Remarks. – The order Stomatopoda has been classified by Ahyong (2001) into 7 superfamilies and 17 families. Morphological characteristics of the specimen from Salalah indicate that it belongs to banded mantis shrimps from family Lysiosquillidae Giesbrecht, 1910. This family includes some of the largest known stomatopods, many of whom are flattened burrowers with elaborate spear-type appendages. Lysiosquillids live in monogamous pairs in long, deep burrows in coral reef flats, mud flats and soft subtidal substrates (Ahyong et al., 2008).

Genus diagnostic characters. – Dorsal processes of antennular somite produced into spines (Figure 2a); antennal protopod with triangular anterior projection; telson lacking movable submedian teeth (Figure 2b).

Remarks. – Three lysiosquillid genera are currently recognized (*Lysiosquilla*, *Lysiosquillina*, *Lysiosquilloides*). The examined specimen belongs to the genus *Lysiosquilla* Dana, 1852. The genus currently includes 12 species, five of which (*L. colemani*, *L. isos*, *L. sulcistrotris*, *L. suthersi*, *L. tredecimdentata*) occur in the Indo-West-Pacific region (Ahyong, 2001).

Species diagnostic characters. – Distal end of uropodal endopod dark (see Figure 2b); dactylus of raptorial claw with

9-13 teeth (Fig 3b); rostral plate cordiform, broadest in advance of base, median carina on rostral plate not flanked laterally by longitudinal grooves (see Figure 2a); ventral keel of 8th thoracic somite produced into posteriorly directed spine; uropodal propod with small spine anterior to endopod articulation; endopod telson slightly wrinkled dorsally.

Remarks. – Morphological features of the specimen from Salalah indicate it as *Lysiosquilla tredecimdentata* Holthuis, 1941. A pair of copulatory organs (gonadopods) at the base of the third pair of pereiopods was absent (see Figure 1b), so it is female. The coloration of the studied specimen was slightly different from described in Taiwan (Ahyong et al., 2008). Body was black with conspicuous yellow bands; carapace with yellow band in the middle, its dorsum base yellow.

Measurements. –

TL 207 mm; carapace: length 409 mm, width 37.4 mm; thorax length 37.6 mm; abdomen length 102.9 mm; eye length 7.0 mm; cornea width 6.4 mm; rostral plate: length 6.9 mm, width 7.8 mm; raptorial propodus: length 33.7 mm, depth 10.6 mm; 5th abdominal somite width 42.6 mm; telson: length 27.1 mm, width 39.8 mm. Total wet weight 82.3 g.

It is known that *L. tredecimdentata* is a relatively large species. Adult males ranging in length from 120 to 259 mm and females 116 to 276 mm TL have been recorded in the literature (Manning, 1978; Ahyong, 2001).

Ecology and distribution. –

The species inhabits deep burrows on intertidal sand and mudflats, and level subtidal substrates to 30 m (Ahyong, 2001). Almost nothing is known about the biology of lysiosquillids. According to Manning (1998) they form simple burrows with 2 entrances, one at each end, in level-bottom habitats in shallow water, from shore to a depth of about 25 m. The burrow openings may be as much as 10 m apart. Although they generally hunt from the mouth of their burrow, they occasionally leave their burrows and may be caught at night lights or in trawls. The studied specimen was caught in the fisherman harbour near the shore, where depth was about 1 m.

The known distribution of *L. tredecimdentata* is from Yemen (Red Sea) (Holthuis, 1941) southward to Madagascar (Manning, 1968) and South Africa (Manning, 1978); from India eastward to Thailand, Vietnam, Taiwan, Australia and the central Pacific (Ahyong, 2001). This is the first record of the species from the Omani waters of the Arabian Sea that extends its geographical distribution from the Red Sea east-

ward to the Arabian Sea.

Acknowledgments

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Figure 1: *Lysiosquilla tredecimdentata* Holthuis, 1941, female, TL 207 mm, fishermen harbour, Salalah, Oman, 5 April 2013: A - dorsal view, B - ventral view.

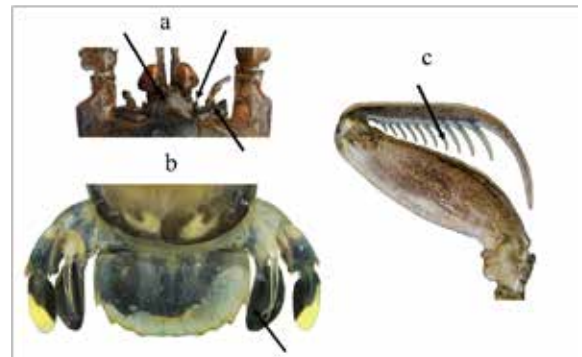


Figure 2: *Lysiosquilla tredecimdentata* Holthuis, 1941, Oman: a) anterior part of body: cordiform rostral plate without flanked median carina by longitudinal grooves, antennular propod with triangular anterior projection, spined antennular somite; b) telson and uropods: telson without movable submedian teeth, dark tip of uropodal endopod; c) left raptorial claw: dactylus with 11 teeth.

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