

**THREE NEW RECORDS OF STOMATOPODA (CRUSTACEA)
FROM THE SEAS AROUND INDIA**

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INTRODUCTION

OUR knowledge of stomatopods from the seas around India is fairly extensive. The monograph of Kemp (1913) is a landmark in the history of the group from the region. Subsequent contributions by Kemp and Chopra (1921), Chopra (1934), Chopra (1939) and Alikunhi (1967) have enriched our knowledge of the group. While making collections for a detailed study of the group, the following three species which are new records to the seas around India *Lysiosquilla tredecimdentata* Holthuis (Family Lysiosquillidae) and *Alima hyalina* Leach, and *Carinosquilla lirata* (Kemp and Chopra) (Family Squillidae) were collected. The diagnostic characters of each species and detailed measurements of some specimens are given. Attention is also drawn to differences observed from earlier descriptions. Data on the total length (TL) measured from the tip of the rostrum to the tip of the submedian spines of the telson; the carapace length (CL) exclusive of rostrum; the abdominal width measured at the 5th somite and the corneal index (CI) obtained by dividing the carapace length by the corneal width and multiplying it by 100 are given.

***Lysiosquilla tredecimdentata* Holthuis, 1941**

(Pl. I, Figs. 1 and 2)

Lysiosquilla maculata var. *tredecimdentata* Holthuis, 1941, p. 273, fig. 6.

Lysiosquilla tredecimdentata Manning, 1968, p. 38, fig. 13; Shanbhogue, 1969, p. 36.

Material: 1 Male, TL 275, CL 48, Vizhingam (south-west coast of India); 1 Male, TL 253, CL 44, Pamban (Gulf of Mannar), Dec. 1966; 1 Male, TL 199, CL 34, Mandapam (Gulf of Mannar), April 1967; 1 Male, TL 159, CL 26.5, Cochin, May 1968; 1 Female, CL 27.5, Tuticorin, Nov. 1966; 2 Females and 1 Male, Calicut, June 1965; 1 Female, Mandapam, 8-1-1967.

Measurements (mm.) of a male and a female specimen from Calicut are given below:

	<i>Female</i>	<i>Male</i>
TL	129.0	134.5
CL	22.1	27.5
CI	325	387
Rostral plate length	4.5	4.9

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	<i>Female</i>	<i>Male</i>
Rostral plate width	6.0	6.5
Antennal scale length	13.5	13.8
Antennal scale width	4.0	3.5
Telson length	18.0	18.0
Telson width	26.0	26.8

The major diagnostic characters of the species are slender antennal scale, outlined in dark pigment, the anterior projection on the basal portion of the antenna, the absence of dark bands on the claw; the deflexed spine on the carpus of the claw, the triangular keel on the 8th thoracic somite and the unarmed ventral surface of the uropodal protopod.

Remarks: The specimens generally agree with the description given by Holthuis (1941). However, according to him the tip of rostrum does not extend to the dorsal process of the ophthalmic segment, but in the present specimens it was found that the tip extends nearly to the base or up to the middle or even beyond the tip of dorsal process. He reported 13 teeth on the raptorial dactylus but 10-11 are present in the above material. Manning (1968) re-described the species and recorded that the antennal peduncle did not extend beyond the eyes. However, in the present specimens it extends slightly beyond or sometimes very much beyond the eyes. In other characters the specimens agree well with Manning's re-description of the species.

It would appear that the species is not rare along the coasts of India. Before the final word can be said, there is need for a re-examination of material at present placed under *L. maculata* (Fabricius) in the various natural history museums.

Distribution: Aden and Madagascar. For the first time the species is reported here from the Indian seas.

Alima hyalina Leach, 1818

(Pl. I, Fig. 3)

Alima hyalina Leach, 1818, p. 416; Manning, 1962, pp. 496-507, figs. 1-4; Manning, 1968, p. 136; Shanbhogue, 1969, p. 35.

Squilla alba Bigelow, 1894, p. 539, pl. xxii; Townsley, 1953, p. 408, figs. 6-7a-f; Ingle, 1958, p. 49, figs. 1-6.

Squilla hieroglyphica Barnard, 1950, p. 846, fig. 2c-e.

Material: Two specimens from Minicoy with the following measurements (mm.):

	<i>Male</i>	<i>Female</i>
Date of collection	Jan. 1967	2-12-1967
TL	33.0	38.0
CL	7.5	8.2
CI	341	316
Length of telson	5.0	5.5
Breadth of telson	5.5	6.0
Abdominal width	6.5	7.0

The major diagnostic characters of the species are : lateral process of fifth thoracic somite bilobed ; lateral processes of sixth and seventh thoracic somites not bilobed ; median carina without anterior bifurcation and raptorial dactylus with six teeth.

Remarks : The species is rare and known hitherto from 7 specimens from the world oceans. Only female specimens of this species were known (the sex of the juvenile specimen reported by Manning in 1962 is not known) and for the first time a male specimen is recorded. This is a new distributional record for Indian Seas as it has upto now not been reported east of the South African Coast.

The specimens agree well with the descriptions given by Bigelow (1894) and Ingle (1958). There is a tendency for the corneal index to decrease with age. The types of this species were collected at Bimini Harbour, Bahamas by Bigelow (1894). Subsequently Edmondson (1921) and Townsley (1953) recorded it from Hawaii and Barnard (1950) from South Africa (as *Squilla hieroglyphica*). Ingle (1958) examined a specimen from St. Helena and also re-examined the specimen collected by Barnard. The specimen reported from Hawaii by Townsley (1953) exhibited some interesting features such as truncate or triangular rostrum, cornea set transversely and only slightly broader than the greatest breadth of the stalk and the telson with indistinct median carina. These differences were attributed to the fact that his specimen was in the last post-larval stage. In the present material the rostrum is short and broad with the greatest breadth at the base and with the lateral margins converging to a rounded apex. The cornea is very much broader than the stalk and somewhat obliquely situated ; and the telson has a prominent elevated median carina. *A. hyalina* shows affinities to *A. hieroglyphica* (Kemp) in some characters, while Ingle (1958) reported that the closest relative of *Squilla alba* (= *A. hyalina*) is *Squilla hildebrandi* Schmitt (1940).

Carinosquilla lirata (Kemp and Chopra, 1921)

(Pl. I, Fig. 4)

Squilla lirata Kemp and Chopra, 1921, pp. 303-307, text-figs. 3, 4 ; Chopra, 1934, pp. 38, 39 ; Tweedie, 1934, pp. 39-40.

Carinosquilla lirata Manning, 1968, p. 135 ; Shanbhogue, 1969, p. 35.

Material : One male specimen collected at Royapuram, Madras, from shrimp trawl catches on 5-10-1968. The measurements (mm.) are TL 77, CL 16.5, CI 412, length of telson 13, breadth of telson 13.2 and abdominal width 16.

The diagnostic characters of the species are : lateral process of 5th, 6th and 7th thoracic somites bilobed ; eye large, stalk not inflated, cornea broader than stalk ; carapace and abdomen with numerous longitudinal carinae and mandibular palp absent.

Remarks : The specimen agrees with the description given by Kemp and Chopra (1921). The dusky patch of colour visible on the second abdominal somite is not seen in the present specimen. There are 5 carinae between the submedian carinae of the first and second abdominal somites of which two are short and are situated near the posterior margin of the somite. The differences between this species and

its close relative *C. multicarinata* (White) have been enumerated by Kemp and Chopra (1921),

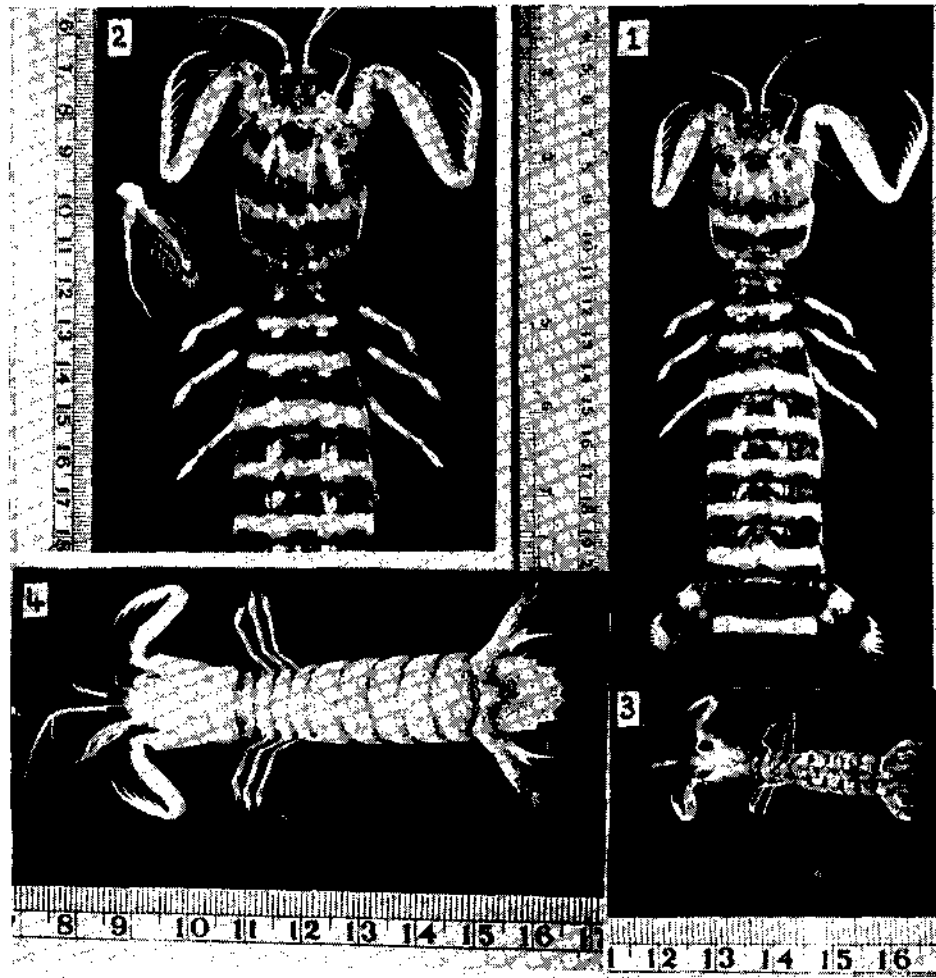
This is a new record for Indian seas and the first record from outside the type locality (Singapore).

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FIGS. (1) *Lysiosquilla tredecimdentata* Holthuis, Male ; Cochin ; TL 159 mm. ; CL 26.5.
 (2) anterior region ; antenna of another specimen. (3) *Alima hyalina* Leach, Female ; Minicoy ;
 TL 38 ; CL 8.2 ; and (4) *Carinosquilla lirata* (Kemp and Chopra), Male ; Madras ; TL 77 ; CL 16.5.

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