



A new record of the parasitic copepod, *Lernanthropus indicus* (Pillai, 1967) (Siphonostomatoida: Lernanthropidae) from Karachi coast Pakistan

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**A NEW RECORD OF THE PARASITIC COPEPOD,
LERNANTHROPUS INDICUS (PILLAI, 1967)
(SIPHONOSTOMATOIDA: LERNANTHROPIDAE) FROM
KARACHI COAST PAKISTAN**

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ABSTRACT: A copepod parasite, *Lernanthropus indicus* (Pillai, 1967), was recorded first time from the marine fish *Otolithes ruber* (Bloch & Schneider 1801) and *Sphyraena putnamae* (Jordan & Seale 1905) captured from Karachi coast Pakistan. *Lernanthropus indicus* (Pillai, 1967) is a rare species and was only reported from marine fishes of India, Iraq and Egypt. This is the Fourth report on this species in the World and first report from Pakistan.

KEYWORDS: Copepod parasite, fish parasites, gill parasites, *Lernanthropus indicus*

INTRODUCTION

The information and taxonomy of parasitic copepods is neglected in the past and only few papers on the taxonomy of parasitic crustaceans were available from Pakistan (Ho *et al.*, 2009; Batool and Yousaf, 2017). The family Lernanthropidae (Siphonostomatoidea) was first described by Kabata (1979a) and now represented by 9 genera. The genus *Lernanthropus* de Blainville, 1822 is the most diverse genus in the family Lernanthropidae with 105 species (Walter and Boxshall, 2018). The typical member of this genus use their prehensile antennae and maxillipeds to attach with the gill filaments of the host (Kabata, 1979b). Female parasite use their three legs which are modified into folded lamellae for climbing on the gill filaments of the host. All of the members of this family have characteristic large dorsal plate on the posterior border of the trunk. Fish parasites belonged to Lernanthropidae family were widely reported from different parts of the world. Most recent records are from Turkey (Özak *et al.*, 2016) and Iraq (Hayder *et al.*, 2018) but only limited information about the occurrence of this family is available from Pakistan. This paper provides the description of *Lernanthropus indicus* which is collected first time from the marine fishes *Otolithes ruber* and *Sphyraena putnamae* of Pakistan.

MATERIALS AND METHOD

The specimens of *Lernanthropus indicus* were collected from the marine fishes *Otolithes ruber* (Bloch & Schneider 1801) and *Sphyraena putnamae* (Jordan & Seale 1905) captured from Karachi coast Pakistan. A total of 20 host fishes were captured during 2016 to 2017. The 15 female parasites were separated from the gills of the host and were preserved in the 70% alcohol. The specimens were cleaned in the lactic acid for

4-5 minutes, mounted in cavity slide and were observed in microscope. The measurements were taken with the help of an ocular micrometer. The species was identified with the help of the description given by Pillai, 1985.

RESULTS AND DISCUSSION

Systematic account:

Order: Siphonostomatoida Thorell, 1859

Family: Lernanthropidae Kabata, 1979

Genus: Lernanthropus de Blainville, 1822

Lernanthropus indicus (Pillai, 1967)

Material examined:

15 ♀ specimens removed from gill filaments.

Total length of adult female: 5 mm.

Hosts: *Otolithes ruber* and *Sphyræna putnamae*

Locality: Karachi coast Pakistan.

Description of female

Prosoma

The body is large and divided into head, neck, trunk and urosome (Fig. 1A). Head is nearly square in shape and of about 1mm (Fig.1A.i). Neck is short. Remaining pedigrees fused into trunk which is 3.5mm long (Fig.1A.ii); trunk contain dorsal plate (Fig.1B.vii).

Cephalic appendages

Five pairs of cephalic appendages are present. Antennules are 5-segmented (Fig.1B.i). Antenna 2-segmented and prehensile, claw is armed with basal seta (Fig.1B.ii & 1C.i). First and second maxilla are uniramous and two-segmented (Figs. 1B(iii, iv) & 1C (ii)). Maxillipeds two segmented with pointed terminal claws (Figs.1B (v) & 1C (iii)).

Thoracic Appendages

There are five pairs of thoracic legs (Figs.1B (vi) & 1D (i-iii)). First thoracic leg is rudimentary with protopod (Fig.1C.iv). Second thoracic leg is more rudimentary than the first thoracic leg with weak protopod and lamella (Fig.1D.i). The third, fourth and fifth thoracic legs are long and contains foliaceous lamella protruded posteriorly from the lateral corners of the trunk (Fig.1D.ii -iv). The fifth thoracic leg reached to caudal rami (Fig.1D.iv).

Urosome

Dorsal shield of genital segment expanded posteriorly and forming a dorsal plate that completely covering the abdomen (Fig.1B.vii). Genital complex and abdomen wider than long (Fig. 1E. i); egg sac is 3mm long and straight (Fig. 1D.v).

Remarks

A copepod parasite, *Lernanthropus indicus* (Pillai, 1967), was recorded first time from the marine fishes *Otolithes ruber* and *Sphyræna putnamae* captured from Karachi coast Pakistan. *Lernanthropus indicus* Pillai, 1967 is a rare species and was only reported from marine fishes of India (Pillai, N.K. 1967), Iraq from the marine fishes

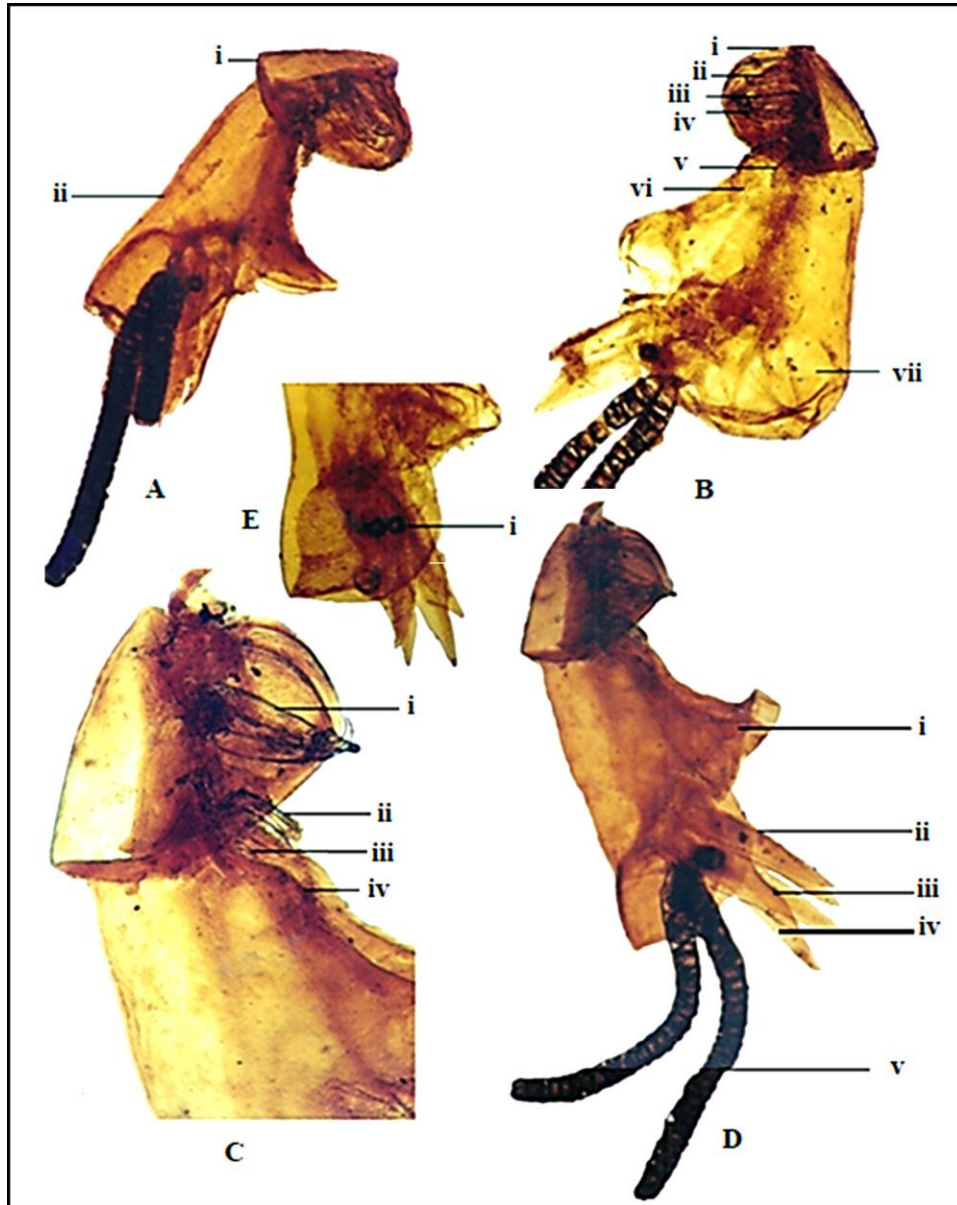


Fig. 1. *Lernanthropus indicus* (Pillai, 1967) adult ♀: A, whole animal lateral view: (i, head; ii, trunk); B, (i, antennule; ii, antenna; iii, 1st maxilla; iv, 2nd maxilla; v, maxilliped; vi, 1st thoracic leg; vii, dorsal plate); C, enlarge view of head and neck: (i, antenna; ii, 2nd maxilla; iii, maxilliped; iv, first thoracic leg); D, whole animal with two complete ovisacs: (i, second thoracic leg; ii, third thoracic leg; iii, fourth thoracic leg; iv, fifth thoracic leg; v, ovisac); E, (i, genital segment). Scale bar: 0.01 mm.

Megalaspis cordyla and *Carangiodes malabricus* (Al-Ataby *et al.*, 2012) and Egypt from *Carangoides bajad* (Salwa *et al.*, 2018). This is the fourth report on this species in the World and first report from Pakistan. The current study showed morphological data of female *L. indicus* that agreed with the description given by Pillai, 1985.

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