

**DESCRIPTION OF A NEW MANGROVE ROOT DWELLING SPECIES OF
TELEOTANAIS (CRUSTACEA: PERACARIDA: TANAIDACEA) FROM INDIA, WITH A
KEY TO TELEOTANAIDAE**

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ABSTRACT. — Specimens collected from India revealed a new species of the rare and plesiomorphic family Teleotanaidae. One new species, *Teleotanis indianis* is described and can be diagnosed from the only two other known species in the genus by the following character combination: carapace shorter than pereonites 1–3 combined; antennule without pigmentation, distal article incompletely fused with article 4 and with distal and subdistal aesthetascs; cheliped fixed finger with five inner, three ventral, and one subdistal setae; uropodal endopod biarticulated.

KEY WORDS. — Tanaidacea, Tanaidomorpha, Paratanaidae, Teleotanaidae, Goa, India.

Running title. — Tanaidacea from India

New taxa described: Crustacea: One new species

Plates: 3

References: 17

INTRODUCTION

This paper describes a new tanaidacean species of the suborder Tanaidomorpha from the Indian subcontinent. With a coastline of 7,517 km, the records of Tanaidacea, or any other smaller invertebrates, are remarkably few and far between. Only a handful of tanais has been recorded from India and all belongs to the suborder Apseudomorpha (Chilton, 1924, 1926; Barnard, 1935; Balasubrahmanyam, 1962; Balasubramanian et al., 1979). With our current knowledge of tanaidacean diversity, occurrence and distribution (Larsen, 2005; Tuya et al., 2010), these few records can only be considered a result of low sampling effort.

The family Teleotanaidae, Bamber is a recent construct (Bird & Larsen, 2009) and currently consists of only one genus with three species, the one described herein included. The genus is considered one of- if not the- most plesiomorphic family within the superfamily Paratanaoidea (Bird & Larsen, 2009; Larsen & Araújo-Silva, in press). It display plesiomorphic features in the cheliped setation and pigmentation but at the same time shares several characters with the family Paratanaidae; particularly in the pleonite lateral setation, mandibles, pereopod armament, and uropods.

MATERIAL AND METHODS

The type material is deposited in the Zoological Reference Collection (ZRC) of the Raffles Museum of Biodiversity Research (RMBR), National University of Singapore (Reference no). Specimens after collection were sorted out under a binocular microscope and mounted in glycerine. Dissections were made using chemically-sharpened tungsten wire needles. Body length was measured from the tip of the cephalothorax to the apex of the pleotelson. The terminology in the descriptions is based on Larsen (2003), although the minute terminal article of the antennule is here termed 'terminal cap-like article' (see Larsen et al. 2013). Adjectives such as long and short are used as relative qualifiers in respect of the appendage being described.

SYSTEMATICS

Order Tanaidacea Dana, 1849

Suborder Tanaidomorpha Sieg, 1980

Superfamily Paratanoidea Lang, 1949

Family Teleotanaidae (Bamber, 2008)

Genus *Teleotanais* Lang, 1956

Revised diagnosis. — Female; with mottled dorsal pigmentation, eye lobes and pigmented eyes present. First four pleonites bearing articulated plumose midlateral setae, last pleonite bearing simple midlateral seta. Antenna article 2 and 3 without dorsodistal spiniform setae, article 3 with proximal, medial and distal dorsal setae, Maxillule with palp bearing one or two distal setae; maxilliped endite not expanded, distally with single seta and two or three fine pointed spine. Cheliped fixed finger with raised inner ridge. Posterior pereopods with distal spiniform setae on merus, carpus and propodus; dactylus plus unguis claw-shaped but unfused. Pleopod basal articles with single dorsal plumose seta. Uropods shorter than pleotelson; exopod with two articles, endopod with one or two articles.

Species: *Teleotanais gerlachi* Lang, 1956 (Type species); *T. indianis* new species; *T. warragamba* Bamber, 2008.

***Teleotanais indianis* new species**

(Figs. 1–3)

Material examined. Holotype: non-ovigerous female, 2.2 mm (Reg. # ZMH to be added after acceptance), Chora Island, Goa, Central west coast of India, 20 Feb.2011, intertidal. Paratypes (Reg. # ZMH to be added after acceptance): one non-ovigerous female (dissected), same locality. Three non-ovigerous females, one manca, same locality. 19 non-ovigerous females, 21 mancae, Diwar Island, Goa, Central west coast of India, 25 May.2013, intertidal. All specimens were collected from the outer surface of pneumatophores of *Avicennia officinalis* after scraping by a nylon brush and preserved in 90% ethanol.

Diagnosis. Carapace shorter than pereonites 1–3 combined. Antennule without pigmentation; distal article incompletely fused with article 4 and with distal and subdistal aesthetascs. Cheliped fixed finger with five inner, three ventral, and one subdistal setae. Uropodal endopod biarticulated.

Etymology. Named after the Indian subcontinent.

Description. — Female, body from holotype, appendages from dissected paratype.

Body (Fig. A) slender, small, long, more than ten times as long as wide. Unevenly scattered black pigmentation present (similar to that of the tanaidacean genera *Tanais* and *Zeuxo*) present on all somites and chelipeds. Cephalothorax sub-rectangular, 1.2 times as long as wide, shorter than pereonites 1–3 combined, tapering to anterior with slight rostrum, eye lobes and pigmented eyes present. Pereonite 1 shortest, pereonite 2–5 successively longer. Pereonite 6 longer than pereonite 3 but shorter than pereonite 4. All with lateral seta. Pleonites subequal in size, all bearing pleopods, with single articulate plumose midlateral setae on pleonites 1–4 and simple seta on pleonite 5. Pleotelson semicircular, longer than last two pleonites combined, with two apical setae of which one is long (as long as uropod).

Antennule (Fig. 2B) shorter than cephalothorax. Article 1 more than twice as long as article 2, shorter than combined length of rest of antennule, with four setulated proximal setae, one simple and three setulated distal setae. Article 2 1.3 times longer than wide, with one simple medial, two simple and four setulated distal setae. Article 3 almost square, with two simple distal setae. Article 4 with incompletely fused with cap-like terminal article, with subdistal seta and aesthetasc. Distally with four setae and one aesthetasc.

Antenna (Fig. 2C) marginally shorter than antennule. Article 1 naked and fused with cephalothorax. Article 2 longer than wide, naked. Article 3 marginally longer than article 4, with one dorsoproximal, one dorsomedial, and two distal setae of which one is bayonet-shaped. Article 4 1.25 times as long as article 5, with one long, one simple and one setulated distal setae. Article 5 with one long, one simple and one setulated distal setae. Article minute with one short and three long terminal setae.

Mouthparts. Labrum (Fig. 2D) with slightly pointed, setulose apex, only weakly demarcated from clypeus. Mandibles with broad denticulate molar. Left mandible (Fig. 2F) with crenulated lacinia mobilis and incisor. Right mandible (Fig. 2E) with lacinia mobilis partly fused with narrow and pointed incisor. Labium (Fig. 2G) wide, bilobed, with setulose apex and small outer depression indicating rudiment of palp. Maxillule (Fig. 2H) with nine distal spiniform setae and five subdistal setules, palp with two distal setae. Maxilla not recovered. Maxilliped (Fig. 2I) basis with long seta extending beyond end of palp article 2. Endites narrower than bases, with single outer seta, three short, sharp spiniform distal setae and rounded inner tubercle. Palp article 1 naked; article 2 with one outer and four inner simple setae. Articles 3 and 4 with eight setae respectively. Epignath (Fig. 2A) narrow and naked.

Cheliped (Fig. 2A) basis as wide as long, with dorso-subdistal seta. Merus sub-triangular with two ventral setae. Carpus longer than propodus including fixed finger, with two ventrodiscal setae and one small dorsal seta in each end. Propodus robust, with inner row of one long and two shorter setae and one seta below dactylus insertion. Fixed finger with two ventral, one ventro-subdistal and four inner setae, cutting edge expanded into blade-shaped structure. Dactylus with small inner seta.

Pereopod 1 (Fig. 2B) longer than other pereopods, coxa (not illustrated) with seta; basis shorter than 3 succeeding articles combined, naked. Ischium with one seta. Merus longer than carpus, with single simple ventrodiscal seta. Carpus with four simple distal setae. Propodus longer than merus, with six simple distal setae and subdistal dorsal spine. Dactylus and unguis as long as propodus. Dactylus with medial seta.

Pereopods 2 and 3 (Fig. 2C) subequal, shorter and more compact than pereopod 1. Basis longer than three succeeding articles combined, with two dorsoproximal setulated setae. Ischium with one simple seta. Merus subequal carpus, with one simple ventrodiscal seta. Carpus with three simple ventrodiscal setae. Propodus longer than merus, with four simple distal setae and subdistal dorsal spine. Dactylus and unguis as long as propodus. Dactylus with medial seta.

Pereopods 4 and 5 (Fig. 2D) subequal. Basis stout, with one longer setulose ventromedial and three shorter setulose dorsoproximal setae. Ischium with two simple setae. Merus marginally longer than carpus, with two ventrodiscal spiniform setae. Carpus with three distal spiniform setae and dorsodistal bone-shaped seta. Propodus as long as merus, with two ventrodiscal spiniform setae, two dorsodistal distal setae as long as dactylus, and one setulated dorsomedial seta. Dactylus and unguis attached to the ventral part of propodus only, combined shorter than propodus, claw-shaped but unfused.

Pereopod 6 (Fig. 2E) as pereopod 4 & 5 except: basis with one ventroproximal setulose seta. Propodus with seven dorsodistal distal setae and three small dorsodistal spines, without dorsomedial setulated seta.

Pleopods (Fig. 2K) basal article with single inner plumose seta. Endopod rectangular, with one inner seta and nine outer setae of which the most distal is thickest and have a complex apex. Exopod traditionally leaf-shaped, with 18 outer setae.

Uropod (Fig. 2F) marginally longer than half of pleotelson, basal article with two small distal setae. Endopod with two subequally length articles, article 1 with two simple distal setae, article 2 with four long simple and two short setulose setae. Exopod marginally shorter than endopod, with

two subequal articles, article 1 with one simple distal seta, article 2 with two long thick terminal setae.

Male unknown.

Remarks. The new species differs from the two only previously described species, *Teleotanis warragamba* and *T. gerlachei* in: the carapace being shorter than pereonites 1–3 combined. Cheliped fixed finger with two ventral, one ventro-subdistal and four inner setae. Uropodal endopod biarticulate.

Although only three species of this genus (including the one described above) have been recorded, it is already clear that the genus have a cosmopolitan warm water distribution (Brazil, Atlantic; Florida and El Salvador, Gulf of Mexico; Nigeria, Africa; Australia, Pacific; and now India, Indian Ocean). Such cosmopolitan distribution is recorded for the vast majority of tanaidacean genera which are not monotypic. This holds true for both the deep-sea and shallow-water fauna and is a disturbing reminder that we still know very little about how these non-swimming animals (which have no dispersal phase) have managed so wide distribution ranges (see Larsen, 2005 for review). The records of *T. gerlachei* from multiple distant localities like Brazil, Gulf of Mexico, and Nigeria (Lang, 1956; Sieg & Heard, 1983) are like a misidentification.

Unfortunately the male of *Teleotanis* is currently unknown and this could be an important clue to its phylogenetic position. Lang (1956) found 36, Sieg & Heard (1983) 12 from The Gulf of Mexico and more than 200 from Nigeria, while Bamber (2008) found 19 specimens. In this study we recorded more than 40 individuals and none of them was of the male gender. If the male was of the feeding type seen in the Tanaidae, chances are that a male would have been found. If the male is of the non-feeding/none-swimming type seen in Leptocheliidae, chances of finding them would be smaller but still fairly good given then many specimens. This leads us to suspect that the male of this genus is of the much rarer, non-feeding/swimming type, found in Paratanaidae.

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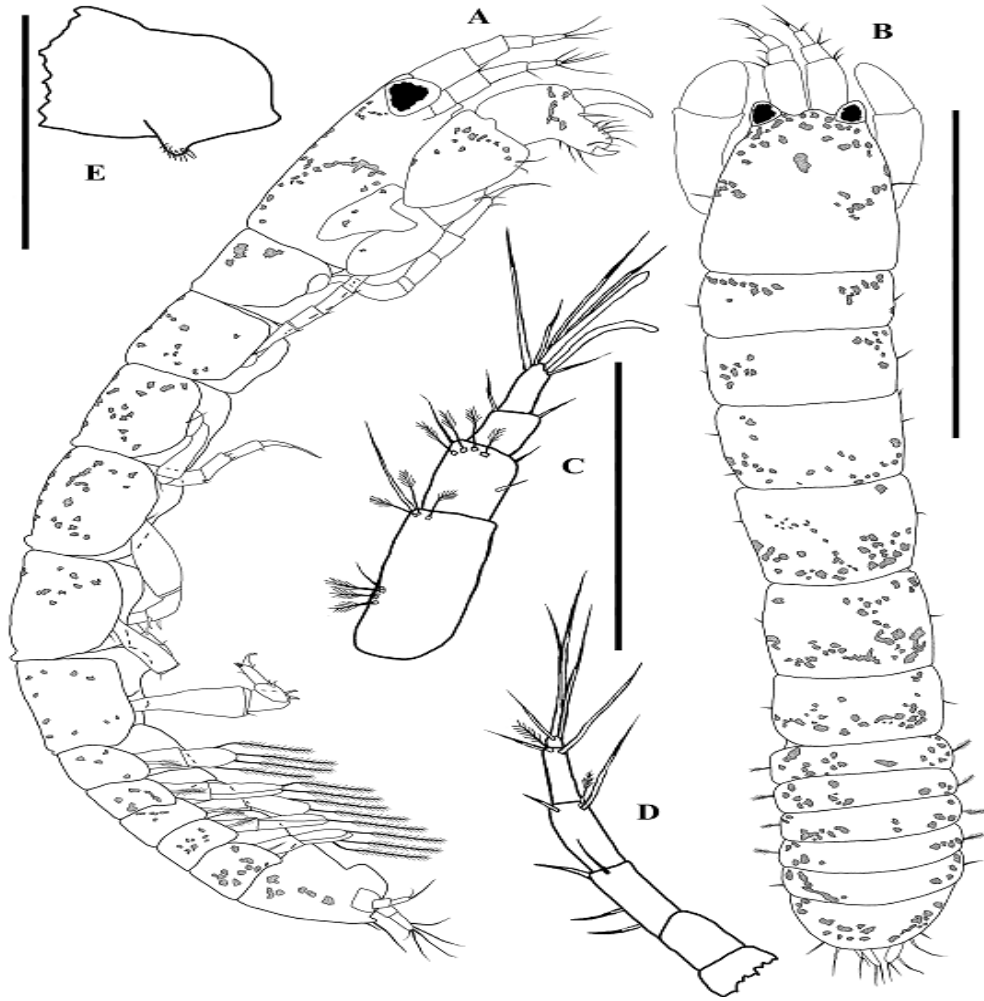


Fig. 1. *Teleotanaeis indianis* new species. A, holotype, habitus, lateral view, scale bar 1.0 mm. B, paratype, habitus, dorsal view, scale bar 1.0 mm. C, antennule. D, antenna, scale bar 0.25 mm. E, labrum, lateral view, scale bar 0.1 mm.

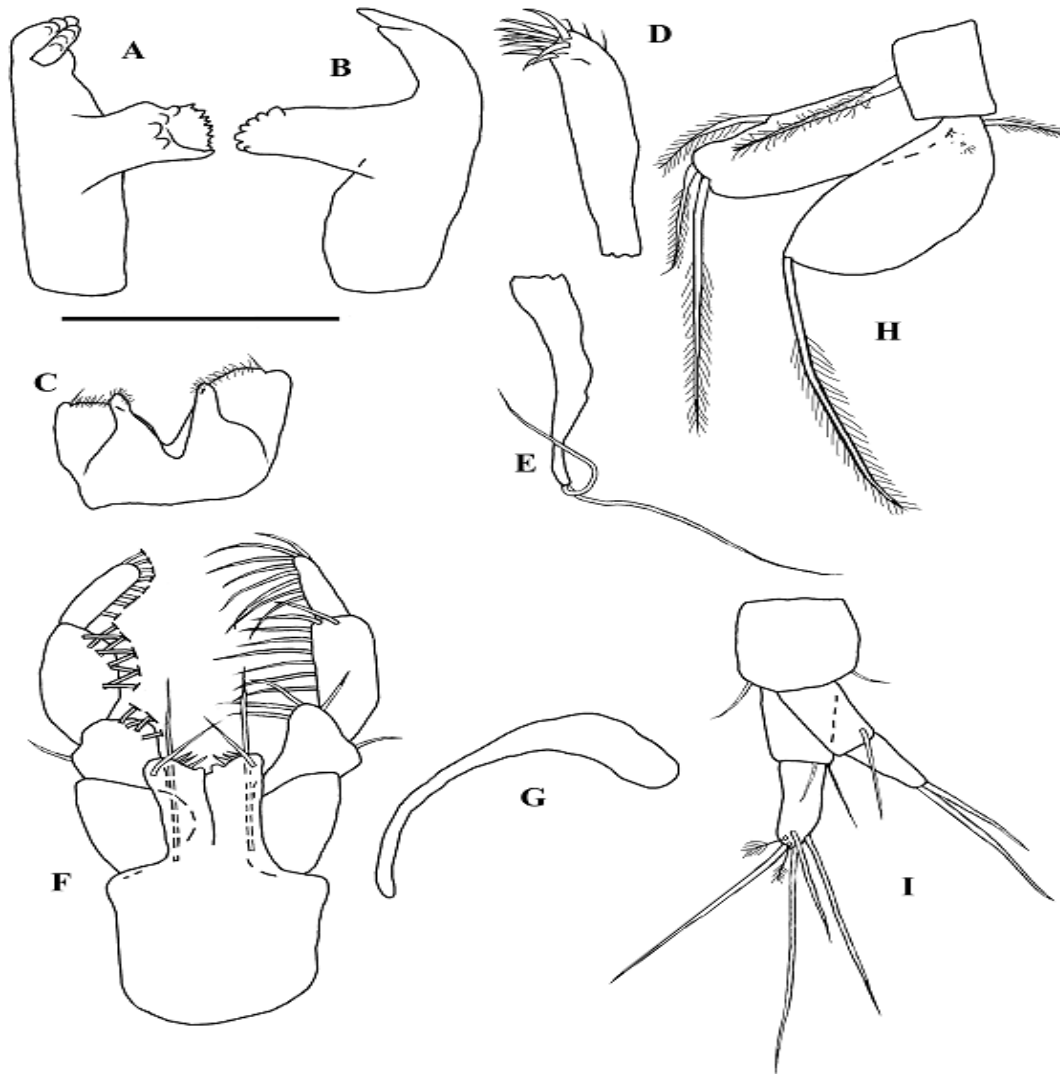


Fig. 2. *Teleotanis indianis* new species, paratype. A, left mandible. B, right mandible. C, labium. D, maxillule, endite. E, same, palp. F, maxilliped. G, epignath. H, pleopod. I, uropod. Scale bars 0.1 mm.

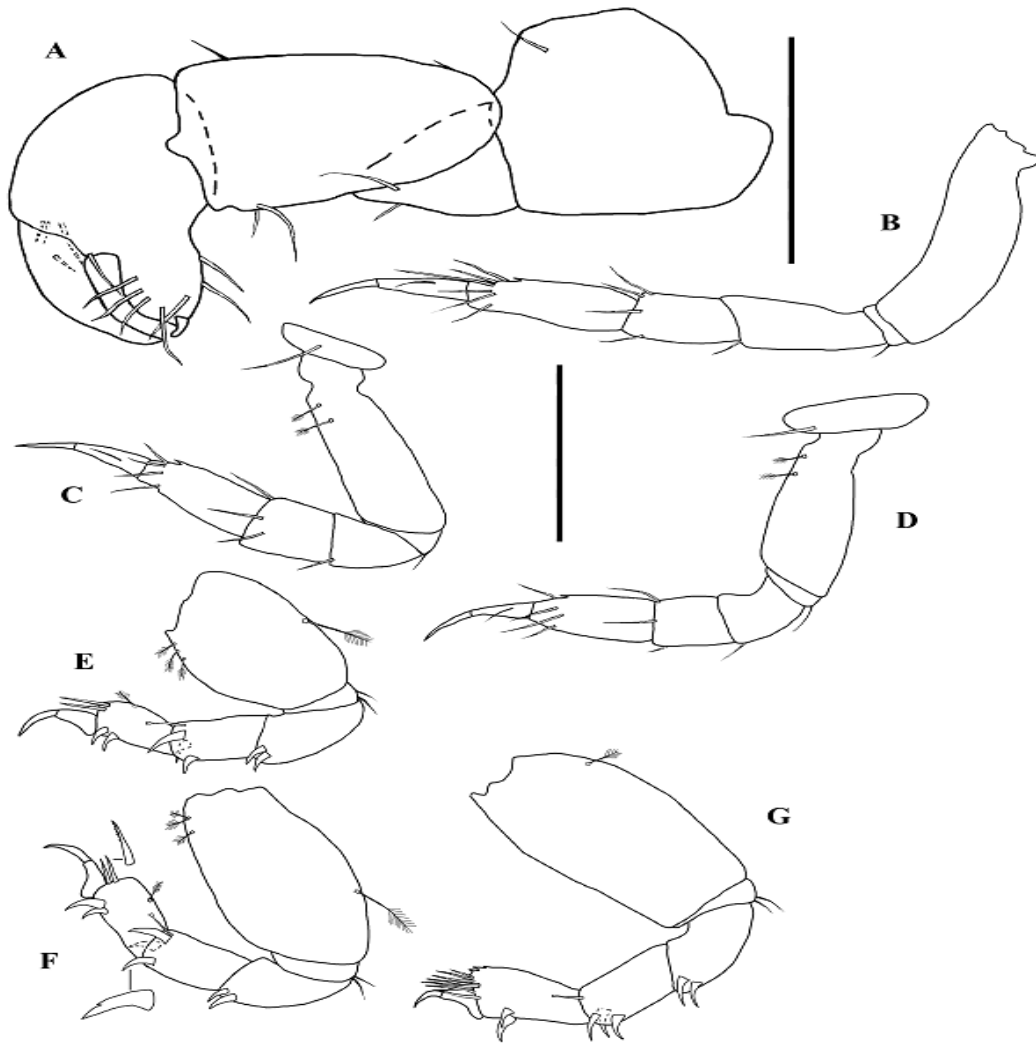


Fig. 3. *Teleotanaeis indianis* new species, paratype. A, cheliped, scale bar 0.25 mm.. B, pereopod 1. C, pereopod 2. D, pereopod 3. E, pereopod 4. F, pereopod 5. G, pereopod 6. Scale bar 0.1 mm.