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Occurence of the polychaete *Pisionidens indica* from India

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Abstract

No further record of *Pisionidens indica* Aiyar and Alikunhi has been reported from India since its original description from Madras beach. Present study describes their occurrence from one beach each of the west and east coast of India and further ascertains the distribution of these small worms that is confined only to surf beaches as observed earlier.

Pisionids are a rare group of small polychaete worms. A survey of their distribution revealed that only a few records have been made in Indian waters and elsewhere. *Pisionidens,* based on a single species *Pisionidens indica,* was described for the first time from the sandy beaches near Madras by Aiyar and Alikunhi (1940). They also recorded it's occurrence from sandy beaches of Calicut.

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Material and methods

The occurrence of *P.indica* is recorded from two surf beaches of India, after nearly 60 years since its original description. During a survey along the central west coast of India (Goa) during October 1998, intertidal samples collected from two beaches, namely Vagator and Calangute, revealed a large number of specimens of *P.indica,* ranging in length from 6.6 and 9.6 mm from the top 10 cm layer of coarse sand grains of the surf beach of Calangute. Subsequently, in February 2000, a large number of them with a size range of 4.2-12 mm were also obtained from Mahabalipuram, a high energy beach located about 50 km south of Chennai, Tamil Nadu (southeast coast of India) from where *P.indica* was initially collected and described.

In order to confirm the exact distribution pattern, a more detailed study was made by collecting intertidal sediment samples along several beaches of the whole stretch of the southeast coast viz. Nagapattinam, Kodiakarai, Mallipatnam, Earwadi, Keelakarai, Rameswaram, Pamban, Tuticorin, Uvari, Idinthakarai, Perumanal, Kanyakumari, Muttom and Thengaipattinam during January and February 2001. No Pisionids were observed at any of these beaches including Muttom, the only beach with considerable wave action. Observations of the present study as well as those of Aiyar and Alikunhi (1940) is in accordance with the description of Day (1967), who suggested that *Pisionidens* is distributed in

tropical surf beaches. He also distinguishes the genus *Pisionidens* as an active burrower in tropical surf beaches and as being not uncommon in localized areas on surf beaches while the genus *Pisione* occurs in soft, silty bottoms.

Pisione oersteidii Grube 1857, was recorded from India by Fauvel (1953) and later by Siva Rama Sarma and Chandramohan (1979) who describe the area of collection to be "coarse and occasionally interspersed with shelly gravel".

The uniqueness of the Indian Ocean fauna is exemplified by the large number of endemic genera and species (Hartman, 1974), of which *Pisionidens* (family Pisionidae) is believed to be a reprsentative. Since then, *Pisionidens* which is represented by a single species *P.indica* has been recorded from Natal (Day, 1967) and Mexico (Bastida-Zavala, 1991). Neither Kumaraswamy Achari (1969), who has catalogued the reference collection of Polychaetes of the Central Marine Fisheries Research Institute nor Hartman (1974), who has described the polychaetes collected by the members of the IIOE (including the samples off Porto Novo), have listed *P.indica.*

However, mention has been made of the presence of *P.indica* in the list of polychaetes occurring in the marine beach of Porto Novo having medium or fine sand (Srikrishnadhas, *et al.* 1987), in a estuarine bottom (Balasubrahmanyan, 1960), and Pulicat, a brackish water body (Sunder Raj and Sanjeeva Raj, 1987), all of which are situated on the southeast

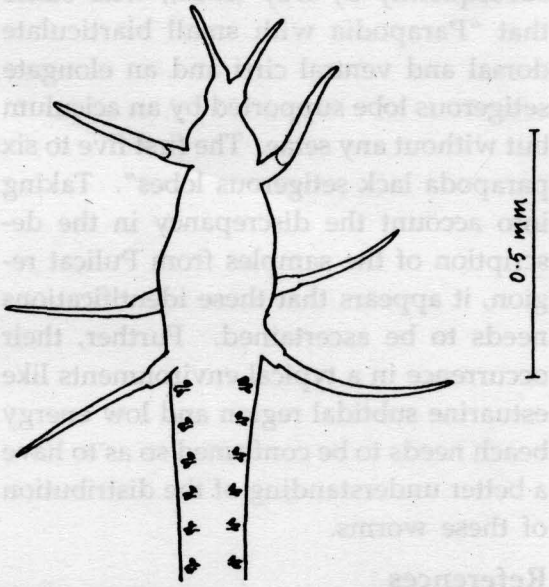

Fig. 1. Anterior of Pisionidens indica

coast of India. Balasubrahmanyan (1960) observed two individuals of *P.indica* from the mouth region of Vellar estuary at a depth of 1.82 m based on subtidal samples collected in a single day.

Pisionidens indica recorded by Sunder Raj and Sanjeeva Raj (1987) from the marine sandy regions of Chilka Lake had a size range of 7-12 mm and are described as juvenile and interstitial. In addition almost all parapodia were observed to bear compound as well as simple setae. On the other hand in fully grown forms the third to sixth parapodia are non setigerous, and setae are observed from the seventh segment only. The taxonomic description of the parapodial structure differs from the original description of the species by Aiyar and Alikunhi (1940) and

subsequently by Day (1967), who states that "Parapodia with small biarticulate dorsal and ventral cirri and an elongate setigerous lobe supported by an aciculum but without any setae. The first five to six parapoda lack setigerous lobes". Taking into account the discrepancy in the description of the samples from Pulicat region, it appears that these identifications needs to be ascertained. Further, their occurrence in a typical environments like estuarine subtidal region and low energy beach needs to be confirmed so as to have a better understanding of the distribution of these worms.

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