

**NEW RECORD OF THE GENUS *GORGORHYNCHOIDES* CABLE
& LINDEROTH, 1963 (ACANTHOCEPHALA :
PALAEACANTHOCEPHALA) WITH *G. INDICUS* N. SP. FROM
CARANGIID FISH OF INDIAN COAST**

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INTRODUCTION

Cable & Linderoth (1963) erected the genus *Gorgorhynchoides* with the type species *G. elongatus*. The type species was described on the basis of a single female specimen obtained from a marine fish, *Caranx chrysos* at Curacao, North of South America. Later, Cable & Mafarchisi (1970) re-examined the type material and rediagnosed the genus with little corrections. Present authors also collected a number of parasites from the intestine of a carangiid fish, *Megalaspis cordyla* in its marine habitat at Chennai coast. These are described as *Gorgorhynchoides indicus* n. sp. with minor addition of characters to the generic diagnosis. The occurrence of *G. indicus* in the host species in Indian coast is a new record for the genus *Gorgorhynchoides*.

MATERIALS AND METHODS

The live specimens available from the marine fish host at Chennai were first cleaned in normal saline solution. The specimens were then taken in distilled water to allow the probosces to come out. Then these were pressed and killed in 70% alcohol. Whole mounts were prepared after staining in borax carmine. The specimens were studied and camera lucida drawings were made. All the measurements are in millimetres unless otherwise stated.

SYSTEMATIC ACCOUNT

Phylum ACANTHOCEPHALA Rudolphi, 1801

Class PALAEACANTHOCEPHALA Meyer, 1931

Order ECHINORHYNCHIDA Southwell et MacFie, 1925

Family ARHYTHMACANTHIDAE Yamaguti, 1935 emend

Genus *Gorgorhynchoides* Cable and Linderoth, 1963

Diagnosis of the genus *Gorgorhynchoides* Cable & Linderoth, 1983 emend.

Diagnosis : Proboscis clavate, with anterior hooks arranged quincunxically in more than 20 longitudinal rows of at least 10 hooks per row. First three or four hooks in each row large, bladelike followed by an abrupt reduction in size of hooks after which they gradually increase in length to about midlevel of the proboscis and then decrease; bladelike hooks with prominent roots; hooks somewhat stouter on ventral than dorsal region of proboscis. Neck well developed. Trunk with narrow, cylindrical or slightly tapering anterior portion armed with numerous spines, followed by a swelling which may or may not encompass trunk or bear spines; swelling most conspicuous dorsally. Trunk posterior to swelling unarmed, with pseudosegmentation in females. Proboscis receptacle with double muscle wall, attached at base of proboscis; brain at about mid-level of receptacle. Lemnisci with many nuclei, slender, sinuous, much longer than proboscis receptacle. Ligament sacs open, uterus long, vagina short. Eggs smooth, oval to broadly spindle shaped, without polar prolongations of middle shell membrane. Testes not contiguous, oval or bean shaped, well apart. Cement gland six, tubular, forming a slender bundle in which some glands reach posterior testis. Bursa with rays and numerous papillae. Parasites of marine fishes particularly of the family Carangedae.

Type species : *Gorgorhynchoides elongatus* Cable & Linderoth, 1963.

Distribution : Curacao, North America.

***Gorgorhynchoides indicus* n. sp.**

(Figs. 1-6)

Four male and six female specimens, collected from the intestine of a marine fish, *Megalaspis cordyla* (Fam. Carangedae) at Chennai coast, Tamil-Nadu are described below :

Description : *Male* : Body long, slender, tubular. Proboscis clavate, with hooks arranged in 20-26 longitudinal rows with 10-16 hooks in each row; anterior hooks quincunxically arranged; first 3-4 hooks of each row large, bladelike, and with strong roots followed by few small hooks near mid-proboscis and then increase in size but further decrease at base; ventral hooks somewhat stouter than dorsal hooks. Neck well developed. Trunk with narrow, cylindrical or slightly tapering anterior portion armed with numerous spines, followed by a swelling either dorsally or ventrally, or both; dorsal swelling more conspicuous. Trunk posterior to swelling unarmed. Trunk spines in 24-30 longitudinal rows dorsally and 20-25 rows ventrally; spines not reaching the swelling; no spines in the swelling. Proboscis receptacle double walled with ganglion near middle. Lemnisci very long, slender, sinuous, much longer than proboscis receptacle, generally more than half of the body length. Testes oval or bean shaped, well apart. Cement gland six, long, tubular, forming a slender bundle, some of which reach posterior testis Cement reservoir massive, longer than broad. Bursa sometimes protruded or not.

Female : Mature females usually larger than mature males, with pseudosegmentation in live specimens. Proboscis clavate, hooks as in males. Nature of distribution of trunk spines, trunk

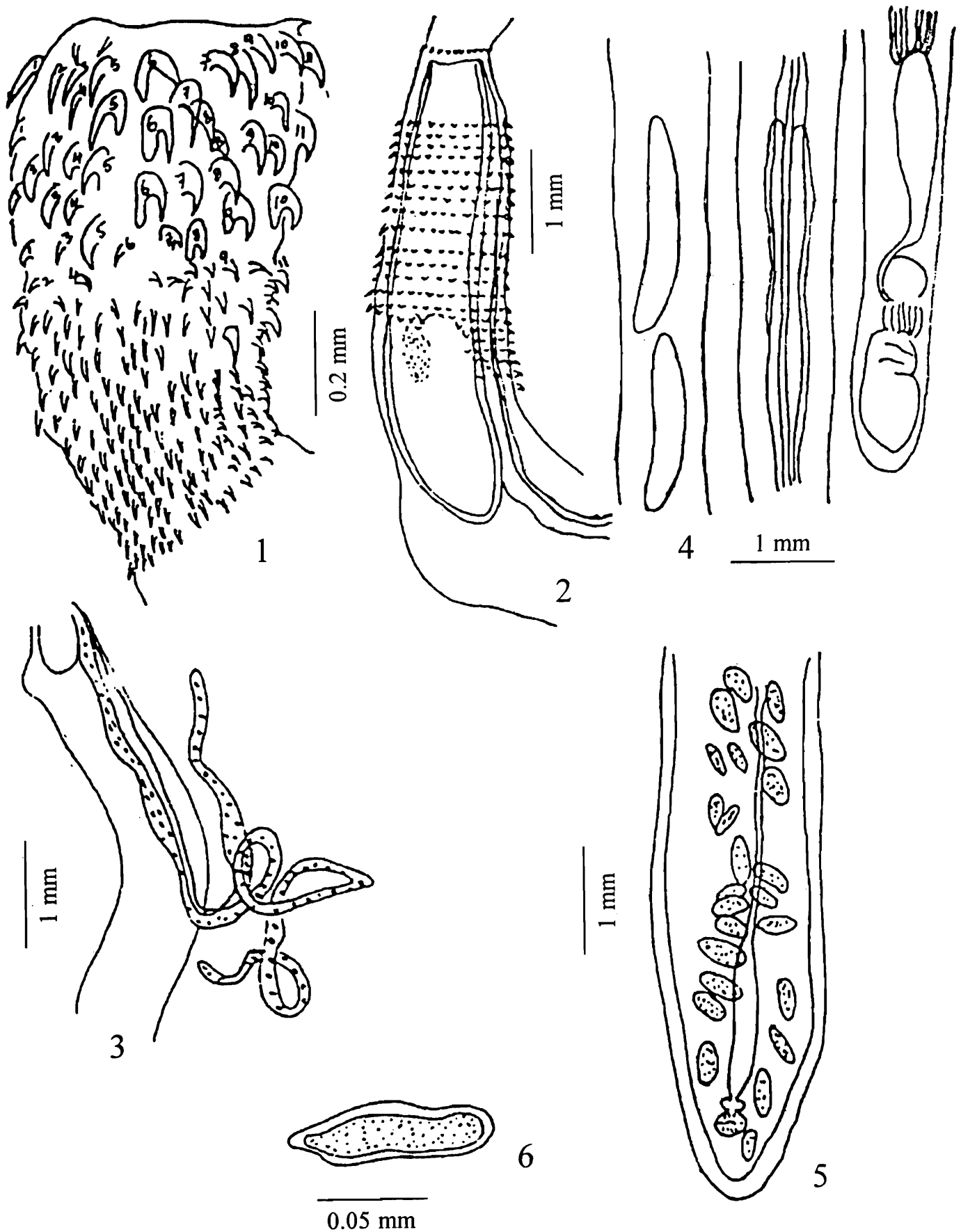


Fig. 1. *Gorgorhynchoides indicus* n. sp.

1-proboscis; 2-anterior body with buldge; 3-coiled lemnisci; 4-gonads in male; 5-posterior end of female showing subterminal genital aperture; 6-egg.

swelling, same as in males. Female genital aperture sub-terminal. Eggs smooth, oval without polar prolongation of the middle shell.

Measurements :

Male : Body 17.00-60.75 long and 1.00-1.5 wide. Proboscis 0.5-0.925 long and 0.3-0.4 wide. Proboscis hooks : 1st 0.0913-0.099 long and 0.0166 wide; 2nd 0.099-0.124 long and 0.0249 wide; 3rd 0.083-0.107 long and 0.0415 wide; 4th 0.083-0.091 long and 0.0415 wide; 5th 0.033-0.091 long and 0.0166 wide; 6th 0.041-0.0581 long and 0.0166 wide; 7th 0.083 long; basal hooks 0.0332-0.033 long. Roots of proboscis hooks : 1st-3rd 0.083-0.107 long and 0.0249 wide; 4th 0.083-0.099 long and 0.0249 wide. Neck 0.24-0.375 long and 0.25-0.35 wide. Proboscis receptacle 1.5-2.5 long and 0.35-0.4 wide. T_1 -0.85-1.625 long and 0.275-0.4 wide. T_2 -0.825-1.75 long and 0.3-0.35 wide. Cement reservoir 1.375 long and 0.55 wide.

Comparison of *G. indicus* n. sp. with Caribbean spp.

	<i>G. elongatus</i> Host : <i>Caranx chrysos</i> Loc. : CURACAO, N.A.	<i>G. lintoni</i> Host : <i>Seriola lalandi</i> Loc. : MASSACHUSETTS	<i>G. bullocki</i> Host : <i>Caranx hippos</i> Loc. : G. of FLORIDA	<i>G. indicus</i> Host : <i>Megalospis cordyla</i> Loc. : CHENNAI
BODY M.	—	64.5-66.00	39.00	17.00-60.75
F.	30.00	48.00-74.00	52.00	45.00-63.00
TRUNK SPINES ON SWELL.	7 Spines	2-3 circles of Spines	No Spines	No Spines
PROBOSCIS	0.75	0.80-1.34	0.63-0.69	0.50-1.125
P. SHEATH	—	—	2.09-2.17	1.5-2.5
P. HOOKS	2nd 0.70	0.124-0.154 (Largest Ant. Hooks)	0.074-0.083 (Largest Ant. Hooks)	1st 0.0913 2nd 0.124
	3rd 0.68	0.095-0.105 (Largest middle) 0.025-0.030 (BASE)	0.024-0.032 (Smallest middle) 0.48-0.60 (Post. Prob. Hook)	3rd 0.107 4th 0.091 5th 0.041 6th 0.0581 7th 0.083 Base 0.0332
CEM. RES.	—	—	—	1.375-0.55
TESTES	—	T_1 -2.16-2.56 T_2 -2.1-2.4	T_1 -1.38 T_2 -1.71	T_1 -0.85-1.625 T_2 -0.825-1.75
GENITAL PORE	Sub-Terminal	1.1 From Post End	0.25-0.28 From Post End	0.6 From Post End

Female : Body 45.00-63.00 long and 0.625-1.00 wide. Proboscis 0.925-1.125 long and 0.3-0.5 wide. Genital aperture 0.6 mm away from the end point. Eggs 0.04-0.064.

Host : *Megalaspis cordyla* (Carangedae).

Locality : Chennai coast, Tamil-Nadu, India.

Type specimens : Registration No. W8299/1 in the Helminthological collection, Zoological Survey of India, Calcutta.

DISCUSSION

The parasitic species of the genus *Gorgorhynchoides* Cable and Linderoth (1963) which is typical of the carangeid fish hosts of the Caribbean Sea, is recorded for the first time in a carangeid fish *Megalaspis cordyla* in Indian coast. Altogether four species under the genus have been reported so far from carangeid fish.

The type species of the genus *G. elongatus* Cable & Linderoth, 1963 has been reported from *Caranx chrysos* at Curacao, North America. *G. bullocki* Cable & Mafarchisi, 1970 has been reported from *Caranx hippos* at Gulf of Florida. *G. lintoni* Cable and Mafarchisi, 1970 at Woods Hole, Massachusetts. All the hosts belong to the family Carangedae.

Wang (1986) has reported *G. epinephali* in a marine fish, *Epinephalus awaora* at Fujian China which belongs to the family Epinephalidae. *G. epinephali* is the first record of occurrence in the fish other than a member of the family Carangedae.

The present form has been compared with all the Caribbean species as shown in the comparison chart. *G. Bullocki* comes close to the present form in respect of anterior trunk swelling and absence of spines in the swelling. As a matter of fact, *G. Bullocki* bears inconspicuous ventral trunk swelling as well as dorsal swelling. But the species under report differs *G. bullocki* in having greater length of proboscis, more number of proboscis hooks per row, and in having greater size of anterior proboscis hooks. The position of genital aperture from the posterior end of the female of the former also differs from that of the latter.

G. elongatus and *G. lintoni* basically differ from the species under report by possessing spines in the trunk swelling. The most significant difference among the three species is the difference of position of female genital aperture. Genital pore is much farther from the posterior end of *G. lintoni* than that of *G. elongatus* whereas it is in between in the present form.

According to the figures shown in the literature by the authors of the Caribbean Sp., the anterior proboscis hooks of all the caribbean species possess roots but their measurements have not been provided with. The present form with its strong roots of proboscis hooks claims its distinction from these species.

G. epinephali Wang, 1986, owing to its occurrence in marine fish of the family, Epinephalidae shows a greater degree of inter-specific variation with regard to number of proboscis hooks, size

of hooks, number and extension of trunk spines etc. The occurrence of *G. epinephali* in the fish of the family, Epinephalidae may throw light in the knowledge of adaptability of the Gorgorhynchoideid worms in other than carangeid fish hosts.

Gupta and Fatma (1979) erected a new genus *Neogorgorhynchoides* with its type species *N. cablei* from *Caranx kalla* at Mandapam, Tamil-Nadu. According to the literature, it appears that the description of *N. cablei* is based on sub-adult specimens. Therefore, the acceptance of the status of the new genus *Neogorgorhynchoides* is unwise till further studies on adult species of the genus are made.

Thus, the present form is distinguishable from all the species described so far under the genus. Therefore, the species under report is designated as a new species and is offered as *Gorgorhynchoides indicus* n. sp. for its reception. The occurrence of the species in the new carangeid fish at Chennai forms a new record from the Indian coast.

ACKNOWLEDGEMENTS

The authors are thankful to Dr. J. R. B. Alfred, Director, Zoological Survey of India for providing laboratory facilities and giving permission for presenting the paper in the 15th National Congress of Parasitology held at Jodhpur on 1st-3rd of October, 2001. Authors are grateful to Dr. A Chatterjee Sc. D. of Zoological Survey of India for his guidance and suggestion in finalising the paper.

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