

Pristolepis pentacantha, a new fish species (Perciformes: Pristolepidae) from Kerala, India



Zoology

KEYWORDS : Kabani River, Taxonomy, New fish, *Pristolepis marginata*

Mathews Plamoottil

Assistant Professor in Zoology, Govt. College, Chavara, Kollam, Kerala, India

ABSTRACT

Pristolepis pentacantha, a new fish species of the family Pristolepidae, is described from Kabani River of Kerala, India. It is distinguished from its relative species by the following combination of characters: eyes larger and closely set, dorsal fin with 15- 16 spines and 11 soft rays; anal fin with 5 spines and 7 soft rays; pre orbital without any serration; pre opercle with 5-6 serrae; posterior end of lateral line bends downwards and ends 2- 3 scales in front caudal base.

INTRODUCTION

Pristolepis marginata Jerdon, *P. malabarica* (Guenther) and *P. rubripinnis* Britz et al. are the three *Pristolepis* species occurring in the water bodies of Kerala, India. Many taxonomists including Jerdon (1865) considered *Catopra malabarica* as a synonym of *Pristolepis marginata*. Recently Plamoottil, M (2013) could rediscover original specimens of Jerdon's *Pristolepis* with four anal spines based on collection from its type locality and Plamoottil & Abraham (2013) redescribed *P. malabarica* based on collections from Mundakkayam, its type locality.

The present fish described from the Kabani River of Kerala, India possesses characters of the genus *Pristolepis* but carries enough features to distinguish it from its congeners. So it is described here as a new species *Pristolepis pentacantha*

MATERIALS AND METHODS

Methods used are those of Jayaram (2002); subunits of the head are presented as proportions of head length (HL); head length and measurements of body parts are given as proportions of standard length (SL). Abbreviations used: ZSI- Zoological Survey of India, Kolkata; ZSI/WGRC- Zoological Survey of India, Western Ghats Regional Centre, Kozhikode; UOK/AQB- University of Kerala, Department of Aquatic Biology and Fisheries, Kariavattom; LLS- lateral line scales; LL/D- scales between lateral line and dorsal fin; LL/V- scales between lateral line and ventral fin; OLS- overlapping scales.

RESULTS

Pristolepis pentacantha sp. nov., (Table 1 & 2; Fig. 1 & 2)

Holotype: STC/DOZ 82, 94.5 mm SL, India: Kerala, Bavali, Kabani River, Wayanad, coll. Mathews Plamoottil, 10 January 2012.

Paratype: STC/DOZ 83, 1 specimen, 70.0 mm SL India: Kerala, 11 January 2012, same data as holotype.

Diagnosis. *Pristolepis pentacantha* is distinguished from its congeners in possessing the following characters: dorsal fin with 15- 16 spines and 11 soft rays, anal fin with 5 spines and 7 soft rays; lateral line scales 22/7+ 2- 3; pre opercle serrated with 5-6 serrae and pre orbital without serration.

Description. Body roughly rectangular, strongly laterally compressed; body depth 2.4- 2.5 in SL, dorsal contour rising gradually from snout towards the dorsal front; convex along the dorsum, abruptly attenuated at the caudal base. Head moderate, its length 2.8- 3.0 and depth 2.9-3.2 in SL, pointed towards the snout; Mouth upturned, its width 3.4- 3.7 in HL, maxilla ending at vertical at the level of anterior margin of orbit; opercle with two spines posteriorly; pre opercle angle serrated with 5-6 serrae; junction of inter and sub opercle slightly serrated; pre orbital without any teeth. Pectoral fin reaching 9th scale row



Fig. 2. A fresh specimen of *Pristolepis pentacantha*, STC/DOZ 82, Holotype.



Fig. 2. A preserved specimen of *Pristolepis pentacantha*, STC/DOZ 83, Paratype.

SL. No	Characters	Holotype	Paratype
1	Total length (mm)	117	87.8
2	Standard length (mm)	94.5	70.0
Percentage of Standard length			
3	Head length	33.3	35.4
4	Head depth	31.7	34.6
5	Head width	19.0	17.4
6	Body depth at dorsal fin origin	41.3	40.0
7	Body depth at anal origin	40.7	40.6
8	Body width at dorsal fin	19.0	18.8
9	Body width at anal origin	13.8	12.8

10	Pre dorsal length	39.4	40.7
11	Post dorsal length	72.0	70.7
12	Pre pectoral length	34.5	36.4
13	Pre pelvic length	40.7	41.3
14	Pre anal length	69.3	69.0
15	Length of soft dorsal fin	15.3	20.3
16	Length of spinous dorsal	12.2	14.1
17	Length of pectoral fin	24.9	25.0
18	Length of pelvic fin	20.6	22.1
19	Length of soft anal fin	19.0	20.0
20	Length of spinous anal fin	13.5	14.6
21	Length of base of spinous dorsal fin	49.7	47.1
22	Length of base of soft dorsal fin	15.9	13.1
23	Length of base of spinous anal	13.3	16.9
24	Length of base of soft anal fin	10.1	10.4
25	Length of base of pectoral fin	6.9	8.1
26	Length of base of pelvic fin	5.5	6.4
27	Distance from pelvic to anal	28.4	31.4
28	Length of caudal fin	23.9	25.0
29	Length of caudal peduncle	10.6	16.1
30	Depth of caudal peduncle	14.7	14.6
31	Width of caudal peduncle	4.1	3.6
32	Distance from ventral to vent	25.0	24.8
33	Distance from anal to vent	5.8	7.0
34	Head length (mm)	31.5	24.8
Percentage of head length			
35	Head depth	95.2	97.6
36	Head width	57.1	49.2
37	Eye diameter	33.3	33.9
38	Inter orbital width	22.8	20.9
39	Inter narial width	15.9	20.2
40	Snout length	27.9	27.0
41	Width of gape of mouth	27.0	29.4

Table 1. Morphometric characters of *Pristolepis pentacantha*

but never reach anal opening; anal fin with five prominent spines; caudal fin rounded with 14 rays. Scales comparatively large, tiny scales occurs on the bases of dorsal, anal and caudal fins. Scales between ventral rim of orbit and ventral edge of pre opercle- 4; pre dorsal scales 12; lateral line scales 22/7; scales between dorsal and ventral branch of lateral line 1/2 2 1/2; lateral transverse scales 3 1/2- 4/10 1/2; scales between lateral line and anal fin 9 1/2; pre pelvic scales 12; pre anal scales 25; scales between dorsal branch of lateral line and base of middle of spinous dorsal fin 3 1/2; scales between dorsal branch of lateral line and anterior base of spinous anal fin 10 1/2; circumpeduncular scales 9.

Lateral line interrupted; dorsal branch extending from shoulder girdle in convex longitudinal line to vertical through base of anterior most soft anal ray; ventral branch forming a straight line from in front or at the level of front soft anal ray to the middle of caudal peduncle and from there goes abruptly

downwards posteriorly through three scales and then reach 2-3 scales in front of caudal fin base.

Colour

In fresh specimens body grayish green; inter spinous membrane of dorsal fin reddish orange; soft dorsal, anal and caudal fin grey, their bases grayish green; pectoral fin green. Eyes greenish black. After preservation body acquires a brown color and fins become hyaline.

Etymology: The specific epithet '*pentacantha*' was taken from two Greek words, '*pente*' meaning five and '*akantha*' meaning thorn, refers to five spines present in the anal fin of the new fish.

Distribution

Currently known to occur only at Wayanad, Kerala, India.

DISCUSSION

The present fish differs from *Pristolepis marginata* Jerdon (1849) (Fig. 3) in many meristic counts; it has 5 anal spines (vs. 4 in *P. marginata*), 15- 16 dorsal spines (vs. 15), 11 dorsal rays (vs. 12), 22/7 lateral line scales (vs. 19- 21/12- 15+ 2- 3), 4 scales between ventral rim of orbit and ventral edge of pre opercle (vs. 5- 6), 12 pre dorsal scales (vs. 15- 17), 10 1/2 scales between dorsal branch of lateral line and anterior base of spinous anal (vs. 9 1/2) and 3 1/2- 4/10 1/2 lateral transverse scales (vs. 4 1/2/9 1/2).



Fig. 3. A fresh specimen of *Pristolepis marginata*, ZSI FF 4935, Mananthavady River.

Sl. No	Characters	<i>Pristolepis pentacantha</i>	<i>P. marginata</i>	<i>P. malabarica</i>	<i>P. rubripinnis</i>
1	Dorsal fin spines	XV- XVI	XV	XIV	XIV
2	Dorsal fin rays	11	12	11- 12	14
3	Pectoral rays	14	13- 14	12- 14	14
4	Pelvic rays	I, 5	I, 5	I, 5	I, 5
5	Anal soft rays	7	7- 8	8-9	9
6	Anal spines	V	IV	III	III
7	LLS	22/7+ 2-3	19- 21/12-15	19- 23/8- 11	20- 22/9- 10
8	LL/D	4	4 1/2	3 1/2	4-5
9	LL/V	9 1/2	9 1/2	8 1/2 -10 1/2	10
10	OLS	4	1-4	0-3	2- 4

Table II. Meristic counts of *Pristolepis pentacantha* and its relative species

In *Pristolepis pentacantha* eyes are closely set (IOW 20.9- 22.8 % HL in the new species vs. 23.3- 30.3 in Jerdon's species) and larger (33.3- 33.9 % HL vs. 22.8- 28.6), width of gape of mouth shorter (27.0- 29.4 % HL vs. 30.0- 34.4), pre orbital devoid of any serrations (vs. 9 strong serrations), anterior naris located nearer to orbit than to upper lip (vs. in the middle of orbit and upper lip), posterior nostril located a little in front of orbit (vs. close to orbit), posterior end of lateral line goes downwards and reach 2- 3 scales in front of caudal base (vs. lateral line reach caudal base in a straight line) and pre opercle angle serrated with 5-6 serrae (vs. 18).

Pristolepis pentacantha have a longer post dorsal distance (70.7- 72.0 % SL vs. 64.5- 70.2), longer base of spinous dorsal fin (47.1- 49.7 % SL vs. 42.4- 46.4), shorter base of soft dorsal (13.1- 15.9 % SL vs. 17.3- 19.8), longer base of spinous anal (13.5- 14.6 % SL vs. 10.7- 12.7) and vent located away from anal fin (distance from anal to vent 5.8- 7.0 % SL vs. 3.8- 5.4).

The new fish differs from *Pristolepis malabarica* Guenther (1864) (Fig. 4) in having 5 anal spines (vs. 3 in *P. malabarica*), 15- 16 dorsal spines (vs. 14), 7 soft rays in anal fin (vs. 8- 9), closely set (IOW 20.9- 22.8 % HL vs. 26.1- 33.3) and larger eyes (ED 33.3- 33.9 % HL vs. 25.8- 26.9) and body depth lesser (40.0- 41.3 % SL vs. 41.4- 45.5).



Fig. 4. A fresh specimen of *Pristolepis malabarica*, ZSI FF 4937, Manimala River.

Pristolepis rubripinnis Britz et al. (2012) (Fig. 5) differs from the new fish in many meristic counts; in *P. pentacantha* anal fin with 5 spines (vs. 3 in *P. rubripinnis*) and 7 soft anal rays (vs. 9), dorsal fin with 15- 16 spines (vs. 14) and 11 soft rays (vs. 14); more over fins are orange red in colour in *P. rubripinnis* (vs. grayish green in the new species).



Fig. 5. A fresh specimen of *Pristolepis rubripinnis*, Pampa River.

Comparative material. *Pristolepis malabarica*: ZSI/WGRC/IR/2373, 10 exs, 63- 88 mm SL, Mundakkayam, Manimala River, Kerala, collected by Mathews Plamoottil, 8.10.2011, 9.12.2011 & 9.12.2012; ZSI FF 4937, 2 exs, 65.0- 69.0 mm SL, Mundakkayam, Manimala River, Kerala, collected by Mathews Plamoottil, 14.10.2012; UOK/AQB/F/112 and 113, 2 exs, 60.0- 65.0 mm SL, Mundakkayam, Manimala River, Kerala, collected by Mathews Plamoottil, 14.10.2012.

***Pristolepis marginata*:** ZSI FF 4935, 8 exs, 82.0 mm- 103.0 mm SL, Valloorkkavu, Mananthavady River, Wayanad, Kerala, collected by Mathews Plamoottil, 20.03.2013.

***Pristolepis rubripinnis*:** STC/DOZ/55, 4 exs, 100- 136 mm SL, Edathua, Pampa River, Kerala, collected by Mathews Plamoottil, 10.01.2013.

REFERENCE

- Britz, R., Kumar, K., & Baby, F. (2012). | *Pristolepis rubripinnis*, a new species of fish from Southern India (Teleostei: Percomorpha: Pristolepididae). *Zootaxa*, 3345: 59-68. | Günther, A. (1864). Descriptions of three new species of fishes in the collection of the British Museum, *The Annals and Magazine of Natural History*, 3 (14), 374-376. | Jayaram, K. C. (2002). Fundamentals of fish taxonomy. Narendra publishing House, Delhi. | Jerdon, T. C. (1849). On the freshwater fishes of Southern India. *Madras Journal of Literature and Science*, 15, 139-149. | Jerdon, T. C. (1865). On *Pristolepis marginatus*. *Annals and Magazine of Natural History*, 16, 298. | Plamoottil, M. (2013). Rediscovery of *Pristolepis marginata* Jerdon (Teleostei: Percomorpha: Pristolepididae) after one and a half century. *Research Journal of Animal Veterinary and Fisheries Science*, 1 (7): 16- 20. | Plamoottil, M., & Abraham, N. P. (2013). Rediscovery of *Pristolepis malabarica* after one and half century. *Journal of Advanced Zoology*, 34 (1), 28- 35. |