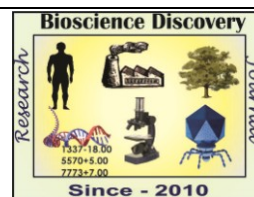


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**Research Article**



## *Pristolepis pauciradiatus*, a new fish species (Perciformes: Pristolepididae) from Myanmar

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Mathews Plamoottil<sup>1\*</sup> and Than Win<sup>2</sup>

<sup>1</sup>Baby John Memorial Government College, Chavara, Kerala, India

<sup>2</sup>Department of Zoology, Hpa-An University, Kayin State, Myanmar

\* [mathewsplamoottil@gmail.com](mailto:mathewsplamoottil@gmail.com)

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### Abstract

A new *Pristolepis* species from Myanmar is described and scientifically named. It differs from its congeners in having XIII dorsal spines, 15 dorsal soft rays, 15-16 pectoral fin rays, 5-6 scales between lateral line and dorsal fin, 12 ½ scales between lateral line and ventral fin and in possessing a distinct brownish blotch below pectoral fin. The new species is taxonomically analyzed and compared with its congeners.

### INTRODUCTION

Fishes of the genus *Pristolepis* Jerdon includes economically important freshwater fishes distributed in the water bodies of India and Southeast Asian countries. These are widely used as aquarium and food fishes. They are moderately sized fishes with laterally compressed body with spiny dorsal, ventral and anal fins. They can further be recognized among other percoid fishes by their greatly enlarged basibranchial tooth plate, studded with globular teeth that bite against a similar tooth patch on the parsphenoid.

*Pristolepis* is a poorly recognized genus (Britz, 1995) with only 8 species. Jerdon (1849) described *Pristolepis marginata* from Wayanad hills of Kerala, India. Bleeker (1851) described *P. fasciatus* (*Catopra fasciata*) from rivers of Borneo; it is now considered as a widely distributed species (Kottelat *et al.*, 1993, Kottelat, 2001). *Catopra malabarica* described by Guenther (1864) from Mundakkayam of Kerala is also a widely distributed

species in south India. *P. rubripinis* (Britz *et al.* 2012), *P. pentacantha* (Plamoottil, 2014) and *P. procerus* (Plamoottil, 2017) are the *Pristolepis* species described recently from water bodies of India. The present fish described from Myanmar 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 pauciradiatus*

### MATERIALS AND METHODS

Fishes were collected using cast nets and preserved in 10% formalin. Methods used are those of Jayaram (2002) and measurements follow standard practices. Specimens of different species of *Pristolepis* collected by the first author as comparative materials are deposited in the museum of Zoological Survey of India (ZSI) at Kolkata, Zoological Survey of India Western Ghats Regional Centre at Kozhikode (ZSI/WGRC),

Zoological Survey of India, North Eastern Regional Centre, Shillong (ZSI/NERC) and Zoological Survey of India Andaman & Nicobar Regional Centre, Port Blair (ZSI/ANRC). Specimens of the new fishes are now deposited in Govt. Museum of Freshwater Biology Regional Centre, Zoological Survey of India at Hyderabad (FBRC/ZSI).

## RESULTS AND DISCUSSION

### *Pristolepis pauciradiatus*, sp. nov

(Fig. 1 & 2; Table 1 & 2)

**Type specimens:** Holotype: ZSI/FBRC/F/2397, 136.0 mm SL, a freshwater stream, Kayin, Myanmar, coll. Than Win, 29. 03. 2017; Paratypes: ZSI/FBRC/F/2398, 2, 98.0- 117.5 mm SL, same data as Holotype

**Diagnosis:** *Pristolepis pauciradiatus* can be distinguished from all its congeners in having XIII dorsal spines, 15 dorsal fin soft rays, 5-6 scales between lateral line and dorsal fin and 12½ scales between lateral line and ventral fin. The new species can further be distinguished from its relative species in having a distinct brown spot on the base of pectoral fin.

**Description:** For general appearance see figures 1 & 2. Meristic counts presented in Table 1 and morphometric data provided in Table 2. Body strongly laterally compressed; depth 42.5- 46.3 % SL. Dorsal contour rising gradually from snout towards the occiput, ventral profile almost straight; head 35.7- 38.8 % SL, pointed towards the snout; orbits inserted on the anterior half of head. Anterior nostrils are in tubes and posterior ones are round openings. Mouth slightly upturned; lower jaw a little longer than the upper one. Pre orbital with 8-10 strong serrations; 13- 18 strong spines present on at the angle of pre opercle; opercle with two sharp spines; outer rows of teeth in jaws enlarged and externally visible. Dorsal spines originate above and posterior to pectoral fin base. 6-7 dorsal spines are longer than remaining ones, last spine attached with first dorsal soft ray. Inter spinous membrane deeply emarginated. Soft dorsal fin located considerably in front of soft anal fin; tip of the former reach behind middle of caudal fin. Pectoral fin inserted in front of first dorsal spine and its tip extends as far as backwards as the ventral tip. Ventral fin tip never reach anal opening. Second and third anal spines equal in length and longer than the first. Third anal spine found attached to first soft anal ray. Lateral line passes through 21- 22 scales and then ceases below 8<sup>th</sup> soft dorsal ray; lower part

of lateral line starts ½ 2 ½ scales below upper part of lateral line. 3- 4 scales overlap between upper and lower branches of lateral line. Many distinct broken longitudinal lines present above and below lateral line. Scales present all over the head except pre orbital. Bases of soft dorsal, soft anal and caudal fin scaly.

**Habitat:** Specimens of *P. pauciradiatus* were collected from the freshwater stream (Fig 3 & 4) Hlaing Chaung, Hpa-An, Kayin State, 16°57' 08,1" N, 97° 44' 44.9" E. At the time of collection the stream was a little turbid and slow-flowing. It was 20 m wide and 3 m deep and bottom of this stream was muddy. The stream was surrounded on all sides by paddy fields. Riparian vegetation was moderate. *Notopterus notopterus*, *Gymnostomus horai*, *Systemus rubripinnis*, *Puntius burmanicus*, *Osteobrama belangeri*, *Amblypharyngodon mola*, *Mystus falcarius*, *Hemibagrus microphthalmus*, *Ompok bimaculatus*, *Wallago attu*, *Parambassis ranga*. etc are the co-occurring fish species.

**Etymology.** The species name *pauciradiatus* is taken from Latin, meaning 'having few rays', with reference to the fewer dorsal spines than other members of genus. The common name 'lesser spined *catopra*' is suggested.

**Comparison:** Britz *et al.*, (2012) recognized only four *Pristolepis* species namely *P. marginata*, *P. fasciata*, *P. grootii* and *P. rubripinnis*. They considered *P. malabarica* as a synonym of *P. marginata* and followed the view of of Talwar & Jhingran (1991) and Jayaram (2010). Jerdon (1849) described *Pristolepis marginata* from Wayanad of Kerala as one with 4 anal spines, 15 dorsal spines and dorsal fin and caudal fin margins with orange red color. But all the scientists after Jerdon (1849) could not find a species with characters as mentioned by Jerdon. They considered a *Pristolepis* with 3 anal spines and 14 dorsal spines and fin margin without an orange color as Jerdon's *Pristolepis*. Recently Plamoottil (2013) rediscovered the original *Pristolepis* with the same character stated by Jerdon (1849). Plamoottil & Abraham (2013) collected many specimens of *Pristolepis malabarica* from its type locality and resurrected it from its synonymy with *P. marginata*. A five anal spined *Pristolepis* namely *P. pentacantha* was also been discovered (Plamoottil, 2014, 2015) from near the type locality of *P. marginata* and *P. malabarica*.

*Pristolepis pauciradiatus* is a percoid fish with distinct differences from its congeners. It differs from its relative species in many reliable taxonomic characters. Its humeral blotch, lesser number of dorsal spines, greater number of pectoral and soft dorsal rays is helpful in demarcating this species from its congeners. The new species differs from *P. fasciatus* (Bleeker, 1851) in having a plain body (vs. with distinct vertical bands), XIII (vs. XIV) dorsal spines and 5- 6 (vs. 4) scales between lateral line and dorsal fin. *Pristolepis pauciradiatus* can be distinguished from *P. grooti* (Bleeker, 1852) in having 5- 6 (vs. 3) scales above lateral line and 12½

(vs. 9) scales below lateral line. The new species differs from *P. malabarica* Gunther in having XIII (vs. XIV) dorsal spines, 15 (vs. 11- 12) dorsal soft rays, 15- 16 (vs. 12- 14) pectoral fin rays, 5- 6 (vs. 3½) scales between lateral line and dorsal fin and 12½ (vs. 8½ -10½) scales between lateral line and ventral fin. *P. pauciradiatus* differs from *P. marginata* in having III (vs. IV) anal spines, 15- 16 (vs. 13- 14) pectoral fin rays, 15 (vs. 12) dorsal soft rays, XIII (vs. XV) dorsal spines and 5- 6 (vs. 4½) scales above lateral line. The new species differs from *Pristolepis*



Fig. 1. Freshly collected *Pristolepis pauciradiatus*, Holotype; Fig. 2. *P. pauciradiatus*, preserved, Paratype.



Fig. 3. Type locality of *P. pauciradiatus*;

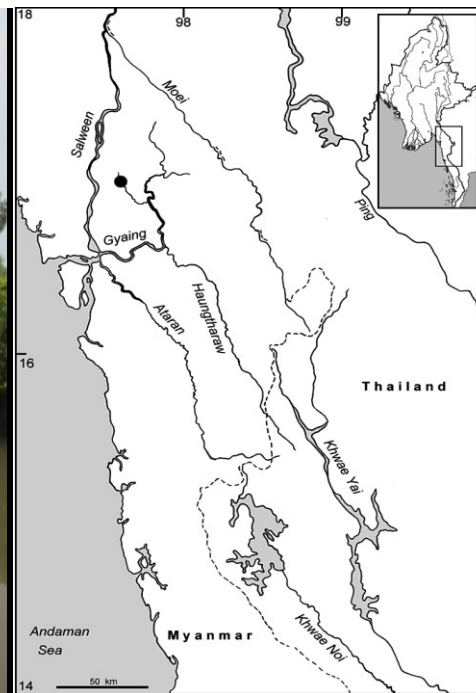


Fig. 4. Map showing type locality

**Table 1. Meristic counts of *Pristolepis pauciradiatus***

SL. NO.	CHARACTERS	HOLOTYPE	RANGE
1	Dorsal fin spines	XIII	XIII
2	Dorsal fin soft rays	15	15
3	Pectoral fin rays	15	15- 16
4	Ventral fin spines	I	I
5	Ventral fin rays	5	5
6	Anal fin spines	III	III
7	Anal fin soft rays	9	8-9
8	Caudal fin rays	i, 12, i	i, 12, i
9	Lateral line scales	21/8	21- 22/ 8
10	Pre dorsal scales	16	16
11	Scales between lateral line and dorsal fin	5	5-6
12	Scales between lateral line and ventral fin	12½	12½
13	Scales between anal fin and lateral line	9½	9½- 10½
14	Overlapping scales	3	3-4

*pentacantha* Plamoottil in having 15- 16 (vs. 14) pectoral fin rays, 15 (vs.11) dorsal fin rays, XIII (vs. XV- XVI) dorsal spines, III (vs. V) anal spines, 8- 9 (vs. 7) anal soft rays and 5- 6 (vs. 4) scales above lateral line. The new species further differs from the five anal spined *Pristolepis* in having longer (35.7- 38.8 vs. 33.3- 35.4) head, deeper body (42.5- 46.3 vs. 40.0- 41.3) and greater base of spined dorsal fin (42.8-45.6 vs. 47.1- 49.7). *P. pauciradiatus* differs from *P. rubripinnis* Britz *et al.*, in having XIII (vs.XIV) dorsal spines, 15 (vs. 14) dorsal soft rays and 15- 16 (vs. 14) pectoral fin rays. The new species further differs from *P. rubripinnis* in having hyaline (vs. orange red) fins. *P. pauciradiatus* differs from *P. procerus* Plamoottil in having XIII (vs. XIV) dorsal spines, 15 (vs. 13) dorsal rays, 15- 16 (vs. 13-14) pectoral fin rays, 21-22 / 8 (vs. 19- 21/10) lateral line scales, 3- 4 (vs. 2) overlapping scales, 5- 6 (vs. 4½) scales above lateral line and 12½ (vs. 9½) scales between lateral line and ventral fin. As *Pristolepis tetracantha* (Gunther, 1862) is a subjective synonym of *P. marginata* (Britz *et al.*, 2012 & Plamoottil, 2013) no comparison is included here.

**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 and 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 pentacantha*: Holotype: ZSI FF 5191, 94.5 mm SL, India: Kerala, Bavali, Kabani River, Wayanad, coll. Mathews Plamoottil, 10 January 2012. Paratype: ZSI FF 5192, 70.0 mm SL India: Kerala, 11 January 2012, same data as holotype.

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

*Pristolepis procerus*: Holotype: ZSI/NERC//4057, 85.0 mm SL, 10 December, 2013, Chaliyar, Kozhikode District, Kerala, India; coll.Mathews Plamoottil. Paratypes: ZSI/ANRC/16619, 72 mm SL, same information as in the Holotype.

*Pristolepis fasciata* and *P. grooti*: Data taken from original description and from Britz *et al* (2012).

**CONCLUSION**

*Pristolepis pauciradiatus* is a percoid fish with distinctive differences from its congeners. Its fin ray counts and scale counts are very peculiar and unseen in other *Pristolepis* species. Many researchers reported *Pristolepis fasciatus* from Myanmar. But these authors doubt its presence in Myanmar; it may be a misidentification of the new species. It is expected that more taxonomic works may be conducted on *Pristolepis* species of Southeast Asian countries in near future.

Table 2. Morphometric Characters of *Pristolepis pauciradiatus*, sp. nov

SL. No	Characters	Holotype	Range	Mean
1	Total Length (mm)	173.0	129.5- 173.0	151.0
2	Standard Length (mm)	136.0	98.0- 136.0	117.2
3	Head Length (mm)	51.0	38.0 - 51.0	43.7
% SL				
4	Head length	37.5	35.7- 38.8	37.3
5	Head depth	37.5	36.7-40.0	38.1
6	Head width	20.6	20.4-20.6	20.5
7	Body depth at dorsal fin	46.3	42.5- 46.3	44.2
8	Body depth at anal fin	49.3	42.8- 49.3	45.5
9	Body width at dorsal fin	19.8	18.7- 20.4	19.6
10	Body width at anal fin	13.2	10.2- 13.2	11.9
11	Predorsal distance	41.2	40.8- 42.7	41.6
12	Post dorsal distance	69.8	68.4- 70.6	69.6
13	Pre pectoral distance	37.5	34.0- 38.8	36.8
14	Pre pelvic distance	43.4	39.1- 44.4	42.3
15	Pre anal distance	75.7	68.1-75.7	72.4
16	Length of soft dorsal fin	22.1	18.7-22.4	21.1
17	Length of spinous dorsal fin	14.7	14.3- 15.3	14.8
18	Length of pectoral fin	27.2	25.5- 28.1	26.9
19	Length of pelvic fin	22.8	22.8- 24.5	23.4
20	Length of soft anal fin	22.1	15.3-22.1	18.9
21	Length of spinous anal fin	12.5	12.5- 15.3	13.7
22	Length of base of spinous dorsal	45.6	42.8-45.6	44.0
23	Length of base of soft dorsal fin	20.6	20.6-22.5	21.8
24	Length of base of anal fin	22.8	22.4-23.8	23.0
25	Distance from pelvic to anal fin	30.9	30.6-30.9	30.7
26	Distance from anal to caudal fin	31.6	31.6-34.5	32.6
27	Length of caudal fin	27.2	27.2-32.1	29.1
28	Length of caudal peduncle	7.4	7.4- 15.3	11.0
29	Depth of caudal peduncle	18.4	17.0- 18.4	17.8
30	Width of caudal peduncle	3.7	3.7- 4.2	4.0
31	Distance from ventral to vent	25	22.9-25.5	24.5
32	Distance from anal to vent	5.1	5.1- 6.1	5.7
% HL				
33	Head depth	100.0	94.7- 111.9	102.2
34	Head width	55.0	52.6-57.1	54.9
35	Eye diameter	25.5	25.5-28.9	27.7
36	Inter orbital width	19.6	17.6-26.2	21.1
37	Inter narial width	25.1	23.7- 25.1	24.2
38	Snout length	27.4	26.2- 27.4	26.6
39	Width of mouth gape	31.4	28.6- 31.4	29.6

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