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NEW RECORD OF A SRI LANKAN ENDEMIC SPECIES *LABEO FISHERI (*JORDAN AND STARKS, 1917; CYPRINIFORMES: CYPRINDAE) FROM KALAKKAD MUNDANTHURAI TIGER RESERVE, TAMIL NADU, INDIA.

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ABSTRACT
Labeo fisheri (Jordan and Starks 1917) showed its distribution only in mountain streams and rivers of Sri Lanka. Collection of one specimen from the upstream of Tamiraparani River in South Tamil Nadu, peninsular India showed its occurrence outside its original distribution range.

KEY WORDS: Cyprinidae, *Labeo*, Western Ghats, Kalakkad Mundanthurai Tiger Reserve, Tamil Nadu.

INTRODUCTION

Labeo fisheri, a rare barb having very limited distribution, is known from the mountain streams and rivers of Sri Lanka. Jordan and Starks (1917) described this species from Mahaweli River. So far, the distribution of the species had been restricted to Sri Lankan streams and rivers. During the survey of fish habitats and communities in the upper reaches of Tamiraparani River above the impoundments of Papanasam Reservoir, one specimen of *Labeo fisheri* was collected inside the Kalakkad Mundanthurai Tiger Reserve. The occurrence of this species in Kalakkad Mundanthurai Tiger Reserve (KMTR) shows its extension range to peninsular India.

MATERIALS AND METHODS

Fish collections were performed using cast nets and gill nets with varying mesh sizes from 8 -16 mm. and preserved in 10% formalin. Fish collections were made between 1996 and 2005 at river sites by earlier workers led by M. Arunachalam. Measurements were made point to point using digital calipers. Methods used for the meristic and morphometric characters are based on Hubbs and Lagler (1964). Preanal scales (Jayaram, 1991) are the scales from the anus to the isthmus. The meristic character of lateral transverse scale (L.tr.) rows described by Day (1889) is "number of longitudinal rows of scales between the back and abdomen, usually counted, unless some other part of the side is specified, from the anterior end of the dorsal fin to the ventral".

Morphometric characters of 9, 18-25, 29-31 and 35-36 are the additional truss characters (Strauss and Bookstein, 1982). Body measurements are expressed as percentage of Standard Length (%SL); head measurements are expressed as percentage of Head Length (%HL). Total length (TL) was also used for comparison.

Abbreviations: MSUMNH (Manonmaniam Sundaranar University Museum of Natural History), and CMA (Collections of M. Arunachalam).

Materials Examined and comparative materials:
Labeo fisheri CMA501, 1, 275.81mm SL., Tamiraparani River above Pabanasam Reservoir, Tamil Nadu, M. Arunachalam and team, 26 March 2003.

Labeo calbasu CMA 551, 2, 93.67 – 102.84 mm SL., Shimoga, Thunga River, Karnataka, M. Arunachalam and team, 21 November 2004.

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RESULTS

***Labeo fisheri* (Jordan and Starks, 1917)**

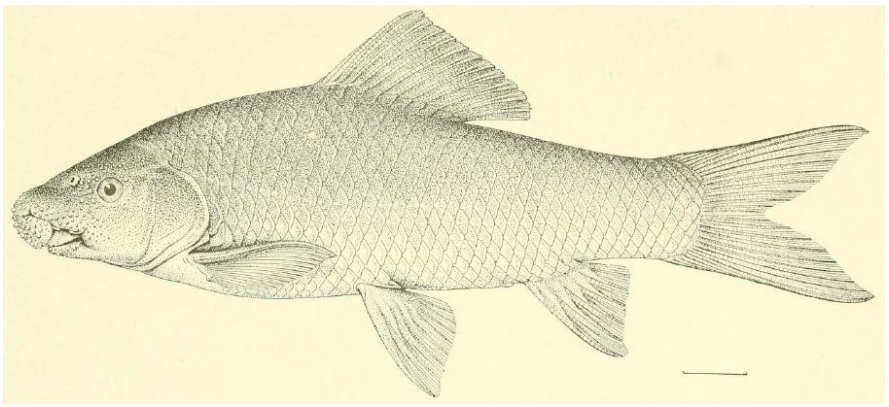
(Fig.1, Tables 1-2)

Diagnosis:

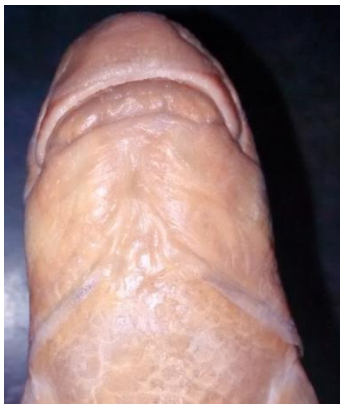
Labeo fisheri is distinguished from its closely related species, *Labeo calbasu* in having fewer dorsal fin rays (13 vs. 15-18), greater pre-dorsal scales (15 vs. 10-14) and the morphometric characters of dorsal insertion to caudal fin origin (38.01 vs. 18.21 - 20.80 % SL), dorsal-fin insertion to anal-fin insertion (30.26 vs. 20.7 – 20.93 %SL), dorsal fin base length (19.48 vs. 26.71 – 29.25% SL), post-dorsal length (89.88 vs. 49.47 -50.15%SL), and distance between pelvic fin and vent (24.04 vs. 17.42 – 18.33 %SL).

Description:

Body deep and slender, dorsal profile gently arched and its depth is 25.16 % SL, dorsal-fin origin anterior to pelvic-fin insertion vertically by a distance of 3 scale rows; pre-dorsal length 43.78 % SL; pre-pelvic length 46.55 % SL; pre-anal length 72.37% SL and pre-pectoral length 21 % SL; pelvic-fin insertion to anal-fin origin 21.68 %SL. A slight concavity at the nape with narrow dorsum rising steeply to dorsal origin. Caudal peduncle is moderately deep, depth at narrowest region 12.69 %SL; length of caudal peduncle 13.43 %SL.



a)



b)

c)

Figure 1. *Labeo fisheri* a) original diagram by Jordan and Starks, (1917)
b) Ventral view of mouth
c) Lateral view of *Labeo fisheri* collected from Tamiraparnai River, South Tamil Nadu, India.

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Table 1. Morphometric characters of *Labeo fisheri.*

No	Measurements from point to point (identified by numbers and names)	
1	Total length (mm)	356.1
2	Standard length (mm)	275.81
	% of Standard length	
3	Snout to urocentrum	95.00
4	Pre-anal length	72.37
5	Pre-dorsal length	43.78
6	Pre-pelvic length	46.55
7	Pre-pectoral length	21.00
8	Caudal peduncle length	13.43
9	Dorsal-fin origin to pelvic-fin insertion	29.93
10	Dorsal spinous height	12.35
11	Anal fin height	21.52
12	Depth of caudal peduncle	12.69
13	Caudal fin length	32.63
14	Dorsal fin height	25.59
15	Pectoral fin length	21.91
16	Pelvic fin length	19.88
17	Pelvic axillary scale length	7.83
18	Occiput to dorsal-fin origin	28.97
19	Occiput to pectoral-fin insertion	19.68
20	Occiput to pelvic-fin insertion	42.70
21	Dorsal-fin insertion to pelvic-fin insertion	25.79
22	Dorsal-fin origin to pectoral-fin insertion	28.06
23	Dorsal-fin origin to anal-fin origin	42.08
24	Dorsal-fin insertion to caudal-fin	38.01
25	Dorsal-fin insertion to anal-fin origin	26.86
26	Dorsal-fin insertion to anal-fin insertion	30.26
27	Dorsal-fin base length	19.48
28	Anal-fin base length	7.90
29	Pectoral-fin insertion to pelvic-fin insertion	26.15
30	Pectoral-fin insertion to anal-fin origin	47.48
31	Pelvic-fin insertion to anal-fin origin	21.68
32	Head length	22.16
33	Post- dorsal length	89.88
34	Body depth	25.16
35	Distance between pectoral-fin and vent	50.06
36	Distance between pelvic-fin and vent	24.04
	% of Head length	
37	Pre-occipital length	69.29
38	Snout to opercle	71.62
39	Upper jaw length	48.31
40	Snout length	48.19
41	Pre nasal length	35.01
42	Orbit width	18.89
43	Interorbital width	51.76
44	Internasal width	35.99
45	Head width	63.57
46	Gape width	41.68
47	Lower jaw to isthmus	38.51
48	Head depth at nostril	45.18
49	Head depth at pupil	62.06
50	Head depth at occiput	69.39
51	Maxillary barbel length	2.78

Table 2. Meristic counts of *Labeo fisheri* (n=1).

No	Meristic counts	
1	Dorsal fin rays	iii 10
2	Anal fin rays	ii 5
3	Pelvic fin rays	i 8
4	Pectoral fin rays	i 15
5	Caudal fin upper lobe	5+9
6	Caudal fin lower lobe	4+8
7	Lateral-line scales	42
8	Pre-dorsal scales	15
9	Upper transverse scale rows	8.5
10	Lateral line to pelvic scale rows	6.5
11	Circumpeduncular scale rows	21
12	Circumferential scale rows	37
13	Transverse breast scale rows	14
14	Anal scale rows	2
15	Pre-anal scale rows	47
16	Pre-pelvic scale rows	20
17	Anal fin to lateral line scale rows	6.5
18	Lateral transverse rows (L.tr.)	9/6

Distribution:
SRI LANKA: Mahaweli River, Kandy and Matale. (Deraniyagala, 1952). Currently this species has been recorded for the first time from peninsular India.

Habitat and Ecology:
Big sized species in the genus *Hypselobarbus,Tor* and *Labeo* prefer deep pools habitats in rivers (Arunachalam *et al*., 2005). Species of *Labeo* are essentially benthic feeders. Present collection of *Labeo fisheri* is also from a deep pool with a depth range of 0.5-2.0 m.

DISCUSSION
This species is closely related to *Labeo calbasu* (Hamilton, 1822), but differs from the color pattern. Few meristic characters like dorsal fin rays, pre-dorsal scales and pre-anal scales showed variation. Further, this species has been listed and described by Deraniyagala (1929) and Jayaram (2000) in his description based on the only specimen available in ZSI, Calcutta (Kolkatta) state that it is rare. Pethiyagoda (1991) in his treatise on the freshwater fishes of Sri Lanka states that this is too rare and difficult to capture.

As per original description (Jordan and Starks, 1917), this species can be diagnosed with all its congeners in the genus by having wide head (62.06% SL) its height one and half times in its length (61.13mm). This was mentioned by Jordan and Stark (1917) that *Labeo fisheri* is the only species with wider head when compared to *Labeo angra* and *Labeo pangusia*. The specimen collected from Tamiraparani River showed the same characteristic feature of the wider head, 4.5 times in body; body depth 3.97 times in the length. Eye small, less than the height of scales, (5.29) times in head; Barbel single on each side, its length (2.78% of HL) less than that of eye (18.89%). In the original description, the lateral line scale counts were 40: upper transverse scale rows of 7 ½ , lower transverse scale rows of 5 ½ , whereas our specimen shows 42 lateral line scales, upper transverse scale rows of 8, lower transverse scale rows of 6. A thin, soft flap from snout projecting in front of upper lip, its edge irregularly and firmly dentate. Mouth wide and broadly curved; upper lip smooth and swollen; lower lip irregularly scalloped behind, with a few irregular, fine cirrhi on its edge and a few elongate papillae on its surface. In the description of Deriniyagala (1952) mentioned that *Labeo fisheri* had

maxillary barbel and a pair of mental barbels hidden in post labial groove. But Jordan and Starks (1917) mentioned one pair of barbels only and in the present specimen also, there is one pair of maxillary barbels hidden in labial groove. Based on the comparison of original description and illustration by Jordan and Starks (1917) it is confirmed that the specimen collected from Tamiraparani River, South Tamil Nadu is a new record showing its distribution to peninsular India. Pethiyagoda (1991) in his treatise on the freshwater fishes of Sri Lanka states that this is too rare and difficult to capture.

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