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## *Mystus catapogon*, a new catfish (Siluriformes: Bagridae) species from Kerala, India

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#### ABSTRACT:

*Mystus catapogon*, a new fish species, is distinguished from its congeners by the following combination of characters: maxillary barbels reach beyond caudal fin base; outer mandibulars reach to base of ventral fin and inner mandibular barbels to middle of pectoral fin; Snout shorter; cephalic groove long, shallow and divided into two fontanelles and reaching occipital process; occipital process does not reach basal bone of dorsal fin; adipose fin located fairly behind the rayed dorsal fin; body without any mid lateral stripe. The new fish is described and compared with its congeners.

#### Keywords:

Taxonomy, Bagrid fish, *Mystus keralai*, *Mystus seengtee*

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## INTRODUCTION

Bagrids are the most common freshwater catfishes distributed in the water bodies of India. Rivers of Kerala are rich in quantity and species diversity of these medium sized edible catfishes. *Mystus*, *Hemibagrus*, *Horabagrus* and *Batasio* are the Bagrid catfish genera found in inland aquatic bodies of Kerala; of these, fishes of genus *Mystus* Scopoli are the most common catfishes found in the state. They can be diagnosed by the presence of cephalic groove, occipital process, sub equal jaws, four pairs of barbels, anterior rayed dorsal fin and posterior adipose dorsal fin. Fishes of the genera also bear 11–30 gill rakers on the first gill arch, a thin needle-like first infra orbital, 37–46 vertebrae and twisted and thickened metapterygoid loosely attached to the quadrate (Mo, 1991; Roberts, 1994). *Mystus oculatus* (Valenciennes, 1839), *M. armatus* (Day, 1865), *M. malabaricus* (Jerdon, 1848), *M. montanus* (Jerdon, 1848), *M. canarensis* Grant (Day, 1865; Grant, 1999), *M. indicus* (Plamoottil and Abraham, 2013 a), *M. heoki* (Plamoottil and Abraham, 2013 a), *M. menoni* (Plamoottil and Abraham, 2013 b) and *M. keralai* (Plamoottil and Abraham, 2014b) are the *Mystus* species described from Kerala.

The present catfish described from a small freshwater stream at Mavelikkara of Kerala, India bears features of the genus *Mystus* but possesses enough

characters to distinguish it from its congeners. So it is described here as a new species *Mystus catapogon*.

## MATERIALS AND METHODS

Methods used are those of Jayaram and Anuradha (2003) and Jayaram (2006 and 2010) and measurements were made point to point with dial calipers and data recorded to tenths of a millimeter. Body depth and body width were measured both at dorsal-fin origin and anus, vertically from dorsal fin origin to belly and from anus to dorsum, respectively. **Abbreviations:** RD- Rayed dorsal fin; AD- Adipose dorsal fin; CP- caudal peduncle; ZSI/WGRC- Zoological Survey of India, Western Ghats Regional Centre, Kozhikode; ZSI- Zoological Survey of India, Kolkata, West Bengal; ZSI/ANRC- Zoological Survey of India Andaman Nicobar Regional Centre, Port Blair.

## Results

### *Mystus catapogon*, new species

#### (Figures 1 – 3 and Table 1)

**Holotype:** ZSI/ ANRC 12758, 73.0 mm SL, India: Kerala, small water stream at Mavelikkara, coll. Mathews Plamoottil, 17 August 2013.

**Paratypes:** ZSI/ ANRC 12759, 4 specimens, 53.4- 66.0 mm SL, India: Kerala, small water stream at Mavelikkara, coll. Mathews Plamoottil, 17 August 2013.

**Diagnosis:** The new species differs from its congeners in having an yellowish body without any stripes, black



Figure 1. Dorsal view of head of *M. catapogon*



Figure 2. Lateral view of head of *M. catapogon*



**Figure 3.** *Mystus catapogon*, Holotype, ZSI/ ANRC 12758.

triangular mark outside operculum, long and shallow cephalic groove divided into two peripheral fontanelles, occipital process not reaching base of dorsal fin; shorter snout, elongated maxillary barbels which reach behind caudal fin base and longer outer mandibular and inner mandibular barbels. *Mystus catapogon* can further be distinguished from its congeners in having an elongated rayed dorsal fin which is higher than the body.

#### Description: Morphometric data given in Table 1

Dorsal profile evenly sloping and ventral profile almost straight. Head depressed; its dorsal profile naked and not covered with a skin. Cephalic groove elongated and shallow. It is divided into two peripheral fontanelles. First fontanel starts from front border to posterior border of eyes, second starts from there and reach the occipital process; hind part of the second fontanel is narrow and seems to be a separate peripheral fontanel. Occipital process short and it does not reach to dorsal fin front; an inter neural shield presents in between these two. Barbels unusually long; maxillary barbels very long, extending beyond the base of caudal fin, nasal barbels reach a little behind occiput and almost as long as head, outer mandibulars reaching nearly base of pelvic fin origin and inner pair extend to the middle of pectoral fin. Nasals are located nearly in the middle of snout and orbit. Anterior nostrils are located nearer to the tip of snout than eyes.

Rayed dorsal fin originates considerably behind the origin of the pectoral and fairly in front of pelvic fin origin; it is higher than the body; its tip a little filamentous. Rayed dorsal fin with one spinelet, one spine and seven branched rays; spine thin, ossified and strong; its outer margin smooth, inner margin smooth or with 5 small serrations. Adipose dorsal fin shorter and its base moderately long but starts considerably behind the posterior base of rayed dorsal fin. Pectoral fin with one spine and 8- 9 branched rays; spine strong, outer margin smooth, inner margin serrated with 11- 12 strong teeth. Pectoral tip never reaches ventral fin; ventral fin with one unbranched and five branched rays, located just below the posterior base of rayed dorsal fin; its tip reaches nearly below middle of adipose dorsal, reaches or reach nearer to the anal fin origin; anal fin provided with three undivided and 7 - 8 branched rays; it never reaches the base of caudal fin. Caudal fin with 15- 18 rays; lobes pointed; upper lobe considerably longer than the lower one. Distinct muscle bands seen on the lateral sides of the body; sensory organs on lateral line in the form of very small tubes.

#### Etymology

The specific epithet '*catapogon*' is a Greek word meaning 'long-bearded' and refers to the long maxillary and mandibular barbels of the new fish. It is invariable.



**Figure 4.** *M. keralai*, Holotype: ZSI FF 5091



**Figure 5.** *M. cavasius*: ZSI FF 4930, Ganges River



**Figure 6.** *Mystus seengtee*, ZSI FF 4936

**Distribution:** Currently known only from the type locality in Kerala.

#### Discussion

*Mystus keralai*, *M. seengtee* and *M. cavasius* are the close congeners of *Mystus catapogon*. These have elongated maxillary and mandibular barbels, long and narrow cephalic groove with double fontanelles which reaches occiput, a feebly serrate rayed dorsal fin and elongated caudal lobes with pointed tips. *Mystus catapogon* differs from *Mystus keralai* (Plamoottil and Abraham, 2014b) (Fig. 4) of Manimala River of Kerala, in having larger (26.3- 28.5 % HL vs. 21.9- 25.0 in *Mystus keralai*) and closely set (IOW 15.8- 25.2 % HL vs. 34.3- 34.4) orbits, slender head (HW 17.4- 19.8 % SL vs. 27.1- 27.6), shorter (3.1 – 4.8 % SL vs. 6.7- 8.3) and short based (24.2- 29.5 % SL vs. 34.5- 37.3)

adipose fin, longer nasal (83.9- 89.5 % HL vs. 81.3- 82.5), outer mandibular (167.7- 185.3 % HL vs. 146.8- 162.5), inner mandibular (102.8- 134.2 % HL vs. 80.6- 81.3) barbels and lesser number of branched rays in anal fin (7- 8 vs. 9). In the new fish a mid lateral band lacking (vs. present in *M. keralai*), a triangular black mark present (vs. absent) outer to opercle and caudal lobes are greatly unequal (vs. nearly equal). *Mystus catapogon* can further be distinguished from *M. keralai* in having a short (vs. long) occipital process which does not reach (vs. reach) rayed dorsal fin base. The new species can be differentiated from *M. cavasius* (Hamilton, 1822; Chakrabarty and Ng, 2005) (Fig. 5) of River Ganges, in having elongated nasal (83.9- 89.5 % HL vs. 68.0- 70.8 in *M. cavasius*), outer (167.7- 185.3 % HL vs. 132.0 - 145.8) and inner mandibular (102.8- 134.2 % HL vs. 64.6- 88.0) barbels. *Mystus catapogon* further differs from *M. cavasius* in having a short (vs. long) occipital process which does not reach (vs. reach) rayed dorsal fin base, a longer (26.0- 29.0 % SL vs. 21.4- 23.8) and wider (17.4- 19.8 % SL Vs. 15.0- 17.1) head, shorter snout (22.6- 29.1 % HL vs. 40.0- 41.7), longer pectoral spine (16.8- 17.9 % SL vs. 12.5- 14.9), longer anal fin (13.7- 16.9 % SL vs. 10.5- 13.6) and short based adipose dorsal fin (24.2- 29.5 % SL vs. 40.2- 45.6). *Mystus catapogon* differs from *Mystus seengtee* (Valenciennes, 1839; Chakrabarty and Ng, 2005) (Fig. 6) in having a longer head (26.0-29.0 % SL vs. 22.1-

Table 1. Biometric data for *Mystus catapogon* and its closely related species

Sl. No	Characters	<i>Mystus catapogon</i>			<i>M. keralai</i>			<i>M. seenghee</i>			<i>M. cavasius</i>		
		HT	Range	Mean	SD	Range	Mean	Range	Mean	Range	Mean	Range	Mean
1	Total length (mm)	87	70.4- 97.0	85.5	9.6	72-78	75	157.5-204.5	184.1	124.5- 144.0	141		
2	Standard length (mm)	66	53.4- 73.0	68.1	7.1	58-59	58.5	120.0-156.5	140.6	96.5-112.0	108.5		
3	Head length	26.1	26.0- 29.0	26.9	1.4	27.1- 27.6	27.4	22.1-24.2	22.8	21.4- 23.8	22.6		
4	Head width	17.4	17.4- 19.8	18.7	0.9	27.1- 27.6	18.5	13.4-15.9	15.1	15.0- 17.1	16.2		
5	Body depth at dorsal origin	20.9	18.5- 22.5	20.8	1.5	21.0- 22.4	21.7	20.3-22.7	21.4	17.8- 21.2	18.9		
6	Body depth at anal origin	18.2	17.1- 18.7	18.0	0.6	18.6- 18.9	18.8	14.2-15.8	15.3	12.9- 15.7	14.3		
7	Body width at dorsal origin	14.8	14.8- 18.4	16.2	1.7	15.8- 17.0	16.4	13.8-14.5	14.2	12.9- 15.2	14.7		
8	Body width at anal origin	10.2	8.9- 10.9	9.84	0.7	10.3- 11.2	10.8	7.6- 8.3	7.8	6.1- 8.0	7.4		
9	Pre dorsal length	36.4	35.4- 36.6	36.1	0.6	36.2- 38.9	37.6	34.4-34.8	34.6	32.1-39.1	35.6		
10	Post dorsal length	67.4	64.6-68.7	66.9	1.8	67.2- 67.8	67.5	65.2-71.0	67.4	63.8- 69.5	66.7		
11	Pre pelvic length	46.9	45.2-52.0	48.7	2.7	48.3- 54.2	51.3	45.4-49.0	47.4	44.4- 46.6	45.6		
12	Length of rayed dorsal	25.7	22.9-27.1	25.1	1.5	22.4- 23.7	23.1	20.7-23.4	22.5	18.8-22.4	20.6		
13	Height of adipose dorsal	4.5	3.1- 4.8	4.1	0.7	6.7- 8.3	7.5	5.5- 6.6	5.7	4.7- 6.7	6.4		
14	Length of pectoral	21.2	20.0- 21.2	20.5	0.5	17.2- 19.5	18.4	16.9- 20.0	18.1	14.7- 17.1	15.9		
15	Length of pelvic	18.2	16.8- 18.5	17.6	0.7	17.2- 18.8	18.0	15.3- 16.7	16.1	14.3- 15.2	14.8		
16	Length of anal	14.1	13.7- 16.9	15.4	1.4	18.1- 21.2	19.6	13.5-16.7	14.8	10.5- 13.6	10.6		
17	Length of dorsal spine	12.9	11.5- 13.1	12.6	0.7	12.9-13.6	13.2	13.7-15.9	15.1	10.6- 13.3	12.0		
18	Length of pectoral spine	17.9	16.8-17.9	17.3	0.5	16.9-17.2	17.1	13.4-14.8	14.5	12.5- 14.9	13.7		

19	Length of upper caudal lobe	31.8	31.8-33.8	32.8	0.9	29.8-32.2	31.0	30.3-31.6	30.9	28.6-31.4	30
20	Length of lower caudal lobe	27.3	27.3-29.6	28.0	0.9	28.1-28.8	28.4	21.7-24.2	23.0	22.8-25.7	24.5
21	Length of base of rayed dorsal	16.7	13.8-17.2	15.7	1.5	16.9-17.2	17.1	13.4-14.6	13.9	12.5-13.3	12.9
22	Length of base of adipose dorsal	24.2	24.2-29.5	27.5	2.1	34.5-37.3	35.8	42.1-46.2	43.6	40.2-45.6	41.9
23	Length of base of anal	11.4	9.2-13.1	11.3	1.7	12.1-13.7	12.9	9.2-10.3	9.8	8.6-10.7	9.6
24	Length of base of caudal	14.4	10.8-14.4	13.1	1.5	15.5-16.0	15.8	7.9-12.1	9.8	10.3-11.1	10.6
25	Length of caudal peduncle	17.4	13.8-19.2	17.32	2.1	18.6-20.7	19.7	19.2-22.4	20.7	20.9-22.8	21.6
26	Depth of caudal peduncle	10.6	10.0-11.2	10.68	0.4	11.8-12.2	12.1	7.6-8.3	7.9	8.0-9.1	8.3
27	Distance from pelvic to anal	20.4	15.9-23.1	20.4	2.7	19.3-20.3	19.8	19.8-23.6	21.5	21.8-24.8	24.4
28	Inter dorsal Distance	12.1	6.8-12.1	9.1	1.8	4.3-5.1	4.7	0	0	0	0
29	Distance from anal to vent	4.5	3.0-5.5	4.1	0.9	6.0-6.4	6.2	7.0-9.6	7.8	4.7-6.1	5.4
30	Distance from ventral to vent	13.6	11.6-17.5	14.5	2.3	15.5-16.1	15.8	13.3-16.3	15.0	14.3-19.6	16.3
	% of Head Length										
31	Head depth	63.9	63.1-63.9	63.5	0.6	53.1-62.5	57.8	65.6-68.8	67.2	64-66.7	65.0
32	Distance from occipital to snout	87.2	82.6-87.2	84.5	1.8	84.4-86.3	85.4	82.8-87.5	84.8	86.9-91.9	88.6
33	Distance from occipital to dorsal	51.7	47.1-51.7	49.7	1.9	46.7-50.0	48.4	60.3-71.9	65.8	61.3-68.0	64.5
34	Post orbital length	43.6	41.2-47.4	44.6	2.4	40.6-43.8	42.2	39.3-42.9	40.9	39.6-41.5	40.6
35	Head length excluding snout	75.6	70.6-75.6	72.9	2.0	62.5-68.8	65.7	65.5-71.9	67.7	64.6-70.0	68.2
36	Eye diameter	28.5	26.3-28.5	26.88	2.0	21.9-25.0	23.4	26.9-32.8	27.3	29.2-30.0	29.6

37	Inter orbital width	18.8	15.8- 25.2	22.66	5.1	34.3-34.4	34.4	21.9-31.4	26.0	33.3-34.0	33.7
38	Snout length	29.1	22.6- 29.1	26.32	2.7	37.5	37.5	31.3-35.9	35.2	40.0-41.7	40.8
39	Mouth gape Width	34.8	29.4- 38.9	33.8	4.0	37.5-45.0	41.3	32.8-37.1	34.4	36.0-41.7	38.8
40	Maxillary barbel length	401.2	374.2- 401.2	386.56	9.9	375- 418	396	382.8-443.8	418.4	377-440	408.5
41	Nasal barbel length	87.2	83.9- 89.5	87.35	2.4	81.3-82.5	81.8	62.1-78.1	71.0	68.0-70.8	69.4
42	Outer mandibular barbel length	177.3	167.7- 185.3	178.5	6.8	146.8-162.5	154.7	146.9-167.1	156.4	132-145.8	138.9
43	Inner mandibular barbel length	110.5	102.8- 134.2	114.25	13.7	80.6-81.3	80.9	81.4-93.1	85.8	64.6-88.0	76.3
						Ratios					
44	Length of base of AD / Length of base of RD	1.5	1.5- 2.0		1.76	0.1	1.8-2.1	1.9	2.9-3.4	3.1	3.2-3.7
45	Length of CP/Depth of CP	1.6	1.4- 1.7		1.6	0.1	1.4-1.6	1.5	2.3-2.8	2.6	2.4-2.8
46	Inter orbital width /Eye diameter	1	0.8- 1.0		0.9	0.08	1.2-1.3	1.3	0.7-0.9	0.8	0.7-0.8
47	Snout length / Eye diameter	1	0.8- 1.0		0.98	0.1	1.3- 1.4	1.4	1.0-1.3	1.2	0.9-1.4
											1.2

24.2), shorter snout (22.6- 29.1 %HL vs. 31.3- 35.9), not reach), externally visible (vs. invisible- as it is covered short based adipose dorsal fin (24.2- 29.5 % SL vs. 42.1 by a sheath of flesh) occipital process and long maxillary 46.2) and elongated inner mandibular barbels (102.8- (374.2- 401.2 % HL vs. 200.0- 291.7), outer mandibular 134.2 % HL vs. 81.4-93.1). The new species further (167.7- 185.3 % HL vs. 92.0- 137.5) and inner mandibular differs from the Sykes' *Mystus* in having a short (vs. (102.8- 134.0 % HL vs. 65.3- 88.6) barbels. *Mystus* long) occipital process which does not reach (vs. reach) *catapogon* differs from *Mystus menoni* (Plamoottil and rayed dorsal fin base and in lacking (vs. possessing) any Abraham, 2013 b) in having a body without distinct mid color spot on the front base of rayed dorsal fin. The new lateral stripes (vs. thick bluish green mid lateral band species differs from *Mystus armatus* (Day, 1865, 1878, present in *M. menoni*) and long (vs. short) cephalic groove 1889; Grant, 1999, 2004; Plamoottil and Abraham, reaching (vs. not reaching) occiput and long maxillary 2014a) in lacking (vs. having a black spot in *Mystus* (374.2- 401.2 % HL vs. 280.0- 312.0), nasal (83.9- 89.5 % *armatus*) any color spot on the front base of rayed dorsal HL vs. 62.5- 83.0), outer mandibular (167.7- 185.3 % HL fin, long (vs. short) cephalic groove reaching (vs. not vs. 124.0- 148.0) and inner mandibular (102.8- 134.2% reaching) occipital process, and long maxillary (374.2- HL vs. 83.0- 104.0) barbels.

401.2 % HL vs. 343.0- 367.0), nasal (83.9- 89.5 % HL vs. 73.0- 77.0) outer mandibular (167.7- 185.3 % HL vs. 132- +136.8.) and inner mandibular (102.8- 134.2% HL vs. 90- 94.7) barbels.

The new species differs from *Mystus vittatus* of Tranquebar in having cephalic fontanel reaching (vs. not reaching in *M. vittatus*) base of occipital process, occipital process not reaching (vs. reaching) the basal bone of

*Mystus catapogon* differs from *M. oculatus* dorsal fin and maxillary barbels reaching beyond caudal (Valenciennes, 1839) in having smaller orbits (26.3- 28.5 % HL vs. 33.0- 40.0) and long based adipose dorsal fin (24.2- 29.0 % SL vs. 17.2-19.0.). *M. catapogon* differs from *Mystus keletius* (Valenciennes, 1839) of Pondicherry in having a cephalic groove reaching (vs. not reaching) base of the occipital process, occipital based (24.2- 29.0 % SL vs. 21.5) adipose dorsal fin, long process not reaching (vs. reaching) base of dorsal fin and (vs. short) cephalic groove reaching (vs. not reaching) maxillary barbels reaching beyond caudal fin base (vs. occipital process, and long maxillary (374.2- 401.2 % HL reaching pelvic fins). *Mystus catapogon* differs from *Mystus montanus* (Jerdon, 1848) in having long not reaching) base of the occipital process, occipital process not reaching (vs. reaching) base of dorsal fin and (vs. short) cephalic groove reaching (vs. not reaching) maxillary barbels reaching beyond caudal fin base (vs. occipital process, and long maxillary (374.2- 401.2 % HL reaching pelvic fins). *Mystus catapogon* differs from *Mystus gulio* (Hamilton, 1822) of Gangetic estuaries in mandibular (167.7- 185.3 % HL vs. 100.0) and inner having anal fin with 7 – 8 (vs. 9- 11 in *Mystus gulio*) mandibular (102.8- 134.0 % HL vs. 63.2) barbels. branched rays, cephalic groove reaching (vs. not reaching)

The new species differs from *Mystus indicus* base of occipital process and long based adipose dorsal fin (Plamoottil and Abraham, 2013a) in having shorter (22.6- (24.2- 29.5 % SL vs. 8.5- 9.4). The new species differs 29.1% HL vs.36.2- 42.5) snout, closely set (IOW 15.8- 25.2% HL vs.36.3- 45.0) orbits, shorter (3.1- 4.8 % SL vs. 5.2- 6.5) adipose dorsal fin and elongated (374.2 % HL vs. 289.7- 375.0) maxillary barbels. The new species *bleekeri* of Bengal in having a short occipital process which does not reach basal bone of dorsal fin (vs. no differs from *M. heoki* (Plamoottil and Abraham, 2013a), interdorsal distance).

*Mystus malabaricus* (Jerdon, 1848) and *M. canarensis* Grant (Day, 1865; Grant, 1999; Grant, 2004) in having an elongated cephalic groove which reach occiput (vs. does

## CONCLUSION

Even though *Mystus* is the most common Mathews Plamoottil, 10 January 2011 and 16 October freshwater catfish in Kerala, taxonomic studies on it were 2011. *Mystus malabaricus*: ZSI FF 4931, 5 ex., 71.5-102 very rare in the state. No new species of it had been mm SL, Kallodi, Mananthavady River, Wayanad, Kerala, discovered after the discovery of *Mystus armatus* from collected by Mathews Plamoottil, 20.03.2013. *Mystus* Trichur. But during the last two years four new *Mystus oculatus*: ZSI FF 4933, 5 ex., 85- 91 mm SL, species were discovered and described from Central Arattupuzha, Karavannoor River, Trichur, Kerala, Travancore of Kerala. *Mystus catapogon* is a peculiar collected by Mathews Plamoottil, 10.01.2013; ZSI 487, I catfish with many unique characters. Detailed taxonomic ex., India, purchased from Francis Day. *Mystus armatus*: studies will certainly help to find out many new fish ZSI FF 5095, 2 ex., Arattupuzha, Karavannoor River, species of this genus. Trichur, collected by Mathews Plamoottil, 13.01. 2013;

## **Comparative materials examined**

Manimala River at Elankadu, Kerala, India, collected by Mathews Plamoottil, 10 January 2011 and 16 October 2011. *Mystus malabaricus*: ZSI FF 4931, 5 ex., 71.5-102 mm SL, Kallodi, Mananthavady River, Wayanad, Kerala, collected by Mathews Plamoottil, 20.03.2013. *Mystus oculatus*: ZSI FF 4933, 5 ex., 85- 91 mm SL, Arattupuzha, Karavannoor River, Trichur, Kerala, collected by Mathews Plamoottil, 10.01.2013; ZSI 487, 1 ex., India, purchased from Francis Day. *Mystus armatus*: ZSI FF 5095, 2 ex., Arattupuzha, Karavannoor River, Trichur, collected by Mathews Plamoottil, 13.01. 2013; *Mystus montanus*: ZSI FF 5096, 1 ex., 67.5 mm SL,

*Mystus keralai*: Holotype: ZSI FF 5091, 59.0 mm SL, India: Kerala, Manimala River at Chenappady, collected by Mathews Plamoottil, 16.03.2013; *Mystus canarensis*: Mathews Plamoottil, 10 January 2011. Paratype: ZSI FF 5092, 1 specimen, 58.0 mm SL, India: Kerala, Manimala River at Chenappady, Mathews Plamoottil, 10 January 2011. *Mystus cavasius*: ZSI FF 4930, 5 ex, 96.5- 112.0 mm SL, Serrampore, Ganges River, West Bengal, 10.02.12; *Mystus bleekeri*: ZSI unreg., 4 exs, 60.9- 81.1 mm SL, collected by Mathews Plamoottil, 14.04.2012. *Mystus vittatus*: *seengtee*: ZSI FF 4936, 4 ex, 120- 156.5 mm SL, Koodal ZSI, unregistered, 10 exs, 39.8- 76.5 mm SL, Vennar kadavu, Mananthavady River, Wayanadu, Kerala, River, collected by Jayaram (2002), 26.3. 1973. *Mystus indicus*: Holotype, ZSI/FF 4627, 100 mm SL, Kuttoor, Nainakulam tank, Thirunelveli, coll. Santhanakumar, Manimala River, Kerala, India; collected by Mathews 03.04. 1976.

Plamoottil, 17 February 2011. Paratypes, ZSI/

WGRC/2418, 7 specimens, 81- 107 mm standard length, **ACKNOWLEDGMENTS**

Kuttoor of Manimala River, Kerala, India; collected by The author is greatly indebted to Dr. Richard Mathews Plamoottil, 07 March 2011. *Mystus heoki*: Pyle, Database Coordinator and Associate Zoologist in Holotype, ZSI/FF 4626, 137 mm SL, Elankadu, Ichthyology, Department of Natural Sciences, Bishop Manimala River, Kerala, India; collected by Mathews Museum, Honolulu, Hawaii. I am also grateful to Plamoottil, 10 January 2011. Paratypes, ZSI/WGRC 2419, Dr.Miguel A. Alonso-Zarazaga, Department of 5 specimens, 85.5- 120 mm standard length, Elankadu, Biodiversity and Evolutionary Biology, National Museum Manimala River, Kerala, India; collected by Mathews of Natural History, Madrid, Spain for his valuable Plamoottil, 10 January 2011. *Mystus menoni*: Holotype, suggestions which helped to improve this article. I am ZSI/FF 4628, 101.7 mm standard length, Manimala River thankful to anonymous reviewers for comments that at Elankadu, Kerala, India; collected by Mathews helped improve the manuscript.

Plamooottil, 10 January 2011. Paratypes, ZSI/WGRC/IR/V

2417, 5 specimens, 96-121 mm standard length,

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