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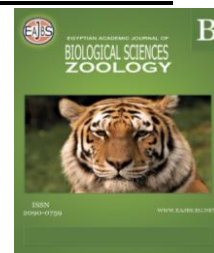


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Taxonomic Notes on Native Cyprinoid Fishes of Southern Karnataka, India

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ABSTRACT

Cyprinoid fishes are the most common freshwater fishes in India. They are copiously dispersed in diverse freshwater bodies of Kerala, Tamil Nadu, Karnataka and its neighbouring states of India. They are broadly used as ornamental and food fishes; some large fish species are utilized as game fishes. *Puntius*, *Pethia*, *Systemus*, *Salmostoma*, *Haludaria*, *Dawkinsia*, *Barilius*, *Hypselobarbus*, *Labeo*, *Garra*, etc are the major cyprinoid genera of south India; of these, *Puntius*, *Dawkinsia*, *Barilius* and *Hypselobarbus* preponderate in all catches from water bodies of south India. During this research work, ichthyodiversity and taxonomic studies were conducted on various species of cyprinoid fish species of Karnataka state, India. Different species of cyprinoid fishes were collected from several rivers of the state; most of the collections were from the Cauvery River and its tributaries; many cyprinoids were procured from Bhadra River, Tunga River, Nethravathi River and Payaswini River at Karnataka. Their essential taxonomic details such as meristic counts, morphometric characters and other diagnostic features were analysed.

INTRODUCTION

Fishes of family cyprinidae are small to medium-sized edible and ornamental fishes widely distributed in the freshwater bodies of Africa, Asia, Australia, Central and North America, New Zealand and New Guinea. They are the most common and abundant freshwater fishes. in south-eastern Asia. Rainboth(1991)listed 177 genera of Asian cyprinids and grouped those under 7 subfamilies.

Cyprinids can be diagnosed by having a compressed body, rounded abdomen, protractile, terminal or inferior mouth, toothless jaws and wide gill openings. Body wholly or partly covered with small to moderate cycloid scales. The dorsal fin is composed largely of soft branched rays, but anterior unbranched rays often ossified into the spine which sometimes may bear weak or strong serrations. Ventral fin abdominal and inserted behind to pectoral fin. The lateral line is mostly complete.

In India, Karnataka state is blessed with a number of rivers such as Cauvery, Krishna and Godavari and its distributaries. In the state, Cypriniformes is the largest and most diverse group of fishes having wide distribution and considerable economic value. Most of them are food and ornamental fishes. Genera such as *Dawkinsia*, *Barilius*, *Hypselobarbus*, *Osteochilichthys*, *Devario*, *Garra*, *Salmostoma*, *Systemus*, *Puntius*, etc

are moderately distributed in various aquatic bodies of Karnataka.

During this study, the survey was conducted on Krishna and Cauvery Rivers and their tributaries for ichthyotaxonomic studies. Detailed systematic studies were conducted on cyprinid fishes of the selected areas in Karnataka.

MATERIALS AND METHODS

Fishes were collected from different locations of Karnataka for the period of 2019 May to 2021 December by using gill net and cast net. Collected fishes were preserved in 10% formalin. After fixation, they were taken out and identified. For the methods and identification of fishes Day (1878), Talwar & Jhingran(1991), Jayaram & Dhas (2000), Jayaram(2002) were used. Measurements were made a point to point with dial calipers and data recorded to tenths of a millimetre. Systematic identification is based mainly on meristic, morphometric and other relevant taxonomic characteristics. Measurements and counts were made on the left side of the specimens. In the meristic counts of fin rays, lower case Roman numerals indicate soft or hard unbranched rays and Arabic numerals indicate branched rays. Length of head and other measurements of body parts are given as a percentage of standard length (SL); parts of the head are presented as a percentage of head length (HL).

List of Abbreviations: D- Dorsal fin rays; P- Pectoral fin rays; V- Ventral/ pelvic fin rays; A- Anal fin rays, C- Caudal fin rays; LLS- Lateral line scales; PDS- Pre-dorsal scales; LL/D- Scales between lateral line and dorsal fin; LL/V- Scales between lateral line and ventral fin; LL/A- Scales between lateral line and anal fin; CPS- Circumpeduncular scales; NB- Number of barbels; HL- Head length; HD- Head depth; HW- Head width; BDD- Body depth at dorsal fin; BDA- Body depth at anal fin; BWD- Body width at dorsal fin; BWA- Body width at anal fin; PRD- Pre dorsal length; POD- Post dorsal length; PRPL- Pre pelvic distance; PRA- Pre anal distance; LD- Length of dorsal fin; LP- Length of pectoral fin; LV- Length of ventral fin; LA- Length of anal fin; LC- Length of caudal fin; LBD- Length of base of dorsal fin; LBA- Length of base anal fin; LCP- Length of caudal-peduncle; DCP- Depth of caudal-peduncle; WCP- Width of caudal-peduncle; DP-PL- Distance from pectoral fin to pelvic fin; DPL-A- Distance from pelvic fin to anal fin; DA-C- Distance from anal fin to caudal fin; DVV- Distance from ventral fin to vent; DAV- Distance from anal fin to vent; ED- Eye diameter; PRORB- Pre orbital distance; PORB- Post- orbital distance; IOW- Inter orbital width; INW- Inter narial width; WGM- Width of gape of mouth; STL- Snout length; WGM- width of gape of mouth.

RESULTS AND DISCUSSION

23 species of Cyprinid fishes were collected during the study period (Fig. 1-23) from different locations of Karnataka (Fig. 24- 34). These belong to 12 genera. Most of the fishes can be used as aquarium fishes due to their attractive body colour. All collected fishes are edible except a few species which are not consumed because of their small size. *Rasbora dandia*, *Dawkinsia filamentosa*, *Hypselobarbus species*, *Garra species*, *Barilius species* are the most common and abundant fishes in Southern Karnataka. Taxonomic details of the fishes collected are as follows:

***Puntius cauveriensis* (Hora, 1937):**

Hora SL (1937). Notes on fishes in the Indian Museum. XXVIII. On three collections of fish from Mysore and Coorg, South India. Records of the Indian Museum (Calcutta) v. 39 (pt 1): 5-28.

1. *Puntius cauveriensis* Fig. 2. *Cirrhinus fulungee*

Locality: Cauvery River, Coorg

Diagnosis: Body silvery without any colour spots or strips. Head relatively small. Scales large; 9 branched rays in the dorsal fin and 26 lateral line scales.

Meristic counts: D- ii, 9; P- i, 15; V- i, 8; A- ii, 5; C- iii, 17, iii; LLS- 26; PDS- 10; CPS- 6; LL/D- 4 ½; LL/V- 3 ½; LL/A- 3 ½; NB- 4.

Morphometric characters: TL (mm)- 299.0; SL (mm)- 235.0; HL (mm)- 65.0. % **SL:** HL- 27.6; HD- 20.4; HW- 18.2; BDD- 32.3; BDA- 20.8; BWD- 24.5; BWA- 14.4; PRD- 57.0; POD- 53.6; PRPL- 52.3; PRA- 81.2; LD- 23.8; LP- 21.2; LPL- 18.2; LA- 21.2; LC- 28.9; LBD- 16.1; LBA- 8.0; LCP- 21.2; DCP- 14.4; WCP- 7.2; DP-PL- 26.8; DPL- A- 26.8; DA-C- 26.8; DVV- 22.5; DAV- 4.25. % **HL:** HD- 73.8; HW- 66.1; ED- 21.5; PRORB- 49.2; PORB- 53.8; IOW- 41.5; INW- 26.1; STL- 30.7; WGM- 26.1.

Other characteristics: body fairly deep. Two pairs of barbels are present. Fins do not reach each other. Bases of scales below lateral-line bluish-grey. Dorsal fin, anal fin and caudal fins slate color. Pectoral and pelvic fins hyaline.

***Cirrhinus fulungee* (Sykes, 1841):**

Sykes (1841) *Chondrostoma fulungee* *Trans. Zool. Soc. Lond.* 2: 358 (type

locality: Deccan)

Locality: Cauvery River, Coorg

Diagnosis: The body is exceptionally slender and fairly elongated. Mouth inferior. A pair of very short barbels are present. 8 branched rays in the dorsal fin, 45-47 lateral line scales and 1 pair of barbels.

Meristic counts: D- ii, 8; P- i, 12-13; V- i, 8; A- ii, 5; C- iii, 17, iii; LLS- 45-47; PDS- 15; CPS- 8; LL/D- 8 ½-10 ½; LL/V- 6 ½; LL/A- 6 ½.

Morphometric characters: TL (mm)- 106.0-122.0; SL (mm)- 84.0-97.0; HL (mm)- 20.0-22.0. % **SL:** HL- 22.6-23.6; HD- 17.5-17.8; HW- 13.0-13.4; BDD- 25.7-27.3; BDA- 17.5-17.8; BWD- 14.2-14.4; BWA- 10.3-10.7; PRD- 45.3-46.4; POD- 54.7-56.7; PRPL- 50.0-51.5; PRA- 76.1-77.3; LD- 23.7-23.8; LP- 16.4-16.4; LPL- 16.6-17.5; LA- 15.4-16.6; LC- 27.3-29.8; LBD- 15.4-16.4; LBA- 8.2-8.3; LCP- 16.6-18.5; DCP- 11.9-12.3; WCP- 7.1-7.2; DP-PL- 28.8-29.7; DPL-A- 25.7-26.1; DA-C- 23.7-25.0; DVV- 20.2-20.6; DAV- 4.7-5.1. % **HL:** HD- 75.0-77.2; HW- 55.0-59.0; ED- 30.0-31.8; PRORB- 60.0-68.1; PORB - 36.3-40.0; IOW- 40.0-45.2; INW- 22.7-25.0; STL- 35.0-36.3; WGM- 30.0-31.8.

Other Characters: Dorsal fin inserted towards the tip of snout than the base of the caudal fin. Fins not touching reach each other. Caudal fin deeply forked. Olive on back and flank; belly silvery. Dorsal and caudal fins are dark-stained.

***Puntius carnaticus* (Jerdon, 1849):**

Barbus carnaticus Jerdon, (1849), *Madras Journal of Literature and Science*, 15: 311 (type-locality: Cauvery River).

Collection Locality: Cauvery River at Hunsur, Karnataka.

Diagnosis: Body elongates. Mouth sub-terminal. Barbels two pairs. Dorsal fin inserted to the tip of snout than the base of the caudal fin. 8 branched rays in the dorsal fin and 31- 33 lateral line scales.

Meristic counts: D- iii, 8; P- i, 14; V- i, 8; A- ii, 5; C- iii, 17, iii; LLS- 31-33; PDS- 9-11; CPS- 8; LL/D- 5 ½; LL/V- 4 ½; LL/A- 4 ½-5 ½.

Morphometric characters: TL (mm)- 131.0-159.0; SL (mm)- 101.0-127.0; HL (mm)- 25.0-30. % **SL:** HL- 23.6-24.7; HD- 17.8-18.1; HW- 14.8-15.7; BDD- 31.4-31.6; BDA- 20.4-20.7; BWD- 15.8-17.3; BWA- 8.91-9.44; PRD- 48.5-49.6; POD- 55.4-56.6; PRPL- 47.2-51.4; PRA- 72.4-77.2; LD- 27.5-27.7; LP- 19.6-20.7; LV- 18.8; LA- 18.1-18.8; LC- 29.1-30.6; LBD- 16.5-17.8; LBA- 7.87-8.91; LCP- 17.3-17.8; DCP- 13.3-13.8; WCP-

3.93-4.95; DP-PL- 25.9-28.7; DPL-A- 25.9-27.7; DA-C- 19.6-21.7; DVV- 23.6-24.7; DAV- 2.36-2.97. % **HL:** HD- 72.0-76.6; HW- 60.0-66.6; ED- 30.0-32.0; PRORB - 56.6-60.0; PORB- 43.3-44.0; IOW- 40.0; INW- 26.6-28.0; STL- 32.0-33.3; WGM- 26.6-28.0.

Other Characteristics: Barbels two pairs; last unbranched dorsal-fin ray strong, smooth and osseous. None of the fins touch each other. The upper lobe of the caudal fin is slightly longer than the lower one. Flanks silvery with a mid-lateral dark band running from operculum to base of the caudal fin. Pectoral and pelvic fins are yellow. Dorsal fin red.

***Osteochilichthys brevidorsalis* (Day, 1873):**

Semiplotus brevidorsalis Day (1873), *Proc. Zool. Soc. Lond.* : 239 (type-locality: Rivers below Nilgiri Hills, Western Ghats).

Collection Locality: Cauvery River at Sreerangapattinam, Karnataka

Diagnosis: Body deeper. Tubercles present across snout. Barbels absent. Last unbranched dorsal-fin ray osseous, strong and smooth. 11- 12 branched rays in the dorsal fin. Lateral line scales 40.

Meristic Counts: D- iii, 11-12; P- i, 13; V- i, 8; A- iii, 5; C- iii, 17, iii; LLS- 40; PDS- 12-13; CPS- 7-8; LL/D- 8 ½ ; LL/V- 4 ½ ; LL/A- 5 ½ ; NB- 0.

Morphometric Characters: TL (mm)- 183.0-214; SL (mm)- 140.-163.0; HL (mm)- 30.0-34.0. % **SL:** HL- 20.8-21.4; HD- 19.2-21.4; HW- 14.2-15.3; BDD- 35.0-36.1; BDA- 23.5-24.5; BWD- 16.5-17.8; BWA- 10.7-11.0; PRD- 44.2-47.2; POD- 60.0-62.5; PRPL- 46.6-47.7; PRA- 71.7-75.7; LD- 30.7-31.9; LP- 20.7-20.8; LPL- 21.4-22.0; LA- 20.7-21.4; LC- 30.0-30.7; LBD- 22.1-23.9; LBA- 10.0-11.0; LCP- 21.4-22.0; DCP- 12.8-14.1; WCP- 4.90-5.0; DP-PL- 28.2-28.5; DPL-A- 25.1-28.5; DA-C- 24.2-25.7; DVV- 23.3-25.7; DAV- 1.84-2.85. % **HL:** HD- 90.0-102.9; HW- 66.6-73.5; ED- 38.2-40.0; PRORB - 66.6-67.6; PORB- 33.3-35.2; IOW- 43.3-47.0; INW- 30.0-35.2; STL- 32.3-33.3; WGM- 33.3-35.2.

Other Characters: Dorsal fin inserted towards the tip of snout than the base of the caudal fin. Pelvic fin located in advance to the dorsal fin. None of the fins touched each other. Scales moderate to large. Lateral-line complete.

***Hypselobarbus micropogon* (Valenciennes, 1842):**

Barbus micropogon Valenciennes (1842), 2. *Hist. Nat. Poiss.*, 16: 188 (type-locality: Mysore).

Collection Locality: Cauvery River at Sreerangapattina Karnataka

Diagnosis: Body elongate; snout conical and pointed; two pairs of barbels which are short and not reaching the base of orbit. Dorsal fin inserted nearer to the tip of snout than the base of caudal fin; its last unbranched ray osseous and strong. Dorsal fin with 9 branched rays. 37- 38 lateral line scales.

Meristic counts: D- iii, 9; P- i, 15; V- i, 9; A- ii, 5; C- iii, 17, iii; LLS- 37-38; PDS- 12; CPS- 8; LL/D- 6 ½; LL/V- 4 ½; LL/A- 5 ½ .

Morphometric Characters: TL (mm)- 155.0-156.0; SL (mm)- 122.0-124.0; HL (mm)- 33.0-34.0. % **SL:** HL- 26.6-27.8; HD- 17.7-18.0; HW- 14.5-14.7; BDD- 25.8-27.0; BDA- 17.2-18.5; BWD- 13.1-15.3; BWA- 9.0-9.67; PRD- 47.5-48.3; POD- 57.2-57.3; PRPL- 48.3-50.8; PRA- 73.3-76.2; LD- 30.0-30.6; LP- 19.6-22.5; LPL- 18.5-18.8; LA- 16.9-18.0; LC- 29.0-29.5; LBD- 16.1-18.0; LBA- 8.06-8.19; LCP- 16.1-16.3; DCP- 11.2-11.4; WCP- 4.03-4.09; DP-PL- 25.0-26.2; DPL-A- 25.4-25.8; DA-C- ;19.3-20.4 DVV- 22.5-22.9; DAV- 2.45-3.22. % **HL:** HD- 64.7-66.6; HW- 52.9-54.5; ED- 32.3-36.3; PRORB - 64.7-69.7; PORB- 33.3-38.2; IOW- 32.3-33.3; INW- 24.2-26.4; STL- 33.3-35.2; WGM- 20.5-21.2.

Other Characters: mouth inferior. Snout studded with pores. None of the fins touched

each other. The upper lobe of the caudal fin is longer than the lower one. Fins darker.

***Garrabikor nuta* Rao:**

Garrabikor nuta Rao (1920), *Ann. Mag. Nat. Hist*, (9) 6: 57, pl. (type-locality: Thunga River at Shimoga, Karnataka).

Collection Locality: Bhadra River at Kalasa, Karnataka

Diagnosis: Body elongate and sub-cylindrical. Snout with a well-marked trilobed proboscis, lateral lobe free and tapering while median lobe as immovable rectangular prominence.

Meristic Counts: D- ii, 8; P- i, 14; V- i, 8; A- ii, 5; C- iii, 17, iii; LLS- 30-32; PDS- 8; CPS- 6-7; LL/D- 3 ½; LL/V- 2 ½; LL/A- 3 ½.

Morphometric Characters: TL (mm)- 108.0-119.0; SL (mm)- 84.0-94.0; HL (mm)- 21.0-22.0. % **SL:** HL- 23.4-25.0; HD- 15.9-16.6; HW- 15.9-17.8; BDD- 21.2-22.6; BDA- 17.0-17.8; BWD- 17.0-19.0; BWA- 9.52-9.57; PRD- 43.6-44.0; POD- 58.3-59.5; PRPL- 47.8-52.3; PRA- 73.4-76.1; LD- 29.7-30.9; LP- 23.8-24.4; LV- 22.3-22.6; LA- 22.3-22.6; LC- 29.7-30.9; LBD- 20.2; LBA- 9.52-9.57; LCP- 16.6-18.0; DCP- 12.7-13.0; WCP- 4.25-4.76; DP-PL- 29.7-32.1; DPL-A- 23.8-26.5; DA-C- 19.0-23.4; DVV- 16.6-18.0; DAV- 7.14-8.51. % **HL:** HD- 66.6-68.1; HW- 68.1-71.4; ED- 33.3-36.3; PRORB- 76.1-81.8; PORB- 28.5-31.8; IOW- 38.0-40.9; INW- 23.8-27.2; STL- 47.6-50.0; WGM- 47.6-54.5.

Other Characters: One pair of barbels present, not reaching the base of orbit. Dorsal fin inserted to the tip of snout than the base of caudal fin; its last ray is flexible and smooth. Anal fin reaches base of caudal fin. A black spot is present at the upper angle of the gill opening.

***Pethia conchoni* Hamilton-Buchanan (1822):**

Cyprinus conchoni Hamilton-Buchanan (1822), *Fishes of Ganges*: 317, 389 (type-locality: W).

Collection Locality: Cauvery River at Sreerangapattinam, Karnataka

Diagnosis: Body fairly deep and compressed. The last unbranched ray of the dorsal fin is strong, osseous and serrated at its posterior edge.

Meristic Counts: D- ii, 8; P- i, 11; V- i, 8; A- ii, 5; C- iii, 17, iii; LLS- 28-30; PDS- 10-11; CPS- 7; LL/D- 6 ½-7 ½; LL/V- 6 ½; LL/A- 5 ½.

Morphometric characters: TL (mm)- 79.0-81.0; SL (mm)- 60.0-64.0; HL (mm)- 18.0-19.0% **SL:** HL- 29.6-30.0; HD- 21.8-23.3; HW- 15.6-16.6; BDD- 43.7-50.0; BDA- 31.2-33.3; BWD- 18.3-18.7; BWA- 12.5-13.3; PRD- 51.5-55.0; POD- 54.6-55.0; PRPL- 51.5-55.0; PRA- 73.4-76.6; LD- 26.5-26.6; LP- 20.3-21.6; LV- 20.0-20.3; LA- 16.6-17.1; LC- 31.2-33.3; LBD- 17.1-20.0; LBA- 10.9-11.6; LCP- 20.3-21.6; DCP- 15.6-16.6; WCP- 6.25-6.66; DP-PL- 26.5-26.6; DPL-A- 25.0; DA-C- 26.5-31.6; DVV- 21.6-21.8; DAV- 3.12-3.33.

% **HL:** HD- 73.6-77.7; HW- 52.6-55.5; ED- 36.8-38.8; PRORB - 57.8-61.1; PORB- 42.1-44.4; IOW- 42.1-44.4; INW- 21.0-22.2; STL- 21.0-22.2; WGM- 22.0-22.2.

Other Characters: Mouth moderate, sub-terminal; no barbels. Dorsal fin inserted equidistant between the tip of snout and base of the caudal fin. None of the fins are touching each other. A deep black golden-yellow bordered blotch on the caudal peduncle. The dorsal fin, anal fin and caudal are stained light red.

***Barilius canarensis* (Jerdon):**

Opsarius canarensis Jerdon (1849), *Madras J. Lit. & Sci.*, 15: 329 (Type-locality: Canara).

Collection Locality: Cauvery River at Uppinangadi Karnataka

Diagnosis: Body elongate and laterally compressed. Two rows of dark blue spots are present along the flanks. 9-10 spots in the upper row and 4-5 spots in the lower row. 10

branched rays in the dorsal fin. Lateral line scales 35.

Meristic counts: D- ii, 10; P- i, 13; V- i, 8; A- ii, 13; C- iii, 17, iii; LLS- 35; PDS- 15; CPS- 7; LL/D- 8 ½ ; LL/V- 2 ½ ; LL/A- 3 ½ .

Morphometric Characters: TL (mm)- 86.0; SL (mm)- 67.0; HL (mm)- 19.0. % **SL:** HL- 28.3; HD- 22.3; HW- 14.9; BDD- 32.8; BDA- 28.3; BWD- 13.4; BWA- 10.4; PRD- 50.7; POD- 50.7; PRPL- 49.2; PRA- 64.1; LD- 20.8; LP- 23.8; LPL- 17.9; LA- 20.8; LC- 31.3; LBD- 19.4; LBA- 20.8; LCP- 19.4; DCP- 13.4; WCP- 4.47; DP-PL- 23.8; DPL-A- 16.4; DA-C- 32.8; DVV- 14.9; DAV- 1.49. % **HL:** HD- 78.9; HW- 52.6; ED- 42.1; PRORB - 63.1; PORB- 42.1; IOW- 42.1; INW- 21.0; STL- 21.0; WGM- 21.0.

Other Characters: Dorsal fin inserted near to the base of caudal fin than snout tip; its last unbranched ray soft and flexible. Pelvic fin inserted in advance of the dorsal fin. Pectoral fins reach pelvic fins, pelvic fins reach anal fin and the latter does not reach caudal fin. The base of the dorsal fin extends to the 2nd -3rd un branched ray of the anal fin.

***Barilius gatensis*(Valenciennes):**

Leuciscus gatensis Valenciennes, (1844), *Hist. nat. Poiss.*, 17: 309, pl. 503 (type-locality: Peninsula of India).

Collection Locality: Cauvery River at Sreerangapattinam, Karnataka

Diagnosis: Body deep and laterally compressed. Barbels absent. Dorsal fin inserted nearer to the base of caudal fin than snout tip; its last unbranched ray soft and flexible. 11-12 blue coloured vertical bands descend from the back.

Meristic counts: D- ii,8; P- i, 12; V- i, 8; A- ii, 13; C- iii, 17, iii; LLS- 38; PDS- 19; CPS- 7; LL/D- 8 ½ ; LL/V- 3 ½ ; LL/A- 3 ½ ; NB- 0.

Morphometric Characters: TL (mm)- 117.0; SL (mm)- 96.0; HL (mm)- 29.0. % **SL:** HL- 30.2; HD- 21.8; HW- 14.5; BDD- 30.2; BDA- 27.0; BWD- 13.5; BWA- 10.4; PRD- 57.2; POD- 44.7; PRPL- 46.8; PRA- 64.5; LD- 20.8; LP- 20.8; LV- 15.6; LA- 18.7; LC- 25.0; LBD- 13.5; LBA- 20.8; LCP- 19.7; DCP- 11.4; WCP- 5.20; DP-PL- 17.7; DPL-A- 17.7; DA-C- 36.4; DVV- 15.6; DAV- 2.08. % **HL:** HD- 72.4; HW- 48.2; ED- 31.0; PRORB - 51.7; PORB- 48.2; IOW- 34.2; INW- 17.2; STL- 24.1; WGM- 24.1.

Other characters: Mouth superior with symphyisial process. The base of the dorsal fin extends to the 3rd – 4th branched rays of the anal fin. Pectoral fins reach pelvic fins; pelvic fin not reaching anal fin.

***Barilius bendelisis*Hamilton:**

Cyprinus bendelisis Hamilton-Buchanan (1807), *Journey in Mysore*, 3: 345, pl. 32 (type-locality: Vedawati stream, headwaters of Krishna River near Heriuru, Mysore).

Collection Locality: Cauvery River at Thirthahalli, Karnataka

Diagnosis: Body elongate and laterally compressed; mouth sub-terminal. Two pairs of short barbels, maxillary pair longer than rostral pair; not reaching orbit. 9 dark bands start from the dorsum, descending towards the lateral line.

Meristic counts: D- ii, 7; P- i, 13; V- i, 7; A- ii, 8; C- iii, 17, iii; LLS- 39-42; PDS- 19-20; CPS- 7-8; LL/D- 8 ½ ; LL/V- 3 ½ ; LL/A- 3 ½ .

Morphometric Characters: TL (mm)- 47.0-69.0; SL (mm)- 38.5-56.0; HL (mm)- 12.0-16.0. % **SL:** HL- 28.5-31.1; HD- 19.6-20.7; HW- 14.2-15.5; BDD- 23.2-23.3; BDA- 17.8-18.1; BWD- 12.9-14.2; BWA- 8.92-10.3; PRD- 57.1-58.9; POD- 42.8-44.1; PRPL- 51.7-51.9; PRA- 73.2-75.3; LD- 19.6-20.7; LP- 19.6-20.7; LPL- 12.9-14.2; LA- 14.2-15.5; LC- 23.3-26.7; LBD- 12.5-12.9; LBA- 1; LCP- 15.5-16.0; DCP- 10.3-10.7; WCP- 5.19-5.35; DP-PL- 23.2-23.3; DPL-A- 20.7-21.4; DA-C- 23.2-23.3; DVV- 18.1-19.6; DAV- 1.78-2.59. % **HL:** HD- 66.6-68.7; HW- 50.0; ED- 31.2-33.3; PRORB- 56.2-58.3; PORB- 41.6-43.7; IOW- 31.2-33.3; INW- 16.6-18.7; STL- 12.5-16.6; WGM- 31.2-33.3.

Other Characters: Dorsal fin inserted near to the base of caudal fin than the tip of snout; its last unbranched ray soft and flexible. No fins touch each other.

***Hypselobarbus jerdoni* (Day):**

Barbus (Barbodes) jerdoni Day (1870), *Proc. Zool. Soc. Lond.*: 372 (type-locality: Mangalore, Karnataka).

Collection Locality: Tunga River at Kalasa Karnataka

Diagnosis: Body elongated and fairly deep. Barbelstwo pairs. Dorsal fins are inserted near to the tip of the snout than the base of the caudal fin; its last ray is non-osseous and smooth. Tip of the dorsal fin and upper caudal-fin lobe black-tipped.

Meristic Counts: D- ii, 9; P- i, 13-14; V- i, 8; A- ii, 5; C- iii, 17, iii; LLS- 29-31; PDS- 9-11; CPS- 6; LL/D- 6 ½; LL/V- 4 ½; LL/A- 3 ½ - 4 ½.

Morphometric Characters: TL (mm)- 123.0-130.0; SL (mm)- 93.0-101.0; HL (mm)- 26.0-27.0. % **SL:** HL- 26.7-27.9; HD- 20.7-21.5; HW- 16.8-17.2; BDD- 32.6-33.3; BDA- 21.5-21.7; BWD- 17.2-18.8; BWA- 9.67-11.8; PRD- 49.4-49.5; POD- 55.9-56.4; PRPL- 52.4-52.6; PRA- 76.2-76.3; LD- 24.7-27.9; LP- 19.8-22.5; LV- 18.8-20.4; LA- 18.8-20.4; LC- 32.6-35.4; LBD- 16.8-17.2; LBA- 8.91-9.67; LCP- 16.1-16.8; DCP- 12.8-12.9; WCP- 5.94-6.45; DP-PL- 26.8-28.7; DPL-A- 25.7-25.8; DA-C- 19.8-20.4; DVV- 21.5-22.7; DAV- 2.97-4.30. % **HL:** HD- 76.9-77.7; HW- 61.5-62.9; ED- 38.4-40.7; PRORB - 65.3-66.6; PORB- 38.4-40.7; IOW- 34.6-37.0; INW- 25.9-26.9; STL- 26.9-29.6; WGM- 25.9-26.9.

Other Characters: Maxillary barbels reach orbit. Anal fin tip just touch origin of caudal fin.

***Dawkinsia assimilis* (Jerdon):**

Systomus assimilis Jerdon, (1849): P. 319 (type-locality: Southern Karnataka).

Collection Locality: Nethravathi River at Uppinangadi, Karnataka

Diagnosis: A pair of maxillary barbels present that reach orbit. Upper lip with developed tubercles. Dorsal fin inserted to the tip of snout than the base of the caudal fin. Last unbranched and 1st and 2nd branched rays of dorsal fin elongated.

Meristic counts: D- iii, 8; P- i, 14; V- i, 8; A- ii, 5; C- iii, 17, iii; LLS- 21; PDS- 7; CPS- 5; LL/D- 4 ½; LL/V- 2 ½; LL/A- 3 ½.

Morphometric Characters: TL (mm)- 88.0; SL (mm)- 66.0; HL (mm)- 18.0. % **SL:** HL- 27.2; HD- 19.6; HW- 16.6; BDD- 33.3; BDA- 25.7; BWD- 18.1; BWA- 12.1; PRD- 46.9; POD- 60.6; PRPL- 48.4; PRA- 71.2; LD- 33.3; LP- 24.2; LV- 25.7; LA- 18.1; LC- 36.3; LBD- 21.2; LBA- 10.6; LCP- 21.2; DCP- 13.6; WCP- 6.06; DP-PL- 24.2; DPL-A- 32.7; DA-C- 31.8; DVV- 21.2; DAV- 1.51. % **HL:** HD- 72.2; HW- 61.1; ED- 44.4; PRORB - 66.6; PORB- 33.3; IOW- 38.8; INW- 22.2; STL- 22.2; WGM- 16.6.

Other Characteristics: None of the fins touch each other. A black pear-shaped blotch on caudal-peduncle. Pectoral fin and caudal fin-stained red.

***Osteochilichthys nashi* (Day)**

Barbus nashii Day, (1868), *Proc. Zool. Soc. Lond.*: 584 (type-locality: Fraserpett River, Coorg district, Karnataka).

Collection Locality: Bhadra River at Kalasa Karnataka

Diagnosis: Body oblong and compressed. Dorsal fin inserted to tip of snout than base of caudal fin; its last unbranched ray flexible, smooth and non-osseous. A black lateral band present between eye to caudal fin.

Meristic Counts: D- ii, 11; P- i, 13; V- i, 8; A- ii, 5; C- iii, 17, iii; LLS- 40; PDS- 12; CPS- 7; LL/D- 7 ½; LL/V- 4 ½; LL/A- 4 ½.

Morphometric Characters: TL (mm)- 153.0; SL (mm)- 117.0; HL (mm)- 29.0. % **SL:** HL- 24.7; HD- 18.8; HW- 14.5; BDD- 29.9; BDA- 19.6; BWD- 16.2; BWA- 9.82; PRD- 45.7; POD- 58.1; PRPL- 52.9; PRA- 75.2; LD- 28.2; LP- 22.2; LV- 20.9; LA- 22.2; LC-

32.4; LBD- 22.2; LBA- 10.2; LCP- 17.9; DCP- 11.1; WCP- 4.27; DP-PL- 29.4; DPL-A- 23.0; DA-C- 22.2; DVV- 20.5; DAV- 2.56. % **HL**: HD- 75.8; HW- 58.6; ED- 37.9; PRORB - 67.2; PORB- 34.4; IOW- 34.4; INW- 25.8; STL- 34.8; WGM- 27.5.

Other Characters: Pelvic fins inserted just behind the dorsal fin. Anal fin reach origin of caudal fin. The lower lobe of the caudal fin is smaller than the upper lobe. A dark band is present in both the dorsal fin anal fin.

***Salmophasia boopis* (Day):**

Collection Locality: Tunga River atKalmame, Karnataka

Chela boopis Day(1937), *Proc. Zool. Soc. Lond.*: 708 (Type-locality: South Canara).

Diagnosis: Body elongate, laterally compressed and slender. No barbels. The last unbranched dorsal ray is strong and smooth. Dorsal fin inserted near to the base of caudal fin than snout tip. Dorsal, anal and caudal fin pale yellow stained and edged with black.

Meristic Counts: D- ii, 7; P- i, 11; V- i, 8; A- ii, 11; C- iii, 17, iii; LLS- 41; PDS- 21; CPS- 6; LL/D- 7 ½ ; LL/V- 1 ½; LL/A- 2 ½.

Morphometric Characters: TL (mm)- 81.0; SL (mm)- 65.5; HL (mm)- 17.0. % **SL**: HL- 25.9; HD- 16.7; HW- 12.2; BDD- 21.3; BDA- 18.3; BWD- 9.92; BWA- 6.10; PRD- 64.1; POD- 36.6; PRPL- 53.4; PRA- 70.2; LD- 16.7; LP- 24.4; LPL- 15.2; LA- 15.2; LC- 27.4; LBD- 9.92; LBA- 15.2; LCP- 18.3; DCP- 9.16; WCP- 3.81; DP-PL- 28.2; DPL-A- 19.8; DA-C- 29.0; DVV- 18.3; DAV- 1.52. % **HL**: HD- 64.7; HW- 47.0; ED- 41.1; PRORB- 64.7; PORB- 35.2; IOW- 32.3; INW- 17.6; STL- 23.5; WGM- 23.5.

Other characters: Superior mouth with symphysial process in the lower jaw. The lower lobe of the caudal fin is longer than the upper one. Silvery body- the upper half of the body is dark and the lower half is white. After preservation in formalin, a sharp slender black band develops on the mid-lateral side.

***Puntius narayani* Hora:**

Barbus narayani Hora (1937), *Rec. Indian Mus.*, 39(1): 24 (type-locality: Cauvery River, Coorg, Karnataka).

Collection Locality: Bhadra River atSamsay Karnataka

Diagnosis: Body short and small. Barbelsabsent. Dorsal fin inserted to the tip of snout than caudal base; its last unbranched ray flexible and smooth. Four vertical broad blotches on the lateral side, starting from dorsum and disappear before it reach the ventral side.

Meristic Counts: D- iii, 8; P- i, 11; V- i, 8; A- iii, 5; C- iii, 17, iii; LLS- 23; PDS- 8; CPS- 5; LL/D- 4 ½ ; LL/V- 3 ½ ; LL/A- 3 ½.

Morphometric Characters: TL (mm)- 43.0; SL (mm)- 32.0; HL (mm)- 10. % **SL**: HL- 31.2; HD- 25.0; HW- 18.7; BDD- 37.5; BDA- 28.1; BWD- 18.7; BWA- 12.5; PRD- 53.1; POD- 59.3; PRPL- 50.0; PRA- 71.8; LD- 34.3; LP- 28.1; LPL- 28.1; LA- 21.8; LC- 37.5; LBD- 21.8; LBA- 10.9; LCP- 21.8; DCP- 15.6; WCP- 6.25; DP-PL- 21.8; DPL-A- 23.4; DA-C- 25.0; DVV- 21.8; DAV- 1.56. % **HL**: HD- 80.0; HW- 60.0; ED- 50.0; PRORB - 70.0; PORB- 35.0; IOW- 35.0; INW- 25.0; STL- 20.0; WGM- 20.0.

Other Characters: Pectoral fins reach pelvic fins; pelvic fins reach anal fin; anal fin does not reach caudal-fin base. Greenish-dark dorsum. The base of the caudal fin is marked with a black spot. Pelvic fin stained black and tipped white.Pectoral fin, anal fin and caudal fin are hyaline.

***Systemus subnasutus* (Valenciennes):**

Collection Locality: Tunga River at Kalmame Karnataka

Barbus subnasutus Valenciennes, (1842), *Hist. nat. Poiss.*, 16: 154 (Type-locality: Pondicherry).

Diagnosis: Body elongate and deep.Barbels two pairs reaching the base of orbit. Last

unbranched ray of dorsal fin strong and posteriorly serrated. A dark band is present behind the operculum and a faded black blotch on the caudal peduncle.

Meristic Counts: D- iii, 7-8; P- i, 13-15; V- i, 8; A- ii, 5; C- iii, 17, iii; LLS- 31; PDS- 9-11; CPS- 8-9; LL/D- $6\frac{1}{2}$; LL/V- $3\frac{1}{2}$; LL/A- $4\frac{1}{2}$.

Morphometric Characters: TL (mm)- 149.0-197.0; SL (mm)- 120.0-160.0; HL (mm)- 32.0-40.0. % **SL:** HL- 25.0-26.6; HD- 18.7-20.8; HW- 16.2-17.5; BDD- 31.2-34.1; BDA- 22.8-24.1; BWD- 18.3-20.0; BWA- 11.6-12.5; PRD- 49.3-50.8; POD- 54.1-54.3; PRPL- 47.5-49.1; PRA- 72.5; LD- 23.1-23.7; LP- 18.7-19.1; LPL- 17.5-17.8; LA- 15.6-15.8; LC- 26.2-27.9; LBD- 15.0-15.6; LBA- 9.37-10.0; LCP- 20.0-21.6; DCP- 13.7-14.1; WCP- 5.00-5.83; DP-PL- 24.5-26.2; DPL-A- 25.0-26.2; DA-C- 23.7-25.8; DVV- 22.5-23.1; DAV- 2.50-3.12. % **HL:** HD- 75.0-78.1; HW- 65.0-65.6; ED- 30.0-32.8; PRORB- 57.5-59.3; PORB- 40.6-45.5; IOW- 43.7-45.0; INW- 27.5-28.1; STL- 25.0-30.0; WGM- 28.1-30.0.

Other Characters: Dorsal fin inserted to the tip of snout than the base of the caudal fin. Fins not touching each other. Dorsal fin and caudal fin hyaline. Pectoral fins, pelvic fins and anal fins orange-red stained.

***Osteobrama neilli*(Day):**

Rohtee neilli Day, (1937), *Proc. Zool. Soc. Lond.*: 239 (type-locality: Bhavani river at the base of Nilgiri Hills).

Collection Locality: Bhadra River at Tudoor, Karnataka

Diagnosis: Body laterally compressed. Head small; eyes large. Abdominal edge sharp. Dorsal fin equidistant to the tip of snout and base of caudal fin; its last unbranched ray very strong, osseous and serrated. Scales small.

Meristic Counts: D- iii, 8; P- i, 15-16; V- i, 9; A- iii, 16-17; C- iii, 17, iii; LLS- 54-55; PDS- 21-23; CPS- 9-11; LL/D- $10\frac{1}{2}$ - $11\frac{1}{2}$; LL/V- $7\frac{1}{2}$; LL/A- $11\frac{1}{2}$ - $13\frac{1}{2}$.

Metric Characters: TL (mm)- 125.0-126.5; SL (mm)- 95.0-97.0; HL (mm)- 26.0-27.0. % **SL:** HL- 27.0-27.8; HD- 18.7-19.5; HW- 14.4-14.7; BDD- 35.0-36.4; BDA- 28.4-30.2; BWD- 12.3-12.6; BWA- 8.33-9.47; PRD- 52.6-55.2; POD- 52.5-55.2; PRPL- 44.2-45.3; PRA- 63.9-64.3; LD- 28.4-30.9; LP- 20.6-21.5; LPL- 20.0-20.8; LA- 16.4-16.8; LC- 31.9-34.3; LBD- 14.2-16.6; LBA- 22.6-23.6; LCP- 16.8-17.5; DCP- 10.8-11.4; WCP- 4.12-5.20; DP-PL- 18.0-19.7; DPL-A- 19.0-20.8; DA-C- 34.3-34.7; DVV- 15.9-18.7; DAV- 2.08-2.63. % **HL:** HD- 69.2-71.5; HW- 51.8-53.8; ED- 42.3-42.5; PRORB- 65.3-66.6; PORB- 32.6-38.8; IOW- 26.9-28.8; INW- 22.2-23.0; STL- 25.0-25.9; WGM- 23.0-24.0.

Other Characters: Two pairs of barbels present, reaching to orbit. Pectoral fins reach pelvic fins; pelvic fins reach anal fin; later not reach caudal fin. In life, silver colour. Dorsal and caudal fins slightly dark stained. Pectoral, pelvic and anal finhyaline.

***Hypselobarbus curmuca* (Buchanan):**

Cyprinus curmuca Hamilton-Buchanan (1807), *Journey in Mysore*, 3: 344, pl. 30 (type-locality: Mysore, Western Ghats of India).

Collection Locality: Cauvery River at Sullya Karnataka

Diagnosis: Dorsal profile convex and the ventral profile nearly horizontal. Two pairs of barbels are present, not reaching the base of orbit. Middle-third of caudal fin orange tipped with black.

Meristic Counts: D- iii, 9; P- i, 14-15; V- i, 8-9; A- iii, 5; C- iii, 17, iii; LLS- 41-43; PDS- 12-14; CPS- 7-9; LL/D- $7\frac{1}{2}$ - $8\frac{1}{2}$; LL/V- $3\frac{1}{2}$ - $4\frac{1}{2}$; LL/A- $5\frac{1}{2}$; NB- 4.

Metric characters: TL (mm)- 170.0-199.6; SL (mm)- 131.4-158.0; HL (mm)- 37.5-42.3. % **SL:** HL- 26.7-28.9; HD- 17.9-19.3; HW- 14.2-15.6; BDD- 23.7-26.8; BDA- 17.0-18.3; BWD- 12.0-13.6; BWA- 6.20-8.09; PRD- 46.2-48.4; POD- 54.4-57.7; PRPL- 47.6-51.6; PRA- 72.2-76.1; LD- 23.3-25.5; LP- 19.6-21.3; LPL- 16.9-18.2; LA- 16.6-18.9;

LC- 29.3-32.4; LBD- 14.2-15.8; LBA- 7.76-8.41; LCP- 16.6-18.2; DCP- 10.1-10.8; WCP- 5.28-5.93; DP-PL- 23.8-27.0; DPL-A- 24.2-27.0; DA-C- 19.5-22.9; DVV- 21.0-23.6; DAV- 2.42-3.25. % **HL:** HD- 64.3-68.1; HW- 50.0-56.9; ED- 33.9-37.3; PRORB - 66.9-73.2; PORB- 32.1-35.8; IOW- 34.4-37.1; INW- 21.7-23.3; STL- 37.1-39.8; WGM- 20.1-26.0.

Other Characters: Eyes moderate. Snout elongated and conical with two rows of well-developed tubercles. Dorsal fin inserted towards the tip of snout than the base of caudal fin; its last unbranched ray osseous but weak. Body silvery, lightest on flanks and belly.

***Devario malabaricus* (Jerdon):**

Perilampus malabaricus Jerdon, (1849), *Madras J. Lit. and Sci.*, 15: 325.

(Type locality: Malabar).

Collection Locality: Cauvery River at Sullya Karnataka

Diagnosis: Body laterally compressed. Barbels two pairs. maxillary pair reach orbit; rostral pair very short. Three lateral bands of dark blue colour run along flanks, separated by narrow yellow lines.

Meristic Counts: D- ii, 9-10; P- i, 11-12; V- i, 6-7; A- ii, 14-15; C- iii, 17, iii; LLS- 36-37; PDS- 15-16; CPS- 6-8; LL/D- 7 ½- 8 ½ ; LL/V- 1 ½ ; LL/A- 1 ½.

Metric Characters: TL (mm)- 90.0-94.0; SL (mm)- 72.0-74.1; HL (mm)- 17.9-18.9. % **SL:** HL- 24.3-25.5; HD- 18.4-19.0; HW- 12.3-13.4; BDD- 26.5-30.0; BDA- 25.6-29.1; BWD- 10.1-10.7; BWA- 6.53-6.88; PRD- 55.8-59.7; POD- 42.9-47.6; PRPL- 46.0-47.2; PRA- 63.8-64.0; LD- 19.7-20.0; LP- 21.5-23.1; LPL- 15.1-15.9; LA- 17.9-19.7; LC- 29.6-31.9; LBD- 18.0-19.7; LBA- 19.6-22.8; LCP- 17.5-18.7; DCP- 12.1-13.0; WCP- 4.35-5.39; DP-PL- 23.1-24.0; DPL-A- 19.3-20.5; DA-C- 33.3-34.8; DVV- 16.8-18.6; DAV- 1.49-3.23. % **HL:** HD- 72.4-78.2; HW- 50.8-52.9; ED- 39.1-42.3; PRORB- 64.0-65.3; PORB- 37.0-39.1; IOW- 40.7-44.6; INW- 23.8-27.3; STL- 24.3-27.4; WGM- 24.3-27.4.

Other Characters: Dorsal fin inserted near to the base of caudal fin; its last unbranched ray soft, smooth and flexible. Pelvic fin placed behind to dorsal fin. The base of the dorsal fin extends up to 8-9th rays of the anal fin. Pectoral fins do not reach pelvic fins; pelvic fins do not reach the anal opening and anal fin; later do not reach the caudal fin.

***Rasbora daniconius* (Hamilton- Buchanan):**

Cyprinus rasbora Hamilton-Buchanan, (1822), *Fishes of Ganges*: 329, 391.

(Type locality: ponds of Bengal).

Collection Locality: Cauvery River at Sullya, Karnataka

Diagnosis: Body elongate; somewhat round. Barbels absent. The black band running through longitudinal line; above to this band is olive and below it whitish.

Meristic Counts: D- ii, 7; P- i, 12; V- i, 8; A- ii, 5; C- iii, 17, iii; LLS- 33; PDS- 13; CPS- 7; LL/D- 4 ½ ; LL/V- 1 ½ ; LL/A- 1 ½ ; NB- 0.

Morphometric Characters: TL (mm)- 82.9-98.5; SL (mm)- 65.2-77.6; HL (mm)- 19.0-23.4. % **SL:** HL- 29.1-30.1; HD- 17.9-19.0; HW- 14.9-15.7; BDD- 20.7-21.4; BDA- 16.7-17.7; BWD- 10.7-12.0; BWA- 6.59-7.39; PRD- 53.6-53.9; POD- 47.6-49.6; PRPL- 48.9-50.4; PRA- 70.4-72.4; LD- 20.6-21.6; LP- 18.3-20.1; LPL- 15.5-17.0; LA- 18.2-18.5; LC- 30.1-31.2; LBD- 10.8-11.5; LBA- 8.89-9.20; LCP- 21.1-22.2; DCP- 12.2-12.8; WCP- 5.15-6.13; DP-PL- 22.9-24.4; DPL-A- 21.4-23.9; DA-C- 24.4-26.5; DVV- 18.4-20.6; DAV- 3.06-3.35. % **HL:** HD- 60.0-63.2; HW- 50.0-53.6; ED- 33.3-37.3; PRORB- 60.9-63.1; PORB- 36.8-39.0; IOW- 38.4-39.4; INW- 25.6-28.9; STL- 28.5-29.9; WGM- 30.9-32.0.

Other Characters: Dorsal fin inserted to the base of caudal fin; its last unbranched ray soft, flexible and smooth. Pelvic fins are placed in front of the dorsal fin. None of the fins touch each other.

***Haludaria faciatus* (Jerdon):**

Cirrhinus faciatus Jerdon, (1849). *Madras Journal of Literature and Science.*, 15: 305 (Type locality: Mundakkayam, Kottayam).

Collection Locality: Cauvery River at Sullya, Karnataka

Diagnosis: Body elongated head short. Snout conical. Mouth moderate and sub-terminal. The last unbranched dorsal ray is non-osseous and weak.

Meristic Counts: D- ii, 8; P- i, 13; V- i, 8; A- ii, 5; C- iii, 17, iii; LLS- 20; PDS- 6; CPS- 5; LL/D- 3 ½ ; LL/V- 3 ½ ; LL/A- 3 ½.

Metric Characters: TL (mm)-67.0-75.0; SL (mm)- 55.61; HL (mm)- 16.0-18.0. % **SL:** HL- 29.0-29.5; HD- 21.8-22.9; HW- 18.0-18.1; BDD- 36.3-37.7; BDA- 24.5-25.4; BWD- 19.6-20.0; BWA- 11.4-12.7; PRD- 49.0-50.8; POD- 54.0-56.3; PRPL- 52.4-54.5; PRA- 73.7-75.5; LD- 24.5-25.4; LP- 20.0-21.3; LPL- 18.0-20.0; LA- 18.0-20.0; LC- 29.0-29.5; LBD- 19.6-20.0; LBA- 9.09-9.83; LCP- 19.6-20.0; DCP- 14.5-14.7; WCP- 4.91-5.45; DP-PL- 22.9-23.6; DPL-A- 21.8-22.9; DA-C- 21.8-22.9; DVV- 20.0-21.3; DAV- 1.63-1.81. % **HL:** HD- 75.0-77.7; HW- 61.1-62.5; ED- 33.3-37.5; PRORB - 62.5-66.6; PORB- 43.7-44.4; IOW- 43.7-44.4; INW- 22.2-25.0; STL- 31.2-33.3; WGM- 25.0-27.7.

Other Characters: Two pairs of barbells, reaching the base of orbit. Dorsal fin inserted to the tip of snout than the caudal base. The last unbranched dorsal ray is non-osseous and weak. Pelvic fin inserted behind dorsal fin origin. Anal fin tip reaches caudal base. Body with three (rarely four) vertical black bands descending up to a little below the lateral line.

***Puntius puckelli* (Day):**

Capoeta puckelli Day, (1868), *Proc. Zool. Soc. London.* P. 197., (Type locality: Bangalore, Karnataka).

Collection Locality: Cauvery River at Nellyahudheri, Coorg, Karnataka

Diagnosis: The body is elongated; dorsal and abdominal profiles are equally convex. A pair of maxillary barbels extend to the anterior margin of orbit. A small deep black horizontal band is present on the dorsal fin from the third to sixth branched ray.

Meristic Counts: D- ii, 7; P- i, 14; V- i, 8; A- iii, 5; C- iii, 17, iii; LLS- 24; PDS- 9; CPS- 5; LL/D- 3 ½ ; LL/V- 2 ½ ; LL/A- 2 ½.

Morphometric Characters: TL (mm)-28.0-36.0; SL (mm)- 22.0-28.0; HL (mm)- 7.0-8.0. % **SL:** HL- 28.5-31.8; HD- 21.4-22.7; HW- 17.8-18.5; BDD- 25.0-27.2; BDA- 18.1-18.5; BWD- 14.2-18.1; BWA- 10.7-13.6; PRD- 50.0-51.8; POD- 54.5-57.1; PRPL- 50.0-51.8; PRA- 70.3-72.7; LD- 27.2-29.6; LP- 21.4-22.7; LPL- 18.1-21.4; LA- 21.4-22.7; LC- 29.6-32.1; LBD- 13.6-14.8; LBA- 10.7-13.6; LCP- 21.4-22.7; DCP- 13.6-14.8; WCP- 3.57-4.54; DP-PL- 25.0-27.2; DPL-A- 21.4-22.7; DA-C- 25.0-31.8; DVV- 17.8-18.5; DAV- 3.57-4.54. % **HL:** HD- 71.4-75.0; HW- 57.1-62.5; ED- 37.5-50.0; PRORB- 57.1-62.2; PORB- 37.5-42.8; IOW- 37.5-42.8; INW- 25.0-28.5; STL- 25.0-28.5; WGM- 25.0-28.5.

Other Characters: Dorsal fin inserted in advance of ventral fin and in midway between snout tip and caudal-fin base. Its last unbranched ray is smooth and osseous. Pelvic fin inserted behind the dorsal fin. None of the fins touch each other. A tiny diffuse and indistinct black mark is present on the lateral line from the nineteenth to twenty-first scale.

***Dawkinsia filamentosa* (Valenciennes):**

Leuciscus filamentosus Valenciennes (1844). *Hist. Nat. Poiss.*, 17: 495 (Type locality: Aleppey, Kerala)

Collection locality: Payaswini River at Parappa, Karnataka.

Diagnosis: A small pair of barbels present, not reaching the base of orbit. Dorsal fin

inserted equidistantly or slightly towards the tip of snout than the base of the caudal fin. A black oval blotch on lateral line; between 13th- 16th scales.

Meristic Counts: D- iii, 8; P- i, 13-16; V- i, 8; A- ii, 5; C- iii, 17, iii; LLS- 21-22; PDS- 7; CPS- 5; LL/D- 4 ½; LL/V- 2 ½; LL/A- 3 ½.

Morphometric characters: TL (mm)-64.0-100.0; SL (mm)- 47.6-77.8; HL (mm)- 13.5-20.2. % **SL:** HL- 25.9-28.8; HD- 20.5-22.4; HW- 14.3-17.1; BDD- 35.9-37.5; BDA- 25.8-27.8; BWD- 12.4-15.2; BWA- 6.81-8.40; PRD- 48.8-51.1; POD- 55.2-58.4; PRPL- 51.2-53.0; PRA- 73.5-76.5; LD- 27.3-34.2; LP- 21.9-25.0; LV- 21.2-26.1; LA- 16.9-21.2; LC- 32.1-38.4; LBD- 17.9-21.2; LBA- 9.25-10.6; LCP- 20.3-21.6; DCP- 13.6-15.2; WCP- 6.55-7.72; DP-PL- 25.0-27.2; DPL-A- 24.5-25.4; DA-C- 24.4-26.8; DVV- 23.8-25.0; DAV- 0.41-0.77. % **HL:** HD- 76.8-79.2; HW- 55.4-59.4; ED- 38.7-47.8; PRORB-62.3-70.3; PORB- 34.0-40.5; IOW- 36.7-39.6; INW- 22.2-23.7; STL- 24.6-28.0; WGM- 22.4-25.0.

Other characters: small to large tubercles on the snout. The last unbranched dorsal ray is weak and smooth. The caudal fin is tipped with red and black colour.



Fig. 1. *Puntius cauveriensis*



Fig. 2. *Cirrhinus fulungee*



Fig. 3. *Puntius carnaticus*



Fig. 4. *Osteochilichthys brevidorsalis*



Fig. 5. *Hypselobarbus micropogon*



Fig. 6. *Garra bicornuta*



Fig. 7. *Pethia conchoni*



Fig. 8. *Barilius canarensis*



Fig. 9. *Barilius gatensis*



Fig. 10. *Barilius bendelisis*



Fig. 11. *Hypselobarbus jerdoni*



Fig. 12. *Dawkinsia assimilis*



Fig. 13. *Osteochilichthys nashii*



Fig. 14. *Salmostoma boopis*



Fig. 15. *Puntius narayani*



Fig. 16. *Systemus subnasutus*

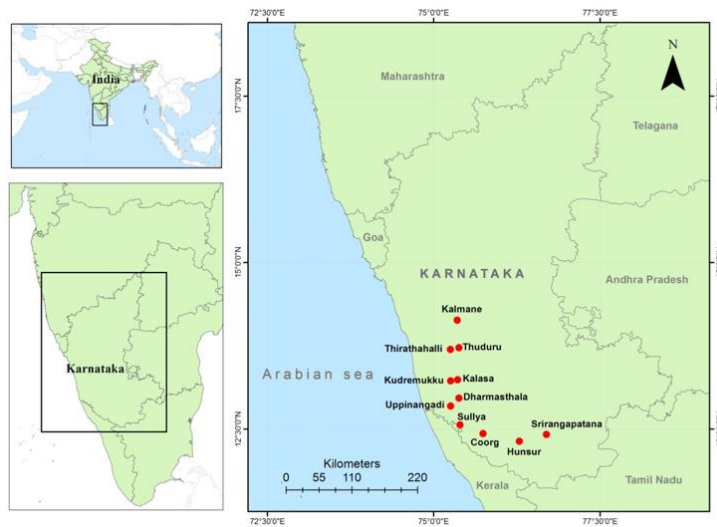
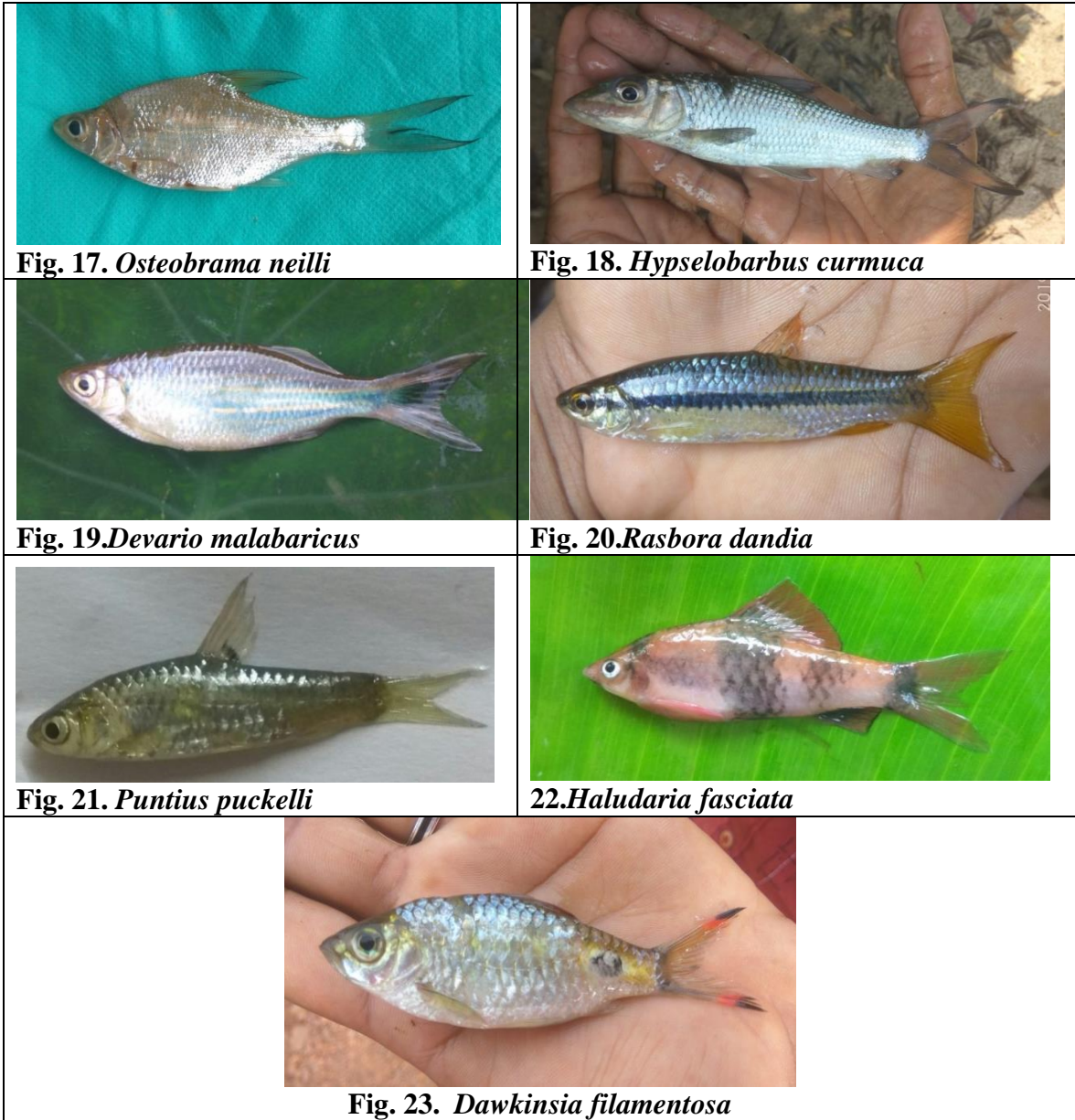


Fig. 24. Map of Karnataka showing collection localities.



Fig. 25. Coorg



Fig. 26. Hunsur



Fig. 27. Mysure



Fig. 28. Uppinangadi



Fig. 29. Kudremukh

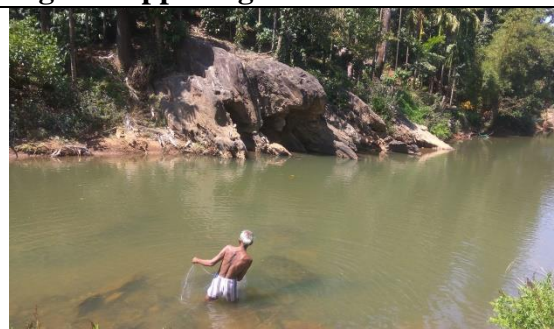


Fig. 30. Samsay



Fig. 31. Kalasa



Fig. 32. Tudoor

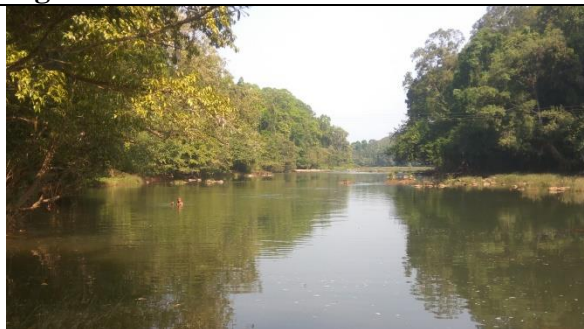


Fig. 33. Sullya



Fig. 34. Thirthahalli

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