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FISH FAUNAL DIVERSITY IN A PADDY FIELD FROM TAMILNADU

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INTRODUCTION

Paddy fields are widespread and are integral parts of the landscape, especially in India. Standing water is more important to rice than most other cultivated plants. Although biological cycles are interrupted by cultivation, colonization in the aquatic phase can be rapid by zooplankton, benthos and nektonic animals along with phytoplankton and macrophytes. There is a rapid buildup of diversity of aquatic organisms after the planting of rice. Although this profusion of species may be short-lived their production biologically can be very high. Many attempts are known to have been made earlier to culture prawn and fish in the rice fields. As for the agricultural pests many studies have been conducted. But no detailed account is available on the fish faunal composition of paddy fields during aquatic and semiaquatic phases. Hence studies pertaining to aquatic and semiaquatic phases of rice fields were undertaken with special reference to fish faunal composition.

MATERIAL AND METHODS

From April 1998 to March 2000, regular monthly collections were made from a paddy field near Chennai in Singaperumalkoil. Though the studies were carried out in an area of 4.5 ha of paddy field behind Singaperumalkoil railway station, yet they were confined mostly to an easily accessible plot of 100m². Fishes were mostly collected by using fish traps and bag nets besides cast-nets. A total of 2,866 specimens belonging to 35 species were collected and detailed in the paper. The list provides relevant references, material collected which included, length range and register numbers in parenthesis followed by size attained and habitat.

PISCES

Though fishes were the most dominant group in this ecosystem they were not collected during certain months when only fry and juveniles were present. The following 35 species were recorded during the study period.

Division TELEOSTEI
 Subdivision OSTEOGLOSSOMORPHA
 Order OSTEOGLOSSIFORMES
 Suborder NOTOPTEROIDEI
 Family NOTOPTERIDAE

1. *Notopterus notopterus* (Pallas)

Subdivision EUTELEOSTEI
 Superorder OSTARIOPHYSI
 Order CYPRINIFORMES
 Family CYPRINIDAE
 Subfamily DANIONINAE
 Tribe OXYGASTERINI

2. *Salmostoma clupeoides* (Bloch)

Tribe DANIONINI

3. *Amblypharyngodon microlepis* (Blkr.)

4. *Chela cachius* (Ham.)

5. *Chela laubuca* (Ham.)

6. *Esomus danricus* (Ham.)

7. *Esomus thermoicos* (Val.)

8. *Rasbora caverii* (Jerdon)

9. *Rasbora daniconius* (Ham.)

Subfamily CYPRININAE

Tribe SYSTOMINI

Subtribe SYSTOMI

10. *Puntius amphibius* (Val.)

11. *Puntius chola* (Ham.)

12. *Puntius conchoni* (Ham.)

13. *Puntius dorsalis* (Jerdon)

14. *Puntius melanostigma* (Day)

15. *Puntius sharmai* Menon & Rema Devi

16. *Puntius sophore* (Ham.)

17. *Puntius vittatus* (Day)

18. *Puntius ticto* (Ham.)

Family COBITIDAE
Subfamily COBITINAE

19. *Lepidocephalus thermalis* (Val.)

Order SILURIFORMES
Family BAGRIDAE
Subfamily BAGRINAE

20. *Mystus bleekeri* (Day)

21. *Mystus gulio* (Ham.)

22. *Mystus vittatus* (Bloch)

Family SCHILBEIDAE
Subfamily SCHILBEINAE

23. *Pseudeutropius atherinoides* (Bloch)

Family HETEROPNEUSTIDAE

24. *Heteropneustes fossilis* (Bloch)

Superorder ACANTHOPTERYGII
Series ATHERINOMORPHA
Order BELONIFORMES
Suborder ADRIANICHTHYOIDEI
Family ADRIANICHTHYIDAE
Subfamily ORYZINAE

25. *Oryzias carnaticus* (Jerdon)

Order CYPRINODONTIFORMES
Family POECILIDAE
Subfamily POECILINAE

26. *Gambusia affinis* (Baird & Girard)

Series PERCOMORPHA
Order SYNBRANCHIFORMES
Suborder MASTACEMBELOIDEI
Family MASTACEMBELIDAE
Subfamily MASTACEMBELINAE

27. *Macrognaathus pancalus* (Ham.)

Order PERCIFORMES
 Suborder PERCOIDEI
 Family CHANDIDAE

28. *Chanda nama* (Ham.)

29. *Parambassis ranga* (Ham.)

Suborder LABROIDEI
 Family CICHLIDAE

30. *Etroplus maculatus* (Bloch)

31. *Oreochromis mossambica* (Peters)

Suborder GOBIOIDEI
 Family GOBIIDAE
 Subfamily GOBIINAE

32. *Glossogobius giuris* (Ham.)

Suborder ANABANTOIDEI
 Family BELONTIDAE
 Subfamily MACROPODINAE

33. *Pseudosphromenus cupanus* (Val.)

Subfamily TRICHOGASTERINAE

34. *Colisa fasciatus* (Schn.)

Suborder CHANNOIDEI
 Family CHANNIDAE

35. *Channa punctatus* (Bloch)

DETAILS OF COLLECTION

1. *Notopterus notopterus* (Pallas)

1769. *Gymnotus notopterus* Pallas, *Spicil. Zoologica*, Part 7, p. 40 Pl. 6, Fig. 2.

1999. *Notopterus notopterus*, Menon, *Rec. zool. Surv. India, Occ. Paper No. 175*, p. 9-10.

Material : 1 ex., 26.x.99, (162) (F 6340).

Size : 6.1 cm T.L. usually much smaller upto 25 cm.

Habitat : Throughout India, fresh (Rivers, swamps, canals) and brackish water.

2. *Salmostoma clupeioides* (Bloch)

1782. *Cyprinus clupeioides* Bloch, *Naturges Ausland, Fische*. 12, p. 49, pl. 408.

1999. *Salmostoma clupeioides*, Menon, *Rec. zool. Surv. India, Occ. Paper No. 175*, p. 27.

Material : 1 ex., 28.x.98, (88), (F 6259); 1 ex., 21.ix.99, (101), (F 6275); 1 ex., 24.vi.99, (81), (F 6307); 2 exs., v.99, (70-110), (F 6508).

Size : 15.0 cm T.L.

Habitat : Usually upper drainages of large rivers (Peninsular India).

3. *Amblypharyngodon microlepis* (Bleeker)

1853. *Leuciscus microlepis* Bleeker, *Verh. Batav. Genoot. Kunst. Wet.*, 25, p. 141.

1991. *Amblypharyngodon microlepis*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. I : 337-338.

Material : 5 exs., 16.vii.98, (31-46), (F 5578); 2 exs., 28.i.99, (33-34), (F 6231); 5 exs., 28.x.98, (19-40), (F 6263); 3 exs., 24.vi.99, (23-34), (F 6298); 4 exs., 24.viii.99, (28-33), (F 6461); 1 ex., 7.iii.00, (62), (F 6472); 1 ex., i.00, (25); 1 ex., iii.00, (30), (F 6547).

Size : 10.0 cm T.L.

Habitat : Ponds, ditches, nullahs, slow moving streams.

4. *Chela cachi* (Hamilton)

1822. *Cyprinus (Chela) cachi* Hamilton, *Fishes of Ganges*, pp. 258, 384.

1991. *Chela cachi*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. I : 313-314.

Material : 4 exs., i.00, (8), (F 6518); 8 exs., 16.vii.98, (8), (F 5582); 1 ex., 28.viii.98, (31), (F 5598); 4 exs., 8.x.98, (29-33), (F 6036); 4 exs., 24.viii.99, (20-35.5), (F 6463); 2 exs., 21.ix.99, (25-26), (F 6485); 85 exs., 28.xii.99, (17-39), (F 6492); 2 exs., v.99, (32-33), (F 6505); 1 ex., 25.xii.98, (22), (F 6213); 5 exs., 28.i.99, (22-24), (F 6227); 42 exs., 28.x.98, (20-28), (F 6257); 1 ex., 24.vi.99, (38), (F 6289); 1 ex., 26.x.99, (35), (F 6341); 1 ex., 26.x.99, (30), (F 6350).

Size : 6.0 cm T.L.

Habitat : Ponds, ditches and rivers in plains (Throughout India).

5. *Chela laubuca* (Hamilton)

1822. *Cyprinus laubuca* Hamilton, *Fishes of Ganges*, pp. 260, 384.

1991. *Cyprinus laubuca*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. I : 316-317.

Material : 36 exs., 16.vii.98, (33-40), (F 5581); 4 exs., 8.x.98, (27-36), (F 6035); 1 ex., 25.xi.98, (38), (F 6197); 11 exs., 24.xii.98, (25-41), (F 6212); 20 exs., 28.i.99, (34-56), (F 6226); 10 exs., 26.ii.99, (28-33), (F 6247); 28 exs., 28.x.98, (20-42), (F 6258); 37 exs., 24.vi.99, (29-44), (F 6290); 2 exs., 26.x.99, (40-42), (F 6342); 29 exs., 24.viii.99, (18.5-43), (F 6462); 227 exs., 28.xii.99, (17-48), (F 6491); 6 exs., v.99, (32-47), (F 6504); 3 exs., i.00, (29-39), (F 6519).

Size : 5.5 cm T.L.

Habitat : Streams both shallow and relatively deeper areas, shallow clear freshwater ponds, canals, ditches (Throughout India).

6. *Esomus danricus* (Hamilton)

1822. *Cyprinus danrica* Hamilton, *Fishes of Ganges*, pp. 325-390, pl. xvi, fig. 88.

1991. *Esomus danricus*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. I : 377-378.

Material : 4 exs., 25.xi.98, (37-58), (F 6200); 52 exs., 24.xii.98, (36-49), (F 6215); 10 exs., 28.i.99, (35-69), (F 6230); 32 exs., 26.ii.99, (30-47), (F 6244); 7 exs., 28.x.98, (32-42), (F 6260); 21 exs., 24.vi.99, (39-67), (F 6291); 7 exs., 28.vii.99, (21.5-55), (F 6458); 150 exs., 28.xii.99, (15-28), (F 6493); 6 exs., i.00, (21.5-38), (F 6520).

Size : 12.5 cm T.L.

Habitat : Ponds, ditches and irrigation canals (Throughout India).

7. *Esomus thermoicos* (Valenciennes)

1842. *Nuria thermoicos* Valenciennes, *Hist. nat. Poiss.*, 16 : 238, pl. 472.

1991. *Esomus thermoicos*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. I : 378-379.

Material : 96 exs., 16.vii.98, (35-48), (F 5579); 22 exs., 28.viii.98, (23-48), (F 5593); 16 exs., 25.xi.98, (25-46), (F 6199); 172 exs., 24.xii.98, (32-48), (f 6214); 30 exs., 28.i.99, (36-41), (F 6229); 144 exs., 26.ii.99, (30-41), (F 6245); 43 exs., 28.x.98, (32-46), (F 6261); 5 exs., 21.ix.99, (22-37), (F 6277); 7 exs., 24.vi.99, (27-35), (F 6291); 56 exs., 28.vii.99, (30-44), (F 6352); 1 ex., iii.00, (35), (F 6543).

Size : 12.7 cm T.L. usually 6.0-10.0 cm.

Habitat : More common in muddy ditches, ponds and canals (Peninsular India).

8. *Rasbora caverii* (Jerdon)

1849. *Leuciscus caverii* Jerdon, *Madras J. Sci. and Lit.*, 15, p. 320.

1991. *Rasbora caverii*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. I : 388-389.

Material : 16 exs., 16.vii.98, (25-38), (F 5580); 11 exs., 28.viii.98, (25-37), (F 5594); 13 exs., 28.vii.99, (27-50), (F 6364); 2 exs., i.00, (34-35), (F 6522).

Size : 7.0 cm T.L.

Habitat : Lowland forest streams and ponds to mountain streams (Peninsular India).

9. *Rasbora daniconius* (Hamilton)

1822. *Cyprinus daniconius* Hamilton, *Fishes of Ganges*, p. 327, pl. 15, fig. 89.

1999. *Rasbora daniconius*, Jayaram, *The Freshwater Fishes of the India Region* : 82-83.

Material : 10 exs., 25.xi.98, (31-43), (F 6198); 10 exs., 24.xii.98, (33-44), (F 6211); 39 exs., 28.i.99, (26-50), (F 6228); 11 exs., 26.ii.99, (20-45), (F 6246); 32 exs., 28.x.98, (21-43), (F 6262); 3 exs., 21.ix.99, (47-50), (F 6276); 104 exs., 24.vi.99, (19-42), (F 6308); 1 ex., 26.x.99, (49), (F 6353); 12 exs., 28.vii.99, (42-56), (F 6353); 24.viii.99, (23-40); (F 6460).

Size : 10.0 cm T.L.

Habitat : Clear but slow flowing streams, ponds and ditches in the plains chiefly with sandy substrate. (Throughout India)

10. *Puntius amphibius* (Valenciennes)

1842. *Capoeta amphibia* Valenciennes, *Hist. Nat. Poiss.*, **16** : p. 282, pl. 478.

1999. *Puntius amphibius*, Menon, *Rec. zool. Surv. India, Occ. Paper No. 175*, p. 85-86.

Material : 1 ex., 16.vii.98, (45), (F 5583); 1 ex., 26.ii.99, (44), (F. 6249); 1 ex., 21.ix.99, (60), (F 6278); 1 ex., 24.vi.99, (34), (F 6294); 1 ex., 28.xii.99, (28).

Size : 9.0 cm T.L.

Habitat : Streams and ponds in the plains (Peninsular India).

11. *Puntius chola* (Hamilton)

1822. *Cyprinus chola* Hamilton, *Fishes of Ganges*, pp. 312.

1991. *Puntius chola*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. **I** : 363-365.

Material : 1 ex., 21.ix.99, (40), (F 6279); 1 ex., 24.vi.99, (48), (F 6295); 2 exs., 24.viii.99, (21-41), (F 6464); 1 ex., v.99, (60), (F 6509).

Size : 15.0 cm T.L., commonly 12.0 cm.

Habitat : Rivers, streams and tanks in the plains.

12. *Puntius conchoni* (Hamilton)

1822. *Cyprinus conchoni* Hamilton, *Fishes of Ganges*, pp. 317-389.

1991. *Puntius conchoni*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. I : 266.

Material : 1 ex., 21.ix.99, (56), (F 6280).

Size : 12.5 cm T.L.

Habitat : Fast flowing hill streams.

13. *Puntius dorsalis* (Jerdon)

1849. *Systemus dorsalis* Jerdon, *Madras J. Lit. & Sci.*, **15** : 314.

1991. *Puntius dorsalis*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. I : 368-369.

Material : 1 ex., 26.ii.99, (35), (F 6250); 1 ex., 21.ix.99, (24), (F 6480).

Size : 25.0 cm T.L., commonly 12 to 15 cm.

Habitat : Rivers and streams, particularly pebbly substrate (Peninsular India).

14. *Puntius melanostigma* (Day)

1878. *Barbus melanostigma* Day, *Fishes of India*, p. 573, pl. 143, fig. 1.

1999. *Puntius melanostigma*, Menon, *Rec. zool. Surv. India, Occ. Paper No. 175*, p. 96-97.

Material : 1 ex., 24.vi.99, (24), (F 6309).

Size : 10.0 cm T.L.

Habitat : Hill streams (Peninsular India).

15. *Puntius sharmai* Menon and Rema Devi

1992. *Puntius sharmai* Menon and Rema Devi, *J. Bombay nat. Hist. Soc.*, **89**(3): 353-354.

1999. *Puntius sharmai*, Menon, *Rec. zool. Surv. India, Occ. Paper No. 175*, p. 100.

Material : 10 exs., 17.vii.98, (22-23), (F 5585); 9 exs., 28.viii.98, (35-50), (F 5595); 13 exs., 8.x.98, (25-29), (F 6033); 3 exs., 24.xii.98, (20-22), (F 6217); 6 exs., 28.i.99, (18-23), (F 6233); 1 ex., 26.ii.99, (23), (F 6248); 55 exs., 28.x.98, (21-24), (F 6264); 3 exs., 28.vii.99, (28-31), (F 6355); 4 exs., 24.vi.99, (18-21), (F 6299); 4 exs., 24.viii.99, (18-25).

Size : 2.7 cm S.L.

Habitat : Freshwater ponds, Tamilnadu.

16. *Puntius sophore* (Hamilton)

1822. *Cyprinus sophore* Hamilton, *Fishes of Ganges*, pp. 310, 389, pl. 129, fig. 86.

1991. *Puntius sophore*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. I : 288-289.

Material : 2 exs., 16.vii.98, (44-45), (F 5584); 7 exs., 28.viii.98, (22-60), (F 5596); 4 exs., 25.xi.98, (32-36), (F 6201); 2 exs., 29.i.99, (41-42), (F 6232); 1 ex., 26.ii.99, (42), (F 6252); 1 ex., 28.x.98, (36), (F 6265); 3 exs., 21.ix.99, (22-46), (F 6282); 15 exs., 24.vi.99, (28-42), (F 6296); 3 exs., 26.x.99, (21-60), (F 6345); 14 exs., 28.vii.99, (28-44), (F 6354); 12 exs., 24.viii.99, ((24-46), (F 6465); 12 exs., 21.ix.99, (20-38), (F 6479); 7 exs., 28.xii.99, (25-50), (F 6496); 25 exs., v.99, (15.5-23), (F 6510); 4 exs., i.00, (43-59), (F 6523).

Size : 18.0 cm T.L.

Habitat : Rivers, streams and ponds in the plains (Throughout India).

17. *Puntius vittatus* Day

1865. *Puntius vittatus* Day, *Proc. zool. Soc. Lond.*, p. 303.

1991. *Puntius vittatus*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. I : 293-294.

Material : 2 exs., 24.vi.99, (63-66), (F 6301); 5 exs., 28.vii.99, (18-22), (F 6357); 1 ex., iii.00, (20), (F 6546).

Size : 5.0 cm T.L., commonly 3.5 cm.

Habitat : Pond, streams, lakes in the plains, common in paddy fields (Peninsular India).

18. *Puntius ticto* (Hamilton)

1822. *Cyprinus ticto* Hamilton, *Fishes of Ganges*, pp. 314, 398, pl. 8, figs. 87.

1991. *Puntius ticto*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. I : 291-292.

Material : 20 exs., 16.vii.98, (29-36), (F 5586); 5 exs., 28.viii.98, (42-48), (F 5597); 2 exs., 8.x.98, (29-33), (F 6034); 50 exs., 25.xi.98, ((17-38), (F 6202); 2 exs., 21.xii.98, (27-31), (F 6216); 6 exs., 28.i.99, (30-36), (F 5234); 7 exs., 26.ii.99, (24-32), (F 6251); 3 exs., 28.x.98, (18-30), (F 6266); 15 exs., 21.ix.99, (21-37), (F 6281); 13 exs., 24.vi.99, (18-31), (F 6297); 8 exs., 26.x.99, (36-39), (F 6344); 27 exs., 28.viii.99, (25-38), (F 6356); 17 exs., 24.viii.99, (19-41), (F 6466); 20 exs., 21.ix.99, (18-28), (F 6478); 13 exs., 28.xii.99, (16.5-19), (F 6497); 21 exs., v.99, (25-39), (F 6512); 19 exs., i.00, (32-40), (F 6524); 6 exs., ii.00, (22-25), (F 6534); 4 exs., iii.00, (25-28), (F 6545).

Size : 20.0 cm T.L.

Habitat : Rivers, streams, ponds in clear waters chiefly with muddy substrate (Throughout India).

19. *Lepidocephalus thermalis* (Valenciennes)

1846. *Cobitis thermalis* Valenciennes, *Hist. Nat. Poiss.*, **18** : 78.

1991. *Lepidocephalus thermalis*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. **I** : 527-528.

Material : 2 exs., 16.vii.98, (34-35), (F 5587); 1 ex., 25.xi.98, (41), (F 6203); 2 exs., 24.xii.98, (31.5-32), (F 6218); 5 exs., 28.i.99, (35-45), (F 6235); 1 ex., 26.ii.99, (34), (F 6253); 1 ex., 28.x.98, (30), (F 6267); 2 exs., 24.vi.99, (26-31), (F 6300); 1 ex., 28.vii.99, (40), (F 6358); 1 ex., 21.ix.99, (40), (F 6482); 2 exs., 28.xii.99, (23-25); 1 ex., i.00, (35.5), (F 6525); 3 exs., ii.00, (29-31), (F 6535); 2 exs., iii.00, (30-34), (F 6548).

Size : 5.8 cm S.L.

Habitat : Clear slow streams with sandy bottom (Peninsular India).

20. *Mystus bleekeri* (Day)

1877. *Macrones bleekeri* Day, *Fishes of India* : 451, pl. 101, fig. 1.

1991. *Mystus bleekeri*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. **II** : 558-559.

Material : 3 exs., v.99, (91-96), (F 6513); 1 ex., 21.ix.99, (87), (F 6283); 4 exs., 26.x.99, (88-98), (F 6346); 1 ex., 24.viii.99, (59), (F 6467); 1 ex., 21.ix.99, (122), (F 6489).

Size : 13.5 cm T.L.

Habitat : Upper reaches of rivers Northern India : Southern limit upto Mahanadi rivers (New record for T.N.).

21. *Mystus gulio* (Hamilton)

1822. *Pimelodus gulio* Hamilton, *Fishes of Ganges*, pp. 201, 379, pl. 23, fig. 66.

1991. *Mystus gulio*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. **II** : 560-561.

Material : 1 ex., 21.x.99, (78), (F 6240).

Size : 46.0 cm T.L.

Habitat : Estuaries, tidal rivers and lakes ascending to freshwaters and entering the sea (Throughout India).

22. *Mystus vittatus* (Bloch)

1797. *Silurus vittatus* Bloch, *Ichth. Hist. Nat.*, **11** : 40, pl. 371, fig. 2.

1991. *Mystus vittatus*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. **II** : 573-574.

Material : 1 ex., i.00, (15).

Size : 21.0 cm T.L.

Habitat : Rivers, streams, ponds and lakes in the plains (Throughout India).

23. *Pseudeutropius atherinoides* (Bloch)

1794. *Silurus atherinoides* Bloch, *Natuges ausland Fische.*, 8 : 48, pl. 371, fig. 1.

1991. *Pseudotropius atherinoides*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. II : 606-607.

Material : 3 exs., 28.x.98, (19-21), (F 6268); 1 ex., 21.ix.99, (58), (F 6490); 5 exs., 28.xii.99, (19-21); 3 exs., ii.00, (28-31), (F 6536).

Size : 15.0 cm T.L.

Habitat : Rivers and estuaries (Throughout India except Kerala).

24. *Heteropneustes fossilis* (Bloch)

1794. *Silurus fossilis* Bloch, *Natuges ausland Fische*, 8 : 46, pl. 370, fig. 2.

1991. *Heteropneustes fossilis*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. II : 689-690.

Material : 1 ex., 28.viii.98, (111), (F 5599); 4 exs., 25.xi.98, (77-115), (F 6204); 1 ex., 26.x.99, (110), (F 6347); 3 exs., 21.ix.99, (71-101), (F 6488).

Size : 30.0 cm T.L.

Habitat : Ponds, ditches, jheels, swamps, marshes and muddy rivers (Throughout India).

25. *Oryzias carnaticus* (Jerdon)

1848. *Aplocheilus melastigmus* Jerdon, *Madras J. Lit. & Sci.*, 15 : 331.

1998. *Oryzias carnaticus*, Tyson R, Roberts, *Ichthyological Research*. The Ichthyological Society of Japan : 213-224.

Material : 2 exs., 16.vii.98, (22-23), (F 5588); 1 ex., 28.viii.98, (F 5601); 1 ex., 28.i.99, (21), (F 6243).

Size : 4.0 cm T.L.

Habitat : Brackish water and estuaries, shallow lagoons, swamps, mangroves, readily adapt to freshwater conditions and breed in freshwater (Peninsular India).

26. *Gambusia affinis* (Baird and Girard)

1853. *Heterandria affinis* Baird and Girard, *Proc. Acad. Nat. Sci. Philad.*, 6 : 390.

1991. *Gambusia affinis*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. II : 756-757.

Material : 1 ex., 28.viii.98, (17), (F 5600); 41 exs., 25.xi.98, (14-29), (F 6205); 16 exs., 24.xii.98, (15-27), (F 6219); 24 exs., 28.i.99, (18-35), (F 6238); 21 exs., 26.ii.99, (16-24), (F 6254); 3 exs., 28.x.98, (20-43), (F 6269); 2 exs., 24.vi.99, (20-34), (F 6293); 3 exs., 24.viii.99, (28-36), (F 6470).

Size : 6.0 cm T.L.

Habitat : Throughout India.

27. *Macrogathus pancalus* (Hamilton)

1822. *Macrogathus pancalus* Hamilton, *Fishes of Ganges*, pp. 30, 364, pl. 22, fig. 7.

1991. *Macrogathus pancalus*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. II : 1027-1028.

Material : 1 ex., 26.ii.99, (35), (F 6250); 1 ex., 21.ix.99, (24), (F 6480).

Size : 18.0 cm T.L.

Habitat : Freshwater rivers of plains and estuaries (Throughout India).

28. *Chanda nama* (Hamilton)

1822. *Chanda nama* Hamilton, *Fishes of Ganges*, pp. 109, 371, pl. 39, fig. 37.

1991. *Chanda nama*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. II : 799-800.

Material : 6 exs., 8.x.98, (30-33), (F 6038); 2 exs., 24.xii.98, (25-35), (F 6223); 22 exs., 28.i.99, (22-30), (F 6236); 4 exs., 28.x.98, (22-30), (F 6271); 8 exs., 21.ix.99, (28-30), (F 6285); 5 exs., 24.vi.98, (25-30), (F 6303); 5 exs., 24.viii.99, (19-21); 1 ex., v.99, (59), (F 6538); 16 exs., ii.99, (18-27), (F 6538); 23 exs., iii.00, (20-26), (F 6553).

Size : 11.0 cm T.L.

Habitat : Freshwater (Both standing and running waters), Brackish waters (Throughout India).

29. *Parambassis ranga* (Hamilton)

1822. *Chanda ranga* Hamilton, *Fishes of Ganges*, pp. 113, 371, pl. 6, fig. 38.

1999. *Parambassis ranga*, Jayaram, *The Freshwater Fishes of the Indian Region* : 370-371.

Material : 26 exs., 8.x.98, (27-30), (F 6037); 28 exs., 25.xi.98, (27-32), (F 6207); 1 ex., 24.xii.98, (22), (F 6224); 1 ex., 28.i.99, (35), (F 6237); 3 exs., 26.ii.99, (26-30), (F 6255); 11 exs., 28.x.98, (20-32), (F 6272); 1 ex., 21.ix.99, (51), (F 6286); 4 exs., 24.vi.99, (20-24), (F 6304); 7 exs., 28.vii.99, (24-30), (F 6363); 7 exs., 24.viii.99, (23-28), (F 6471); 23 exs., 21.ix.99, (26-31), (F 6476).

Size : 7.0 cm T.L., usually 5 cm.

Habitat : Fresh and brakish waters (Throughout India).

30. *Eetroplus maculatus* (Bloch)

1785. *Chaetodon maculatus* Bloch, *Syst. Ichth.*, pl. 427, fig. 2.

1991. *Eetroplus maculatus*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. II : 885.

Material : 1 ex., 24.xii.98, (41), (F 6220); 1 ex., 24.vi.99, (30), (F 6302); 1 ex., 28.vii.99, (59), (F 6360); 1 ex., 28.xii.99, (31), (F 6500); 1 ex., iii.00, (34), (F 6489).

Size : 7.5 cm T.L.

Habitat : Coastal freshwater, common in paddy fields, tanks, occasionally in backwaters with tidal influence. (Peninsular India).

31. *Oreochromis mossambica* (Peters)

1852. *Chromis mossambicus* Peters, *Montab. Akad. Wiss. Berlin*, p. 681.

1991. *Oreochromis mossambica*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. II : 887-888.

Material : 7 exs., 16.vii.98, (35-63), (F 5592); 2 exs., 28.viii.98, (15-17); 5 exs., 25.xi.98, (50-60), (F 6210); 21 exs., 28.i.99, (27-35), (F 6239); 3 exs., 28.x.98, (32-54), (F 6270); 23 exs., 21.ix.99, (58-90), (F 6288); 2 exs., 26.x.99, (69-110), (F 6348); 2 exs., 28.vii.99, (53-68), (F 6361); 1 ex., 24.viii.99, (27); 17 exs., 7.iii.00, (29-103), (F 6473); 13 exs., 21.ix.99, (69-82), (F 6474); 5 exs., 21.ix.99, (68-83); 1 ex., 28.xii.99, (37), (F 6501); 4 exs., v.99, (15.5-52), (F 6517).

Size : Exotic species, widely distributed.

Habitat : Throughout India.

32. *Glossogobius giuris* (Hamilton)

1822. *Gobius giuris* Hamilton, *Fishes of Ganges*, pp. 51, pl. 33, fig. 15.

1991. *Glossogobius giuris*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. II : 936.

Material : 1 ex., 28.i.99, (67), (F 6240); 2 exs., 21.i.99, (108-111), (F 6475).

Size : 30.0 cm T.L., usually 15.0 cm.

Habitat : Freshwaters, estuaries (Throughout India).

33. *Pseudosphromenus cupanus* (Valenciennes)

1831. *Polycanthus cupanus* Cuvier (in C & V), *Hist. Nat. Poiss.*, 7 : 357.

1999. *Pseudosphromenus cupanus*, Menon, *Rec. zool. Surv. India, Occ. Paper No. 175*, p. 300.

Material : 13 exs., 16.vii.98, (27-34), (F 5590); 25 exs., 25.xi.98, (28-31), (F 6208); 7 exs., 24.xii.98, (23-29), (F 6221); 3 exs., 26.ii.99, (20-28), (F 6250); 1 ex., 28.x.98, (28), (F 6274); 3 exs., 24.vi.99, (20-24), (F 6305); 4 exs., 24.viii.99, (21-25), (F 6468); 1 ex., 21.ix.99, (39), (F 6481); 1 ex., 28.xii.99, (16).

Size : 7.5 cm T.L.

Habitat : Fresh (Lentic condition with thick vegetation and floating plants) and brackish waters (Peninsular India).

34. *Polycanthus fasciatus* (Bloch and Schneider)

1801. *Trichogaster fasciatus* Bloch and Schneider, *Syst. Ichth.*, p. 164, pl. 36.

1999. *Polycanthus fasciatus*, Menon, *Rec. zool. Surv. India, Occ. Paper No. 175*, p. 297-298.

Material : 6 exs., 16.vii.98, (28-30), (F 5589); 3 exs., 25.xi.98, (20-23), (F 6209); 1 ex., 24.xii.98, (25), (F 6222); 9 exs., 28.i.99, (27-39), (F 6241); 6 exs., 21.ix.99, (32-35), (F 6287); 3 exs., 26.x.99, (29-30), (F 6349); 7 exs., 28.vii.99, (29-38), (F 6362); 6 exs., 21.ix.99, (25-38), (F 6477); 17 exs., v.99, (28-30), (F 6514); 1 ex., iii.00, (30), (F 6551).

Size : 12.5 cm T.L.

Habitat : Freshwater rivers, lakes and estuaries free floating weedy environment (Throughout India).

35. *Channa punctatus* (Bloch)

1793. *Ophiocephalus punctatus* Bloch, *Naturges ausland. Fische*, 7 : 139, pl. 358.

1991. *Channa punctatus*, Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, Vol. II : 1020-1021.

Material : 4 exs., 16.vii.98, (63-83), (F 5591); 12 exs., 25.xi.98, (53-110), (F 6206); 8 exs., 24.xii.98, (52-96), (F 6225); 2 exs., 28.x.98, (58-110), (F 6273); 10 exs., 24.vi.99, (24-81), (F 6306); 1 ex., 28.vii.99, (90), (F 6359); 6 exs., 24.viii.99, (52-104), (F 6469); 3 exs., 21.ix.99, (41-98), (F 6487).

Size : 30.4 cm T.L., commonly but only up to 11 cm in the plains.

Habitat : Large freshwater tanks, ponds, swamps (Throughout India).

DISCUSSION

From the paddy field ecosystem a total of 35 species under 14 families and 7 orders were collected and their frequency of abundance and occurrence are as follows. Most of the species encountered are known to inhabit quite flowing or stagnant shallow waters with vegetation and

with the sandy or muddy substrates in the low lands. Some are known to occur in coastal marshes also. Species which were encountered almost throughout or for most part of the year are the following in their order of occurrence viz., *Puntius ticto*, *Esomus thermoicos*, *Parambassis ranga*, *Rasbora daniconius*, *Chela cachius*, *Chela laubuca*, *Puntius sharmai*, *Puntius sophore*, *Gambusia affinis*, *Lepidocephalus thermalis*, *Oreochromis mossambica*, *Esomus danricus*, *Chanda nama*, *Colisa fasciatus*, *Pseudosphronemus cupanus*, *Channa punctatus* and *Amblypharyngodon microlepis*. However species which are known to inhabit fast flowing and deeper upland waters where also occasionally encountered in the paddy fields viz. *Rasbora caverii*, *Salmostoma clupeoides*, *Puntius conchoni*, *Puntius dorsalis*, *Puntius melanostigma* and *Mystus bleekeri*. The occurrence of these species could be due to waters flooding the paddy fields from a perennial tank situated not far off.

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