



Taxonomy and biology of fishes of the family Gerreidae (Teleostei: Perciformes)

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Introduction

The family Gerreidae commonly called as mojarras/silver biddies. Gerreids are marine, brackish water and rare in freshwater. Juveniles enter estuaries until they reach maturity; spawning occurs at sea throughout the season. A wide gap exists in the taxonomic studies carried out as indicated by the very less number of species reported from India. The present study envisages the available species in India and to undertake revision of the fishes of the family Gerreidae.

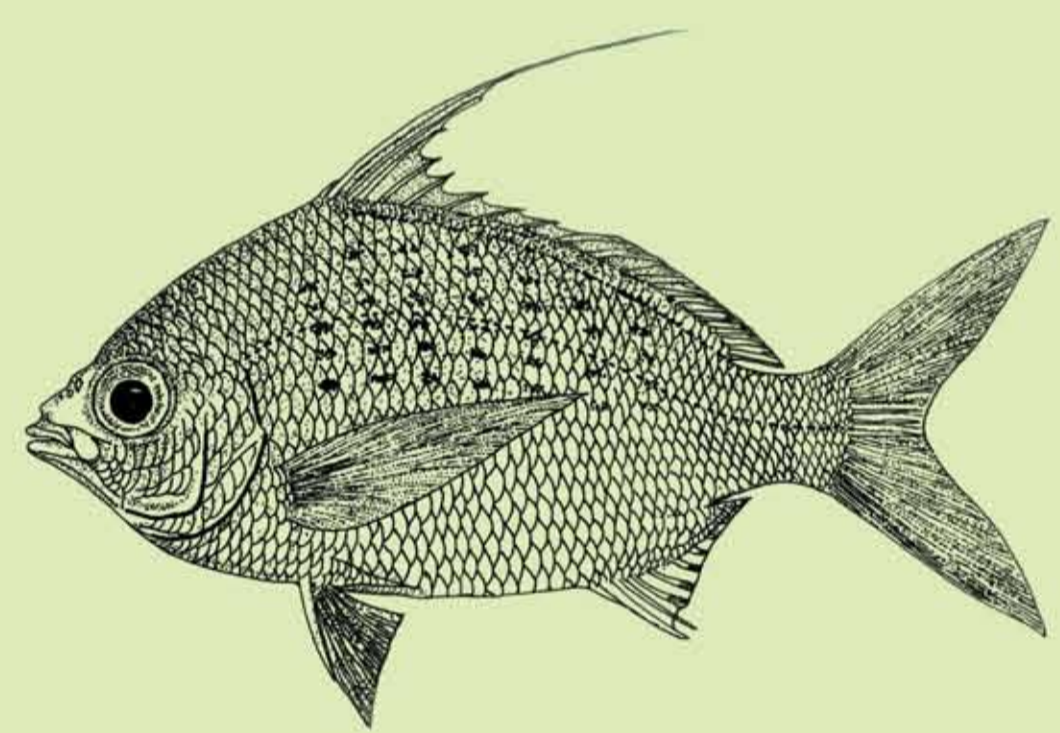
Taxonomy

The study shows that nine valid species, i.e., *Gerres filamentosus* Cuvier, 1829; *Gerres poietii* Cuvier, 1829; *Gerres oyena* (Forsskål, 1775); *Gerres setifer* Hamilton, 1822; *Pentaprion longimanus* (Cantor, 1849); etc occur along the Indian coast.

SI No	Species recorded	Francis Day (1878)	Weber & de Beaufort (1940)	FAO (1974) EIO**	Jones & Kumaran (1980)	Munro (1982)	FAO (1984) WIO*	Talwar and Kacker (1984)	Talwar & Jhingran (1991)
1	<i>Gerres filamentosus</i>	●	●	●	●	●	●	●	●
2	<i>Gerres abbreviatus</i>	●	●	●	●	●	●	●	●
3	<i>Gerres acinaces</i>	●	●	●	●	●	●	●	●
4	<i>Gerres oyena</i>	●	●	●	●	●	●	●	●
5	<i>Gerres oblongus</i>	●	●	●	●	●	●	●	●
6	<i>Gerres macracanthus</i>	●	●	●	●	●	●	●	●
7	<i>Gerres setifer</i>	●	●	●	●	●	●	●	●
8	<i>Gerres lucidus</i>	●	●	●	●	●	●	●	●
9	<i>Gerres poietii</i>	●	●	●	●	●	●	●	●
10	<i>Pentaprion longimanus</i>	●	●	●	●	●	●	●	●
11	<i>Gerres limbatus</i>	●	●	●	●	●	●	●	●
12	<i>Gerreomorpha setifer</i>	●	●	●	●	●	●	●	●

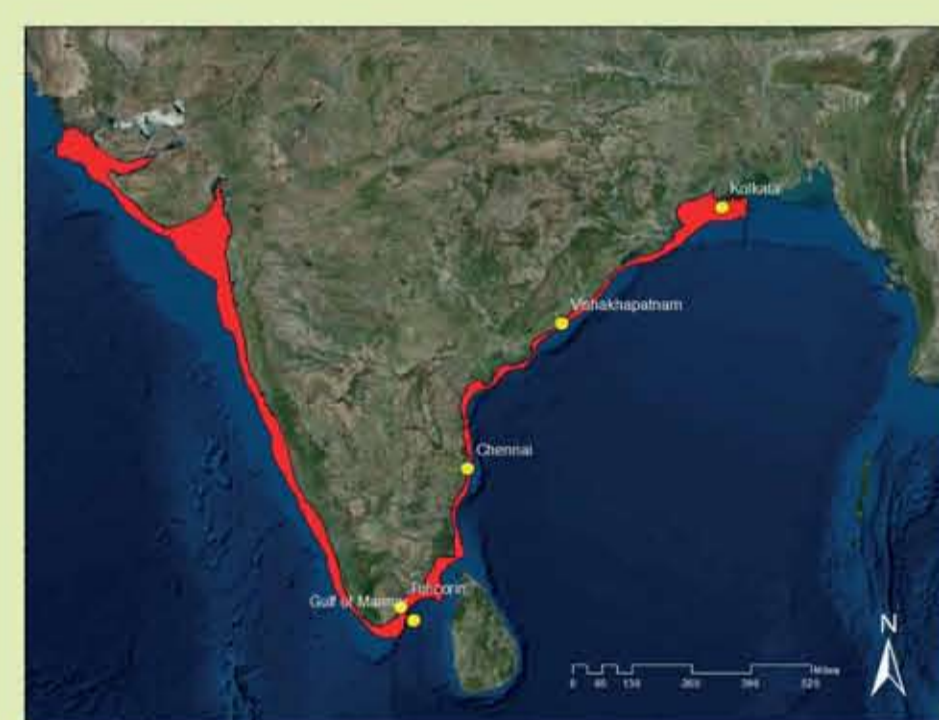
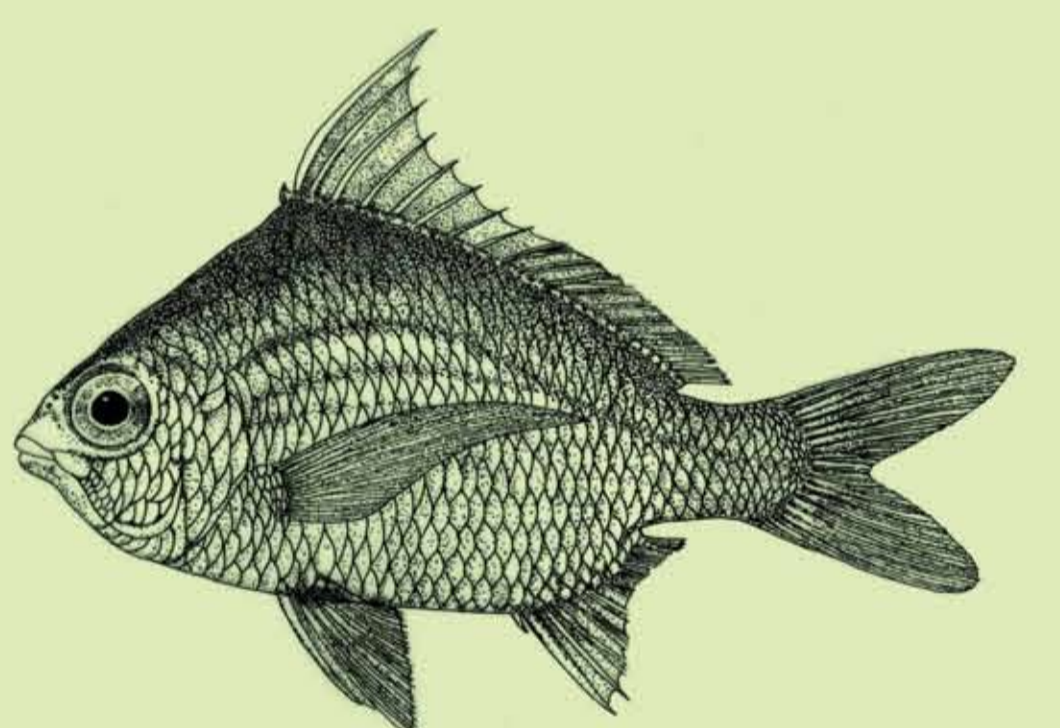
WIO*: Western Indian ocean EIO**: Eastern Indian ocean

1 *Gerres filamentosus* Cuvier, 1829



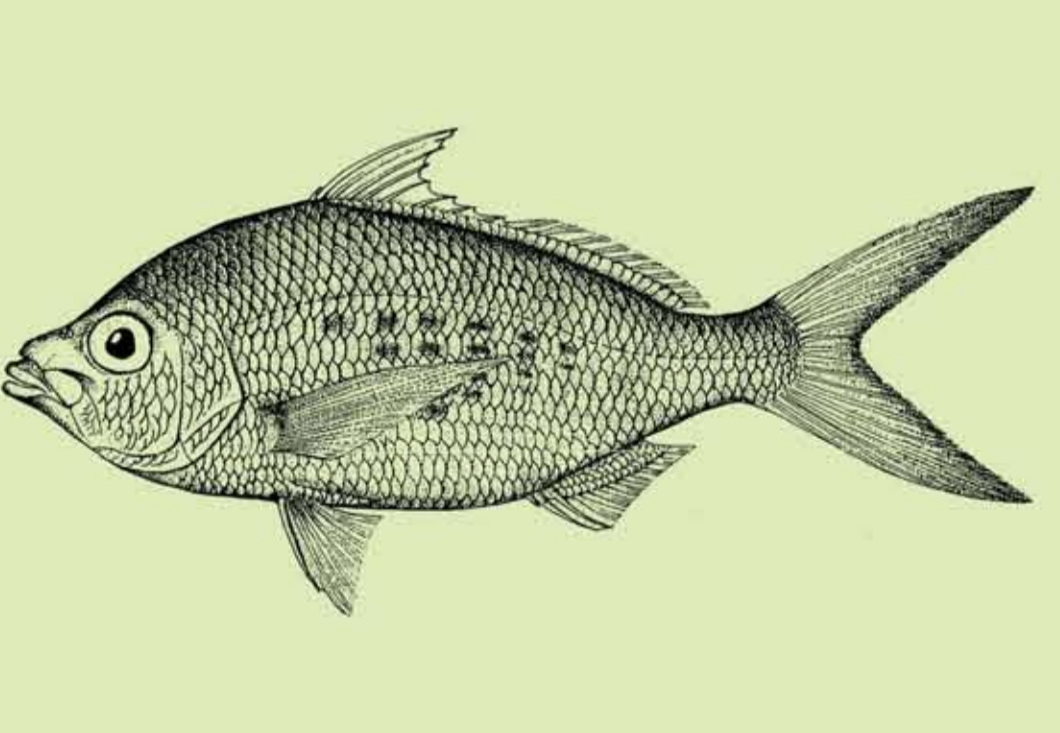
D.IX.10; A. III. 9; L.I 42-43; L. tr. 4-4 1/2/1/10
Second dorsal spine laterally compressed, produced into a filament. 7-10 columns of ovoid spots on each side.

2 *Gerres abbreviatus* Bleeker, 1850 (= *G. erythrousus*)



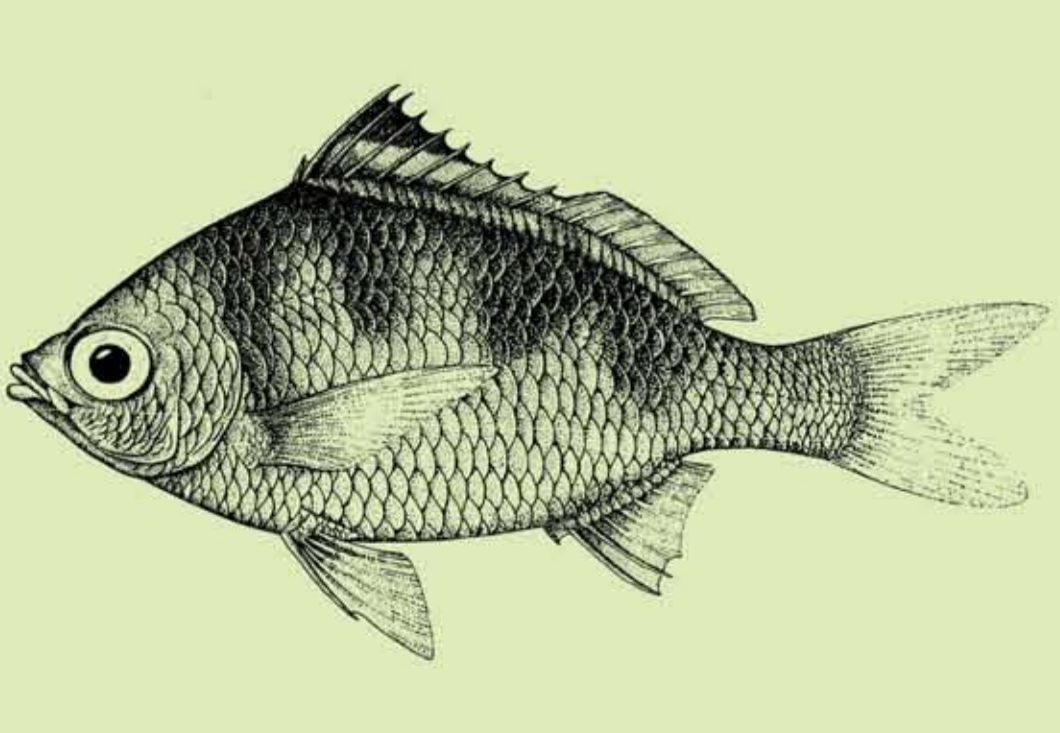
D.IX.10; A. III. 7; L.I 33-35; L. tr. 4/ 1/10
Strong spines, second anal spine much longer than the base of anal fin. Silvery tinged with brown color dorsal. 7-11 slender dark bars along sides.

3 *Gerres acinaces* Bleeker, 1854 (= *G. longirostris*)



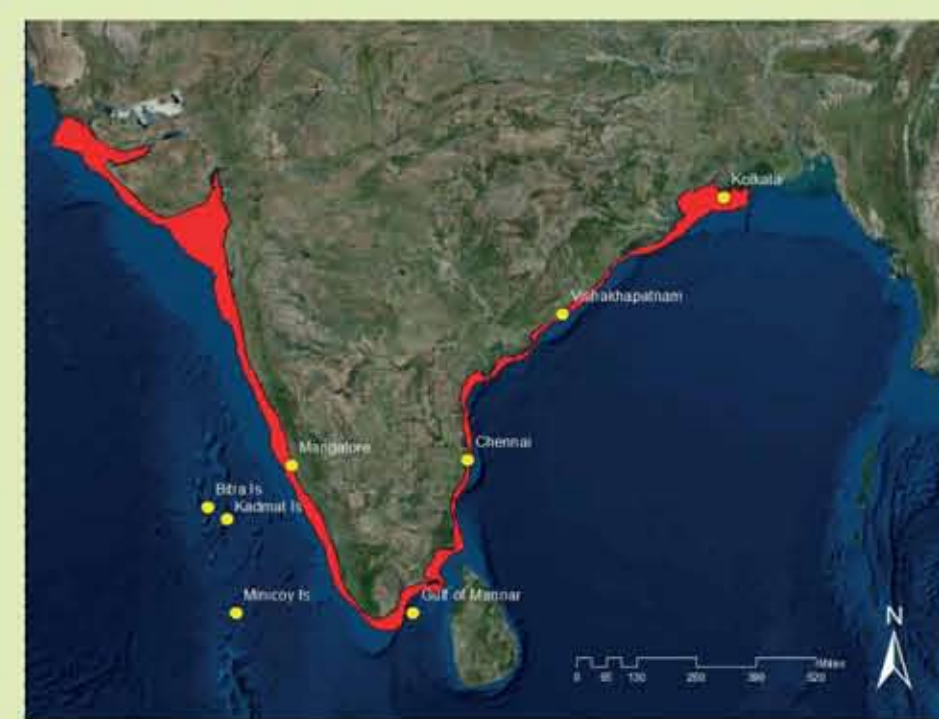
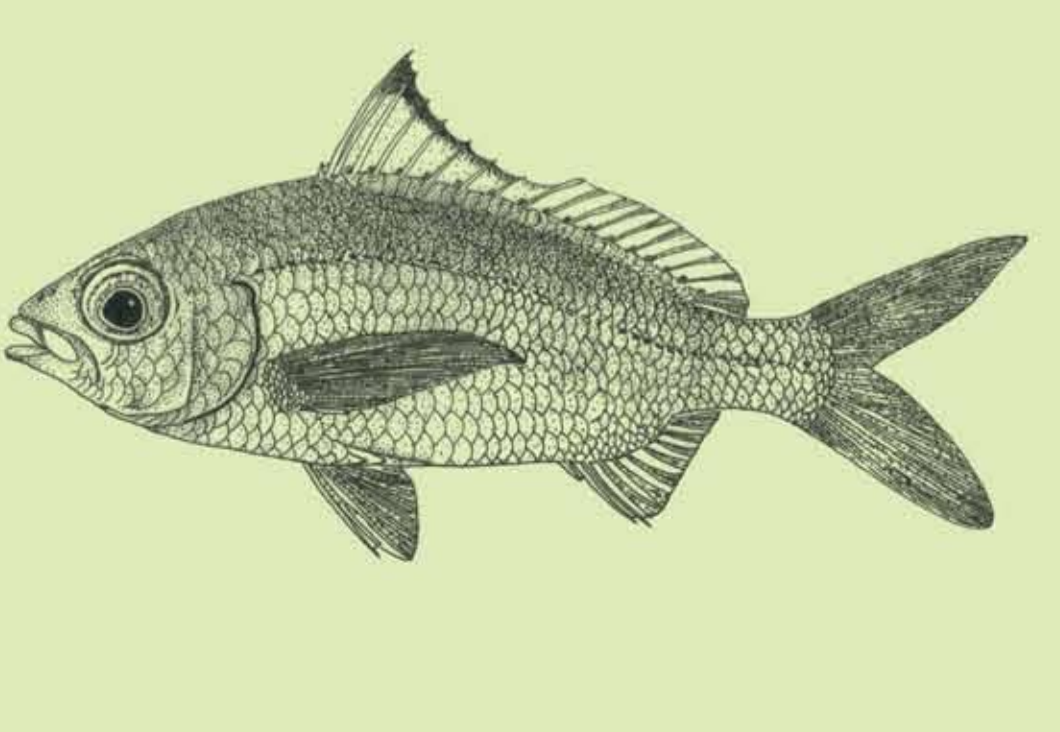
D.IX.10; A. III. 7; L.I 43; L. tr. 5/1/11
Body depth 2.5-2.9 times in standard length. Color olive green above, silver below. In young specimens 7-8 dusky bars on sides of body. When fish grows 5 dark ovoid spots appears below lateral line.

4 *Gerres lucidus* Cuvier and Valenciennes, 1830 (= *G. limbatus*)



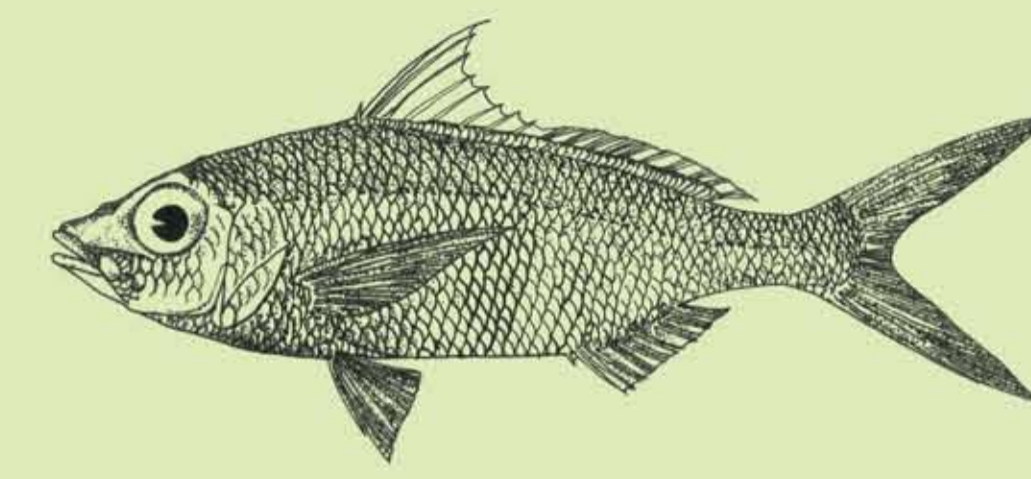
B. VI, D. 9/10, P.15; V 1/5, A. 3/ 7 C. 17; L.I 35; L. tr. 4/10
Pectoral fin short, silvery dusky, 4 diffuse dark saddles along back, extending downsides to middle.

5 *Gerres oyena* (Forsskål, 1775)



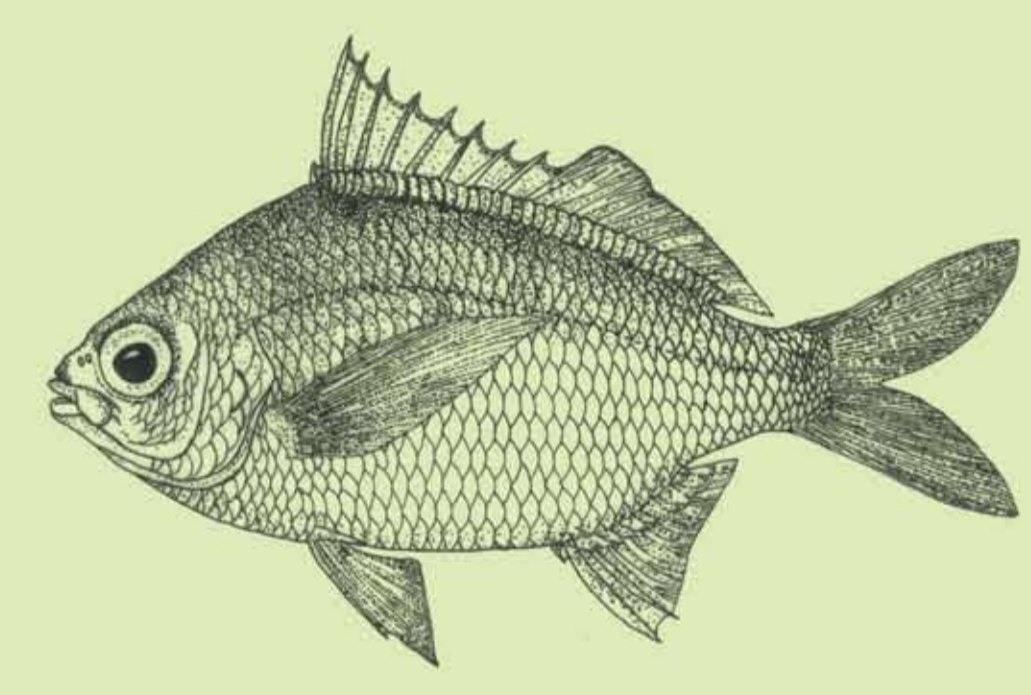
D.IX.10; A. III. 7; L.I 35-38; L. tr. 3 1/2- 4/1/11
Body depth contained 3-3.3 times in standard length. Pale olive above to silvery below. 7/8 faint dusky bars on sides of the body, more pronounced in young.

6 *Gerres oblongus* Cuvier and Valenciennes, 1830



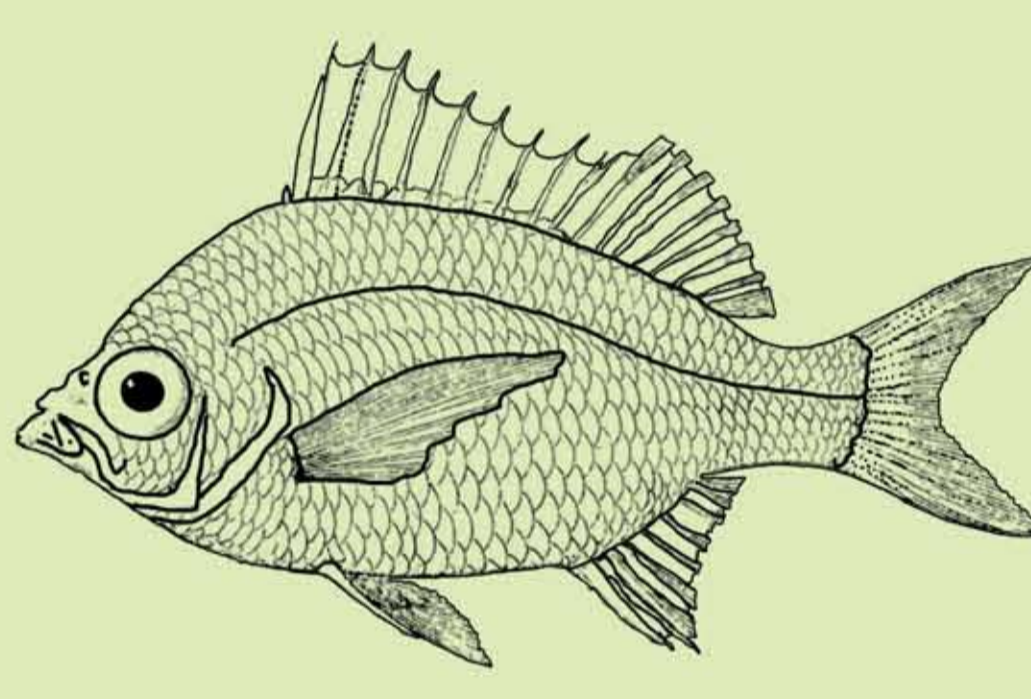
D.IX.10; A. III. 7; L.I 46-48; L. tr. 5 1/2- 6/1/10
Pointed snout, deeply forked caudal fin silvery lilac brown, tip of the dorsal fin dusky and other fins pale.

7 *Gerres poietii* Cuvier, 1829



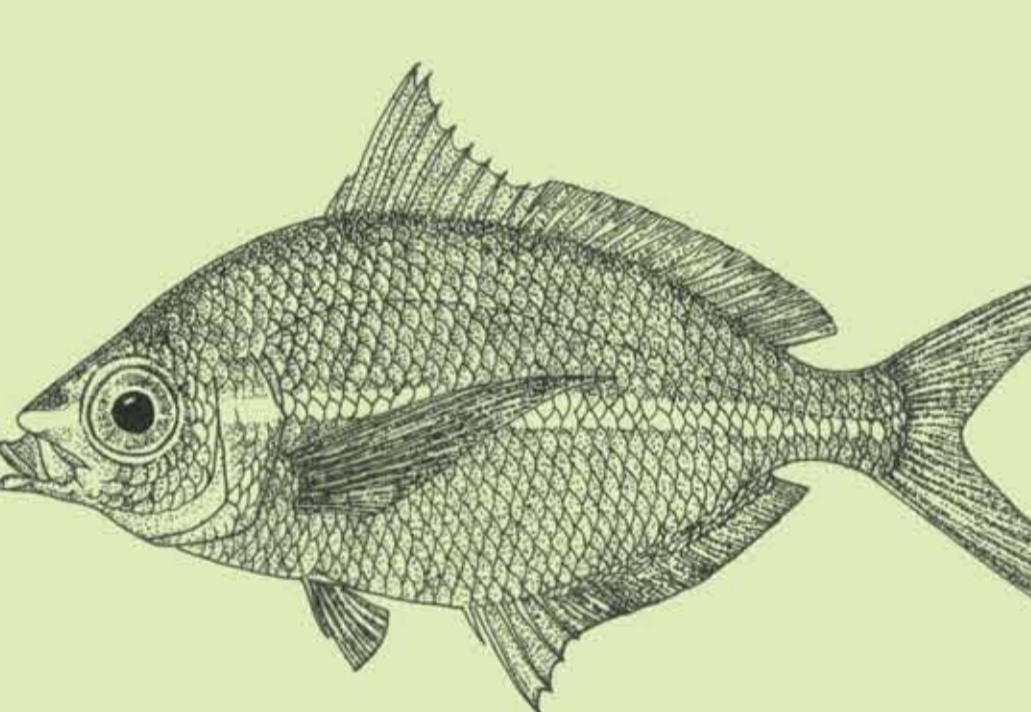
D.IX.10; A. III. 7; L.I 35; L. tr. 3-3 1/2/ 1/10
Deep bodied, depth about 2-3 times in standard length. Fin spine strong.

8 *Gerres setifer* (Hamilton, 1822)



B. VI, D. 9/10, P.15; V 1/5, A. 3/ 7 C. 17; L.I 40; L. tr. 5/10, caec. Pyl. 3
Elongated pectoral fin reaching upto anal fin origin. Head and body completely covered with scales.

9 *Pentaprion longimanus* (Cantor, 1849)

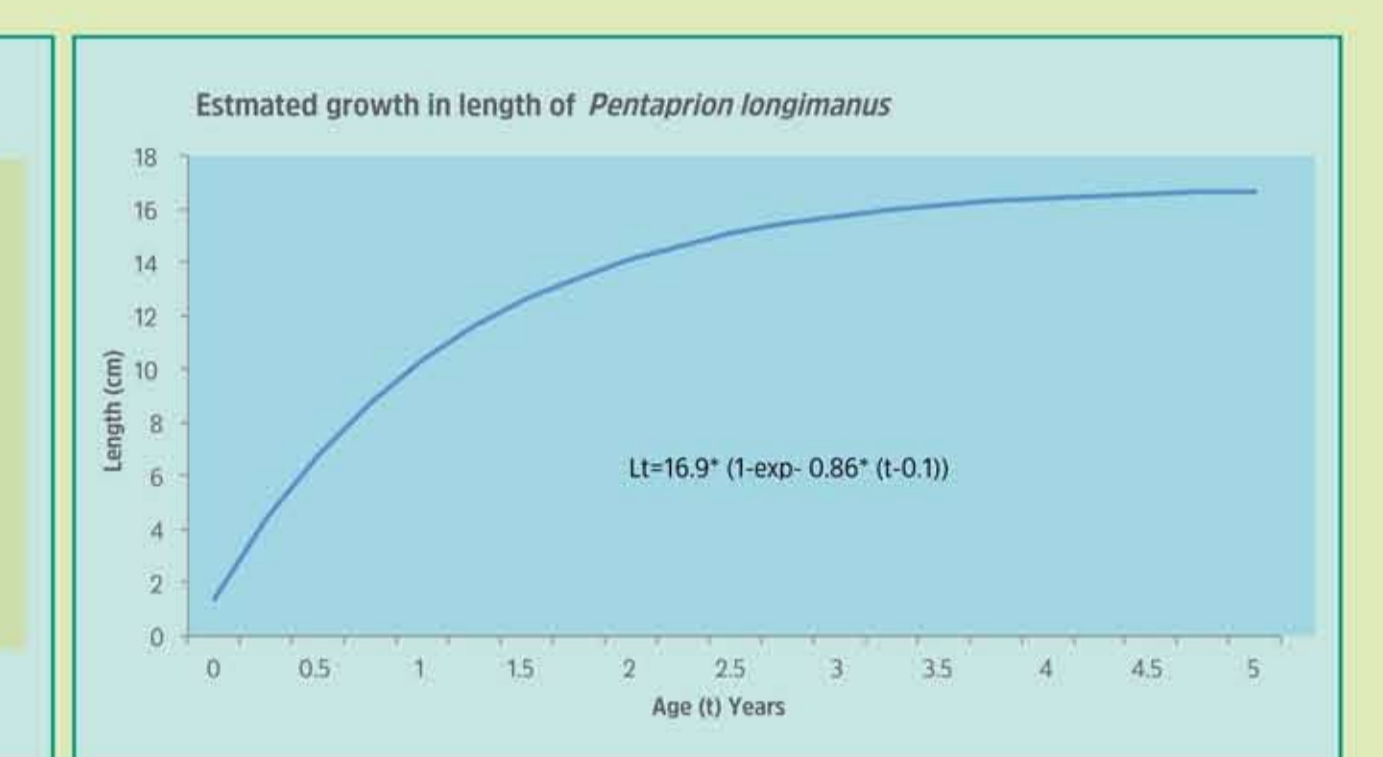
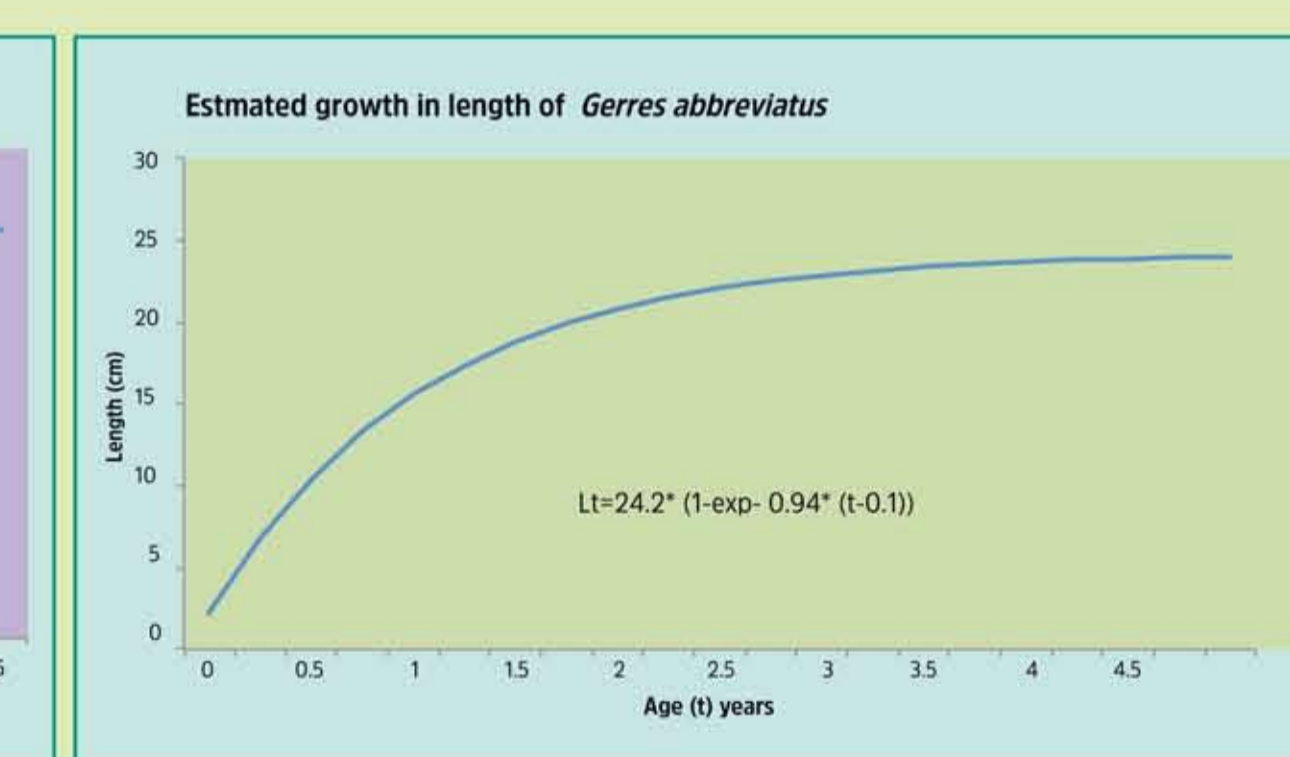
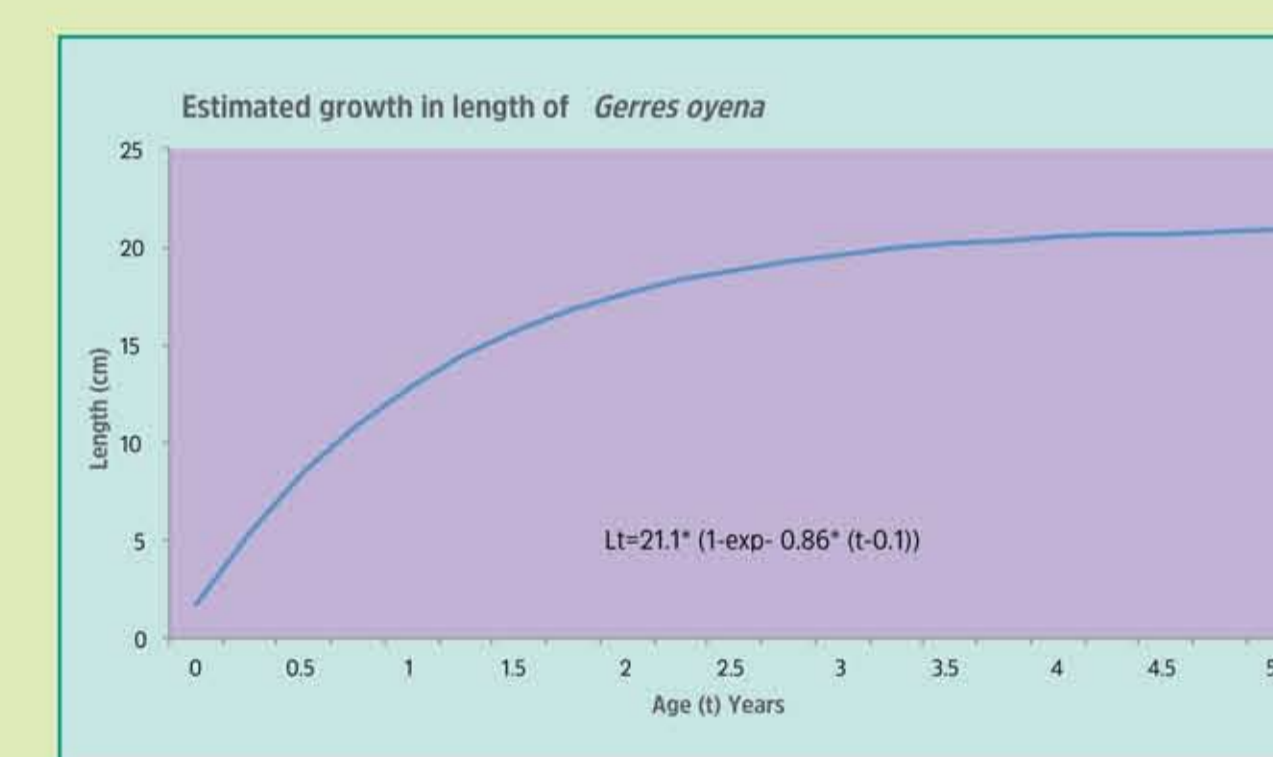
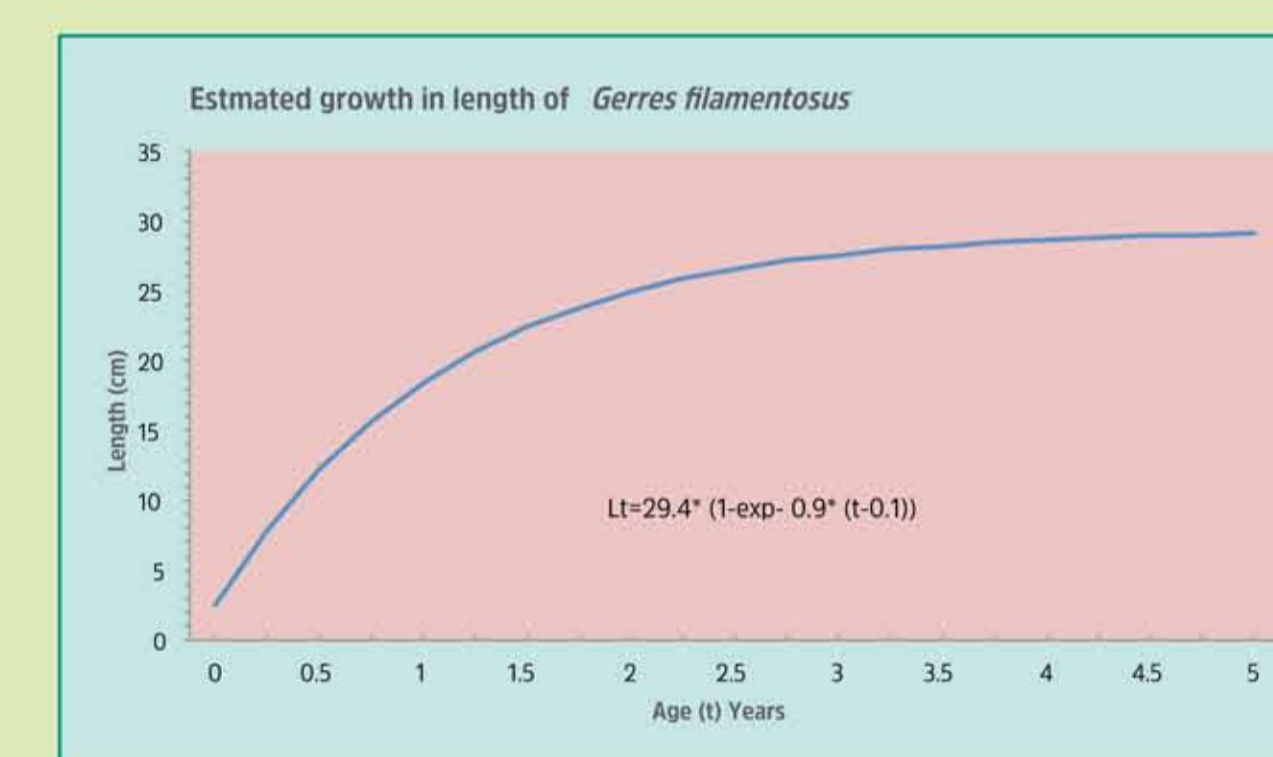


D.IX-X, 14-15; A. V. 13; L.I.ca 40
Anal fin longer than the base of the soft portion of the dorsal fin. Scales sheds very easily.

(Line drawings of the species 1-9 were redrawn from FAO (1984) Species identification sheets for fishery purposes, Western Indian Ocean Area, SI, Rome, Italy)

Biology and Population dynamics

The biology and population parameters were estimated using Froese and Binohalan (2000) equation for the asymptotic length (L_{∞}), length at first maturity (L_m) and annual growth rate (K). The growth of the selected four species was estimated using VBGF. The L_{∞} , K, L_m values of *G. filamentosus* was found to be 29.4cm, 0.9/year, 17.4cm; *G. oyena* was 21.1cm, 0.86/year; *G. abbreviatus* was 24.2cm, 0.94/year, 14.6cm and *Pentaprion longimanus* was 16.9 cm, 0.86/year, 10.6cm respectively.



Conclusion

The taxonomic data of nine species generated will be of immense use to fish taxonomists worldwide. Scientists, researchers and all those interested in fisheries can utilize the systematic details of the fishes of the family Gerreidae. Results obtained will form the basic record of the all the available nine species of mojarras from Indian coast. The biology, population parameters and growth of *Gerres filamentosus*, *G. oyena*, *G. abbreviatus* and *Pentaprion longimanus* were estimated.

References

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- Talwar, P.K. and Kacker, R.K., 1984. Commercial sea fishes of India. Zoological Survey of India, Calcutta.
- Froese, and Binohalan. 2000. Empirical relationships asymptotic length, Length at first and length at maximum yield per recruit in fishes, with a simple method to evaluate length frequency data, *Journal of Fish Biology*, vol.46, pp. 758-773