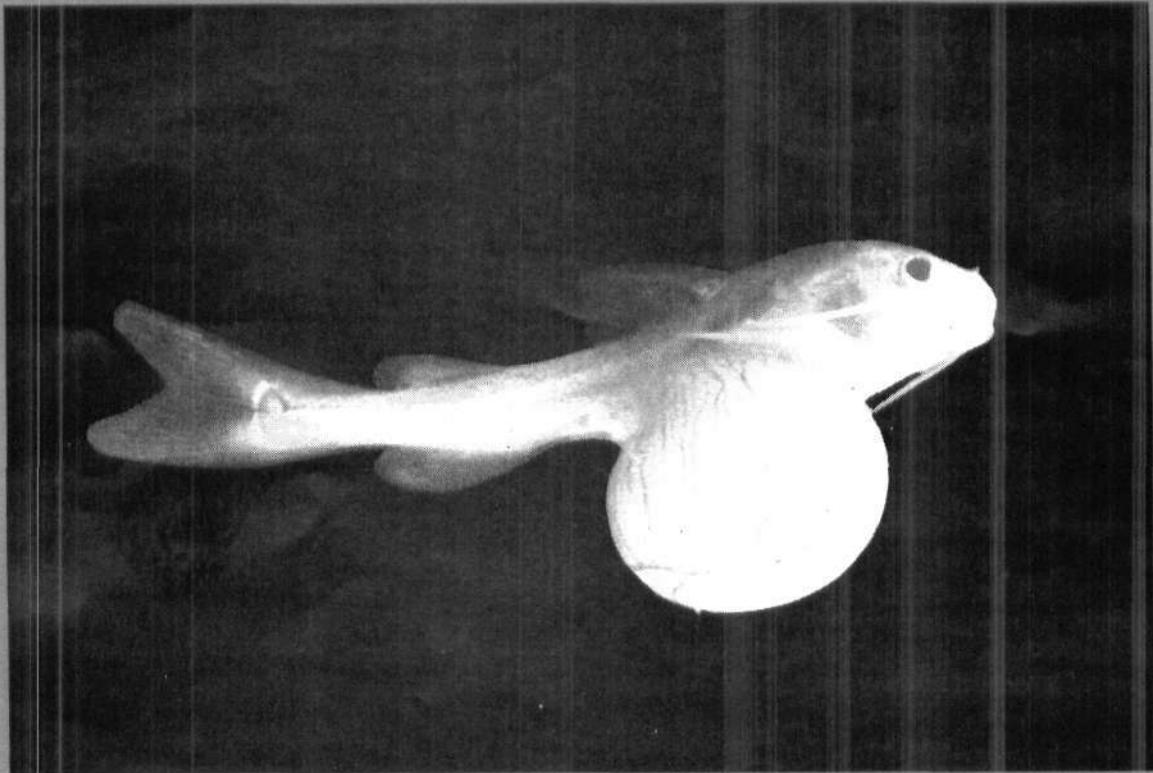




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MARINE FISH CALENDAR

VI. TUTICORIN*

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Introduction

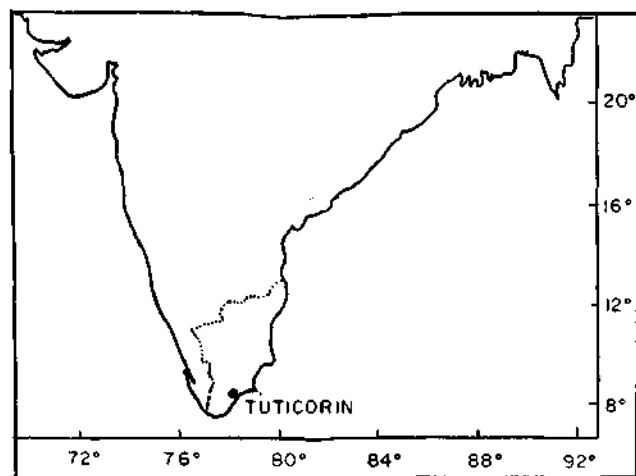
Tuticorin is one of the well known, age old, fishery ports of India especially by virtue of the production of valuable, good quality, natural pearls and chanks in addition to marine fish production. Early in the 1911-'15 period the marine fish production here was to the tune of 663,592 pounds (296.3 tonnes) fetching an amount of Rs. 46,929. The fishermen strength was 520 who operated conventional 'valavalai', 'kolavalai', 'madivalai', offshore lining, inshore lining, trolling and other minor nets with the traditional fishing crafts like Tuticorin type of plank built boats called 'Vallam' and 'catamarans'. Percentage composition of important fisheries was ribbon fishes (34.3%), sardines (10.9%), jew fishes (9.5%), perches (8.8%), rock cods (5.8%), seer fishes (3.9%), sea breams (3.8%), sharks and rays (3.7%), red mullets (2.4%), anchovies (2.3%) *etc.*

Towards 1960 a vast transformation occurred in the fishing industry. As the historical pearl fishery of 1955-'61 almost waned into non-existence and the chank fishery being the monopoly of the State Government, fishing for different marine fish took an impetus resulting in a gradual change in the pattern of fishing with the introduction of high efficiency fishing materials

like nylon nets and HDP twines in places of conventional hemp and cotton and linen yarns. In 1955-'56 period the total marine fish landing in Tuticorin was 35,000 maunds (392 t) caught by 'kolavalai', Dunlop twine nets, hand lines, R.C. lines, 'valavalai', 'madivalai', whiffing and long lines. During 1964-'65 and 1965-'66, the landing was 752.2 and 1,213.6 t respectively. Of this lesser sardines alone constituted the bulk of the catch accounting for 12.1%. Next in importance were the Indian sprats (9.6%), sea breams (6.7%), rock cods (6.7%), anchovies (6.4%) and seer fish (5.9%). There were distinct seasons for seerfish, tunnies, barracuda and carangid fisheries by troll lines (June - September). Hand lining for serranids, lutianids and lethrinids was brisk till March commencing from October.

Post 1970 period brought about a significant change in the quality and quantity of landings. New dimensions were introduced by seasonal prawn fishing by mechanised boats during July-October. On an average, 240 t of prawns and 1,650 t of fish were landed during early seventies by the mechanised trawlers in addition to 4,200 t landed by traditional fishing crafts. Drift nets landed 61% of the traditional catch, set gill nets 19.5%, line fishing 18.6% and seines 0.9%. In all, 973 net fishermen and 240 line fishermen were in the fishing activity.

Consequent to the improvement in the efficiency and longevity of the fishing gears by the introduction of synthetic fishing materials and prolific expansion of the mechanised trawlers, the artisanal and subsistence fishery metamorphosed into small-scale fishing industry. The construction of minor fishing harbour and interest shown by Kerala fish exporters served as a fillip towards the intensification of fishing activity. The important marine fishery resources of the region are (i) pelagic fishery resources such as clupeids (lesser sardines, Hilsa, Chirocentridae, *etc.*), seer fish, tuna, barracudas, sharks, anchovies, carangids, belones, bill fishes, *etc.*, (ii) Major demersal resources namely perches (lethrinids, rock cods, snappers, *scolopsis etc.*, sciaenids, nemipterids,



* Consolidated by N. Gopinatha Menon and K. Balachandran, CMFRI, Cochin.

silver bellies, *Thrissoctes*, cat fish, pomfrets and rays, (iii) molluscan fishery resources like chanks, pearl oysters, edible oysters, squids, cuttle fishes, octopuses etc., (iv) crustacean resources comprising of prawns, lobsters, and crabs and (v) seaweed resources.

Present assessment of fishery resources reveals that in a year 19,850 t of fish are landed by trawlers and 9,275 t by traditional fishing units. Silver bellies are the most dominant in trawl net catches constituting 2,900 t and the important species are *Leiognathus bindus*, *L. dussumieri* and *Secutor insidiator*. Lesser sardines comprising 2,250 t are constituted by *Sardinella fimbriata*, *S. gibbosa*, *S. albella* and *S. sirm*, and are landed mostly by drift gill net called 'Chalai valai'. The king seer *Scomberomorus commerson* forms not less than 90% of total seer fish catch and the rest by the streaked seer, *S. lineolatus* and spotted seer, *S. guttatus*. This resource is exploited mostly by drift gill nets, hand lines, long lines, trolling and to some extent by trawlers. The annual average catch of seer fish is 374 t. Though seer fish occur throughout the year the peak period of abundance coincides with the tuna season during July - September. *Auxis thazard*, *Euthynnus affinis*, *Sarda orientalis* and *Thunnus tonggol* support fishery of tuna and annually 502 t are landed. Perches of the area are lethrinids, *Epinephelus* spp. *Diagramma* spp. *Drepane* spp. serranids, *Scolopsis* spp., *Pomadasys* spp., *Nemipterus* spp. etc. The last three groups along with lethrinids are landed in good quantity by trawlers and the bigger perches are landed by drift gill nets and hooks and line. On an average 5,712 t of perches are landed in a year. *Sphyræna obtusata* is landed abundantly by trawlers from inshore water, whereas from deeper waters drift gillnets and hooks and line land *S. jello* and *S. picuda* and the annual catch of barracuda is to the tune of 685 tonnes.

The once popular shore-seine fishing which was one of the important gears for landing shore hugging coastal fishes including lesser sardines has almost vanished from this region following the intensification of mechanised fishing. Over the two decades, mechanised fishing has changed not only the fishing pattern but also the constituent catches. The progress of fishing industry can still be augmented by motorising the plank built boats and 'catamarans'. As early as in 1958, Tuticorin type 'vallam' was recognised by FAO as suitable for motorization which is now fast catching up as more and more 'vallams' and even 'catamarans' are being motorized. In addition to this, the introduction of high opening bottom trawl for pair trawling operations through FAO sponsored Bay of Bengal

Programme (BOBP) has induced greater interest among the fishermen and already on an average ten pairs of trawlers are engaged in this new type of fishing. The catch is constituted mostly of valuable large size quality fishes like lethrinids, rock cods, snappers, seer fish, pomfrets, horse mackerel and carangids. Introduction of such new dimensions into fishing coupled with the higher rate of yield/sq. nautical mile of this water especially of demersal resources is bound to revolutionise the fishing pattern and enhance the marine fish productions in good proportion.

CARANGIDAE

Popular English Name	: Trevally/Scad
Vernacular Name (Tamil)	: 'Parai'
Annual average catch	: 736.1 t
Percentage in total catch	: 2.5
Fishing methods and their contribution	: Trawl net : 2.49% Drift net : 0.03 %
Period of occurrence	: Aug. - Feb.
Depth of occurrence	: 20 - 50 m

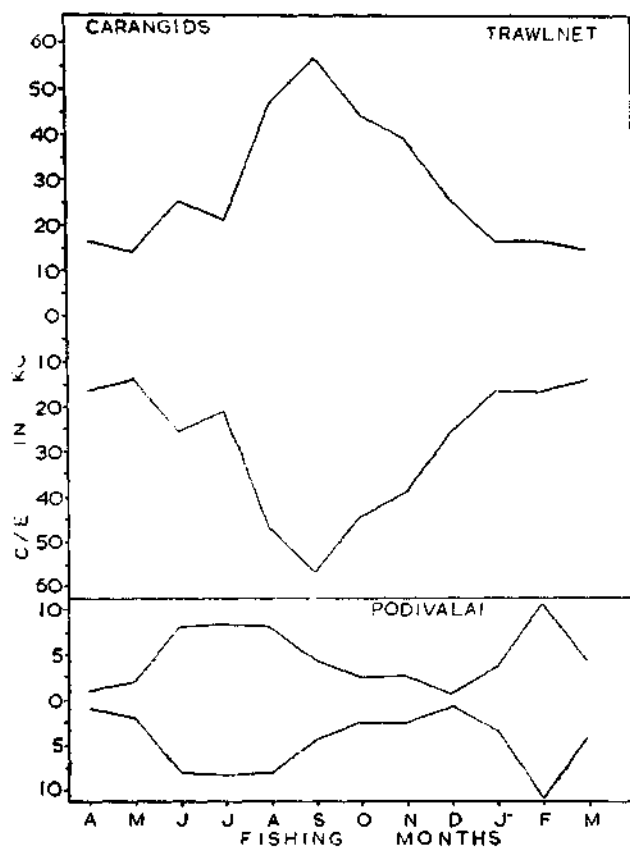


Fig. 1. Seasonal abundance of carangids in trawling and drift gill net grounds.

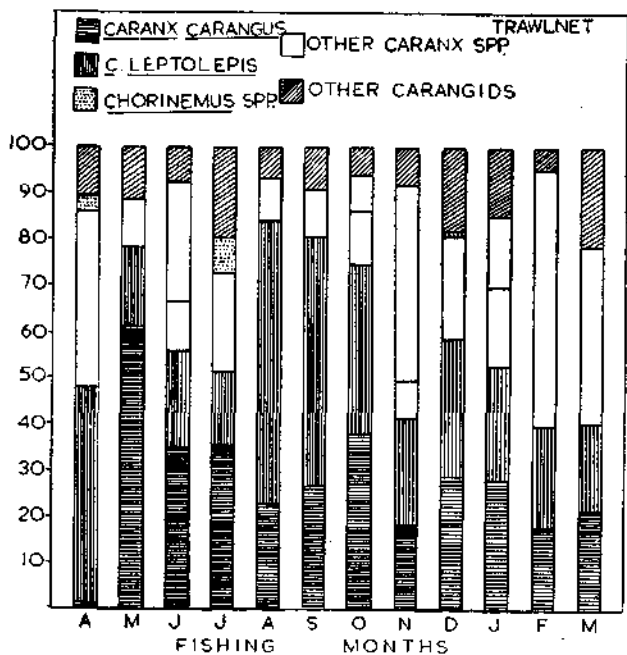


Fig. 2. Monthly species composition of carangids landed by trawlers.

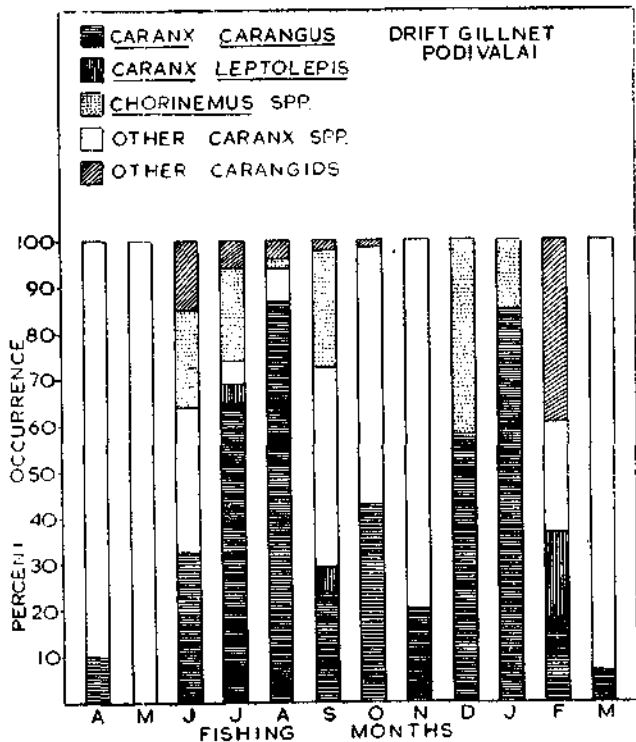


Fig. 3. Monthly species composition of carangids landed by drift gill net.

SCOMBRIDAE

Popular English Name : Seer fish
 Vernacular Name (Tamil) : 'Neimeen'/'Vanjiran'/'Cheela'
 Annual average catch : 374.4 t

Percentage in total catch : 1.3
 Fishing methods and their contribution : Drift gill net : 0.7%
 Trawl net : 0.4%
 Hooks & line : 0.2%

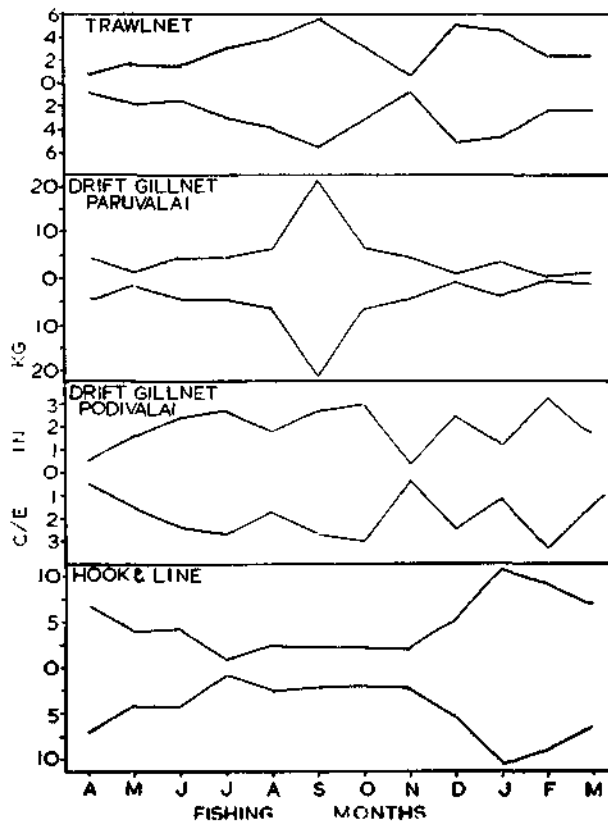


Fig. 4. Seasonal abundance of seer fishes in different fishing grounds.

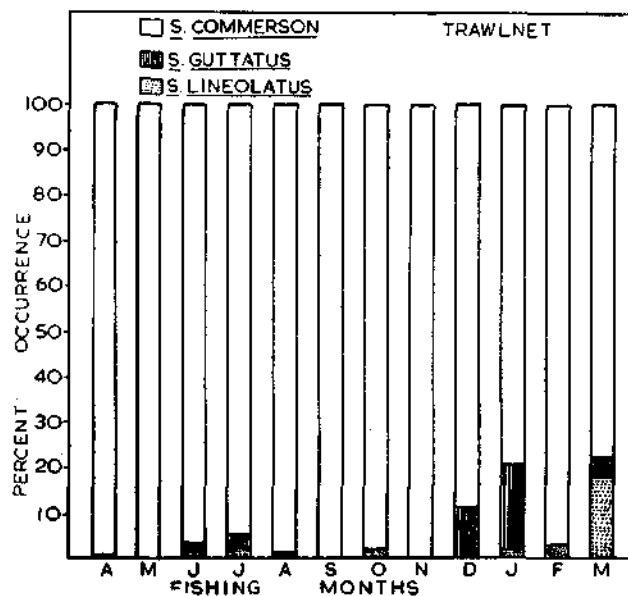


Fig. 5. Monthly species composition of seer fish landed by trawlers.

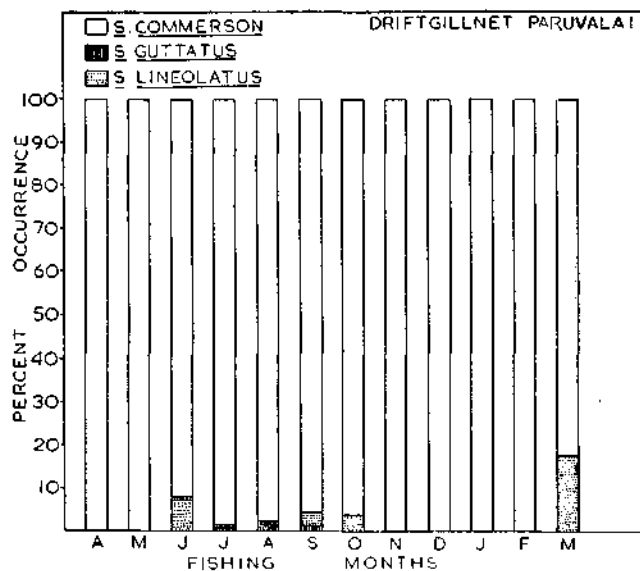


Fig. 6. Monthly species composition of seer fish landed by drift gill net (Paruvalai).

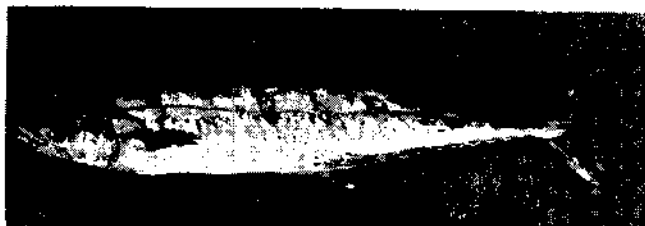


Fig. 7. *Scomberomorus commerson*.

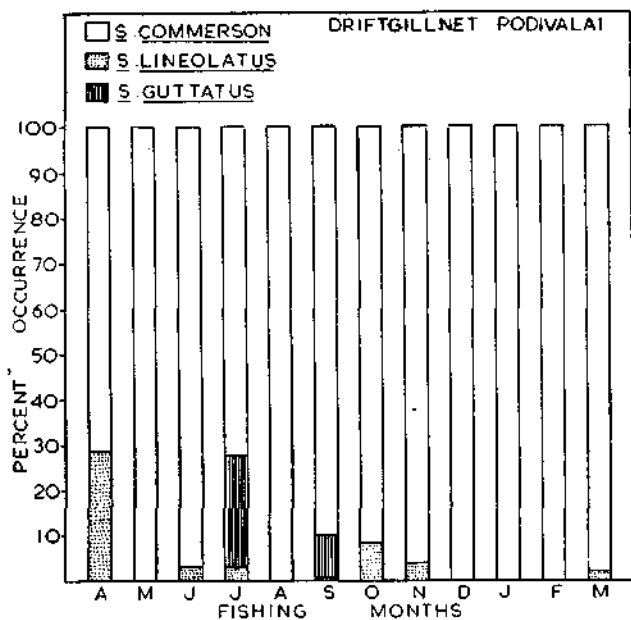


Fig. 8. Monthly species composition of seer fish landed by drift gill net (Podivalai).

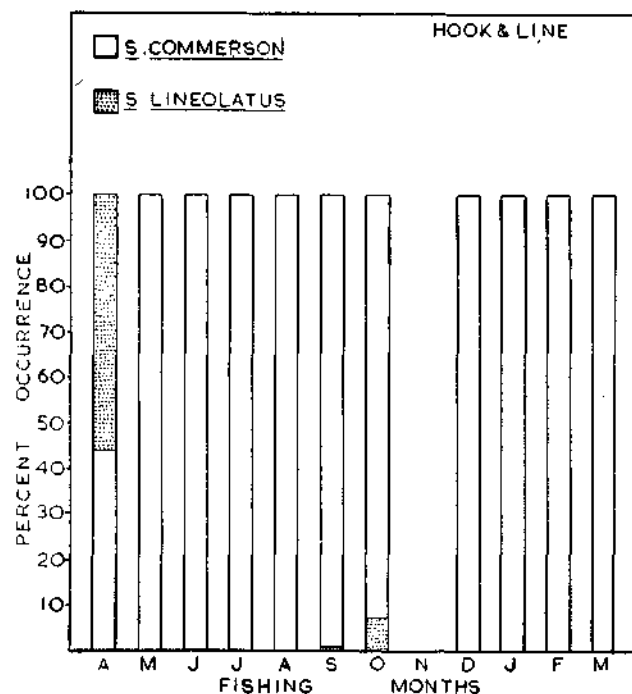


Fig. 9. Monthly species composition of seer fish landed by hook and line.

Scientific Name : *Scomberomorus commerson*
 Vernacular Name : 'Nettayan'/'Cheela'
 Gear : Drift gill net/Hooks and line/Trawl net

Percentage in the catch of the group :
 Drift net ('Paruvalai') : 96.2
 Drift net ('Podivalai') : 92.7
 Hooks & line : 94.2
 Trawl net : 92.4
 Peak period of occurrence : Jun. - Oct. and Jan. - Mar.

Depth of occurrence : 20-60 m
 Length range in commercial fishery : 100-1,400 mm
 Size at first maturity : —
 Spawning season : Nov. - Jan.

TUNAS & BILL FISHES

Popular English Name : Tuna
 Vernacular Name (Tamil) : 'Surai'
 Annual average catch : 502.4 t
 Percentage in total catch : 1.7
 Fishing methods and their contribution : Drift gill net : 1.7%

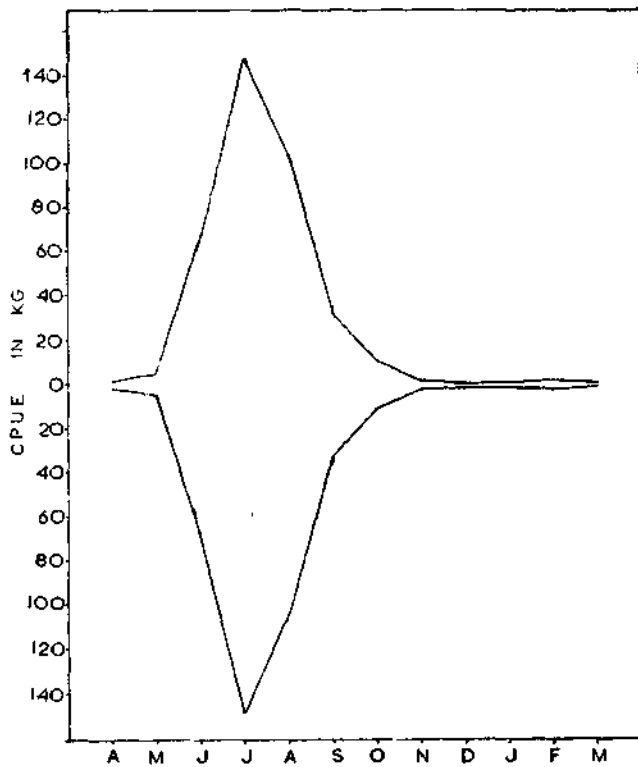


Fig. 10. Seasonal abundance of tuna and bill fishes.

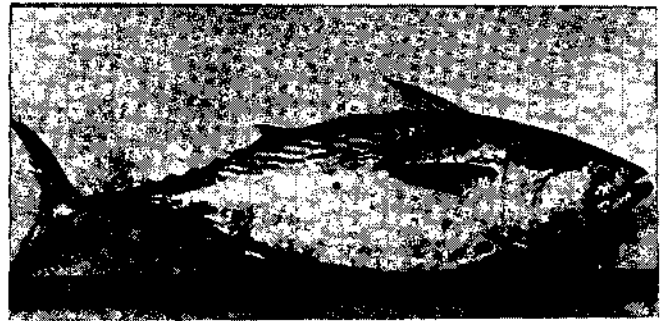


Fig. 12. *Euthynnus affinis*.

Scientific Name : *Euthynnus affinis*
 Vernacular Name : 'Parunsurai'
 Gear : Drift gill net
 Percentage in the catch of the group : 70.7
 Peak period of occurrence : Jun. - Aug.
 Depth of occurrence : 30 - 40 m
 Length range in commercial fishery : 440 - 600 mm
 Size at first maturity : 480 mm
 Spawning season : Sep. - Nov.

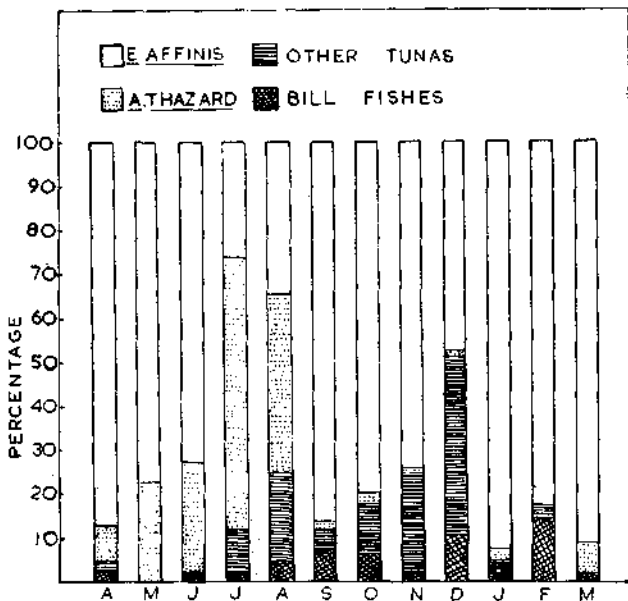


Fig. 11. Monthly species composition of tuna and bill fishes landed by drift gill net.

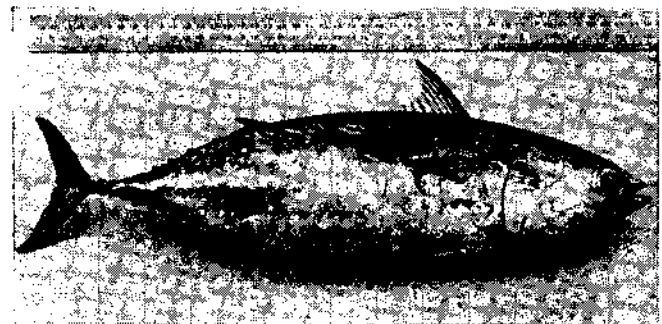


Fig. 13. *Auxis thazard*.

Scientific Name : *Auxis thazard*
 Vernacular Name : 'Elisurai'
 Gear : Drift gill net
 Percentage in the catch of the group : 14.6
 Peak period of occurrence : Jun. - Aug.
 Depth of occurrence : 30 - 40 m
 Length range in commercial fishery : 300 - 420 mm
 Size at first maturity : 300 mm
 Spawning season : Sep. - Mar.

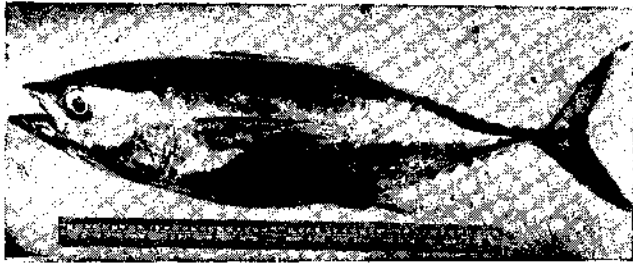


Fig. 14. *Thunnus albacares*.

Scientific Name	: <i>Thunnus albacares</i>
Vernacular Name	: 'Keelavalai'
Gear	: Drift gill net
Percentage in the catch of the group	: 7.0
Peak period of occurrence	: —
Depth of occurrence	: 30 - 40 m
Length range in commercial fishery	: —
Size at first maturity	: —
Spawning season	: —

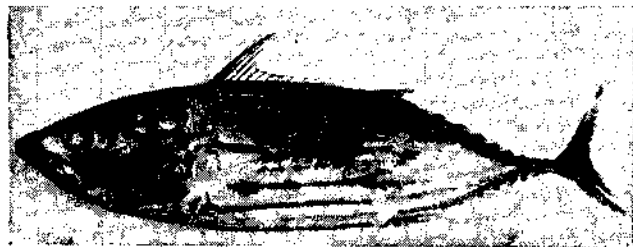


Fig. 15. *Katsuwonus pelamis*.

Scientific Name	: <i>Katsuwonus pelamis</i>
Vernacular Name	: 'Varisurai'
Gear	: Drift gill net
Percentage in the catch of the group	: 1.1
Peak period of occurrence	: —
Depth of occurrence	: 30 - 40 m
Length range in commercial fishery	: —
Size at first maturity	: —
Spawning season	: —

Scientific Name	: <i>Thunnus tonggol</i>
Vernacular Name	: 'Eutavalai'
Gear	: Drift gill net
Percentage in the catch of the group	: 0.7



Fig. 16. *Thunnus tonggol*.

Peak period of occurrence	: —
Depth of occurrence	: 30 - 40 m
Length range in commercial fishery	: —
Size at first maturity	: —
Spawning season	: —

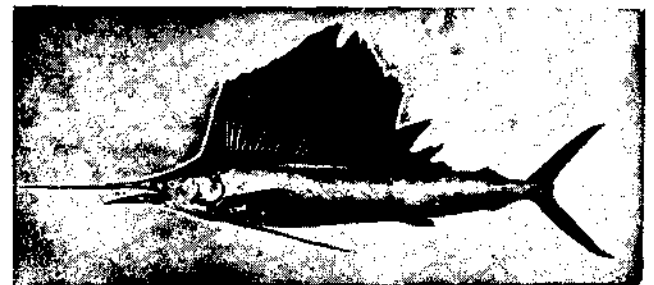


Fig. 17. *Istiophorus platypterus*.

Scientific Name	: <i>Istiophorus platypterus</i>
Vernacular Name	: 'Kopperakkulla'
Gear	: Drift gill net
Percentage in the catch of the group	: 4.1
Peak period of occurrence	: —
Depth of occurrence	: 30 - 40 m
Length range in commercial fishery	: —
Size at first maturity	: —
Spawning season	: —

CLUPEIDAE

Popular English Name	: Sardine
Vernacular Name (Tamil)	: 'Salai'/'Choodai'/'Keerimeen chalai'/'Paisalai'
Annual average catch	: 3,855.2 t
Percentage in total catch	: 13.2
Fishing methods and their contribution	: Gill net : 13.2%

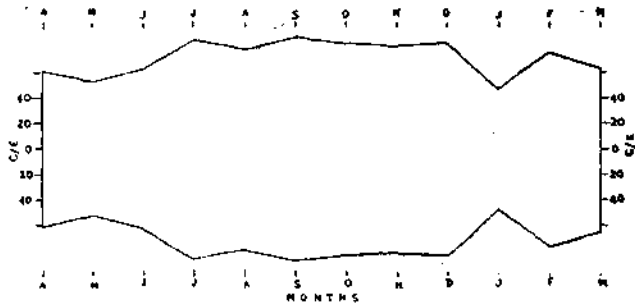


Fig. 18. Seasonal abundance of sardines by indigenous fishing units.

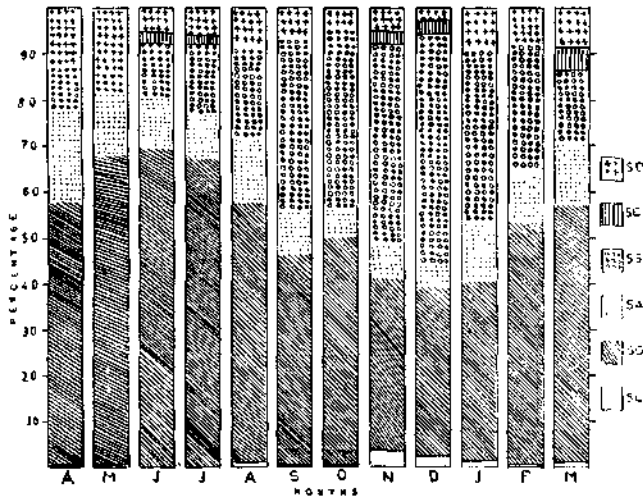


Fig. 19. Monthly species composition of sardines landed by indigenous fishing units (SD - *Sardinella dayi*; SC - *S. clupeioides*; SS - *S. sirm*; SA - *S. albella*; SG - *S. gibbosa* and SL - *S. longiceps*).

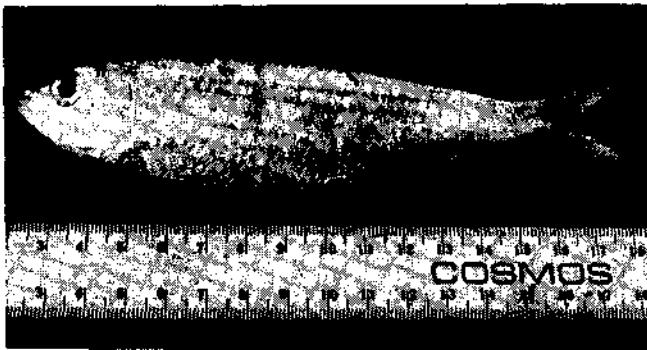


Fig. 20. *Sardinella gibbosa*.

Scientific Name : *Sardinella gibbosa*
 Vernacular Name : 'Salai'
 Gear : Gill net
 Percentage in the catch of the group : 52.1
 Peak period of occurrence : May - Jul.
 Depth of occurrence : 5 - 10 m

Length range in commercial fishery : 100 - 180 mm
 Size at first maturity : 120 mm
 Spawning season : June

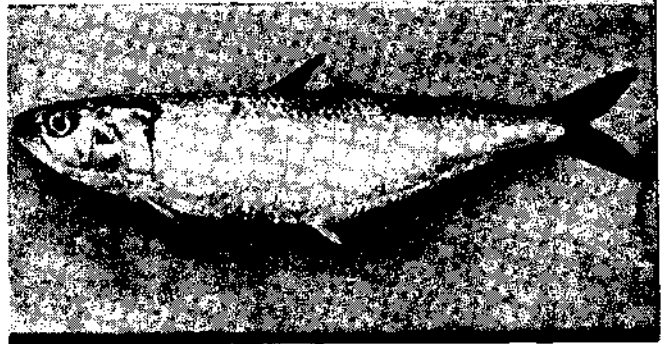


Fig. 21. *Sardinella longiceps*.

Scientific Name : *Sardinella longiceps*
 Vernacular Name : 'Peisalai'
 Gear : Gill net
 Percentage in the catch of the group : 0.9
 Peak period of occurrence : Nov. - Dec.
 Depth of occurrence : 5 - 10 m
 Length range in commercial fishery : 120 - 165 mm
 Size at first maturity : 140 mm
 Spawning season : March



Fig. 22. *Sardinella dayi*.

Scientific Name : *Sardinella dayi*
 Vernacular Name : 'Choodai'
 Gear : Gill net
 Percentage in the catch of the group : 7.3
 Peak period of occurrence : Apr. - May
 Depth of occurrence : 5 - 10 m
 Length range in commercial fishery : 100 - 165 mm
 Size at first maturity : 120 mm
 Spawning season : Feb.

Scientific Name : *Sardinella sirm*
Vernacular Name : 'Karimeen chalai'
Gear : Gill net
Percentage in the catch
of the group : 27.8
Peak period of occurrence : Nov. - Dec.
Depth of occurrence : 5-10 m
Length range in
commercial fishery : 145-220 mm
Size at first maturity : 170 mm
Spawning season : August

Scientific Name : *Sardinella albella*
Vernacular Name : 'Choodai'
Gear : Gill net
Percentage in the catch
of the group : 10.8
Peak period of occurrence : April
Depth of occurrence : 5-10 m
Length range in
commercial fishery : 100-165 mm
Size at first maturity : 110 mm
Spawning season : June

