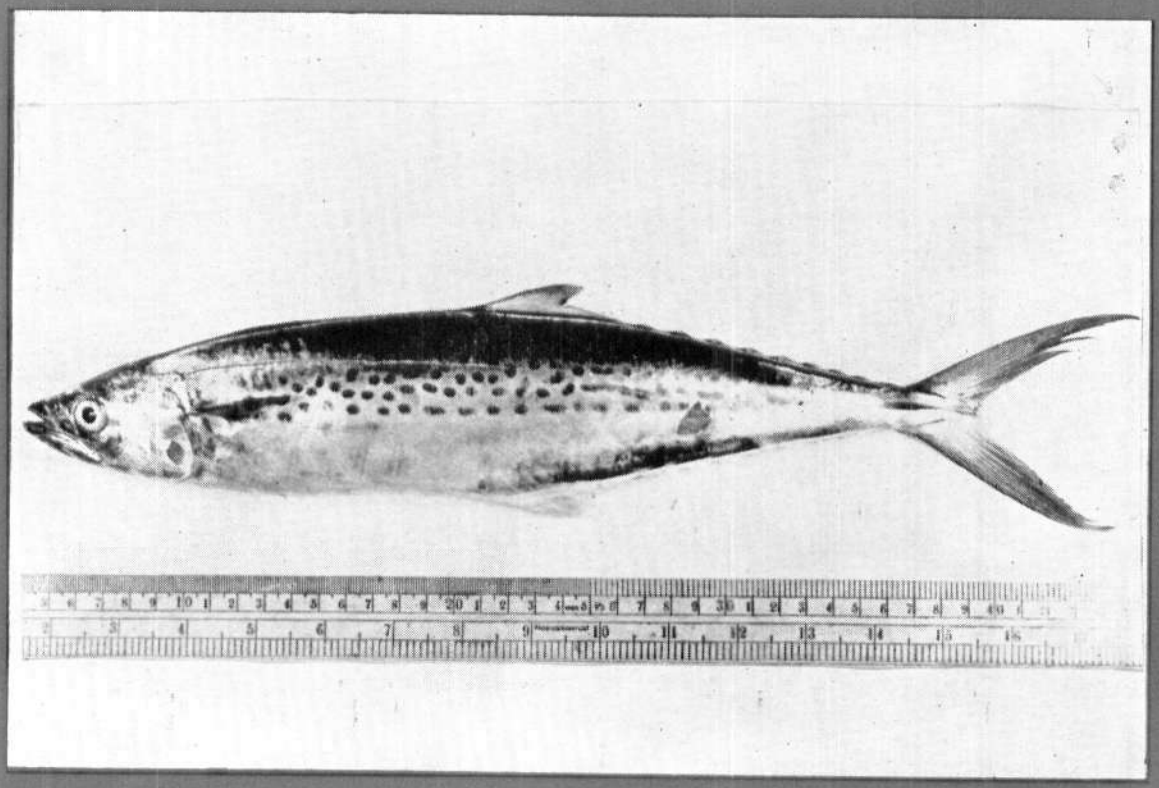
MARINE FISHERIES INFORMATION SERVICE



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MARINE FISH CALENDAR

3. CALICUT*

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Introduction

Investigations on the resource characteristics of some commercially important pelagic as well as demersal fishes, prawns and molluscs are being carried out at the Calicut Research Centre of Central Marine Fisheries Research Institute. The Kerala coast being an important contributor of major species of pelagic fish resources like oil sardine and mackerel, emphasis is given on the investigations of potential stocks of the above resources. Resource characteristics of pelagic fishes like tuna, seer fish, bill fish, pomfret and demersal fishes like cat fish, sole *etc.* are also being regularly monitored for distribution and abundance in space and time.

The major portion of the fish landed at the Calicut fish landing centre is that exploited by country crafts with indigenous gears like boat seines, drift net, gill net and hooks and line and only 13.2% (800 tonnes) is by trawling by mechanised boats. Analysis of the fish landings for the years 1981–'86 shows that the average total landing was 6,053.5 tonnes of which about 70% (4,235.2 tonnes) was by boat seines alone, drift net contributing 6.6% (401.4 tonnes), hooks and line 5.8% (350.1 tonnes) and gill net 4.4% (266.8 tonnes). In the drift net catches the CPUE of different species are found to be maximum during July. This being the peak monsoon month, the effort is generally very low. Perhaps this can be the reason for high CPUE values. Still the possibility of increased availability of these species during the monsoon months cannot be ruled out as drift net units do not venture to go for fishing during monsoon due to bad weather.

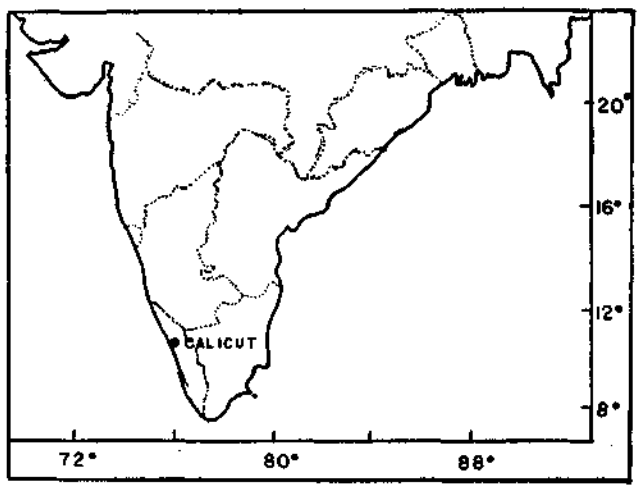
The important groups contributing to the fishery at Calicut are clupeids (3,322 tonnes), anchovies (383 tonnes), seer fishes, mackerel and tunas (363 tonnes), soles (291 tonnes), cat fishes (257 tonnes), pomfrets (65 tonnes) and elasmobranchs (26 tonnes).

Clupeids forming 54.9% are exploited by boat seines which contribute 96.1% and the gill net which contributes 3.9% of the total clupeid landings. The annual yield of oil sardine *Sardinella longiceps* which is the most important species among clupeids having wide fluctuations from year to year and with an average of 3,288 tonnes, has been showing generally a declining trend in recent years. Fishes of 0-year class contribute to a major portion of the catch. As maturity progresses to a size of 14 cm, with the onset of the monsoon there is a seaward breeding migration. The fishery being restricted to the narrow coastal belt extending to about 10 km from the shore is exclusively exploited by artisanal fishermen using indigenous crafts and gears. The gradual decline in the yield along the Malabar coast may be attributed to the widespread operation of purse seiners along both south and north of this part of the coast as it restricts movement of shoals and adversely affects spawning.

Anchovies forming 6.3% in the total landings are exploited by boat seines (83.6%) and trawl net (16.4%).

Scombroids which form 6.0% in the total catch are exploited mostly by drift net (45.3%), boat seines (34.4%) and gill net (19.9%). The Indian mackerel *Rastrelliger kanagurta* forming 208.8 tonnes on an average is exploited by gill net, boat seines and drift net. This resource also shows wide fluctuations in the yield with a maximum catch of 709 tonnes in 1980 which gradually declined in 1983. The yield trend in the subsequent years steadily improved with a crust in 1985 (385 tonnes). The peak fishing season for mackerel which occurs from 5 to 40 m depth is from August to October. Seerfishes *Scomberomorus commerson* and *S. guttatus* contributing 89.6 tonnes per year on an average are mainly landed by drift net. The peak period of abundance is from October to December,

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



but the spawning is during April–May. The average annual catch of tunas is 64.2 tonnes which are exclusively landed by drift net. The dominant species is the little tunny *Euthynnus affinis* and the fishing season extends from March to May. Fairly offshore waters from 30–50 m is the region of abundance of tunas.

Soles form on an average 4.8% in the total landings and is exploited by trawl net, boat seine and gill net and the most important commercial species is the Malabar sole *Cynoglossus macrostomus*.

Cat fish forming 4.3% in the total landings is an important component in the demersal fishery resources and is exploited by hooks and line, drift net and trawl net. *Tachysurus dussumieri*, *T. thalassinus*, *T. tenuispinis* and *T. serratus* are the most important species forming the commercial fishery. Cat fish constitutes 57.0% in the landings of hooks and line and 15.2% in drift net landings. The trend of this resource showed fluctuations from year to year with a general decreasing trend in the past one or two years. The peak period of the fishery generally coincides with the peak breeding season, often with mass destructions of gestating males leading to mass mortality of eggs/embryos.

The pomfrets forming 1.1% of the total landings are exploited by drift net, boat seine and trawl net. The black pomfret *Parastromateus niger* and silver pomfret *P. argenteus* are the species involved and the former forms about twice that of the latter in the fishery. Pomfrets constitute 9.0% in the landings of drift net, 0.8% in the trawl net and 0.5% in boat seines.

Sharks, skates and rays together form only 0.42% in the total landings and are mainly landed by hooks and line and drift net. Other demersal resources like ribbon fishes, threadfin breams, sciaenids, silver bellies and lizard fishes also form a fishery of some importance in the Calicut region.

CLUPEIDAE

Popular English Name	:	Sardines
Vernacular Name (Malayalam)	:	'Mathi'/'Chala'/ 'Mathichala'
Annual average catch	:	3,322 t
Percentage in total catch	:	54.88
Fishing methods and their contribution	:	Boat seine/Gill net
		Boat seine : 96.09%
		Gill net : 3.91%

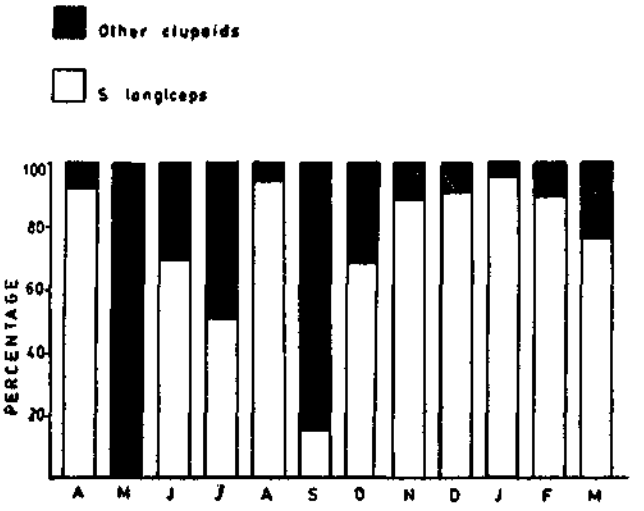


Fig. 1. Monthwise species composition of clupeids by gill net.

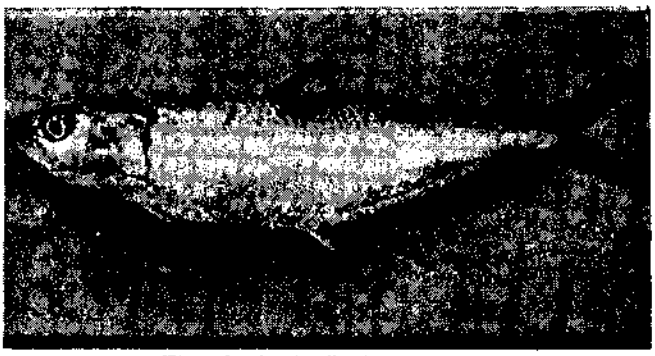


Fig. 2. *Sardinella longiceps*.

Scientific Name	:	*Sardinella longiceps*
Vernacular Name	:	'Mathi'
Gear	:	Boat seine/Gill net
Percentage composition in the gear	:	Boat seine : 74.85
		Gill net : 39.43
Peak period of occurrence	:	Sept. – Feb.
Depth of occurrence	:	5 – 15 m

Length range in commercial fishery : 130 – 210 mm
Size at first maturity : 140 mm
Spawning season : Jun. – Aug.

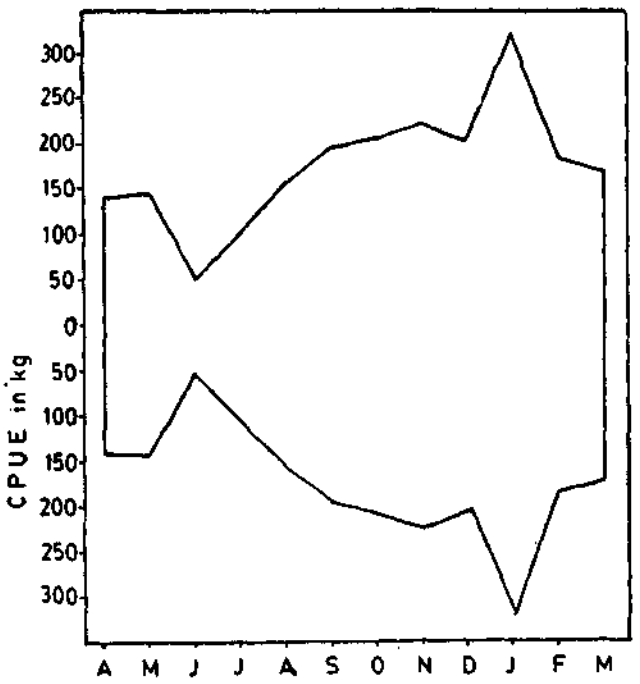


Fig. 3. Seasonal abundance of oil sardine in boat seine.

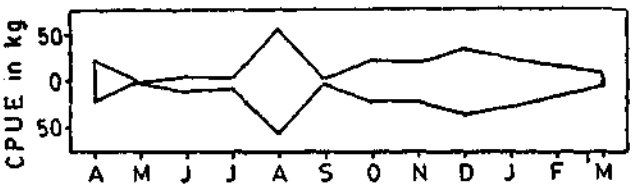


Fig. 4. Seasonal abundance of oil sardine in gill net.

CYNOGLOSSIDAE

Popular English Name : Sole/Tongue sole/ Malabar sole
Vernacular Name (Malayalam) : 'Mantha'
Annual average catch : 290.9 t
Percentage in total catch : 4.8
Fishing methods and their contribution : Trawl net/Boat seine/ Gill net
Trawl net : 90.87%
Boat seine : 6.72%
Gill net : 2.41%

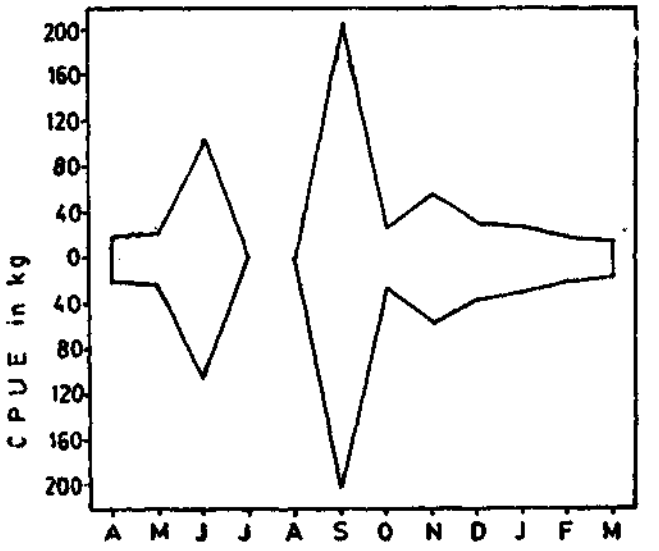


Fig. 5. Seasonal abundance of cynoglossids in trawl net.

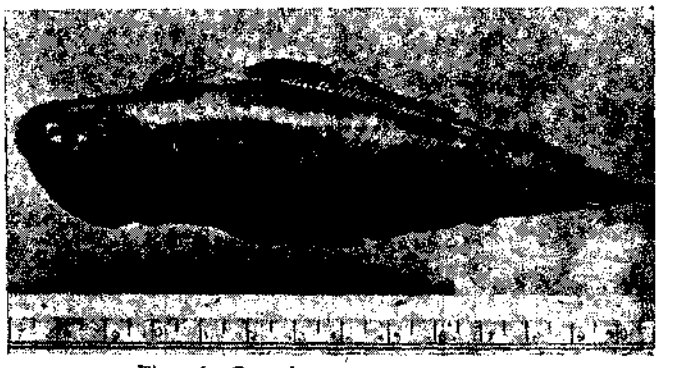


Fig. 6. *Cynoglossus macrostomus*.

Scientific Name : *Cynoglossus macrostomus*
Vernacular Name : 'Mantha'
Gear : Trawl net/Boat seine/ Gill net
Percentage composition in the gear : Trawl net : 33.00
Gill net : 2.41
Boat seine : 0.46
Peak period of occurrence : Nov. - Feb.
Depth of occurrence : Upto 10 m
Length range in commercial fishery : 40 – 160 mm
Size at first maturity : 120 mm
Spawning season : Oct. – Jan.

ELASMOBRANCHS

Popular English Name : Sharks/Skates/Rays
Vernacular Name (Malayalam) : 'Sravu'/'Koithala'/ 'Thirandi'
Annual average catch : 25.69 t

Percentage in total catch : 0.42
Fishing methods and their contribution : Hooks and line/Drift net
Hooks and line : 93.44%
Drift net : 6.56%

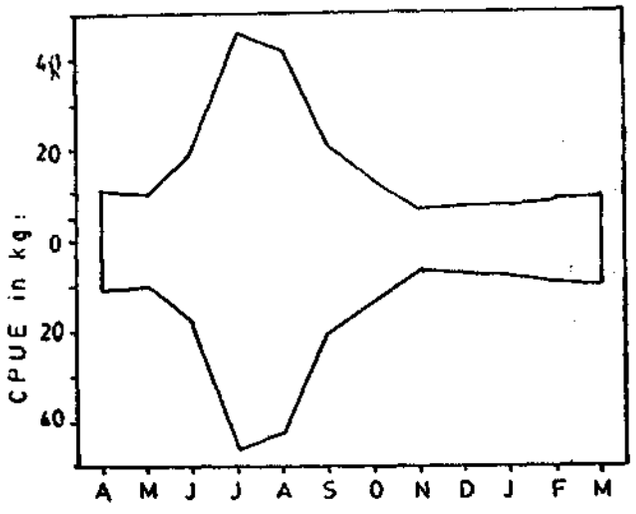


Fig. 7. Seasonal abundance of elasmobranchs in drift net.

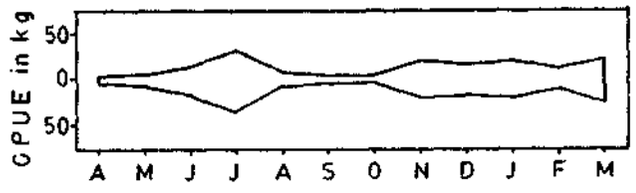


Fig. 8. Seasonal abundance of elasmobranchs in hooks and line.

ENGRAULIDAE

Popular English Name : Anchovy
Vernacular Name (Malayalam) : 'Nethal'/'Netholi'
Annual average catch : 383.27 t
Percentage in total catch : 6.33
Fishing methods and their contribution : Boat seine/Trawl net
Boat seine : 83.6%
Trawl net : 16.4%

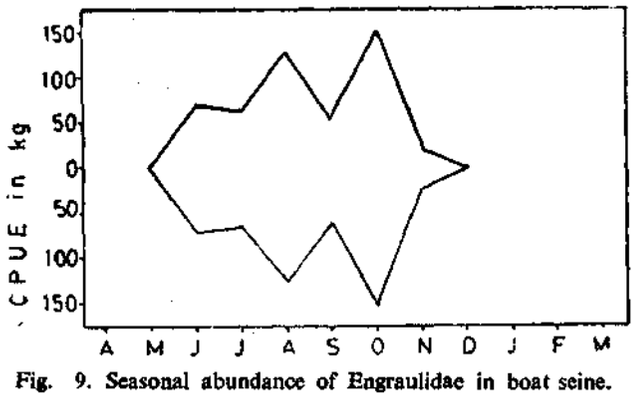


Fig. 9. Seasonal abundance of Engraulidae in boat seine.

Fig. 10. Seasonal abundance of Engraulidae in trawl net.

SCOMBRIDAE

Popular English Name : Seer fishes/Indian mackerel/Tunas
Vernacular Name (Malayalam) : 'Ayakkura'/'Ayila'/'Sootha'/'Varimeen'/'Choora'
Annual average catch : 362.7 t
Percentage in total catch : 5.99
Fishing methods and their contribution : Drift net/Boat seine/Gill net/Trawl net
Drift net : 45.32%
Boat seine : 34.42%
Gill net : 19.88%
Trawl net : 0.39%

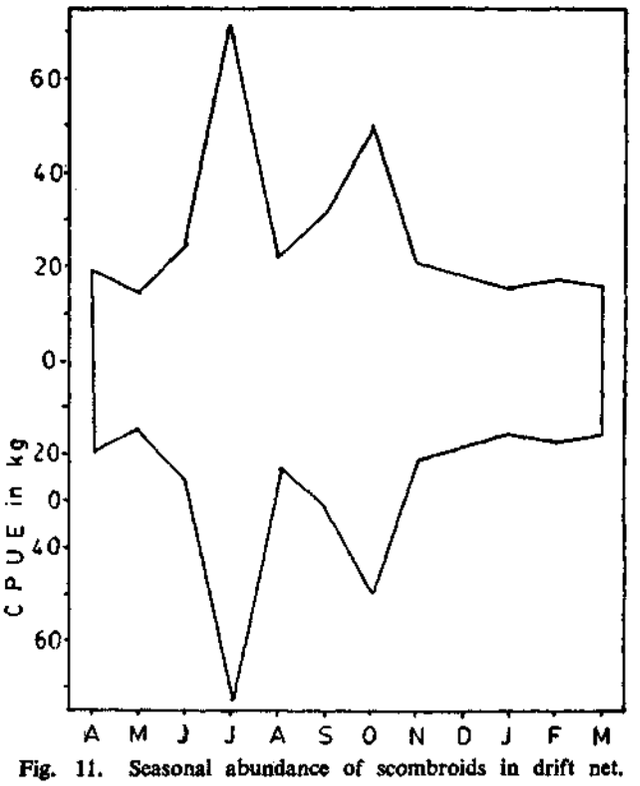


Fig. 11. Seasonal abundance of scombroids in drift net.

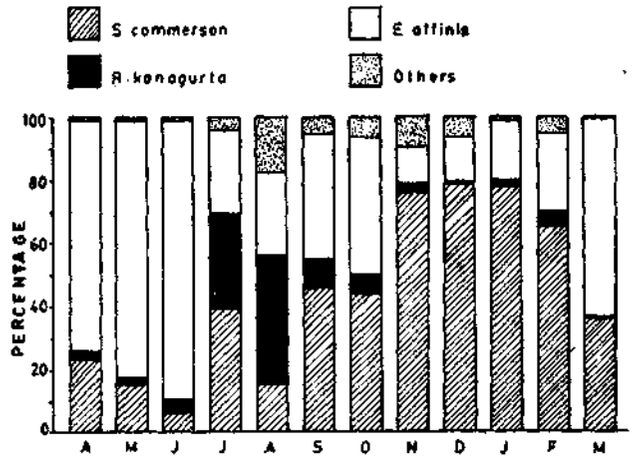


Fig. 12. Monthwise species composition of scombroids in drift net.

Fig. 13. *Rastrelliger kanagurta.*

Scientific Name	:	*Rastrelliger kanagurta*
Vernacular Name (Malayalam)	:	'Ayila'
Gear	:	Gill net/Boat seine/ Drift net
Percentage composition in the gear	:	Gill net : 27.02 Boat seine : 2.98 Drift net : 2.62
Peak period of occurrence	:	Aug. - Oct.
Depth of occurrence	:	5 - 40 m

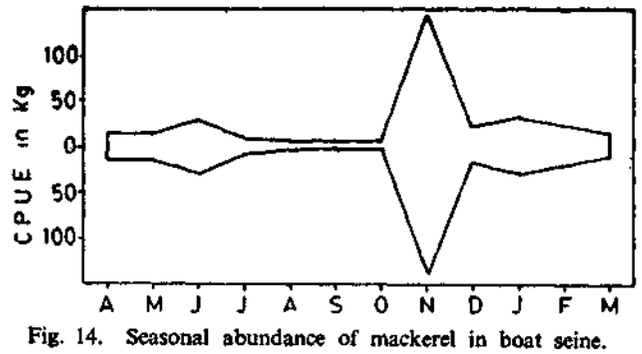


Fig. 14. Seasonal abundance of mackerel in boat seine.

Length range in commercial fishery	:	180 - 220 mm
Size at first maturity	:	200 mm
Spawning season	:	May to August.

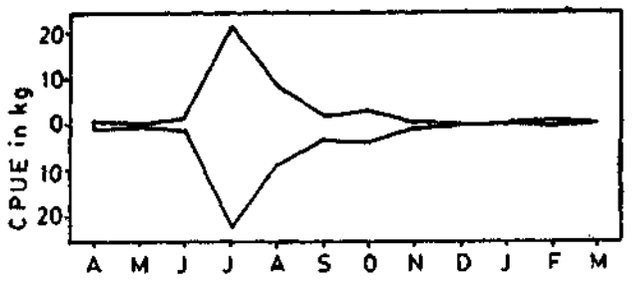


Fig. 15. Seasonal abundance of mackerel in drift net.

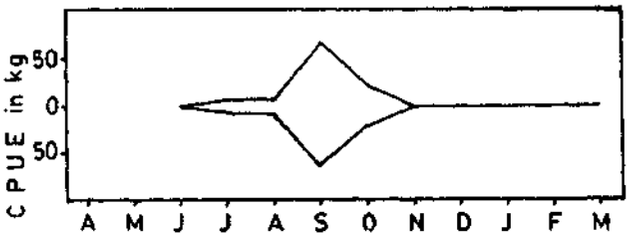


Fig. 16. Seasonal abundance of mackerel in gill net.

SEER FISHES

Popular English Name	:	Seer fishes
Vernacular Name (Malayalam)	:	'Varimeen'/'Ayakkura'
Annual average catch	:	89.6 t
Percentage in total catch	:	22.3
Fishing methods and their contribution	:	Drift net

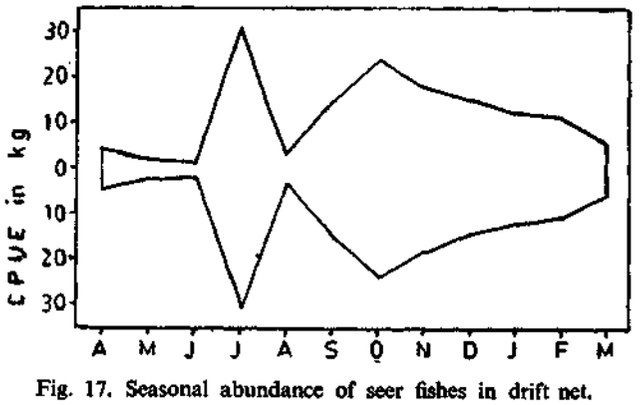


Fig. 17. Seasonal abundance of seer fishes in drift net.

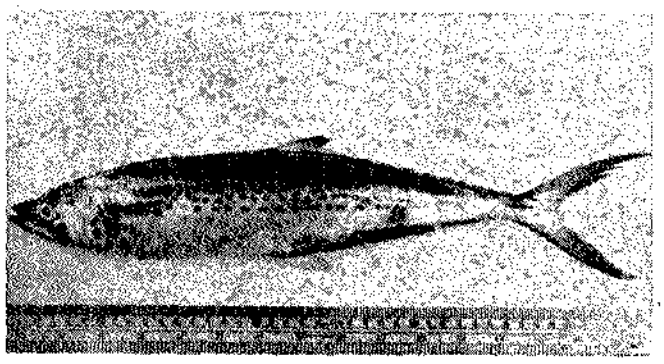


Fig. 18. *Scomberomorus guttatus.*

Scientific Name	:	*Scomberomorus guttatus*
Vernacular Name	:	'Varimeen'
Gear	:	Drift net
Percentage composition in the gear	:	Drift net : 1.04
Peak period of occurrence	:	Oct. – Nov.
Depth of occurrence	:	20 – 50 m
Length range in commercial fishery	:	300 – 600 mm
Size at first maturity	:	410 mm
Spawning season	:	April – May

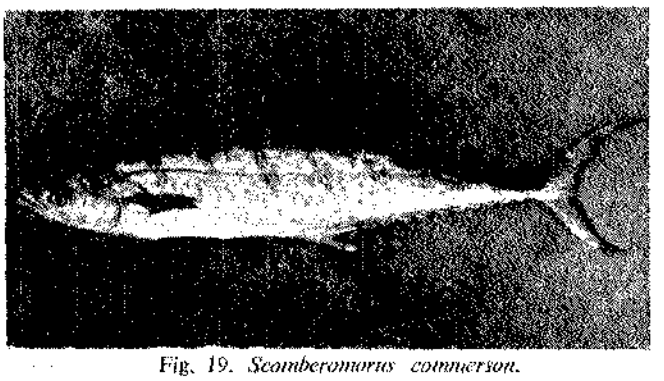


Fig. 19. *Scomberomorus commerson.*

Scientific Name	:	*Scomberomorus commerson*
Vernacular Name	:	'Ayakkura'
Gear	:	Drift net
Percentage composition in the gear	:	Drift net : 21.30
Peak period of occurrence	:	Oct. – Dec.
Depth of occurrence	:	20 – 50 m
Length range in commercial fishery	:	500 – 800 mm
Size at first maturity	:	750 mm
Spawning season	:	April – May

TUNA

Popular English Name	:	Tuna
Vernacular Name (Malayalam)	:	'Sootha'/'Choora'
Annual average catch	:	64.2 t
Percentage in total catch	:	—
Fishing methods and their contribution	:	Drift net : 16%

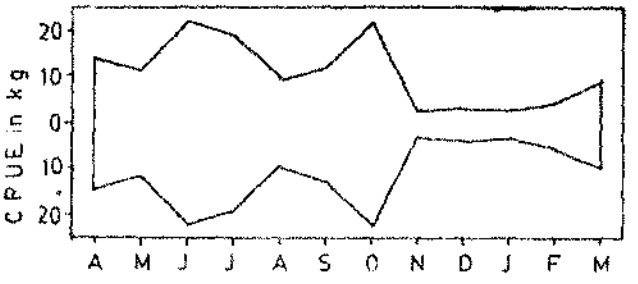


Fig. 20. Seasonal abundance of tunas in drift net.

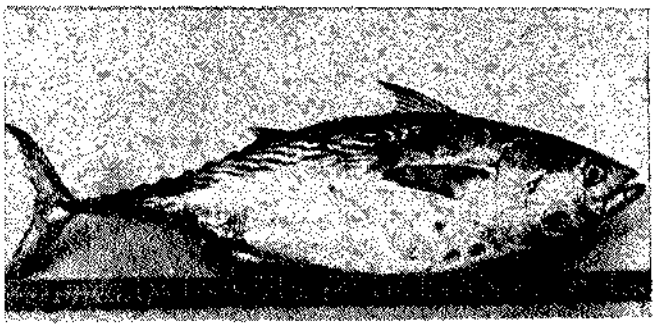


Fig. 21. *Euthynnus affinis.*

Scientific Name	:	*Euthynnus affinis*
Vernacular Name	:	'Sootha'/'Choora'
Gear	:	Drift net
Percentage composition in the gear	:	Drift net : 14.94
Peak period of occurrence	:	March – May
Depth of occurrence	:	30 – 50 m
Length range in commercial fishery	:	300 – 500 mm
Size at first maturity	:	430 mm
Spawning season	:	Sep. – Oct.

STROMATEIDAE

Popular English Name	:	Black pomfret/Silver pomfret
Vernacular Name (Malayalam)	:	'Avoli'
Annual average catch	:	64.7 t
Percentage in total catch	:	1.07
Fishing methods and their contribution	:	Drift net/Boat seine/ Trawl net Drift net : 55.76% Boat seine : 33.47% Trawl net : 10.77%

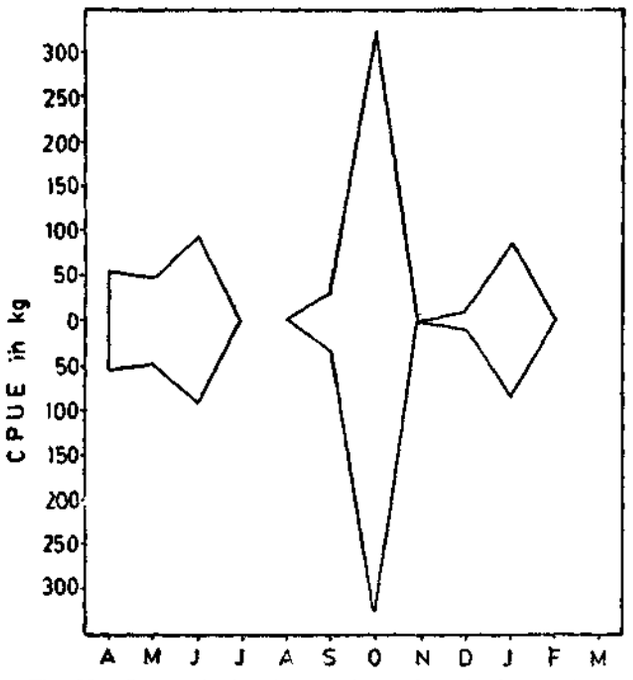


Fig. 22. Seasonal abundance of pomfrets in boat seine.

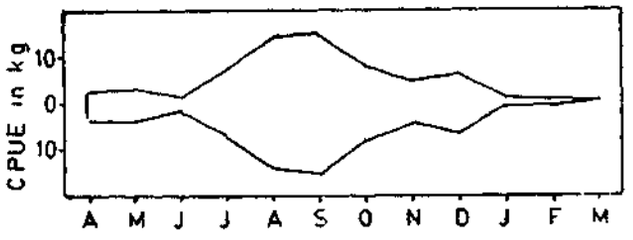


Fig. 23. Seasonal abundance of pomfrets in drift net.

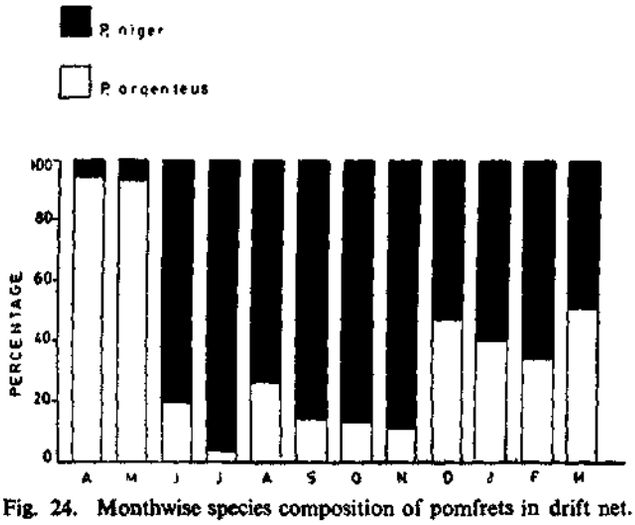


Fig. 24. Monthwise species composition of pomfrets in drift net.

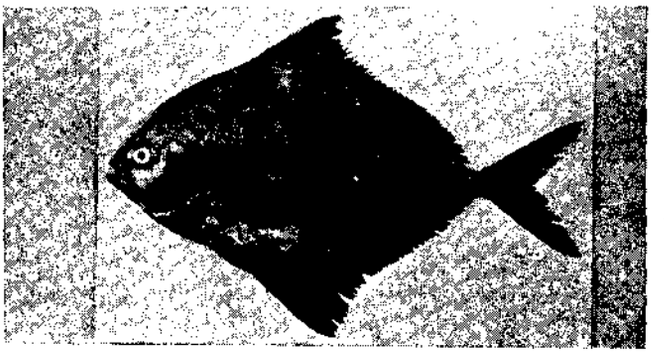


Fig. 25. *Parastromateus niger.*

Scientific Name	:	*Parastromateus niger*
Vernacular Name	:	'Karutha avoli'
Gear	:	Drift net/Boat seine
Percentage composition in the gear	:	Drift net : 6.06 Boat seine : 0.51
Peak period of occurrence	:	Sep. - Dec.
Depth of occurrence	:	15-40 m
Length range in commercial fishery	:	230-350 mm
Size at first maturity	:	300 mm
Spawning season	:	July-Oct.

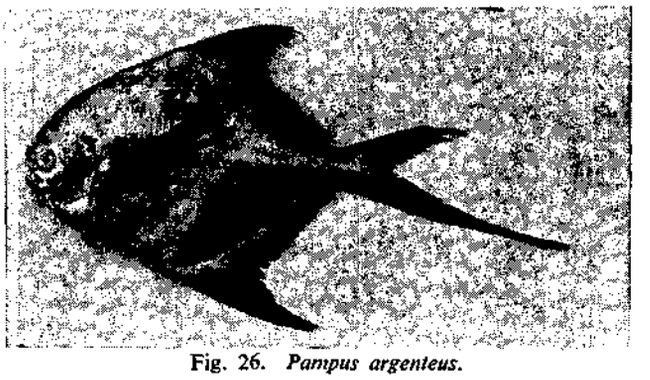


Fig. 26. *Pampus argenteus.*

Scientific Name	:	*Pampus argenteus*
Vernacular Name	:	'Vella avoli'
Gear	:	Drift net/Trawl net
Percentage composition in the gear	:	Drift net : 2.92 Trawl net : 0.85
Peak period of occurrence	:	Nov. - Jan.
Depth of occurrence	:	10-40 m
Length range in commercial fishery	:	160-250 mm
Size at first maturity	:	220 mm
Spawning season	:	May-Sep.

TACHYSURIDAE

Popular English Name : Cat fish
Vernacular Name
(Malayalam) : 'Etta'
Annual average catch : 257.18 t (1981–'86)
Percentage in total catch : 4.3

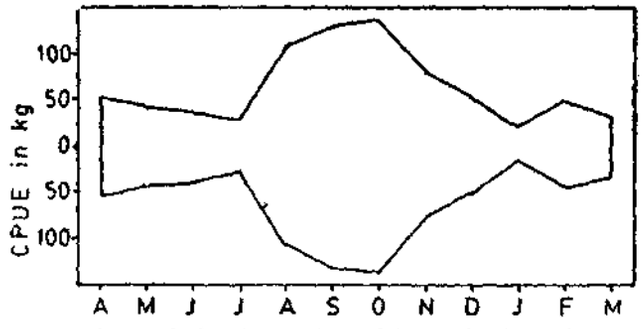


Fig. 27. Seasonal abundance of cat fishes in hooks and line.

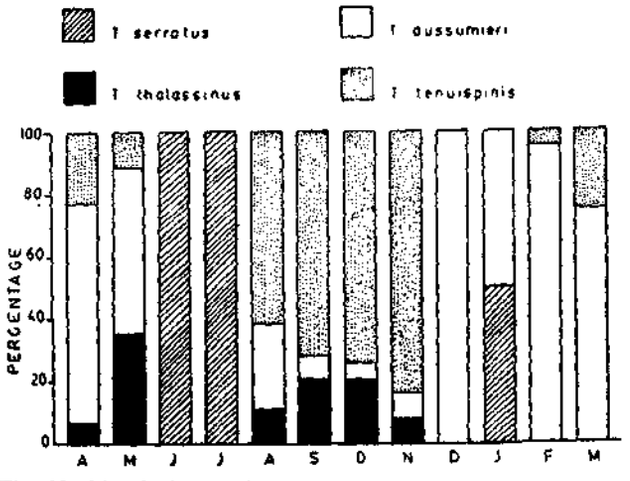


Fig. 28. Monthwise species composition of cat fishes in hooks and line.

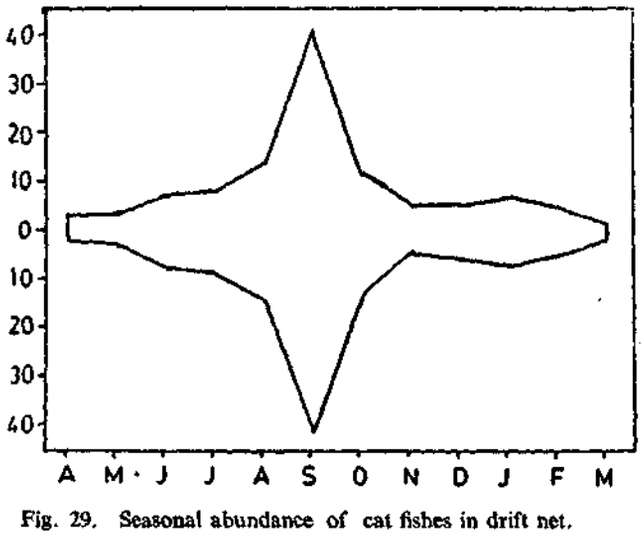


Fig. 29. Seasonal abundance of cat fishes in drift net.

Fishing methods and
their contribution : Hooks and line/Drift net/
Trawl net
Hooks and line: 73.08%
Drift net : 23.14%
Trawl net : 3.78%

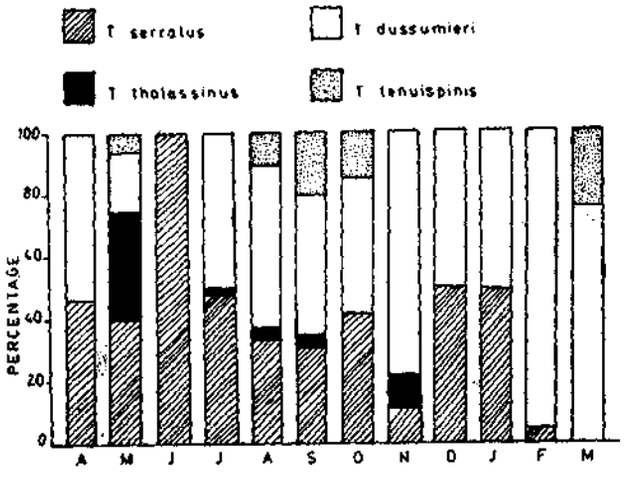


Fig. 30. Monthwise species composition of cat fishes in drift net.

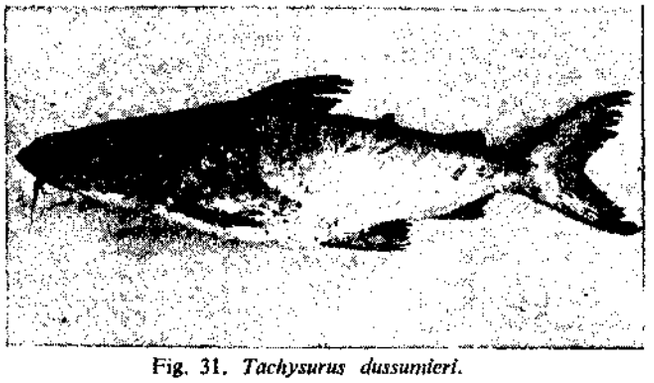


Fig. 31. *Tachysurus dussumieri.*

Scientific Name : *Tachysurus dussumieri*
Vernacular Name : 'Valiyetta'
Gear : Hooks and line/
Drift net
Percentage composition
in the gear : Hooks and line : 14.89
Drift net : 5.91
Peak period of occurrence : Mar. – May
Depth of occurrence : 15–40 m
Length range in
commercial fishery : 500–1,000 mm
Size at first maturity : 500 mm
Spawning season : April–Aug.

Fig. 32. *Tachysurus thalassinus.*

Scientific Name	:	*Tachysurus thalassinus*
Vernacular Name	:	'Thuriyetta'
Gear	:	Hooks and line/ Drift net
Percentage composition in the gear	:	Hooks and line : 11.11 Drift net : 0.27
Peak period of occurrence	:	Aug. – Oct.
Depth of occurrence	:	25 – 60 m
Length range in commercial fishery	:	170 – 600 mm
Size at first maturity	:	280 mm
Spawning season	:	Apr. – Aug.

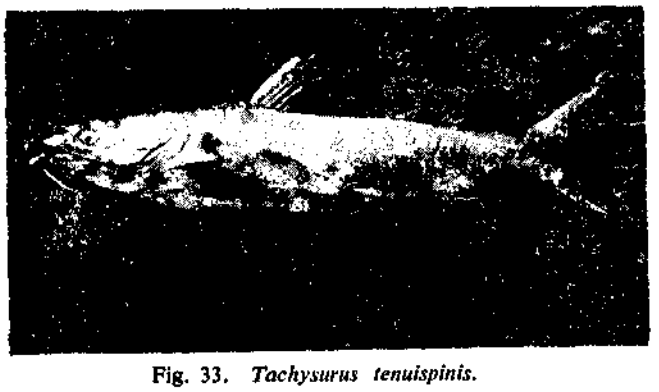


Fig. 33. *Tachysurus tenuispinis.*

Scientific Name	:	*Tachysurus tenuispinis*
Vernacular Name	:	—
Gear	:	Hooks and line/ Drift net/Trawl net
Percentage composition in the gear	:	Hooks and line : 27.46 Drift net : 7.15 Trawl net : 1.22
Peak period of occurrence	:	Sep. – Mar.
Depth of occurrence	:	35 – 60 m
Length range in commercial fishery	:	230 – 400 mm
Size at first maturity	:	280 mm
Spawning season	:	May – Sep.

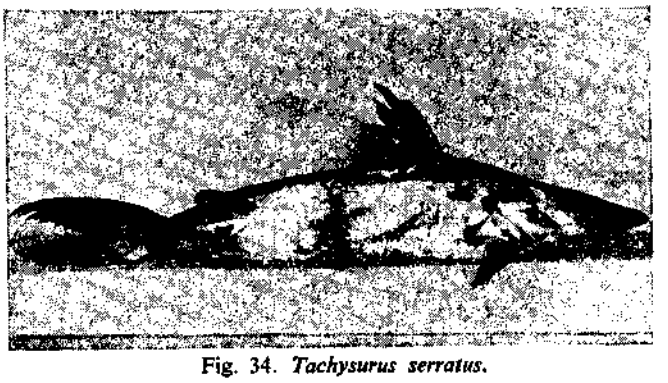


Fig. 34. *Tachysurus serratus.*

Scientific Name	:	*Tachysurus serratus*
Vernacular Name	:	'Navetta'
Gear	:	Hooks and line/ Drift net
Percentage composition in the gear	:	Hooks and line : 3.50 Drift net : 1.82
Peak period of occurrence	:	Sep. – Dec.
Depth of occurrence	:	25 – 40 m
Length range in commercial fishery	:	600 – 1,000 mm
Size at first maturity	:	600 mm
Spawning season	:	April – July