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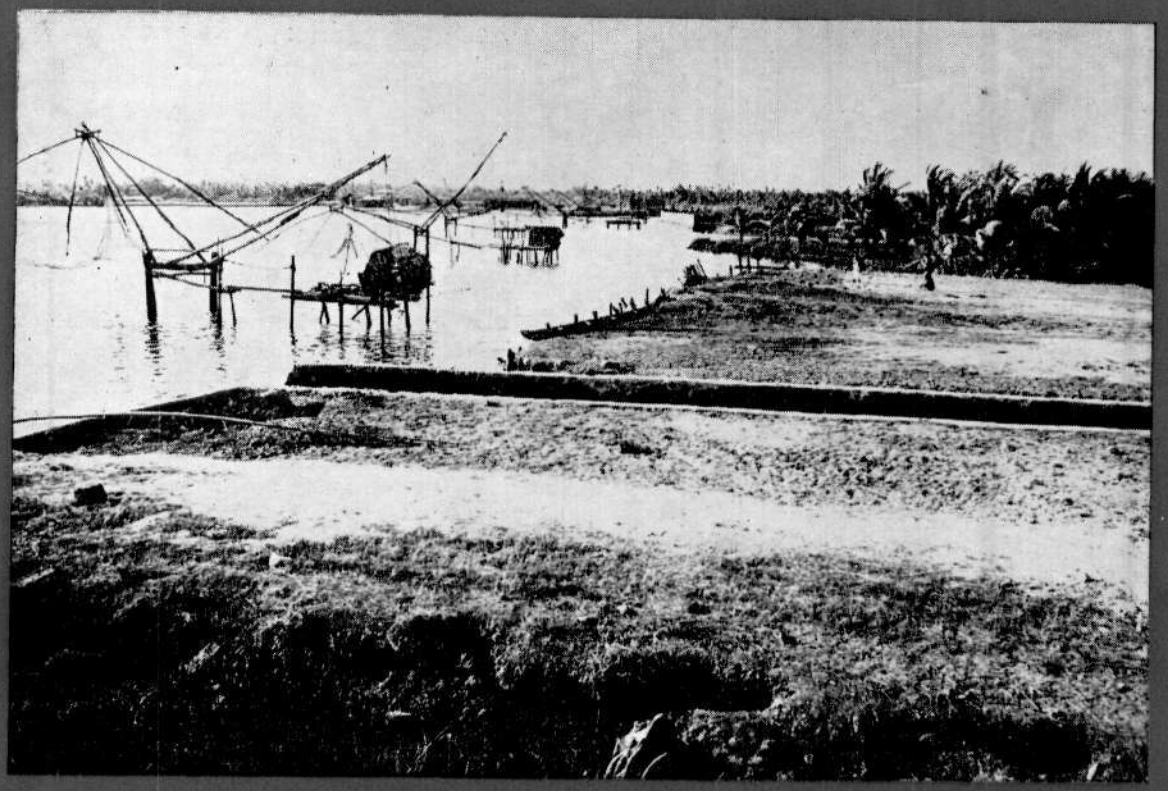

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AN UNUSUAL FISHERY FOR INDIAN SCAD *DECAPTERUS RUSSELLI* AND OCCURRENCE OF INDIAN RUFF *PSENOPSIS CYANEA* AT CALICUT WITH NOTES ON BIOLOGY OF FORMER SPECIES*

Introduction

Though scads (locally known as '*chamban*') used to appear in the catches at Calicut generally after the south-west monsoon, it has not supported a sizable fishery here in the near past. But, from 19th August to 10th September, 1986, there were unusually heavy landings of scads (Fig. 1) all along the Calicut coast by boat seines, operated at depths varying from 35 to 50 metres. When the operations were at a depth of 45 metres or above, appreciable numbers of *Psenopsis cyanea* were also caught for the first time at Calicut. Detailed data collected on this fishery from Vellayil (Calicut) from 23rd August to 10th September, 1986, along with notes on some aspects of the biology of *Decapterus russelli*, the most important component of the fishery, are presented in this report.

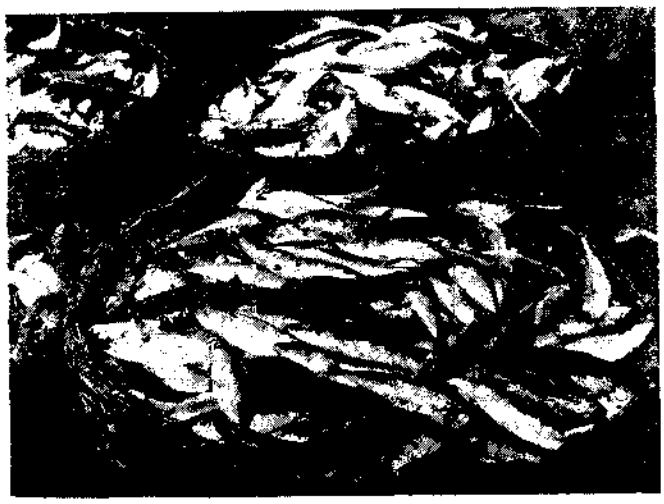

Fig. 1. A view of scads landed at Calicut.

The fishery

The gear employed in this fishery at Vellayil was a boat seine namely *Pattenkolli*. Country crafts employed were all fitted with Yamaha out board engines. The operations were at a depth of 45–50 m till 2nd September and subsequently the operations were at a depth of 36-40 m in the night hours. The units used to leave for fishing at 1830 hrs and return between 0300 and 0900 hrs.

There was hectic fishing activity (Fig. 2) and 1,589 *Pattenkolli* units were operated during this period and most of the boats landed good catches of scads (Fig. 3). Normally, this is the peak period for mackerel catches by *Pattenkolli*. But, with a staggering total catch of 1,170 tonnes of scads during this period it eclipsed the mackerel fishery which yielded only 220 tonnes. The first peak in the scad catches was observed on 24th August (Fig. 4). From 28th August to 2nd September, when operations were at greater depths, say beyond 45 m, there were good catches of *Psenopsis cyanea*. The highest peak in the scad catches was observed on 2nd September, when 178 tonnes of scads were caught with a CPUE of 1,156 kg. The total catch (in kg) of different components are given below.

Fig. 2. Hectic activity – *Pattenkolli* units landing scads.

Species	Catch	CPUE	%
D. russelli	11,16,370	702.56	68.49
D. macrosoma	54,075	34.03	3.32
P. cyanea	12,153	7.65	0.75
R. kanagurta	2,20,464	138.74	13.53
Others	2,26,803	142.73	13.91
Total	16,29,865	1,025.72	100.00

*Prepared by T. M. Yohannan and K. K. Balasubramanian, Calicut Research Centre of CMFRI, Calicut.

D. russelli (locally known as *'kannan chamban'*) constituted 95.38% of the scad catch and *D. macrosoma* (locally known as *'kol chamban'*) 4.62%.

Fig. 3. A boat-full of scads.

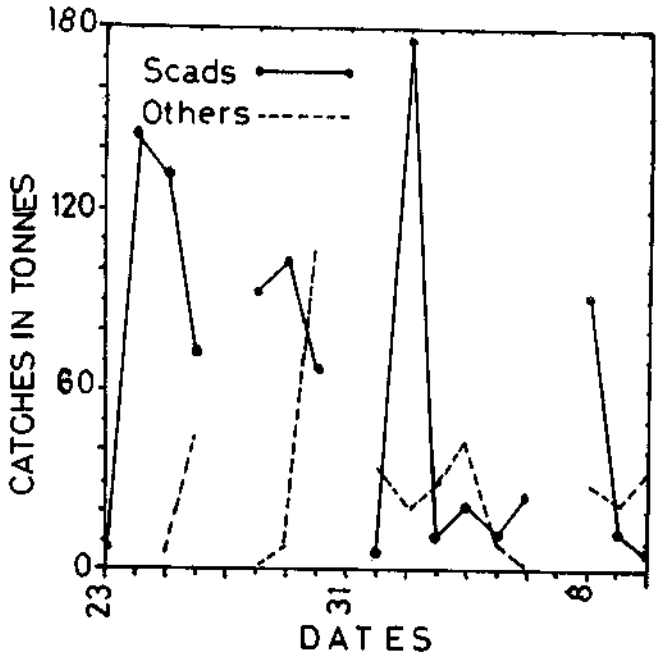

Fig. 4. Daily catches from 23rd August to 10th September, 1986.

STUDIES ON THE RESOURCES OF *D. RUSSELLI*

Size distribution

A random sample of 262 number of *D. russelli* was collected and studied in detail. The length of *D. russelli* ranged from 105 to 224 mm. The major mode was at 197 mm. There was a secondary mode at 167 mm. The smaller size groups had a mode at 122 mm (Fig. 5). Sreenivasan *(Indian J. Fish.,* **29**: 144-150, 1982) while studying the growth of *D. dayi* which is synonymous with *D. russelli* (Fischer and Bianchi, *FAO species identification sheets for fishery purposes, Western Indian Ocean* (Caron Deca 8 FAO, Rome, 1984) has observed that *D. dayi* reached a size of 150 mm (fork-length) in one year and 184 mm (fork-length) in 19 months. The present lengths are total lengths and the fork lengths measured by Srinivasan when converted to total lengths it would be 166 mm for one year and 204 mm for 19 months. Hence, it can be assumed that the modal length 122 mm represents 'O' year-class,the modal length 167 mm one-year-olds and modal length 197 mm 6 months older. 62.98% of the fishes were in size between 180 mm and 224 mm (one and a half year or older fishes), 23.66% between 150 and 179 mm (one-year-olds) and 13.36% between 105 and 139 mm ('O' year-class).

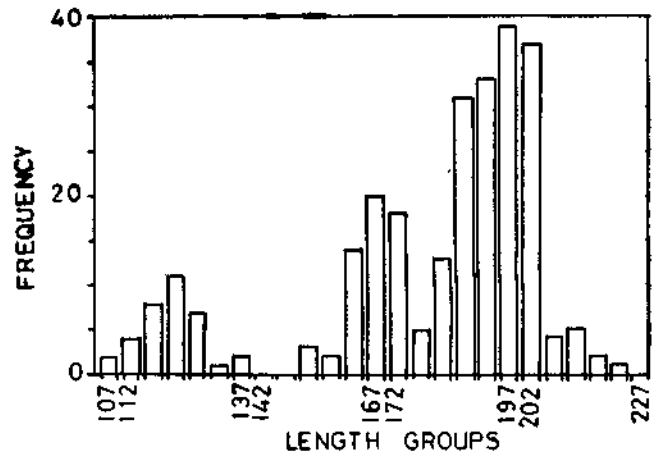

Fig. 5. Frequency of length groups in the sample (mid-points given).

Maturity

Males dominated the catches contributing about 60.71%. 70.91% of the fishes in the size range of 180–224 mm was mature and many were in running stage exuding ova or milt with a slight pressure on the abdomen. 27.59% of the fishes in the size range of 150–179 mm also were mature. Those in the size range of 105–139 mm

were all indeterminates. The percentages of mature individuals in different size groups of 10 mm interval are shown in Fig. 6 (mid-points 165 indicates a size range of 160-169 mm and so on). It can be seen that more than 50% of the individuals above 180 mm in length were mature. The oozing ova of the mature females measured between 0.63 and 0.79 mm in diameter with an oil globule measuring between 0.09 and 0.12 mm in diameter.

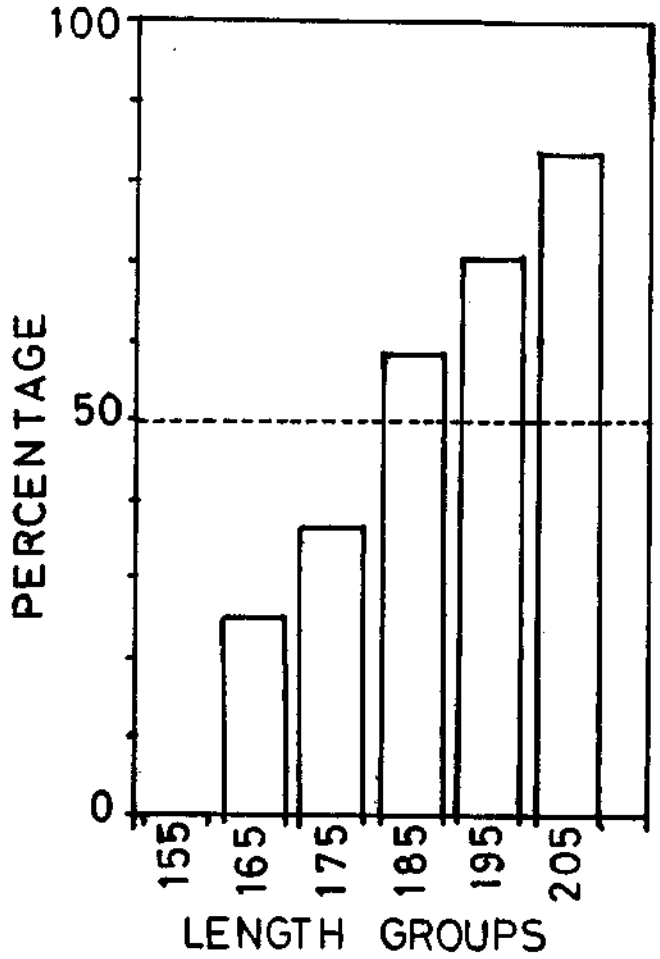

Fig. 6. Percentage of mature individuals in the 10 mm length group.

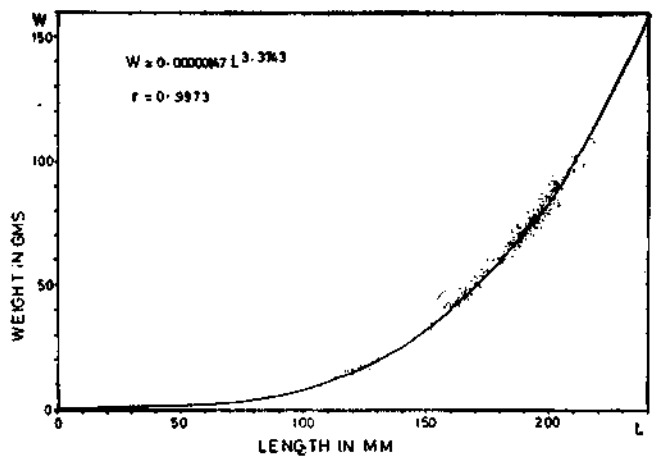

Fig. 7. Observed lengths and weights plotted against estimated relationship.

Fig. 8. Scads being loaded into trucks to be sent to distant places.

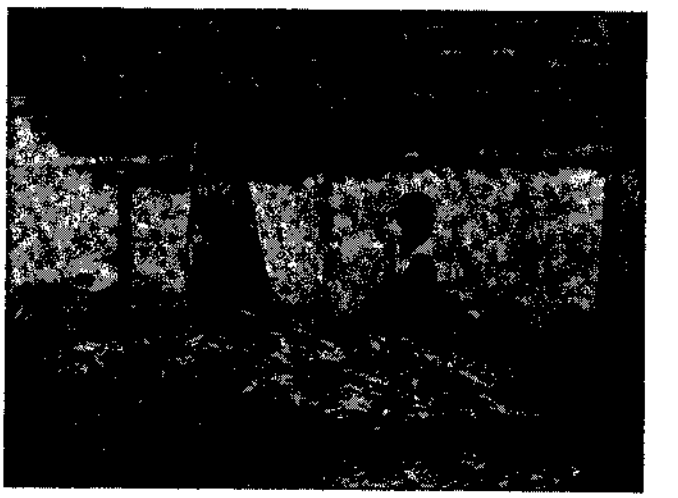

Fig. 9. Scads being gutted for beach-drying.

Length-weight relationship

The weight of *D. russelli* had the following relation with length:

$$W = 0.00000147\ L^{3.3743}$$

The correlation coefficient had a value of 0.9973 (Fig. 7).

Price structure and utilisation

At Vellayil the wholesale price of scads was Rs. 150/- per basket (about 70 kg or 1000 fishes) in the beginning of this period. The price came down to Rs. 80/- by the end of the period. In the market the wholesale price ranged from Rs. 15 to Rs. 25 per 100 fishes and the retail price from Rs. 20 to Rs. 35 per 100 fishes.

Due to poor local demand truck-loads of scads were sent to other places where there was scarcity of fish (Fig. 8). On the days when catches were extremely high, about 25% of the scad catch was gutted, salted and dried on the beach (Fig. 9). *P. cyanea* being new to the area the customers were reluctant to buy it and most of the catch was dried whole on the beach. However, some people who tasted it reported that the fish was fine tasting.