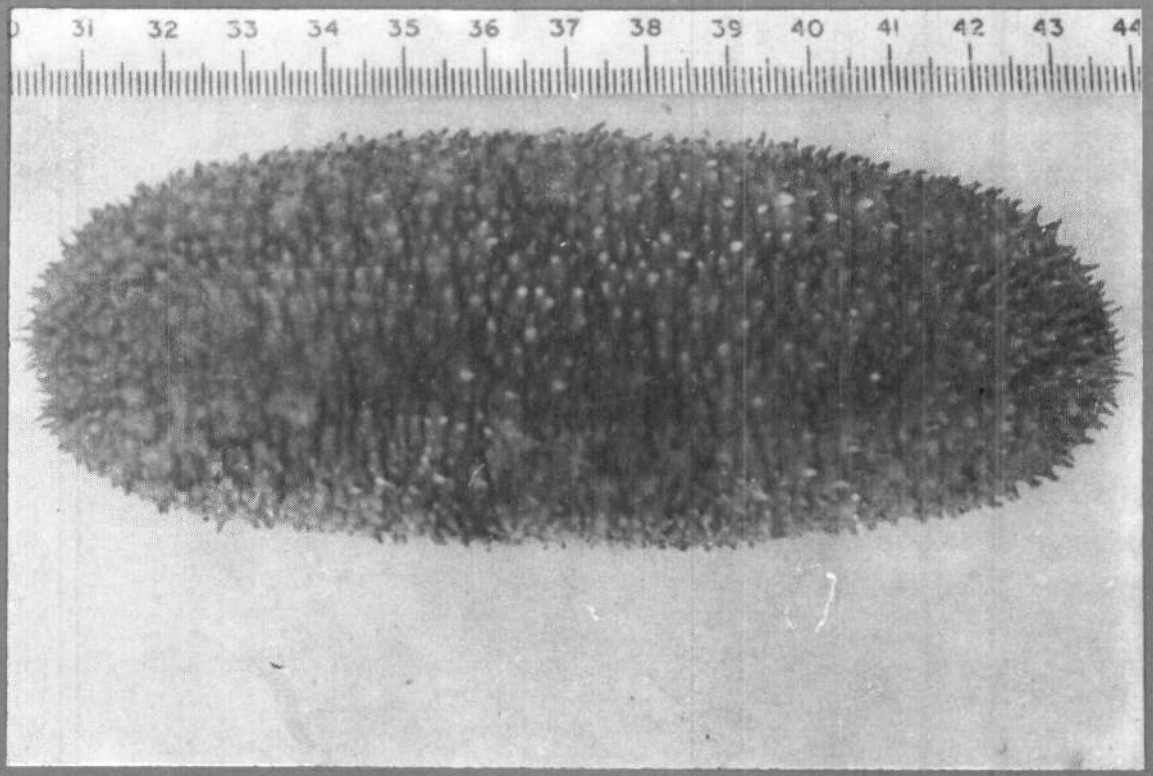
ISSN 0254-380 X

भाकृअनुप
ICAR

समुद्री मात्स्यिकी सूचना सेवा
MARINE FISHERIES INFORMATION SERVICE

No. 137 APRIL - MAY 1995



तकनीकी एवं विस्तार अंकावली
TECHNICAL AND EXTENSION SERIES

केन्द्रीय समुद्री मात्स्यिकी अनुसंधान संस्थान कोचिन, भारत
CENTRAL MARINE FISHERIES RESEARCH INSTITUTE COCHIN, INDIA

भारतीय कृषि अनुसंधान परिषद
INDIAN COUNCIL OF AGRICULTURAL RESEARCH

ON THE BUMPER CATCH OF BALISTIDS FROM TUTICORIN WITH NOTES ON LENGTH - WEIGHT RELATIONSHIP AND GUT CONTENTS*

The Leather jackets (Balistids) locally known in Tamil as 'Klaathi', normally do not form a fishery along Tuticorin coast. Though, very often they constitute a portion of the by-catch of trawl net they are thrown back into the sea by the fishermen mainly because of poor demand in the market and also for want of space on board for storage. Of late, the dry fish merchants have found a market for Balistids and started buying them. The trawl operators have been able to realise some income from the sale of Balistids.

During the second week of July 1993 a few trawlers landed Balistids as the catch of other commercially important varieties was very poor. Consequent to the scarcity of economically important food fishes and also the usual trash fishes which are locally known as 'Kalasal', a few fish merchants showed interest to bid in the auction of the Balistids, with an intension to explore the possibility of using them as a raw material for fish meal manufacture. These merchants were successful in introducing the unpalatable Balistids as a source of raw material for fish meal preparations, though it takes 3 days to get it dried perfectly whereas the other trash fish ('Kalasal') take only a day for drying.

The number of trawl net units varied from 130 to 160 during July '93. Out of the estimated 3,969 units of trawlers, only 680 units were estimated to have landed the Balistids. The catch amounted to 303.5 t at the catch rate of 446.4 kg/unit (Fig. 1) constituting 31.9% of the total trawl landings. Amidst regular Balistid landing during July '93 heavy landings were observed on certain days (Table 1) .

The Balistids were auctioned and the rate varied from Rs.16 to 20 per basket, weighing approximately 20 kg. Depending on the quantum of landing, the catch was transported to fish curing yards either by tricycle or pick-up-vans, dried and marketed.

Three species, *Balistes niger* (Shaw) (Fig 2) *Odonus niger* (Rupell) (Fig 3) and *Balistes capistratus* (Shaw) (Fig 4) constituted 89.5%, 8.6% and 1.9% of the Balistid fishery respectively. Samples of

Fig. 1. A portion of Balistid catch stored on board.

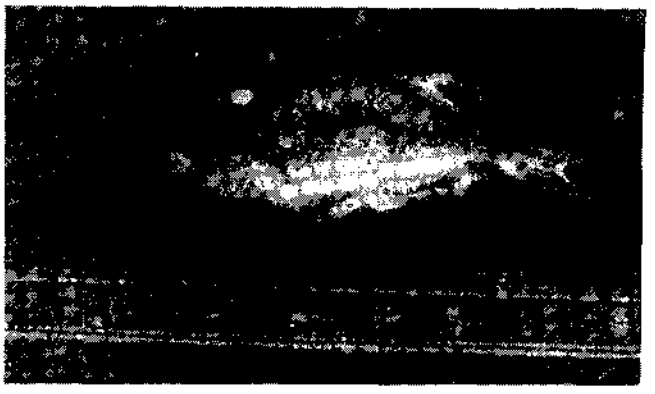


Fig. 2. *Odonus niger.*

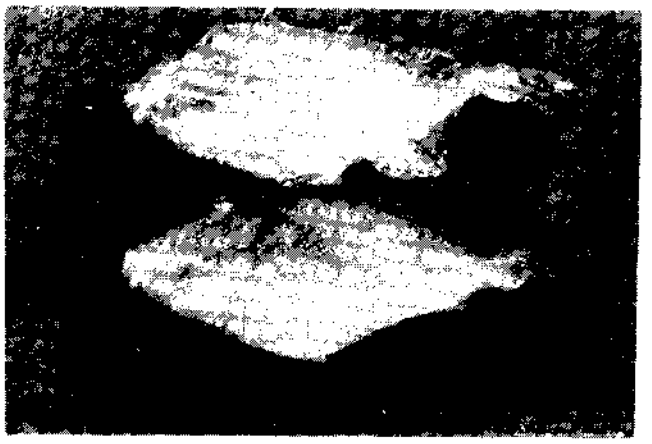


Fig. 3. *Balistes capistratus.*

* **Reported by : T. S. Balasubramanian, S. Rajapackiam, K. M. S. Ameer Hamsa and H. Mohamad Kasim, Tuticorin Research Centre of CMFRI, Tuticorin, 628 001.**

Balistids were obtained at random and detailed analyses were carried out in the laboratory on the size range, length-weight relationship, gut contents and stages of maturity of gonads. The size of *B. niger* ranged from 125-129 to 160-164 mm with a single mode at 145 - 149 mm suggesting a single brood stock having been recruited into the fishery. The second dominant species *O.niger* exhibited a size range from 120 - 124 mm to 180 - 184 mm with two modes at 130 - 134 and 145 - 149 mm, and the size of *B. capistratus* varied from 140 - 144 mm to 210 - 214 mm with two dominant modes at 160 - 164 and 185 - 189 mm indicating a possible recruitment of two brood stocks in the fishery at two different time in these two latter species.

A sample containing 100, 80 and 40 specimens of *B. niger*, *O. niger* and *B. capistratus* respectively were cut opened and stages of maturity of gonads were studied. Almost all the specimens of these 3 species were observed to be in indeterminate condition.

The length-weight data were used in regression analysis to study the length - weight relationship. The regression equation which describes the length-weight relationship of these 3 species are as follows:

B. niger : Log W = -4.0783 + 2.7526 Log L (r = 0.9271)

O. niger : Log W = -4.0474 + 2.7376 Log L (r = 0.9725)

and *B. capistratus* : Log W = -3.3741 + 2.4357 Log L (r=0.9729)

The gut content study revealed that the alimentary tract in these fishes is deeply convoluted from the oesophagus to anus. The stomach and the pyloric caeca are absent.

B . niger : The total number of specimens examined were 40 in the sizes range of 125 to 160 mm and weight from 55 to 105 g. This fish mainly feeds on small fishes which was revealed by the presence of fish flesh bits with vertebrae in the digestive tract. The contents also consisted of digested matter with molluscs (bivalves and gastropods), tentacles of *Sepia* spp., crab appendages (chela and legs) and coral stone particles.

O. niger: 25 fishes ranging from 120 to 180 mm in length and 45 to 145 g in weight were examined. In all the fishes only amphipods were present in the intestine in a semi-digested condition.

B. capistratus : Only 10 fishes of this species measuring between 140 and 210 mm and weighing 70 to 180 g were examined. The food contained tentacles of *Sepia* spp. and black coloured fine mud particles.

The volume of food contents in these three species varied from 0.40 to 1.00 ml.

Present production of Balistids by trawl net is mainly used for fishmeal manufacture. Balistids of larger size landed by hooks & line and drift gill nets are being sold for human consumption in internal markets. A suitable processing method of removing the skin and making it ready for fresh consumption may command a market for small sized Balistids also.

TABLE 1. *Details of Balistid landings during July 1993 (in kg)*

Centre: Tuticorin Fishing Harbour,	Period: July '93.			Gear: Trawl		
Date	Effort No. & Unit	*B. niger*	*O. niger*	*B. capistratus*	Total catch	CPUE
13.7.93	10	12,800	280	-	13,080	1,308.0
14.7.93	15	25,600	2,380	160	28,140	1,876.0
15.7.93	18	16,140	840	80	17,060	947.7
16.7.93	20	14,500	320	40	14,860	743.0
23.7.93	52	17,250	1,500	120	18,870	362.8
24.7.93	80	38,320	3,160	340	41,820	522.8
26.7.93	58	26,400	1,280	110	27,790	479.1
27.7.93	48	15,500	700	30	16,230	338.1
Total	301	1,66,510	10,460	880	1,77,850	590.8