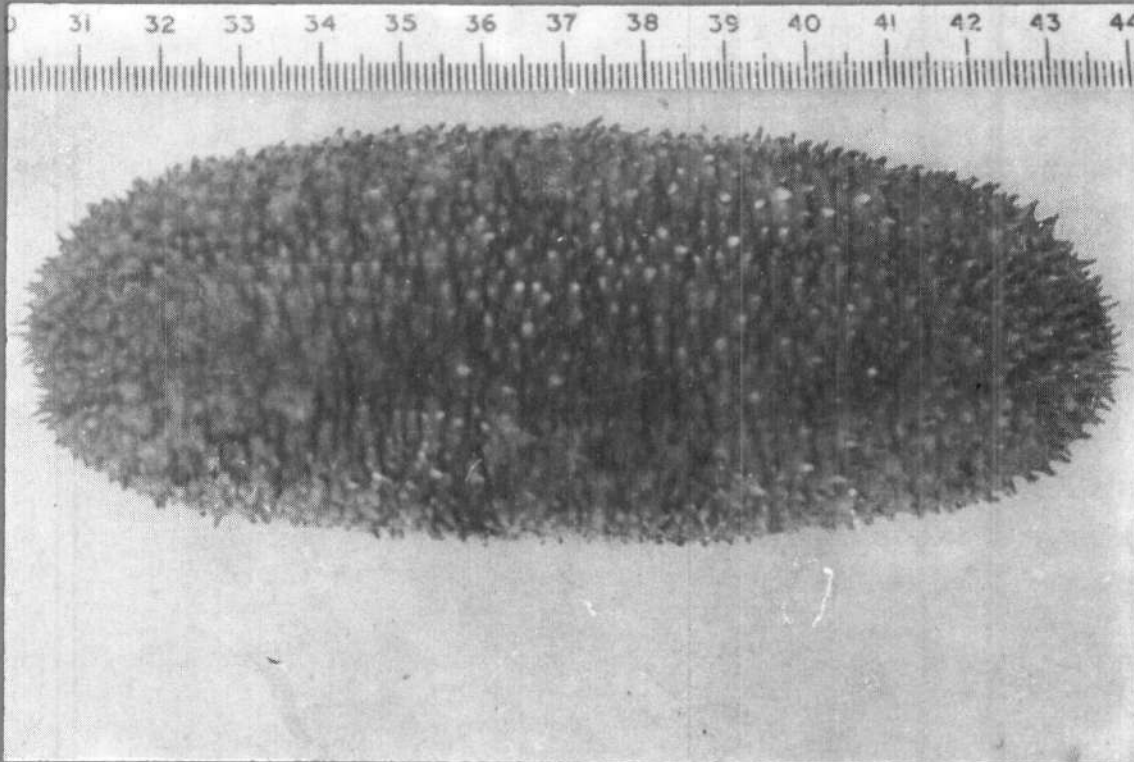




समुद्री मात्स्यकी सूचना सेवा MARINE FISHERIES INFORMATION SERVICE

No. 137

APRIL - MAY 1995



तकनीकी एवं TECHNICAL AND
विस्तार अंकावली EXTENSION SERIES

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

भारतीय कृषि अनुसंधान परिषद
INDIAN COUNCIL OF AGRICULTURAL RESEARCH

"DEEP-WATER RED FISH", A NEW RESOURCE FOR THE INDIAN BECHE-DE-MER INDUSTRY

D.B. James* and M. Badrudeen**

(Central Marine Fisheries Research Institute, Cochin - 682 014)

Introduction

The Indian *Beche-de-mer* industry is in existence for more than one thousand years. The species that are chiefly processed are *Holothuria scabra* ("Vella attai") and to a minor extent *Holothuria spinifera* ("Raja attai" or "Cheena attai") and *Bohadschia marmorata* ("Nool attai"). *H. spinifera* was once a very priced item but now it is not preferred by the industry. In recent years due to the attractive prices offered in the international market, other sea cucumbers like *Actinopyga echinites* ("Paar attai"), *A. miliaris* ("Pal attai") and *H. atra* ("Kuchil attai") are processed in the Gulf of Mannar area. India is now earning a foreign exchange of more than one crore of Rupees by exporting chiefly *H. scabra*.

There are over 650 species of sea cucumbers known from the various parts of the world. They occur from the shore to the greatest depths and from the Arctic to the Antarctic. In the seas around

India, nearly 200 species of sea cucumbers are known of which 75 species are known from the shallow waters within a depth of 20 metres. Of these about a dozen species are of commercial importance.

In 1989 for the first time *Actinopyga echinites* (Fig. 1) known as Deep-water red fish was collected and four tonnes were processed at Keelakarai. This is considered as one of the new resources for the Indian *Beche-de-mer* industry. During 1990 this species was fished and processed from Keelakarai, Periapattanam, Vedalai and Pamban. It is locally known as "Paar attai" since it is found to be attached to Paars (rocks) in the Gulf of Mannar.

Fishery

Actually fishery for this species started in October, '90 simultaneously both at Keelakarai and Periapattanam. The fishery was very intensive at both the places. About 125 fishermen in 12 boats

Present address: *Tuticorin Research Centre of CMFRI, 90 North Beach Road, Tuticorin-628 001.

**Regional Centre of CMFRI, Mandapam Camp-623 520.

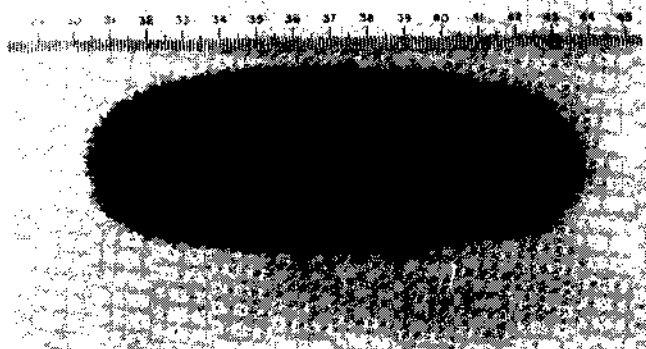


Fig. 1. Single specimen of *Actinopyga echinites* (Jaeger).

and 90 fishermen in 10 boats participated in the fishing from Periapattinam and Keelakarai respectively. Fishermen leave in the morning between 3 and 5 A.M. according to the distance of the fishing ground from their places and land their catches in the afternoon by 3 P.M. Fishing at Vedalai started very late and from Pamban still later. While two boats with 40 fishermen participated at Vedalai, only occasional collections were made at Pamban with 10-15 fishermen. Though the fishermen from Periapattinam and Keelakarai started simultaneously, the Periapattinam fishermen suspended the fishing due to the fall in price from Rs 3.00 to 2.00 and below per specimen and again resumed in mid October, '90 with four boats. Keelakarai fishermen continued collection till the first week of December, '90. The fishing season extended from November to March during 1991, 1992 and 1993 and steadily declined due to non-availability of specimens. During 1991 and 1992 no fishing took place at Periapattinam and during 1992 and 1993 no fishing was conducted at Pamban.



Fig. 2. *Actinopyga echinites* put as a heap.

Collection is mostly done by skin diving using a mask. If the sea is clear without turbidity, collection of sea cucumbers will be good. In the first week of August the catch per fishermen was estimated to be from 150 to 250 numbers or even more. In addition to this sea cucumber *Holothuria spinifera* sea shells like *Cypraea* are also collected by them.

Fishing grounds

The fishing grounds (Fig. 1) are mostly off the chain of Islands in the Gulf of Mannar. The sea cucumbers are found on the rocky bottom which extends from the sea shore to 2-8 kilometre distance of the southern side of the islands. The depth of the fishing grounds also ranges from 3 to 7 metres. The present fishing ground extends from Nallatanni Island to Shingle Islands. Good resource was noticed from Mulli to Shingle Islands because of the rocky substratum of these islands which extends to a greater distance of 7 kilometres. At present beyond 8 metres depth diving is not carried out since visibility is poor. The resource, however, seems to be good beyond 8 metres.

Mode of disposal

As soon as the catch is landed, the entire catch or part of the catch is purchased by the processor or his agent by counting the number of sea cucumbers with each fisherman. In the beginning the price ranged from Rs. 1.50 to 3.50 irrespective of the size. The processed product was sold at the rate of Rs. 120.00 to 150.00 per kilogram to the agents. In later years the price has gone up to Rs. 5.00 to 10.00 for the raw material because of the demand of processed material and decline in the catch. Altogether 35.2 tonnes were landed during 1990-'93 from Mandapam area (Table 1). The price of the processed product has also gone from Rs. 300.00 to 450.00 per kilogram. There are two main agents at Keelakarai and one at Madras. The processed product is mainly sent to Singapore where it fetches good price.

TABLE 1. Centre-wise landings of *Actinopyga echinites* in tonnes during 1990-'93

Names of centres	1990	1991	1992	1993	Total
Keelakarai	12.0	1.2	0.8	0.5	14.5
Periapattinam	8.5	-	-	0.4	8.9
Vedalai	4.5	2.3	1.4	1.6	9.8
Pamban	1.5	0.5	-	-	2.0
Total	26.5	4.0	2.2	2.5	35.2

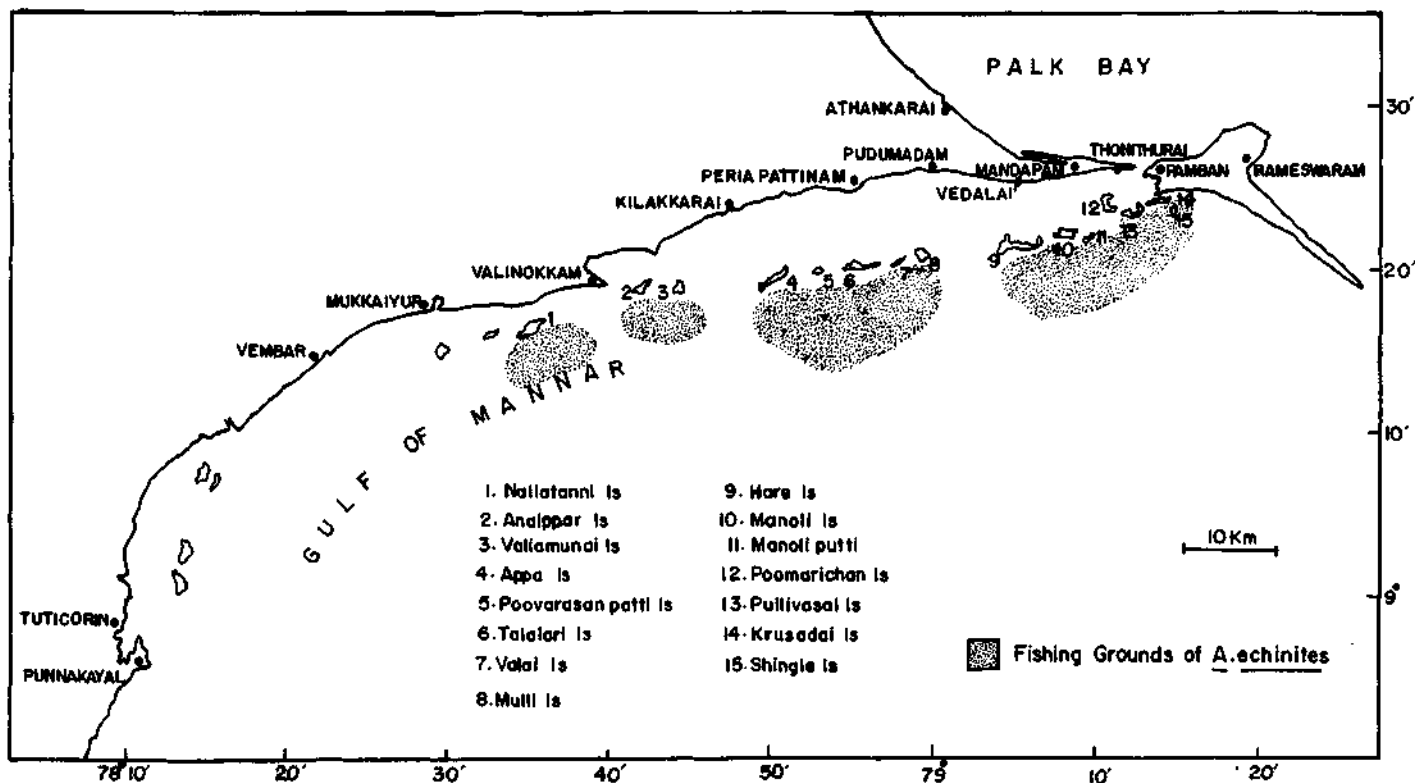


Fig. 3. Map showing the area in the Gulf of Mannar where *Actinopyga echinites* is fished at present.

Processing method

The processing method for this sea cucumber is different from that used for *Holothuria scabra*. For this species burying is not necessary after boiling. After collection, the sea cucumbers are put in a heap to allow evisceration (Fig. 2). The sea cucumbers are put in boiling sea water and boiled for half an hour. Usually 300 to 500 numbers are boiled at a time. After boiling they are heaped on the shore and covered by polythene mats. Next day morning they are first cleaned and pieces of intestine, sticking to the body are removed. The material is put out for sun drying for four or five days depending on the size of the specimens. 25-40 numbers of processed sea cucumbers would weigh 1 kg.

The sea cucumbers ranged in length from 110 to 265 mm and the weight ranged from 140-340 g in the fresh condition. About 50% of the sea cucumbers were found to be in mature condition.

Catch statistics

During the years 1990-'93, 35.2 tonnes of *Actinopyga echinites* were fished from Keelakarai, Periapattinam, Vedalai and Pamban. Table 1 gives centre-wise landings of "Paar attai" at the four centres. Intensive fishing was noticed at Keelakarai by the fishermen almost throughout the year. These fishermen come upto Vedalai and collect the material and take the catch to Keelakarai.