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6

SHRIMP FISHERIES OF PAKISTAN

by

M. R. Qureshi*

A. Fishing Grounds: Of the two units of Pakistan, West Pakistan is situated on the Arabian sea, and the coast extends for about 500 miles from the Indian territory on the south-east to the Gwatar Bay on the west. It is roughly divided into two sections, as follows:

- (a) The *Sind coast* extending from Sir creek on the south-east to the Hab river on the west. It is about 200 miles long and the major part consists of the delta of the river Indus. It is a low coast except that a few barren hills are found near Karachi. The bed of the sea is mostly muddy and suitable for shrimps, which occur throughout this coast, which is a network of creeks. The main centres for shrimp fishing are Mall, Jhabbi, Dabbo, Patiani, Khuddi and Korangi extending to the Karachi harbour.

In February 1955, a shrimping boat was received

through the American aid programme and has struck some shrimp grounds south-east of Karachi. On one occasion 1,200 lbs. of big shrimps (*Penaeus merguensis*) were caught in one haul lasting about two hours.

- (b) The *Mekran coast* extends from the river Hab to the Gwatar Bay and is formed of large bays, broken at two places by backwaters. The main fishing centres are Sonmiani, inside Sonmiani Bay, Kalmat situated on Kalmat creek, Ormara, Pasni, Gwadar, Ganz and Jiwani. No exploratory work has yet been done but the data collected so far indicate that Sonmiani Bay, Kalmat creek, Pasni and Gwadar have good shrimp grounds from where a fairly large catch is dried and exported.

Rainfall on the coasts of West Pakistan is scanty averaging about 7 inches.

* Director, Central Fisheries Department, Karachi, Pakistan.

In East Pakistan, the coast mostly consists of mud flats and is about 200 miles long, the richest area being the Ganges-Brahmaputra deltaic region. No survey of the coast has been carried out and the available information is based on the catch of the fishermen. Shrimp grounds exist along the delta and near Cox's Bazaar. Besides the marine shrimps, fairly large quantities of different species are found in the fresh and brackish waters of East Pakistan.

B. Fishing Methods :

Fishing methods are as a rule primitive and conducted in shallow waters. There is no mechanized commercial fishing.

C. Fishing gear and boats :

(a) *West Pakistan*—on the coasts of Sind and Mekran the following nets are in use :

- i. The beach seine (*Bann*) ranges between 200 to 450 ft. in length, weighted on the lower part and provided with floats on the upper. One end is taken far away in the sea or creek, the other held fast at the beach, the boat is then rowed round and then both ends are dragged ashore by the fishermen. It is a small-meshed net and catches shrimps and small fish. The shrimps are picked up and stored separately in baskets.
- ii. The cast net (*Yari*) is used from shore and from small boats in shallow water. This net does not require any description as it is universal.
- iii. The stake net (*Arr*) is a fixed net. It is used in the creeks and its mouth is adjusted against the flow of tide. Bamboo poles are fixed in the ground, gradually converging to a point where a floating bag is fixed. The netting tied to the poles directs fish and shrimps to the cod-end, from which they are collected by boat.
- iv. There is another type of stake net (*Dora*) which is fixed on a long stretch in shallow water when the tide is up, on the recession of tide shrimps and small fishes are left in the net.

Mechanized fishing has not yet been introduced in Pakistan, although as has been mentioned, a shrimping boat has been received through the American aid programme and a crew has been trained by Mr. L. S. Christey, American Fisheries Adviser in the manipulation of a 100 ft. long flat type shrimp trawl and a 70 ft. long balloon type trawl. The fishing doors are 8 ft. long. Some shrimp grounds

have been located. The operations will continue from September onwards after the monsoon.

(b) *East Pakistan*. The nets used in catching shrimps, as described by Nazir Ahmed in a paper entitled 'Fishing Gear of East Pakistan by N. Ahmad' presented at the 4th Council Session are cast nets, beach seines, trawl nets, stake nets (bags and others), dip nets and traps. These are operated in shallow waters and in this region also there is no mechanized fishing for shrimps. The boats are not seaworthy and are all flat-bottomed.

D. Catch Statistics :

It is estimated that the annual catch on the Sind and Mekran coast in West Pakistan is between 7,000 to 8,000 tons. The ratio of small to large shrimps varies according to seasons, as a whole it is approximately 3 : 1.

In East Pakistan the total catch of freshwater, estuarine and marine shrimps is estimated as 5,000 tons. This is presumably a low estimate.

In West Pakistan the catch of shrimps in 1954 was about 7,900 tons. Data collected only for Karachi area indicate that the monthly proportions of landings were as follows (for other places the data were not available).

January	..	..	..	18.0%
February	..	..	..	14.0%
March	..	..	..	4.0%
April	..	..	..	1.5%
May	..	..	..	1.5%
June	..	..	..	2.0%
July	..	..	..	2.5%
August	..	..	..	3.0%
September	..	..	..	6.5%
October	..	..	..	12.0%
November	..	..	..	15.0%
December	..	..	..	20.0%
			Total	100 %

E. Seasonal Variation :

(a) *West Pakistan* : For the Sind coast in general, it may be said that the season starts in October; and the peak is reached in December/January and ends in March. In other months fishing is mostly confined to the creeks. On the Mekran coast, in the Sonmiani Bay and the Kalmat creek, the fishing is at its peak during the months of July, August and September and near Pasni and Gwadar during the months of November to January.

(b) *East Pakistan* : Fishing in the Bay of Bengal is confined to five months starting from October

and ending in February, the peak months being November, December and January. In freshwater, excepting the flood season, fishing is done throughout the year.

F. Fishery Legislation :

Legislation exists in Punjab and East Pakistan for the conservation and other aspects of inland fisheries, the old Act has been revised in East Pakistan and is under consideration of the Legislature. An act for the sea fisheries has been drafted and is now passing different stages for final consideration of the Constituent Assembly.

G. Processing :

Freezing : A joint Pakistan-American Company, International Fisheries (Pakistan) Ltd., has started work at Karachi. The Company has a freezer and three cold rooms having low temperature for retaining the frozen products for export to the United States of America and other countries. The plant is capable of freezing 5 tons per 8 hours and has a storage space for 200 tons. The plant has not been working satisfactorily owing to non-availability of raw material. This company is now planning to get trawlers and transport boats so that enough shrimps may be available to run the plant.

Canning : The Sind Canning Company have installed a modern canning plant at Karachi and have produced some samples. These were sent to United Kingdom, and the reports received have been encouraging. Operations will probably commence in September, 1955.

Curing :

(a) **West Pakistan :** About 95% of the total production is exported to Burma, Ceylon and India in cured condition. The shrimps are boiled in saturated brine for about an hour till they float on the surface, taken out of the water and dried in the sun. The dried shrimps are then beaten with sticks to remove the shell. The finished product is packed in gunny bags and exported. The shell is also exported or mixed with fish meal.

(b) **East Pakistan :** For keeping the freshness of prawns for a day or two, these are preserved in ice and transported to consuming centres, usually in baskets. For longer storage, three methods are in vogue, viz., Sun-drying, boiling and sun-drying, and smoking. In sun-drying the prawns are simply spread out on mats, in bamboo trays or on raised platforms. After drying the shell is removed by beating. The finished product is stored in gunny bags while the shells are sold as manure. This is

the commonest method followed for curing, especially during the winter months.

For the second method prawns are boiled for a few minutes in fresh water containing a small quantity of common salt. As soon as the shells become soft the water is drained off and prawns are spread out for sun-drying. Smoking is done in smoking chambers in the districts of Bakarganj and Khulna. These smoke-houses locally known as '*Kothi*' are made of forest wood and reeds. The prawns are scattered evenly on raised platforms and smoke is produced by using hard wood. Wood containing much resin and oils is avoided. In a few hours time the finished product with golden colour is obtained. This method of preservation is followed during the rainy season, i.e., April to October, when the prawns cannot be exposed to the sun for a long time at a stretch. During the same season housewives in the district of Bakarganj preserve the surplus supply for home consumption by heating in earthen pans.

Paste :

No shrimp paste is prepared in Pakistan.

H. Marketing and Distribution :

During 1954, out of the total estimated production of 7,900 tons, only 300 tons were sold fresh in the local markets in West Pakistan. The remainder was cured for export yielding 1920 tons in dry condition. The price of fresh shrimps in the Karachi market varied between eight to twelve annas per lb (16 cents to 24 cents U.S.). The export value of the smallest shrimp in cured condition was Rs. 50. (U.S. \$15) and the large variety Rs. 123/- (U.S. \$40) per hundredweight (112 lbs.)

In East Pakistan the total estimated production during the same period was 4,930 tons out of which about 480 were consumed fresh and a negligible quantity exported in dry condition. The wholesale price range of fresh shrimps in 1952 per maund (82 lb) was 20 to 60 Rupees according to size while in the retail market the price varied between ten annas and two rupees per lb.

I. Biology :

Excepting for some casual observations, very little work has been done in Pakistan on the biology of shrimps. In July and August 1954, when a large quantity of shrimp was landed near Karachi, the gonads showed that this was the breeding season for *Penaeus merguensis*. Systematic work has started on shrimps and it will be possible to report some results later.

J. Taxonomy: The following species have been recorded from commercial catches of prawns brought to the market:

West Pakistan:

Marine	Local name	Size
1. <i>Penaeus indicus</i>	Jiari	4"-7"
2. <i>Penaeus merguensis</i>		
3. <i>Penaeus penicillatus</i>		
4. <i>Penaeus canaliculatus</i>		
5. <i>Penaeus semi-sulcatus</i>		8"
6. <i>Penaeus monodon</i>	Kiddi	3"-5" 2"-3"
7. <i>Metapenaeus monoceros</i>		
8. <i>Parapeneopsis uncta</i>		
9. <i>Parapeneopsis styliifera</i>		

Freshwater

10. *Palaemon carcinus*
11. *Palaemon malcolmsonii*

East Pakistan:

Estuaries	Local name	Size
1. <i>Penaeus carinatus</i>	Bagda chingri	11-12 inches
2. <i>Penaeus indicus</i>	Chapda chingri	8 "
	Chapra "	
	Chamma "	
	Chaga "	
3. <i>Leander styliiferus</i>	Ghora chingri	5 "
4. <i>Metapenaeus monoceros</i>	Honye "	6.5 "
	Kucho "	
	& Koraney	
5. <i>Metapenaeus brevicornis</i>	Koraney "	5 "
6. <i>Caridina gracilipes</i>	Ghusa "	
	Sunka "	1.5 "
7. <i>Cardina propinea</i>	Ghusa "	15 "
	Choanicha	
8. <i>Palaemon carcinus</i>	Golda chingri	12 "
	Mocha "	
	Bara "	
	Shala "	
9. <i>Palaemon sudis</i>	Goda "	4 "

7

PRAWN FISHERIES OF THE PHILIPPINES

by

J. S. Domantay*

The present report aims at listing the major species of prawns in the Philippines and describes the methods used in catching them including details of fishing grounds, and catch statistics.

Several species of Prawns, along with other crustaceans such as lobsters, crabs and mysids provide fisheries of varying magnitude and value in the Philippines, though their commercial value is limited by selective demands of the market based largely on size, taste and availability.

The work so far done on the prawns of the Philippines has mostly been on the systematics of some of the most common species. Some of the reported species have been worked out by naturalists outside the Philippines on material collected and deposited

in foreign museums. Professor Eulogio Estampador, former colleague of the writer in the Department of Zoology, University of the Philippines, and Mr. Guillermo J. Blanco of the Bureau of Fisheries, have contributed much to Philippine carcinology. Their works are good sources of information on Philippine crustacean decapods. Blanco and Arriola, Cowles, Villaluz and Villadolid, have also made useful contributions to the study of Philippine prawns.

Studies on the morphology and anatomy of Philippine crustaceans of certain important commercial species have since 1954 been undertaken in the post graduate school of the University of Santo Tomas under the advisership of the writer.

* Chief, Division of Inland Fisheries, Bureau of Fisheries, Manila, Philippines.