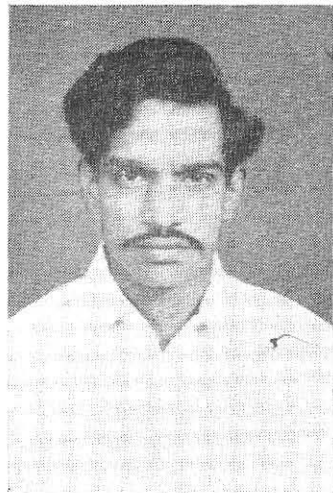


Prawn Fishery of the East Godavary District, Andhra Pradesh



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Introduction

One of the most remarkable developments in the fisheries of Andhra Pradesh in recent years has been the phenomenal expansion in the prawn fishery of the East Godavary district, particularly off Kakinada. Prawns in fact constitute the most important fishery in terms of value in the district, the annual catch being of the order of 4000-4500 tonnes valued at rupees one crore. The main factors responsible for the development of the prawn fishery during the period (1964-1971) were (1) the discovery of large resources of prawns on this coast through exploratory fishing conducted by the State Fisheries Department, the Central Institute of Fisheries Technology, and the Offshore Fishing Station of the Government of India in collaboration with the Central Marine Fisheries Research Institute, (2) introduction of mechanised fishing boats and modern fishing gear, (3) introduction of modern processing techniques like freezing and canning, and (4) ever-increasing

demands for prawns from external markets. The Kakinada Research Unit of the Central Marine Fisheries Research Institute has been conducting research on this valuable resource since 1966. Some of the results which are of interest to the industry are presented here.

Fishing Grounds

The coastline of the East Godavary district is 160 km. long. The region from the Vasista Godavary mouth to Kakinada is cut up by large estuaries and lagoons (backwaters) covering about 576 square kms. of backwaters and mangrove mud flats, while the rest of the coastline from Kakinada to Visakhapatnam border directly faces the Bay of Bengal. The entire area of backwaters, estuaries and the Kakinada Bay with an area of 130 square kms. have rich prawn fishing grounds which are exploited by the indigenous fishing gear, while on the northern half of the coastline the fishery is exploited by mechanised boats as well. Presently the fishery is confined only to the region up to 40 metres deep.

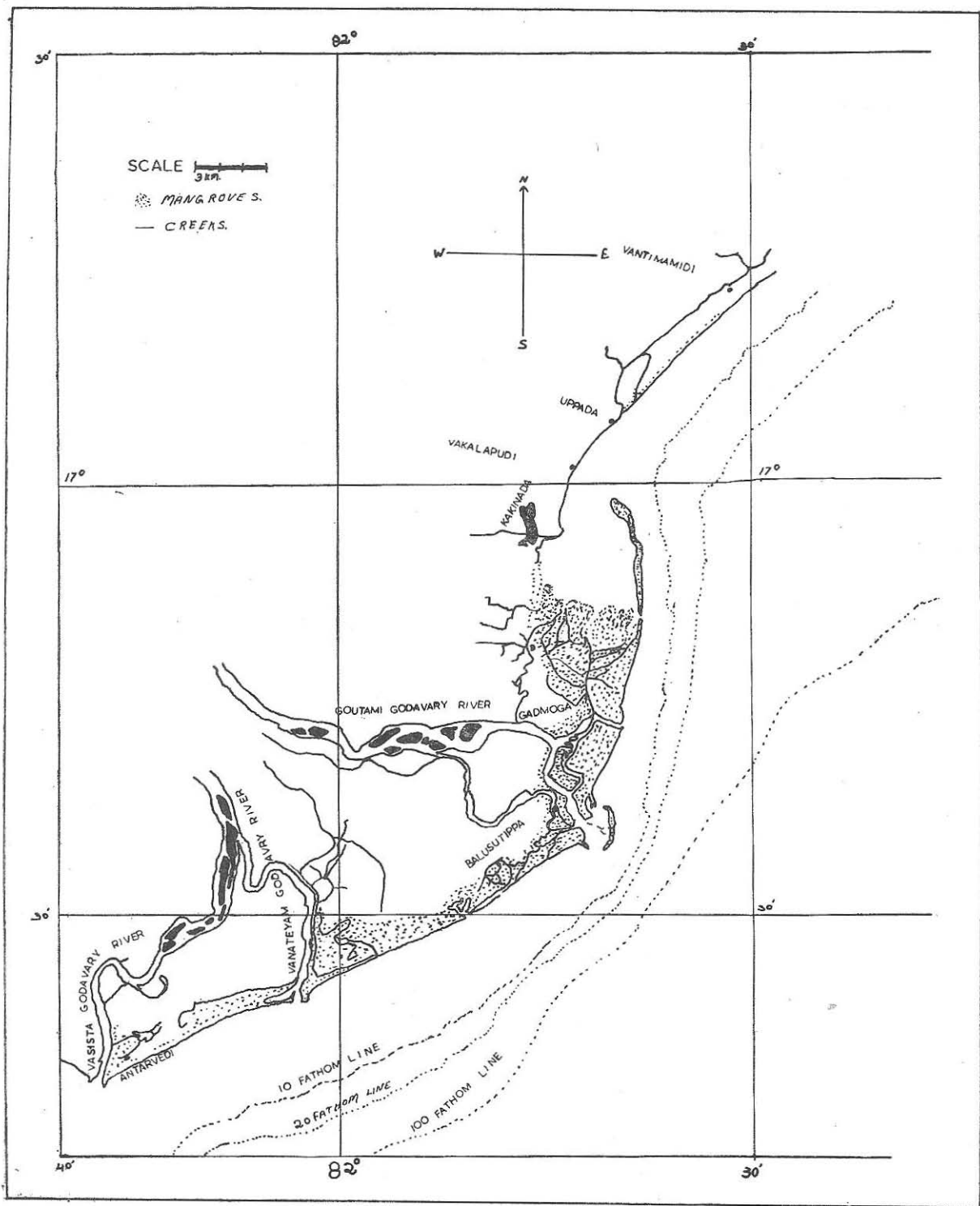


Fig. 1. Map of the East Godavary District showing coastline and prawn fishing areas.

Species Exploited

Although about 30 species of penaeids and an equal number of non-penaeids have been recorded in the landings, only a few of them contribute to the commercial prawn fishery of the area. The species of commercial importance are listed along with their local and common trade names.

from male to female; thus, the mature female of the species carry the sperm and approximately 5,00,000 - 10,00,000 eggs until conditions are right for spawning. The minute eggs are fertilized when released through small openings (oviducts) at the base of the third pair of walking legs. The fertilized eggs are semibouyant. The young one which

Scientific name	Local name	Common trade name
Family : Penaeidae		
1. <i>Penaeus monodon</i>	Pappu royya Gaju royya	Tiger prawn King prawn
2. <i>Penaeus indicus</i>	Tella royya Yelli royya	White prawn
3. <i>Metapanaeus monoceros</i>	Bunga royya	
4. <i>Metapanaeus affinis</i>	Bunga royya	
5. <i>Metapanaeus dobsoni</i>	Chinki royya	
6. <i>Metapanaeus brevicornis</i>	Pasupu royya	Yellow prawn
7. <i>Parapanaeopsis stylifera</i>		
8. <i>Solenocera indica</i>	Erra royya	..
Family : Sergestidae		
1. <i>Acetes indicus</i>	Royya pottu	..
2. <i>Acetes erythraeus</i>	Royya pottu	..
Family : Palaemonidae		
1. <i>Leander termipes</i>	Chingudu royya	Leander
2. <i>Leander styliferus</i>	Chingudu royya	Leander

Life History

The life histories of all the penaeid prawns of commercial importance are similar. Spawning takes place offshore at various depths depending on the species of the prawn and time of the year. When prawns mate, a sperm capsule, or spermatophore, is transferred

hatches out is called 'larva' and passes through three different stages namely, 'nauplius', 'protozoa' and 'mysis' and finally moults into a postlarva which looks like the adult.

The postlarvae enter the estuaries and bacewaters where they feed and grow. After attaining an age of 4-8

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months, depending on the species concerned, the prawns migrate back into the inshore waters of the sea and from there to deeper offshore waters for spawning. Prawns are exploited from late postlarval stage of their life history in these waters by various types of gear. Depending on the area of operation the fishery can be distinguished as backwater, estuarine, coastal and inshore (upto 40 metres).

Backwater Fishery

A variety of gear are used to catch the juvenile prawns of the backwaters, the important ones being Stake nets (*Gidasa vala* or *Thoka vala*), Drag nets (*Pakkadevu vala*), Push nets (*Dobbudu vala*) and Dip nets (*Yethudu vala*). On an average, for the five-year period (1967-1971), about 1700 tonnes of prawns were landed in these backwaters per annum. The backwater prawn fishery is active throughout the year with a peak in October-January months. The catches contain all species mentioned earlier, although *Metapenaeus rffinis*, *Solenocera indica* and various species of the other genera are found only rarely. The size ranges of different species contributing to the backwater fishery differ greatly, 50-200 mm. in total length, depending on the species concerned, gear operated and time of the year.

Since transportation facilities in the landing centres are poor, much of the catch is sun-dried or smoke-cured. But small amounts of *P. monodon* and *P. indicus* are taken to the freezing plant at Kakinada and a fraction of the catch is carried to nearby inland villages by cycles and headloads for fresh consumption. In monsoon there is often a glut of prawns part of which goes waste as they can not be dried.

Leander Fishery of the Estuaries

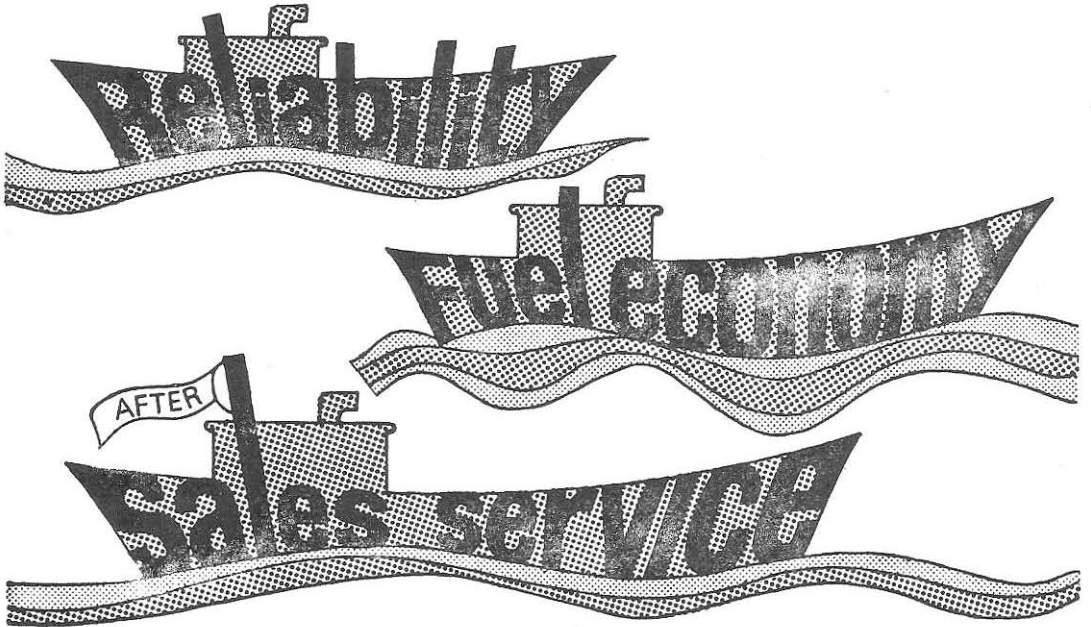
In the mouths of the Godavary there exists a good fishery for *Leander* (*Palaemon*) *tenuipes* in the monsoon season. On an average about 500 tonnes of this species are landed annually. Small quantities of *Leander styliferus* and other non-penaeids are also caught with it. In these mouths of the river when there is heavy freshwater discharge there forms a salt wedge (incurSION of saline water at bottom into the freshwater discharge at river mouth) where these species are found and are exploited with stake nets. The fishery is highly unpredictable and fluctuations are great. There appears to be a direct relationship between the river discharges and the magnitude of the *Leander* fishery.

The villages where this type of prawns are caught are very remote and hence the catch is sun-dried and sent to inland towns for marketing. Sometimes the abundance of the prawns is so high that the fishermen do not catch all that is possible because of lack of drying sites.

Coastal Fishery of the Indigenous Gear

The commercial penaeids, on their way from estuaries and backwaters to the offshore spawning grounds, move along the coast in good concentrations and are caught by shore seines (*Alivi vala*), boat seines (*Iraga vala*) and drag nets (*Konte vala*) in the region upto 20 metres deep. Recently gill nets have been operated to catch big-sized prawns as they fetch very good price. The results were encouraging. The annual catch is about 1500 tonnes. The species in order of abundance are *M. brevicornis*, *M. dobsoni*, *M. monoceros*, *M. affinis*, *P. indicus*, *P. Monodon*, *P. stylifera* and *S. indica*. The size composition of different species that contribute to the coastal fishery closely resemble that of the trawler prawn fishery. In the five-

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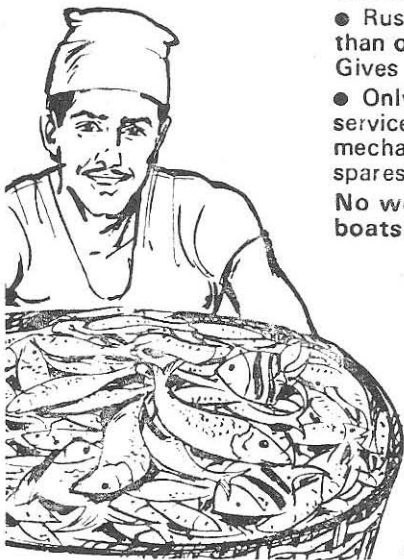
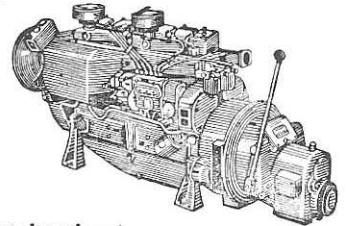
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GREAVES

year period of 1967-1971 the coastal fishery as a whole did not show much fluctuation. There appears to be no peak season for the coastal prawn fishery.

The prawn catch of the coastal fishery is consumed fresh in the inland towns and villages. Some amount of big-sized *P. monodon* and *P. indicus* are transported in ice to Madras, Kakinada and Cochin for freezing and export.

Prawn Fishery of the Mechanised Boats

Mechanised boats operating trawl nets entered the fishery in 1964 and since then fishing effort has been on the increase from year to year. The mechanised boats operating in these waters are classified into three categories.

1. Pablos — measuring 9.1 metres in length fitted with engines of 20-30 H. P. but without a winch,
2. Pomfrets — measuring about 9.8 metres in length and fitted with engines of 45-60 H. P. range and mechanical winches.
3. Sorrahs — measuring 11-4 metres in length fitted with engines of 60-75 H. P. range and mechanical winches.

All the three types of boats use oval otter boards and 2-seam trawl nets of almost similar mesh size.

From a humble start in 1964, the number of mechanised boats operating trawls increased to 60 by 1972. The fishing grounds of the trawlers lie in the 10-40 metre line. All the three types of trawlers go out only for single day fishing trips, the base being the Kakinada fishing harbour. The time spent in actual fishing by a single boat varies from 3-6 hours per trip. There have been gradual increases in prawn landings, catch per hour of trawling and percentage composition of prawns from 1967 to 1971. About 600 tonnes of prawns were landed by mechanised boats in 1971.

Prior to 1968 most of the boats were operating in the proven prawn fishing grounds. With the introduction of new fishing boats in 1968 fishermen were forced to explore other fishing grounds and found them also equally good. So far the fishery has shown encouraging trends without any large fluctuations. The trend in the catch per hour of trawling indicates that there is scope for expansion of the fishing effort without causing any damage to the existing fishery.

The prawn fishery is active throughout the year with seasonal changes in the species composition. The season for *P. monodon* and *P. indicus* starts in January and from February to April they dominate the prawn fishery. *M. monoceros* starts occurring in the catches in April and dominates the fishery in May and June. In July-October, *M. affinis*, *M. brevicornis*, *P. stylifera* and *S. indica* occur together in the fishery in good quantities. *M. dobsoni* which is the dominant species in the fishery occurs throughout the year with peak landings in November-February period. This species which formed only 3% of the prawn landings in 1967 gradually increased in abundance and formed about 35% in 1971.

The prawns are divided into three classes depending on the size, viz., big prawns measuring 170-310 mm., medium prawns measuring 101 - 170 mm., and small prawns measuring less than 100 mm. in total length. *P. indicus* fall in the class of big prawns and command price of 12-16 rupees per kg. Medium prawns consist of *M. monoceros*, *M. affinis*, *M. brevicornis*, *P. stylifera* and fetch a price of 2-4 rupees per kg. Small prawns consist of *M. dobsoni*, *S. indica*, *Leander tenuipes* and other miscellaneous penaeids and non-penaeids fetching price of one rupee or less per kg. The price of medium and small prawns was steady throughout the five-year period.