

ACKNOWLEDGEMENTS

Messrs S. Rama Rao and K. Varahala Raju of this department rendered valuable assistance during investigations. I am indebted to Dr. Yoichi Shojima, Seikai Regional Fisheries Research Laboratory, Nagasaki, Japan, for his help in the identification of species. I am thankful to Professor G. P. Sharma and Dr. K. K. Tandon, Zoology Department, Punjab University, for critically going through the manuscript.

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17. MOLLUSCS OF ECONOMIC VALUE FROM GREAT NICOBAR ISLAND¹

(With a map)

During a scientific expedition to the Great Nicobar Island in February-May, 1966, the Zoological Survey of India team surveyed, the littoral, sub-littoral and offshore zones to assess the potential molluscan resources of these areas for exploitation. Fairly extensive shell beds of living and dead molluscs were found in these areas. The species of molluscs of economic value classified under three main categories, namely (i) as a source of food (ii) of ornamental value and (iii) as raw material for manufacture of lime and cement are listed here together with remarks as to their occurrence in and around the island.

¹ This paper was presented at the "Seminar on the achievements of the Scientific Expedition to the Great Nicobar Island" organised by the National Institute of Sciences of India at Varanasi on 2nd January, 1968.

(i) *Molluscs as a source of food :*

The bivalve *Cyrena galathea* Morch was found in abundance in all the major rivers of the island i.e. the Galathea River on the south coast, the Rivers Alexandra, Dogmar and Amrit Kaur on the west coast and the River Jubilee on the north coast (see map). The Nicobarese and Shompens are aware of its food value. They particularly consume this mollusc during the monsoon when the sea is very rough. They utilize the empty shell for scraping the pulp of steamed *Pandanus* which is one of the regular items of their diet.

The large edible clams, *Tridacna crocea* Lamarck and *Hippopus hippopus* (Linnaeus) were found abundantly in the inshore regions amidst coral reefs around the island. The different bays on the West Coast were rich with *Tridacna crocea* Lamarck in the 4-6 metres depth. Farther deep, between 30-50 metres, both the species occurred in considerable numbers on the eastern side off Galathea bay.

According to Rao (1951), in the Indian mainland, ".....species of *Tridacna* from the reefs,..... from the littoral zones are..... occasionally used as food whenever they occur in large numbers". Though our team did not observe the local people utilizing these bivalves for food, it would be worthwhile to exploit them either for direct use for people in the mainland or for processing them for export.

There were also numerous beds of the smaller bivalves such as *Donax cuneatus* (Linnaeus), *Donax lubricus* Hanley and the back-water clam *Meretrix attenuata* (Dunker) in the sandy patches between the littoral fringes at Campbell bay, Galathea bay and Casuarina bay. Detailed investigations may well reveal more extensive beds in several other places around the island. The two species of *Donax* were found along the coast adjacent to the mouths of rivers and creeks, while *Meretrix attenuata* (Dunker) was found right in the mouths of the rivers where there is considerable lowering of salinity. Hornell (1917) and Rao (1951) have dealt with the edible value of these three species.

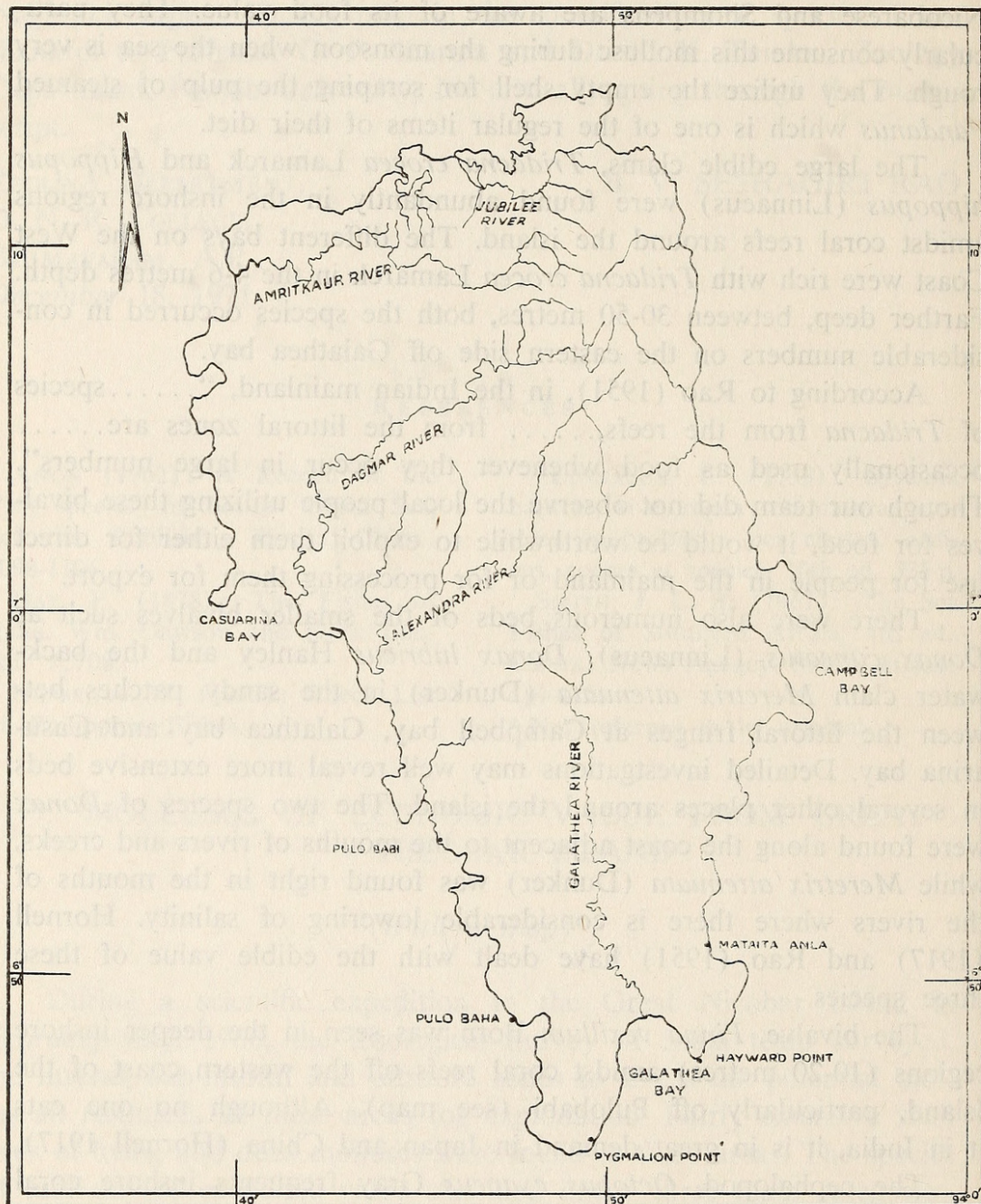
The bivalve, *Pinna vexillum* Born was seen in the deeper inshore regions (10-20 metres) amidst coral reefs off the western coast of the Island, particularly off Pulobabi (see map). Although no one eats it in India, it is in great demand in Japan and China (Hornell 1917).

The cephalopod, *Octopus cyaneus* Gray frequents inshore coral reef regions of the island in large numbers. It is captured commonly by the coastal Nicobarese who seem to relish its meat.

Beds of the gastropod, *Oliva ispidula* Linnaeus were found at several sandy location sites along with cake urchins (Irregular Echinoids) at the mid-littoral fringe of the island and an extensive bed was encountered at Casuarina bay. The Scorpion-shell *Lambis lambis* Linnaeus was found in smaller patches in the infralittoral region of

the inshore waters among coral reefs all around the island, and in greater concentration at 4-6 metres depth between Pygmalion point and Pulobaha and between Hayward point and Mataita Anla. *Lam-*

MAP OF GREAT NICOBAR ISLAND SHOWING LOCALITIES OF COLLECTIONS



bis chiragra Linnaeus was also found in Galathea bay but not in such large numbers. In addition to their food value which is sufficiently well stressed by Hornell (1917) and Rao (1951) the two species of *Lambis* are also commonly used as weights for fish nets in the mainland. These molluscs could be exploited to form subsistence fisheries of local importance.

(ii) *Molluscs of Ornamental Value* :

Dry shells of *Nautilus pompilus* Linnaeus were found washed all along the shore in considerable numbers. Nicobarese use them to bale out water seeping into their canoes.

Trochus niloticus Linnaeus (Top shell) and *Turbo marmoratus* Linnaeus (Turban shell) were found abundantly all along the off shore regions of the entire coast of the island. On the eastern side of the Galathea bay, they were in greater concentrations as evidenced by many specimens brought up by divers. Also, the inshore regions of the different bays on the west coast abounded with the smaller-sized individuals a depth of 4-6 metres. They were also detected at similar depths between Pygmalion point and Pulobaha and between Hayward point and Mataita Anla, where *Lambis lambis* Linnaeus also was found in appreciable numbers (*vide supra*). *Nautilus* shells are used in the manufacture of lamp-shades, buttons and decorative pieces such as ash-trays, and cameos and for inlay work.

(iii) *Molluscs as raw material for the manufacture of Lime and Cement*

The shells of the following molluscs occurring here can rank as an important source of lime: *Trochus niloticus* Linnaeus, *Trochus radiatus* (Gmelin), *Telescopium telescopium* Linnaeus, *Lambis lambis* Linnaeus, *Lambis chiragra* Linnaeus, *Oliva ispidula* Linnaeus, *Crassostrea madrasensis* Preston, *Ostrea cucullata* Born, *Cyrena galathea* Morch, *Tridacna crocea* Lamarck, *Hippopus hippopus* (Linnaeus), *Meretrix attenuata* (Dunker), *Donax cuneatus* (Linnaeus) and *Donax lubricus* Hanley.

Although Comber (1905), Hornell (1917), Rai (1932) and Rao (1951 & 1958) stressed that the rich molluscan fauna available around the Indian mainland can possibly supplement the animal protein food supply to the people, not much progress had been made towards its proper exploitation. Even in 1962, the condition appears to have remained practically the same necessitating the remark that, "Molluscan fisheries of India are insignificant as compared to those of the true fish; they, however, play a considerable role in the economy of fishermen and other coastal people who depend upon them for food when fish is scarce or not within their means" (cf. WEALTH OF INDIA—Raw materials, vol. iv. supplement—Fish and Fisheries—C.S.I.R., Delhi, 1962, p. 124).

The problem has received greater attention only very recently. In 1968, the status of the different molluscan fisheries of India and their potential has been discussed by Jones (*vide, Abstracts of papers on Symposium of Mollusca—1968*) and a detailed account of Molluscs in Indian tradition and economy has been given by Mukundan (*vide,*

Souvenir, Symposium on Mollusca—1968). Further, two important resolutions (3 and 8) have been unanimously adopted at the symposium on Mollusca held at Ernakulam in January, 1968, which focus the attention on the urgent need to conduct surveys in developing countries to enable optimum utilization of their molluscan food resources and recommend steps to popularise the utilization of molluscan shellfish hitherto utilized only by the poorer classes of people.

The species recorded here are not exhaustive as the survey was brief. Therefore, detailed investigation extending over longer periods are necessary for a fuller understanding and estimation of the resources and for determining the possibility of their sustained exploitation.

ACKNOWLEDGEMENTS

We are thankful to Dr. A. P. Kapur, Director, Zoological Survey of India, for facilities to undertake this work; to Shri C. Karunakaran, Deputy Director-General, Geological Survey of India—leader of the expedition for facilities provided during the expedition. Thanks are also due to the various members of the Zoological Survey of India team for helping in the survey.

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December 18, 1969.

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