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52. ON SOME EXPERIMENTS ON THE PEARL OYSTER, *PINCTADA MARGARITIFERA* (LINNAEUS) FROM ANDAMANS

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INTRODUCTION

During the course of a general survey of various organisms such as mussels, oysters and sea cucumbers around Port Blair (Andamans) in 1975-'78 the author came across a bed of pearl oysters belonging to the species *Pinctada margaritifera* on the Blair Reef near Port Blair. This species has been reported from the Andamans by Prashad and Bhaduri (1933), Rao (1970) and Rao (1974). Recently Alagarswami (1983) reported on the resource of *P. margaritifera* and its potential for pearl culture in Andaman and Nicobar Islands.

Pinctada margaritifera is the most common species in Andaman and Nicobar Islands. It chiefly occurs in the intertidal region from the mid-littoral zone and beyond to a depth of 10 m They are found attached to dead coral stones On the Blair reef in an area of 100 square metres 20-25 oysters varying in length from 20 to 120mm were found.

MATERIAL AND METHODS

The oysters collected were kept alive in nylon net bags (Fig. 1) beyond the low water mark. No rafts were used they being costly to instal and difficult to maintain. The net bags used are of the usual type with a handle. They are 600 mm long with a mesh size of 20 mm. In each bag four or five oysters depending on the size are arranged in a single row without stretching the bags wide Between two oysters a rubber band is put to keep them in the same place. Four or five such bags are tied together near the handle with a nylon rope to which a weight is attached to serve as an anchor. A suitable rock crevice is selected beyond the low water mark and the nylon net bags are kept concealed inside the crevice. A number of

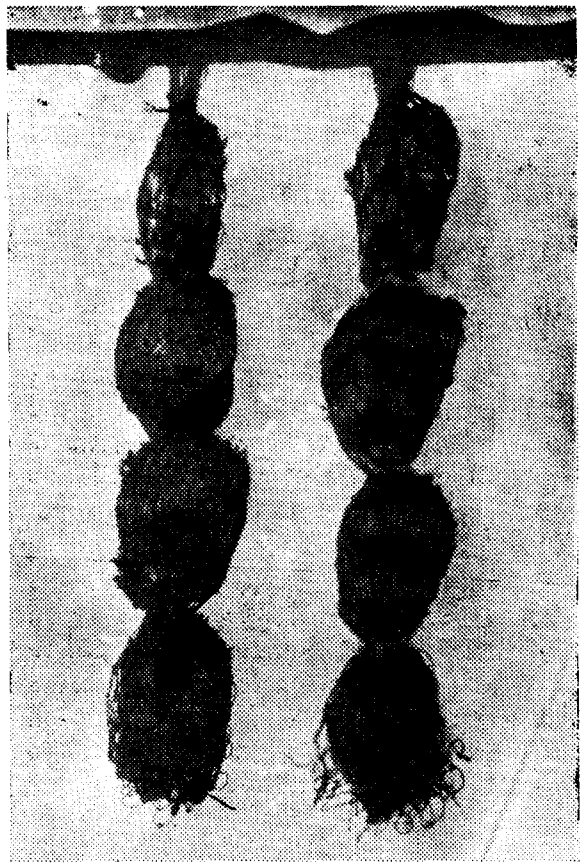

Fig. 1. Pearl oysters suspended from nylon net bags

oysters were kept in net bags from August 1977 onwards and they were regularly watched every week. About 30% of the specimens examined had a commensal shrimp. In some specimens two or even three shrimps were found to live at the same time.

EXPERIMENTS

Two methods were tried to produce culture pearls by using ordinary pierced plastic beads which are sold in the market and used for necklaces etc. They were 3 mm in diameter. Besides using the mantle grafts other methods

were also tried and the results of the experiments are presented below.

In the first method plastic beads were pasted inside the shells, by quickfix. The live oysters when kept out of water in a tray, slightly open their valves. A small wooden peg is introduced between the valves like a wedge. When the mantle is touched with needle it withdraws slowly exposing a wide area of the inner surface of the shell. The moisture on shell is removed with the help of a blotting paper and the beads were pasted at different levels right from the edge of the shell to the base of the aductor muscles. After pasting the beads, the oysters are kept outside for about half an hour for firm setting. Subsequently they are put back into the net bags and returned to the sea. The beads were found to attach well to the shell. The mantle constantly moves over the beads and secretes the nacreous substance over them. After a period of three months it has been found that the whole bead was covered with a thin layer of nacre. The coating, however, was thin and extremely fragile.

In the second method some mantle graft operations were performed as described by Alagarswami (1970) to induce pearl formation. The oysters were first narcotised and arranged on a tray before operation Fig. 2. On 1-1-78, twelve oysters were operated. During the post operative period three of them died. Again on 12-12-'78, sixteen oysters were operated. Of these four died during the post operative period. The two lots of oysters were deposited at different places and regularly watched After one month the first lot of oysters operated on 1-1-78 were lost presumably removed by some one. It may be mentioned here that the Nicobaris regularly collect the pearl oysters for eating. The second lot was immediately shifted to a more secure place. Four more oysters died during the course of observation leaving only eight oysters. These were opened on 26-4-78 after 75 days. Three nuclei were recovered from the oysters. One of them was found to be partially coated with nacreous substance. Another was found to be coated with chalk-like material and the third one had no coating at all.

Fig. 2. Pearl oysters arranged in a tray before operation

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