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ROCK LOBSTER SURVEY

by

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[ Commentary accompanying a showing of slides at headquarters  
of SPC, Noumea - 20 October 1971  
and in conjunction with Report CONCOM.2/71/WP.6 ]

At the commencement of the survey we knew of five or six possibly important species of rock lobster:

P. penicillatus ranges in colour from black to brown, to brown-green, to green, to green-cream, but the distinctive double spined teeth at the front (on the plate) between the horns is a reliable guide. Males are usually darker than females. This is the major species of potential importance.

P. longipes. Two types were discovered, one with cross banded little feelers as illustrated here, the other with uniform coloured little feelers.

P. versicolor. This is a large species but never occurs in concentrations. It is easily recognised by the "painted" colour pattern of back and the pale cross bands on the tail.

P. ornatus. This is another large species mainly found in New Guinea region where it is seasonal in appearance. The blotched legs and the large pale spots down the side of the tail are distinctive.

Two other species were collected in the area but in very low numbers, so I will not mention them here.

The most significant result of the survey was to fully realise that the "productivity" is where the "action" is and to discover that each species has a clear preference for the different sorts of "activity habitats".

Panulirus penicillatus is the species that likes the roughest water available in the Pacific area. These conditions usually apply on the surf-washed, exposed reefs, or where currents race between islands.

Nukosoge Reef, Lau Group, Fiji: on this reef the rock lobsters are collected by diving into the surge channels in the daytime and hand-catching them. The surge is consistent and one has to wait until the bubbles clear, between surges, to see the rock lobster. Occasionally shovel nosed obsters are taken together with P. penicillatus in these surge channels. Two species were found, one in Fiji, the other in Cook Island but they are also known from other territories.

In Western Samoa the action is obvious where surf crashes directly onto lava rock cliffs. On nearby reefs between headlands the Western Samoans walk the reef flat at night catching by hand ( or, less desirably, by spearing). Everywhere I went the fishermen related how light-shy this species was and that they only come up on to the reefs on dark, moonless nights, so there are definite good and bad catching periods in each lunar cycle.

New Hebrides (Tanna). The reefs surrounding the exposed coasts of New Hebrides and Solomons are different from other places I visited because the tidal region is diurnal (2 tides per day), not semi-diurnal (4 tides per day). The result is that the reefs generally form at a deeper level than in other (semi-diurnal) places since, in the winter, the low tide occurs in the daytime, exposing the coral to the sun. This kills off any coral growth at that level. Thus the deeper and surf-washed reefs form excellent shelter for the rock lobster.

So the most favourable areas in any territory are those which are exposed to the prevailing winds or swell and in the southern hemisphere these are the south and east coasts since they receive the direct influence of the south-east Trades. Details of these areas for each of the territories are given in the report\* and, if not, they can be fairly quickly ascertained by considering the wind direction, tidal regime, size and geology of the islands and oceanic quality of the coastal water.

\* CONCOM.2/71/WP.6

By contrast, lagoon waters or quiet coastal waters on the lee side of an island are much less productive and contain the quieter water species such as P. versicolor. The only quiet water species that does hold a potential for a small fishery (Fulunga) is P. ornatus. This is a seasonally migrating species which prefers a habitat largely determined by the large river run-off from the land. The Gulf of Papua provides a large potential habitat of this nature and supports a small but, unfortunately, annually variable fishery.

In conclusion -

The greatest productivity appears to be associated with the greatest "action", whether it be great rivers, surf, surge, swell or currents racing between islands.

Lagoons and the lee sides of islands then become the less productive regions.

Rock lobster potential over the entire Pacific is considerable but, as we all know, the islands are separated from major market areas by vast distances and transport, even to local markets, can be limiting.

But it should also be noted that at the ruling price (frozen tails sell at \$4 per lb in New Ycrk), local economics can be vastly improved by low catches of even a few rock lobsters per day by local fishermen, as is the current procedure at Tonga and the British Solomons.

No territory can expect vast exports as occur in South Africa or Australia or New Zealand, but the natural resource of P. penicillatus, on the surf edge, should be exploited more and the barriers to development should be removed.

Only after deliberate attempts to develop the fishery should biological management be considered, but the only way to find out what has been happening to the resource is to document the catch and effort of such developments.

The species P. penicillatus is very widespread, its larvae are the most common ones in the oceanic plankton and I believe that any recruitment to an island's population is most unlikely to have originated at that island.

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111

244  
The first part of the document is a letter from the Secretary of the State to the Governor, dated 10th March 1871. It contains a report on the progress of the work done during the year, and a list of the names of the members of the Council of the State, and of the members of the various committees and sub-committees, and of the names of the persons who have been appointed to the various offices of the State.

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