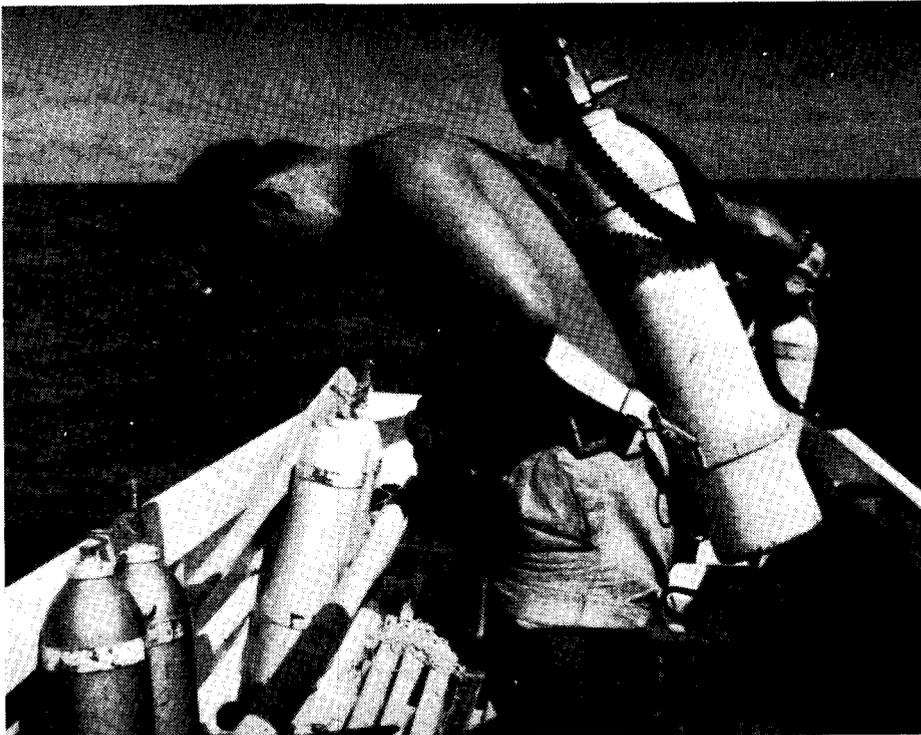


Diving For Pearl Shell In French

Polynesia



The taking of pearl shell in French Polynesia is strictly controlled. No bed may be fished more than once in every four years, while the minimum size of shells that may be taken in every lagoon is laid down. Lastly, protected beds are maintained to ensure adequate supplies of spat for the lagoons.

By J. DOMARD*

Wearing an aqualung, Pepe Mariteragi, local agent for the Pearlservice, prepares to dive.

TWO new decrees concerning pearl shell¹ diving have recently been issued in French Polynesia. One (dated 18 January, 1959) applies to the picking of shells by skin divers; the other (dated 24 July, 1958) deals with the collecting of shells by divers wearing breathing apparatus.

Each year, approximately ten lagoons or parts of lagoons are opened to skin divers for a three-month period, on a rotation basis which ensures that none will be fished twice in under four years. Some of these lagoons are difficult for skin divers to work because they are

¹ Blacklip oyster (*Pinctada margaritifera*).

either very large, remote, or shark-infested. In such cases, divers wearing breathing apparatus may also be authorised to operate.

Apart from the four-year rest period, the following regulations have been issued in order to ensure adequate re-production of the natural stock of pearl shell:

LIMITATION IN THE SIZE OF SHELLS COLLECTED: It is forbidden to fish pearl shells of a diameter less than 13 cm. (5.2") at their broadest dimension. There are two exceptions to this otherwise general rule—in Takapoto Lagoon, and on the Tearai bed in the Gambier

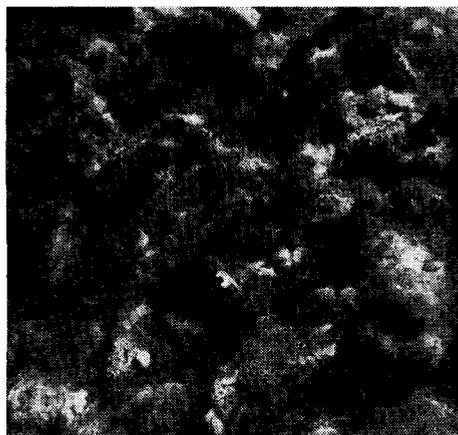
Group, the minimum regulation size is 10 cm. (4.08").

ESTABLISHMENT OF NATURAL RESERVES: The object is to maintain areas closed to fishing, or to develop beds where several thousand oysters are cultivated. Such protected beds will ensure permanent supplies of oyster spat for the lagoons.

Rich Yield From Hikueru Lagoon

Among the areas recently re-opened to skin divers is Hikueru Lagoon, which is quite rightly regarded as the best

* Head of the Fisheries Service in French Polynesia.



Left and right: The author, wearing an aqualung, on an underwater inspection. Centre: Pearl shells embedded in tubular sea anemones (ika-ika).



Above: The only sailing canoe in the fleet of 300 that fished Hikueru Lagoon during the last diving season. All the others were either powered by outboard motors, or were towed. Right: On the way to the pearling grounds.

lagoon in French Polynesia for both quantity and quality of shell taken. At the end of the three-month fishing season within the approved area (the so-called "village area") 405 tons of pearl shell had been collected as against 286 tons four years ago.

The diving season was opened on March 1, and attracted 1,300 people to a village which normally numbers only 200. Approximately 300 roughly-built outrigger canoes crowded the beach. Only one was a sailing canoe; all the others were either powered by an outboard motor, or towed. Each canoe carries one diver only and his mate, the "tete".

The diver sets off at daybreak and reaches the fishing grounds after a journey which may last from $\frac{1}{2}$ -1 $\frac{1}{2}$ hours. An anchor is dropped, sometimes a buoy as well.

Sitting on the gunwale of the canoe, the diver begins breathing exercises which consist of physical movements and short inhalations followed by deep—but never strained—exhalations.

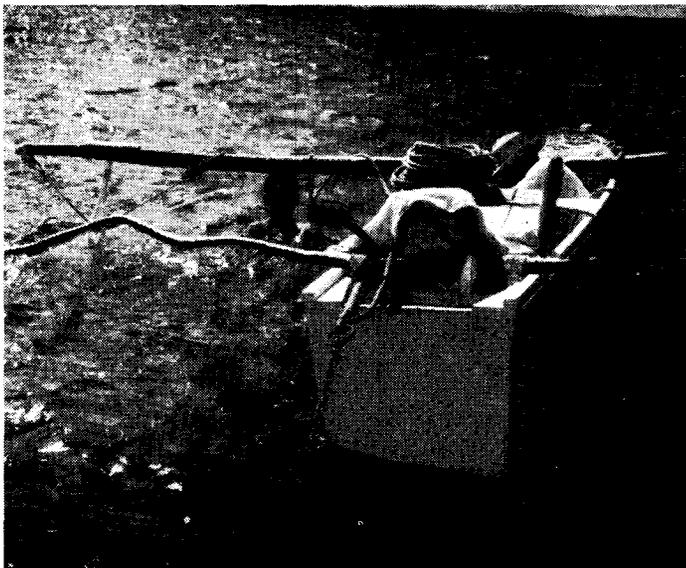
Meanwhile his mate pays out the rope securing the basket until the latter touches the bottom, then hauls it in again so that the basket is poised at approximately one fathom above the seabed.² After that he busies himself with the diving rope, which carries a 15-pound

lead weight.

After cleaning his goggles by licking them a few times, or rubbing them with a little brush made from the fibre of a newly-opened coconut, the diver puts on his goggles, takes a few deep breaths, and slides into the water. While going down at a rate of 6-9 feet per second he grips the rope at head level with his right hand, and just above the weight with his right foot. He pinches his nostrils with his left hand and uses his left foot as a rudder. He is thus able to control his

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² The basket is usually made from a string-net container attached to the rim of a bicycle wheel.



Above: Martin Tupua, vice-President of the Tuamotu Divers' Association, ready to dive. Note the goggles, the right hand gloved for shell picking, and the coiled diving rope. Right: Home again with a full basket (approximately 145 pounds).



Vacuum fumigator for pest control treatment of plants and produce.

established along boundaries and to separate fields. The species used include *Bougainvillea*, *Lawsonia inermis*, *Bixa Orellana*, *Solanum ornans*, *Hibiscus manihot* and *H. rosa-sinensis*. Most of these are stock-proof when properly pruned and already provide a conspicuous feature in the layout of the station. *Hibiscus manihot*, or pele, is a valuable spinach plant which is not widely used in Samoa but which is proving useful for introduction to the gardens of boarding schools.

Forestry: The Department is actively engaged in propagating and distributing useful timber trees, both indigenous and exotic, for village planting and is also planting up extensive areas of water catchment reserves in Upolu. At Nafanua, the steep stream banks have been planted with large numbers of poumuli (Fig. 9), Yemane (Fig. 10) and some tamanu (*Calophyllum samoense*), and malili (*Terminalia richii*) while large numbers of these species have been raised in nurseries for distribution. Other species used are *Cedrela odorata*, *Albizzia falcata*, *Swietenia macrophylla*, *Cassia siamea*, and indigenous species of *Pari-narium*, *Calophyllum*, *Pometia*, *Azelia* and *Palaquium*.

Cover Crops and Shade Trees: Some 20 species, many new to Samoa, have now been established and are under observation. These are expected to play a major role in the conservation and rehabilitation of the fertility of Samoan soils.

Ornamentals: While the inclusion of foliage and flowering plants in plant introduction programmes has been criticised, there is no doubt that in Western Samoa where flowers flourish, there is a demand for ornamental plants and especially for new or uncommon species. Consequently these are not altogether neglected; and among the outstanding plants which have now become established are the following: Timor shower

(*Cassia multijuga*), *C. spectabilis*, *Bauhinia violacea*, *B. hookeri* and *B. rosea*, Rose of Venezuela (*Saraca* sp.), *Brownea* sp. *Galphimium*, *Eranthemum* and *Franciscea americana*. Many of the most useful plants on the station, e.g. frangipanni for Vanilla supports, *Sesbania* for shade, *Bougainvillea*, *Bixa* and *Lawsonia* as hedges, might also be described under this heading. The sale and exchange of these plants make a useful contribution to the work of the station.

The progress made during the past three years owes a great deal to the interest and support afforded to the station by the Ministers of Agriculture and the Government of Western Samoa. A great many of the important crop plants now being grown came from the Department of Agriculture, Fiji, the United States Department of Agriculture, Plant Introduction Service and the Royal Botanical Gardens at Singapore.

Pearl Shell In French Polynesia

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descent and reach an average depth of 20 fathoms, or 120 feet.

When he has reached the bottom he lets go the rope and makes for the shells which he has already been able to single out during the last few fathoms of his descent. They are conspicuous because of their serrated edges or through the crescent-shaped black lips of their mantles.

The diver swims with slow strokes, sometimes gliding from shell to shell or from rock to rock. With a swift half-turn he wrenches the shells from their support and deposits them in the basket. Later, he will use the basket rope to haul himself up to the surface. On an average, he stays under water for 1½-2 minutes.

When he has reached the canoe and inhaled his first breath of air, he dips his head into the water again and remains thus, shoulders hunched, for a few more seconds.

Then after a 5 or 10-minute rest during which he refreshes his lungs by singing, calling or whistling, he dives again. In turn he explores all the rocks within a 15-foot radius of the basket. Then a few fathoms of the rope fastening his canoe to the buoy are paid out, and his underwater search proceeds, gradually, along a 30-foot wide channel.

When diving is over or the basket full the shells are opened, cleaned, scraped and dumped in the bottom of the boat.

The diver's return to the village is the big event of the day. Each fisherman is eagerly awaited by his vahine who, following the custom, is entitled to a few of the better shells, the proceeds from which will keep the home going and bring her in a little pocket-money.

The diving contractor supervises the unloading of the shells and their trans- port to his warehouse where, after a

further checking for size, they are stacked neatly, face downwards in orderly piles.

I may add, in conclusion, that the hard and dangerous work of diving for pearl shell is not confined to youth as shown, for instance, by the case of Louis Masui who is a very good diver indeed and who, at over fifty, can still go down to 22 fathoms, or 132 feet. (Younger divers can manage 24 or 25 fathoms.)

This year he elected to work at 20 fathoms. The last time I met him—in April—he was regularly going down to around 105 feet, and would normally remain under water for 2½ minutes (one of his checked times was 2 minutes 42 seconds). That particular day he was working alone. Said he: "My young mate probably spent the night at the pictures, or playing billiards, or serenading some girl"—and added philosophically "*Aita peapea* (it does not matter) I can dive alone".

New Hospital For Netherlands New Guinea

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The oldest established division of the Public Health Services in the territory is the Division of Malariology, which is housed near the entrance to the Central Hospital.

The building of the new hospital and the headquarters of this Division were combined in the one project. Offices for the medical officers, the entomologist and administrative personnel, besides two laboratories and a "mosquito nursery", have been built.

The main task of the Division is malaria control, but as a logical consequence much attention is paid to research. Modern malaria control necessitates the study of the habits of the vector mosquitoes, as well as their reaction and susceptibility to insecticides.

Because the main vectors of malaria in Netherlands New Guinea also transmit filariasis, a subdivision for filariasis research is established within the Division.

The entomologist of the Division is making a collection of mosquitoes occurring in Netherlands New Guinea. This will serve as a reference for the virus research laboratory to be established shortly. By then, presumably, there will be a major interest in possible vectors of some virus diseases.

In the laboratory is given a three-year course for training of indigenous malaria technicians. Pupils with at least six years of elementary school training are admitted. They are trained to assist the malariologist and the entomologist in epidemiological, parasitological and entomological work. After qualifying, they are capable of diagnosing all types of malaria parasites, of dissecting mosquitos for sporozoëtes and determination of some common mosquitoes occurring in this territory.