SEA TURTLES - SOCIETY ISLANDS

G.H. BALAZS

South Sea sailing recalls bygon

By Bob Krauss
Advertiser Columnist

HUAHINE, Society Islands — The colorful days of interisland steamers in Hawaii come back to life three times a week on this lush, South Sea paradise.

For the natives of Huahine, it's just another arrival of the ferry. But for a kamaaina who lives 2,000 miles to the north, boat day at Fare is a magic moment out of the past.

It began for me on the deserted quay just across Fare's only street from the general store, the bank and a bar, with outdoor vegetable stalls tucked in between.

Then a new element entered this serene, sun drenched scene; a speck on the horizon in the direction of the purple mountains of Raiatea in the distance. Fare stirred with new life.

The speck grew and grew until it became a shabby steamer, painted dirty white and rust red and named Taporo IV, about the size of the old Humuula with the same stumpy masts and deck house aft.

This workhorse of the Pacific eased into her berth at the quay, expertly handled by her Tahitian crew, with the ponderous grace of an extinct dinosaur.

Then all hell broke loose on the dock. My watch read 1:30 p.m.

A big, brown winchman on the bow, handling the levers as if they were Nintendo controls, dropped a finger lift over the side. The winch aft lowered the gangway, and a ramp on the port side opened from the cargo deck.

Another finger lift charged out of the government pier shed like a Rainbow lineman on a pass rush. It was as exciting as Bastille Day, Fourth of July and Christmas rolled into one.

Advertiser photos by Bob

The Taporo IV pulls into Huahine. It's like a flashback to the days of Hawaii's inter-island stear

Passengers steamed down the steep gangway; Tahitians in go aheads, French surfers with backpacks, Italian couples on honeymoons, tutus in lauhala hats.

As soon as the port ramp hit the dock, a Coca Cola van scooted out of the hold and onto the dock like a rabbit out of its hole.

Both winches worked at once lifting off deck cargo; huge containers of water, big crates, a big coil of black rubber cable.

The finger lifts went crazy, roaring up the ramp with loads of crated watermelons. It was like a stock car race, not the arrival of a nondescript freighter at a sleepy dock in the South Seas.

I guess to the natives of Huahine it wasn't anything unusual. Maybe they didn't understand, like so many people on shore, how much skill it takes to unload cargo at such breakneck speed.

Neither did the natives of Kailua, Kona and Kaunakakai, Molokai and Kawaihae, Kohala 60 years ago when crewmen of Hawaii's interisland freighters — like Bobby Pfeiffer (of Alexander and Baldwin) and Albert Bader (of Waikiki) - were unloading cargo with the same skill.

One old Tahitian couple stood quietly and watched, as if they were attending a political rally. She wore a gorgeous, old fashioned woven hat, brown with a black pattern woven in.

Passengers for Papeete appeared out of the woodwork from all directions, a few Tahitians carrying lauhala baskets,

era in Hawaii

Lumber and supplies come off; backpacking tourists go on, as the inter-island steamer Taporo IV makes a lightning stop at Huahine.

but mostly young Europeans — Germans, British, Italians, French — seeing the South Seas on a shoestring.

They all carried back packs, some pushed bicycles, and the line formed at the foot of the gangway where a Tahitian purser checked passports.

Meanwhile, the loading continued with nonstop fury, both winches hauling up boxes and crates, the finger lifts weaving up and down the dock like halfbacks eluding tacklers. This went on for about 25 minutes.

Suddenly, there was no more cargo on the dock. A tiny, white Fiat scooted up the ramp into the hold just before it slowly lifted back up and became part of the hull again.

One of the finger lifts snorted to a halt and a stevedore attached it to a harness on the bow winch. The winchman hauled it on deck with its motor still running.

Stevedores attached a harness to the gangway and the winchman aft lifted it straight up, swung it over and deposited it on deck.

A fellow tossed off the stern line and the back end of the battered ship drifted clear. The bow line let go. Taporo IV turned slowly in the shadow of Huahine, a local Sleeping Giant on the mountain slope that guards the port.

Exactly half an hour after she tied up at Fare, Taporo IV steamed out of the harbor. By the time she disappeared around the point, the quay was deserted again.

By Jerry Tune, Star-Bulletin Writer

AT 4:30 p.m. Wednesday, several of the "wired funds" from the Mainland still had not arrived for the drawing. But fortunately telephone calls had been made and if it could be verified that the funds were on the way, then those potential buyers would be placed in the drawing.

A few others at the drawing were interested but didn't have the $5,000 cashier's or certified checks ready. But for most who were following the real estate event, the chance to get a piece of the Bali Hai Hotel in Tahiti had arrived.

Realtor Mike McCormack, who hosted the drawing, turned the afternoon into something of a party with mai tais and a gift of the traditional flower lei for the head, the Tahiti equivalent to the Hawaii lei around the neck.

The Bali Hai Moorea Hotel, a magical name for those who are willing to pay high prices for an exclusive vacation, was being converted into a condominium.

Sixty-two hotel rooms were to become 62 condominiums, at prices ranging from about $213,000 for the bedroom suite and $133,000 for the overwater buildings to about $53,000 for the interior garden units.

The prices can't be precise—at this moment—because it all depends on the exchange rate at the time of closing but the word is passed to the buyers that the rate now is about 75 central francs pacifica to one U.S. dollar.

The prices are fixed, however, by the central francs pacifica. For example, 16 million CFP for the bedroom suite; 10 million CFP for the overwater units; and 4 million CFP for the interior garden units.

THE DEVELOPER already had sold 10 of 12 units in December with the help of a small sign in the lobby, so the drawing through the McCormack office involved 50 condominiums. As expected, the most expensive units (except for the bedroom suite) and the least expensive units went first, but nearly everyone at the drawing got something. Only three persons passed because the units they wanted were not available.

Twenty-four of the Bali Hai Hotel units were sold from the drawing, something that had not been advertised but wasn't a big secret in town either. Several briefing sessions were held for agents and potential buyers.

They got buildings made of hollow tile with wood facing and pandanus roofs which must last, by law, at least eight years. All of the Bali Hai buildings have been redone recently in anticipation of the first hotel conversion in French-controlled Tahiti.

Hugh H. Kelley, president of Les Societe de L'Hotel Bali Hai-Moorea, a French corporation, says the conversions are necessary so the hotels can keep expanding.

Kelley, an attorney by training, is one of the now famous three Californians who arrived in Tahiti 20 years ago to get away from the 9-to-5 rat race and built a hotel empire in the South Pacific.

THEY STARTED by purchasing a vanilla plantation, saw that go bust and then were offered a deal on a leaky-roofed resort with four rat-infested bungalows on Moorea. Since then, they have combed the beach, built new buildings, a swimming pool and tennis court and got involved in two other Tahiti hotels.

So much has been written about Kelley, Jay Carlisle, and Don McCallum that the Bali Hai has a magical image not only for romantic travelers but for the eager entrepreneur as well.

In some ways, it is surprising that the conversion deal could be put together at all considering the changes in law and attitude necessary in Tahiti.

The French say you can't loan more than 50 percent of the home value to a foreigner for a second home. This was modified by arranging to have part of the overall value placed on the lease so that the financial arrangements could be eased for the buyers. And the hotel corporation will take back the paper on the loans for the condominiums, at 10½ percent interest over 20 years with no points.

Another discouraging thing for buyers in Tahiti has been the 12 percent transfer tax on all real estate transactions. Kelley got that reduced to 2 percent for the Bali Hai deal, and with some of the value transferred to the lease, that means that the 2 percent applies to a lower home value.

THE BUYERS of the Bali Hai units may be expecting some appreciation, while at the same time renting their units out at the high daily rates which have climbed this past year ranging from a low of $85 for land units to $180 for the overwater buildings.

Despite the high prices of Tahiti vacations—which can involve $20 for a bottle of ordinary wine and comparable prices for food—the occupancy rates at the hotel have climbed to about 85 percent last year.

SundayHome

Selling the Bali Hai

The Sunday Star-Bulletin & Advertiser

& Classified section F

Prepared by the staff of the Honolulu Star-Bulletin January 20, 1980

he high costs of Tahiti haven't touraged the initial buyers, in- ding a Kauai attorney who was lucky No. 1 person in the draw.

He took one of the interior gar- buildings and says that after ring he plans to live there six nths out of the year," said Mich- A. Givens, a hotelman by train- who is the Realtor-associate for Cormack on the Bali Hai sales.

ther buyers are virtually all estors, including a top luxury- tomobile dealer from Los An- es, a couple of airline pilots, a tor, several real estate persons, d a timber tycoon from Coos y, Ore., one of three residents of small community to buy a ce of the Bali Hai.

RONICALLY, two of the original buyers came from the small d of 20 stockholders of the Bali l company.

That may seem odd, and even lley had to shake his head a lit- when the stockholders popped after he explained the proposi- n of converting the hotel to a ondominium.

he reason for the conversion s pure economics, as Kelley had tained to the stockholders.

Last year we put up 16 new s at a cost of a half-million dol- s and when we figured out rything, it showed that we had return on our capital last year n the previous year," Kelley d.

Costs are so high in Tahiti. High costs and a high minimum ge which covers just about everybody and high construction costs. We need to take some capital out of the hotels, increase our size and get a better return through operational economies."

The same conversion plan also will be put into effect for the two other corporation hotels—one on the nearby island of Raiatea and the other on Huahine. In all, 148 units will be converted this year with the help of McCormack.

Dealing in Tahiti can be difficult at times. McCormack's office had successfully presold another project on Moorea — Residence Vaiterupe — before the deal fell apart due to lack of long-term financing compounded by the transfer tax and capital requirements of the government.

THIS TIME the hotel will be carrying the loans for the deals which will go through escrow at Bank of Hawaii.

About $3 million worth of the Bali Hai Moorea was sold by the time Wednesday's drawing had finished and the days that followed involved other sales. It is expected that once all of the 148 hotel units are converted to condominiums, the total deal will be worth more than $12 million over the next 20 years.

With the cash flow from the conversions, more hotel units will be constructed.

Kelley, a persausive entrepreneur, got past one of the biggest hurdles when he got the government to pass a law which exempted his corporation from the 12 percent transfer tax, reducing it to only 2 percent.

The overwater buildings at the Bali Hai Moorea Hotel include the option of fishing from your room and the advantage of being able to dive off your doorstep into very deep water.

That came only after producing for the Tahiti legislative body and the minister of tourism a study on the hotel operations which explained the economics of the situation and pointed out that condominiums turn over about every two years.

"I showed them that this would produce the capital to let tourism grow," Kelley said.

The reduced transfer tax applies to all three of the Kelley hotels, but there are conditions. The government allowed the change only if the proceeds are reinvested in a specific program to help tourism.

Kelley originally had asked that the law be changed to apply to everyone, but after some delay—and after dealings with McCormack had reached a near-go position—Kelley had to come to the government and request that something be done quickly. That brought a change in the law only for his company while the government worked out the law to apply to everyone.

"They say it will be passed," Kelley added.

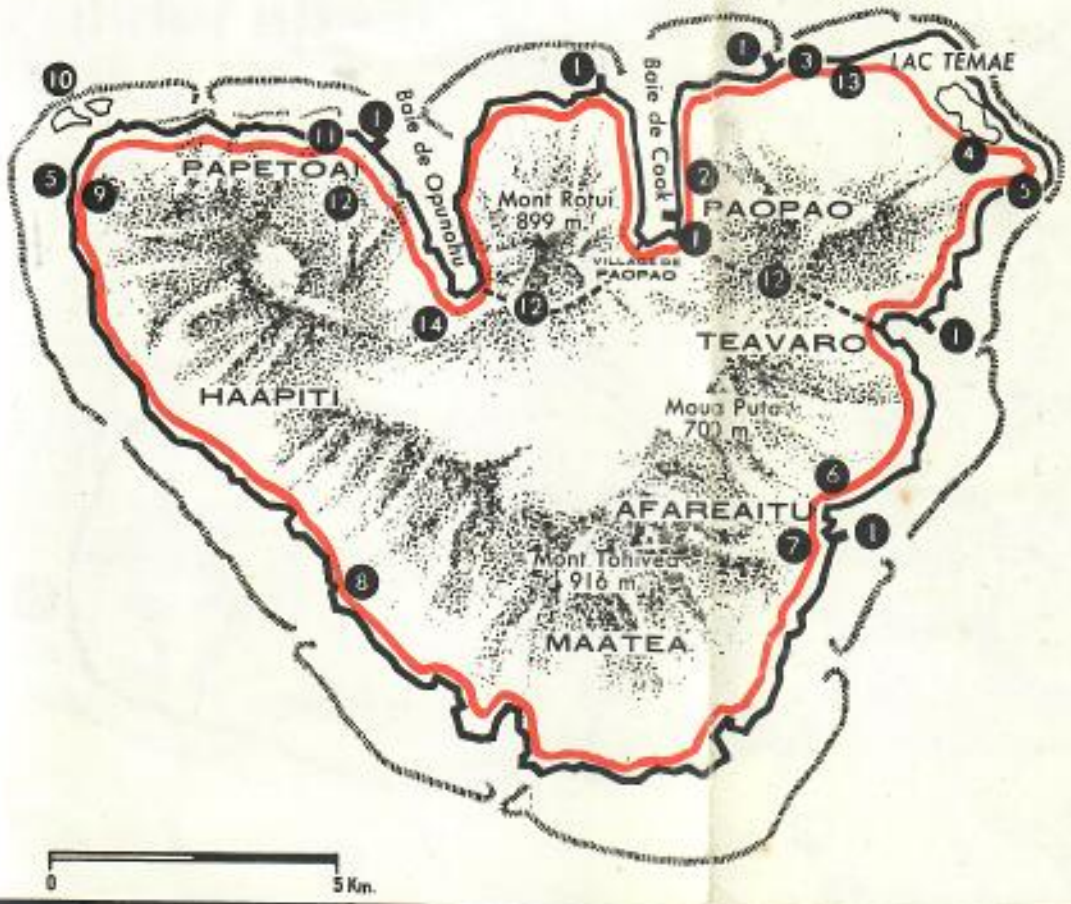
If that happens, Kelley says it could open up a string of hotel conversions in Tahiti—something that would take in a good many of the estimated 4,000 to 5,000 units in the islands.

TAHITI

MOOREA BORABORA

Edité par l'Office du Tourisme

moorea



1 - Wharf
Wharf

2 - Hôtel Aimeo
Aimeo Hotel

3 - Hôtel Matiehani
Matiehani hotel

4 - Village de Temae (danses)
Temae village (dances)

5 - Plage de sable blanc
White sand beach

6 - Village de Afareaitu
Afareaitu village

7 - Auberge Tohivea (chez Pauline)
Tohivea country Hotel (chez Pauline)

8 - Village de Haapiti
Haapiti village

9 - Club Méditerranée
Mediterraneen Club

10 - Ilôts
Islet

11 - Village de Papetoai
Papetoai village

12 - Promenades
Hikes

13 - Village de Maharepa
Maharepa village

14 - Vestiges (maraes et habitats)
Vestiges Remains (Marae)

borabora

1 - Centre administratif (Postes)
Administration and Post Office

2 - Infirmerie
Dispensary

3 - Wharf
Wharf

4 - Aérodrome
Air field

5 - Restaurants-Auberges Pona Ofe - Tiare-Tahiti
Country-Restaurants Rooms

6 - Hôtel Bora Bora
Bora Bora hotel

7 - Hôtel Polynésia
Polynesian Hotel

8 - Monument Alain Gerbault
Alain Gerbault Tomb

9 - Cloche de Hiro
Hiro's Bell

10 - Plages (sable blanc)

Beaches

11 - Point de vue
Scenic View Points

12 - Ascensions et excursions
Hikes

13 - Marae
Sacrificial Altar

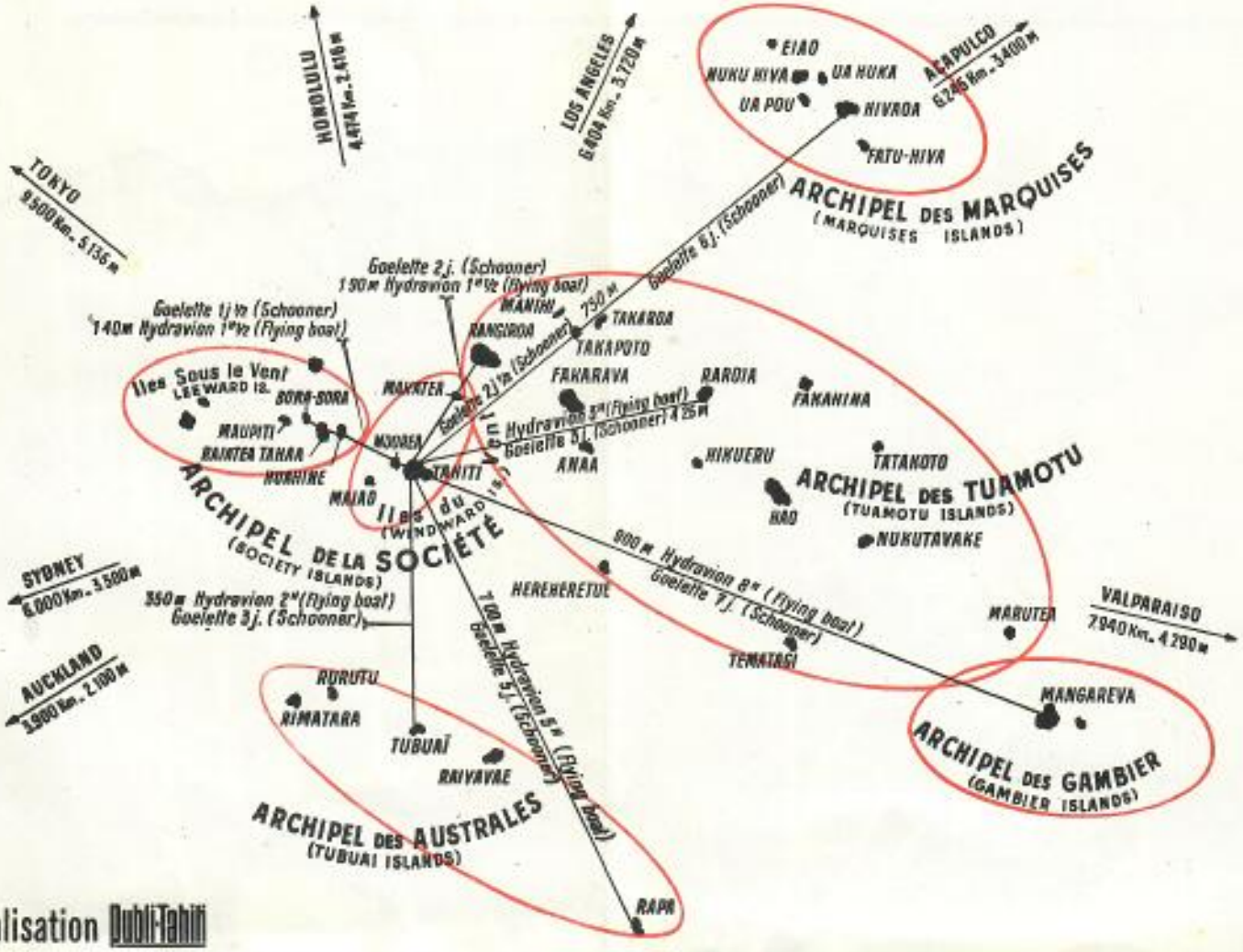
14 - Pêcheries
Fishing grounds

15 - Canotage possibilités de ski nautique
Boating and water skiing area

16 - Bassin abri pour yachts
Yachts basin

17 - Petite cale pour yachts
Slip way for yachts

Polynésie Française



Réalisation Publi-Tahiti

Table de conversions

DISTANCES
DISTANCES

1 km	.621 miles
2 km	1.243 »
3 km	1.864 »
4 km	2.485 »
5 km	3.107 »

CAPACITÉS
CAPACITIES

1 litres	1.76 pints
	0.88 quarts
10 litres	2.64 US gal.
	2.20 Imp. gal.

LONGUEURS
LENGHTS

1 cm	.38 in
1 m	3.28 ft
	1.09 yds

POIDS
WEIGHTS

1 gr	.035 oz
1 kg	2.20 lbs
1 tonne	.98 tons

SURFACE

1 Hectare 2,46 acre

1 Acre 0,4050 hectare

CHANGE AU 1-7-62
EXCHANGE RATE ON THE 1-7-62

	Francs C.F.P.	T.C.
US $	87	88,20
£/ Stg	242	247,63
£/ Austr.	193	197,31
£/ N. Z.	239	245,18
£/ Fiji	216	221,10
N. F.	18,18	18,18

TAILLES SIZES

ROBES ET MANTEAUX *DRESSES AND SUITS* — FEMMES *WOMEN*

Europ.	40	42	44	46	48	50
Engl.	32	34	36	38	40	42
Amer.	10	12	14	16	18	20

CHEMISIERS ET PULLS *SWEATERS AND BLOUSES*

French.	40	42	44	46	48
Engl. Amer.	32	34	36	38	40

PRÊT A PORTER *MENS' READY MADE SUITS* — HOMMES *MEN*

Fran.	34	36	38	40	42	44	46	48	
Engl.	34	35	36	37	38	39	40	42	

PULLS *SWEATERS*

Europ.	36	38	40	42	44	46
Amer.	46	48	51	54	56	58

British measurements and American measurements are not always identical. Check carefully before you buy.

POINTURES SIZES

CHAUSSETTES *SOCKS*

Fran.	39-40	40-41	42	42-43	43-44
Engl.	10	10 ½	11	11 ½	12

BAS *STOCKINGS*

Fran.	1	2	3	4	5
Engl.	8 ½	9	9 ½	10	10 ½

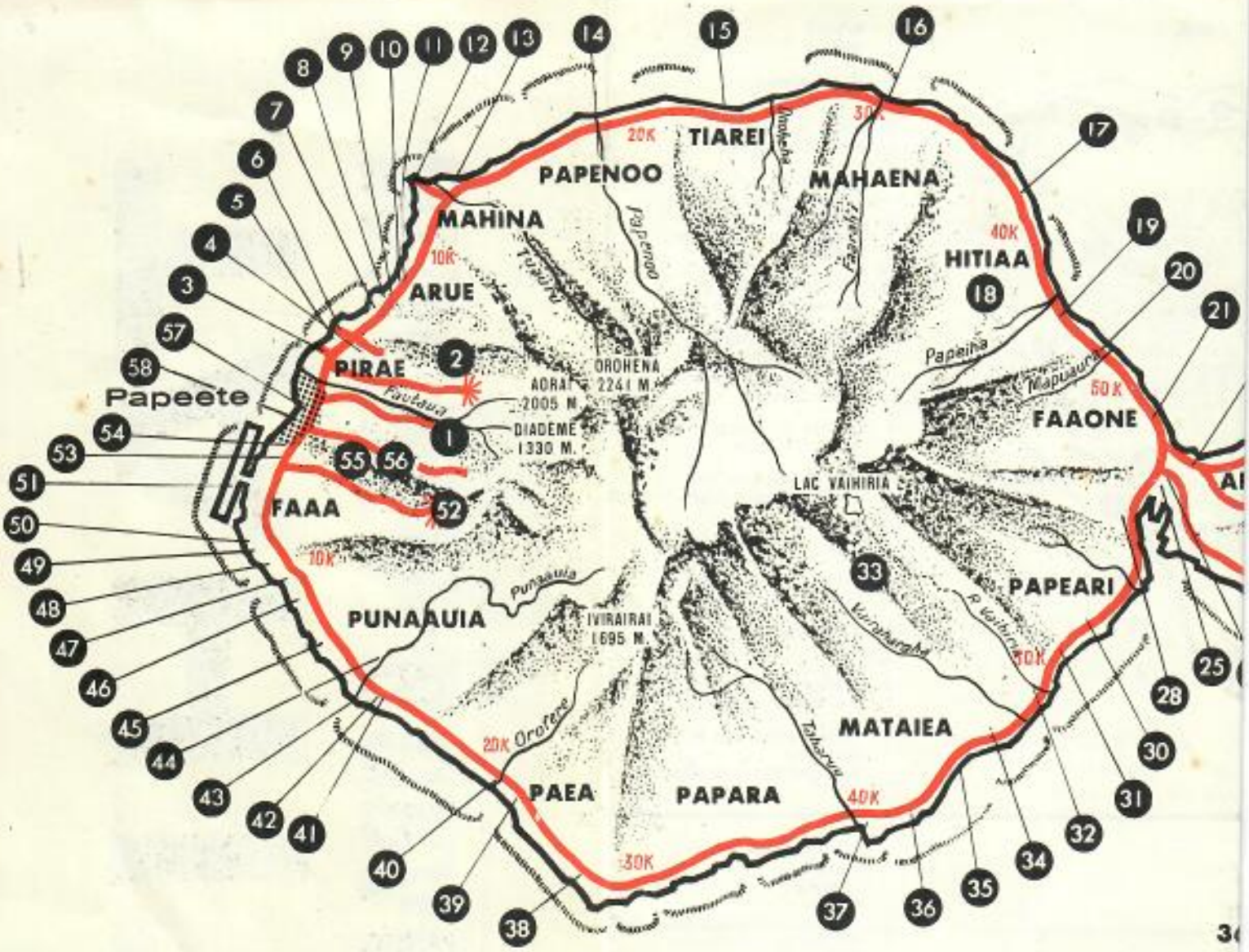
CHAUSSURES *SHOES*

Fran.	36	37	38	39	40	41	42	43	
Engl.	3	4	5	6	7	8	9	10	
Amer.	5	6	7	7 ½	8	9	10	10 ½	

Les tailles peuvent varier légèrement d'un pays à l'autre. Vérifiez bien avant d'acheter.

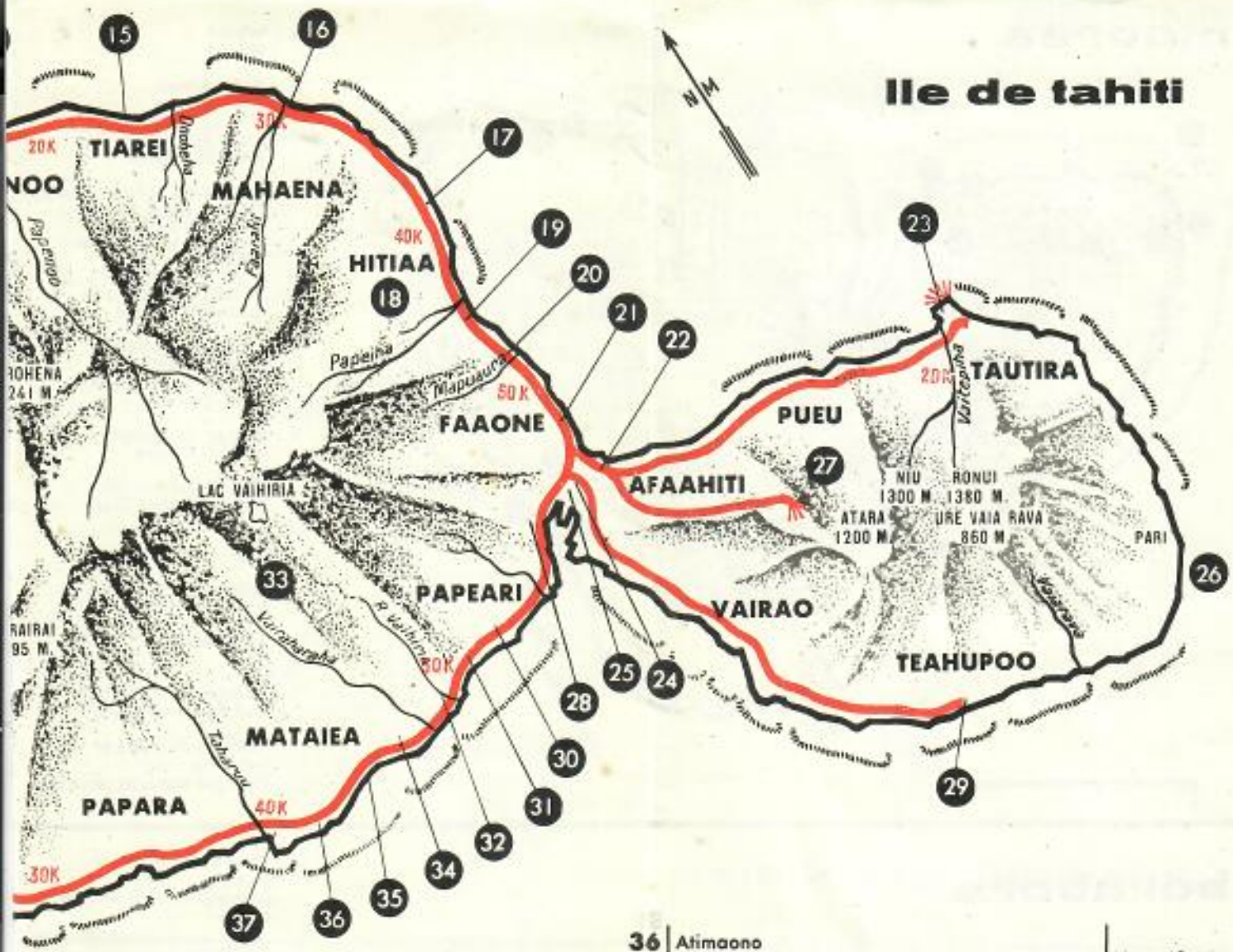
Sizes may vary from country to country. Check carefully before you buy.

Imprimerie "LES NOUVELLES"



1	Vallée de Fautaua - Bain Loti - Cascades *Fautaua valley - Loti's pool - Waterfall*	Km 1,5 E.	19	Papeiha - Plage - Bain de rivière *Papeiha - Beach - River swimming*	Km. 47 E.
2	Piste de Fare Rau Ape - Point de vue (600 m.) *Mountain road to Fare Rau Ape - Scenic view point (600 m.)*	Km. 2 E.	20	Plage de Faaone *Faaone beach*	Km. 50 E.
3	Hôtel Taaone - Plage de Taaone - Ski nautique *Taaone Hotel - Taaone Beach - Water skiing*	Km. 3 E.	21	Fonds coralliens de Faaone *Under water coral gardens*	Km. 52 E.
4	Centre d'équitation *Horse Riding School*	K:n. 3 E.	22	Hôtel-restaurant de Faratea *Faratea Hotel-Restaurant*	Km. 58 E.
5	Hôtel Royal Tahitien - Plage de Taaone *Royal Tahitian Hotel - Taaone Beach*	Km. 3,5 E.	23	Village de Tautira - Point de vue - Bain de rivière - Excursions au Pari - à l'îlot Fenuaino Relais "chez Pepe" Stevenson Lodge - Possibilités d'excursions *Before crossing the isthmus make the 18 kilometers side trip to the Village of Tautira - Scenic view point - River swimming - Motor Boat Excursions to Fenuaino islet; cliffs, valley* *Pepe's Tavern - Stevenson Lodge - Excursions*	Km. 71 E.
6	Hôtel Heiata *Heiata Hotel*	Km. 3,5 E.			
7	Hôtel Arahiri *Arahiri Hotel*	Km. 4 E.			
8	Puooro Plage " "	Km. 4,5 E.	24	Hôpital de Taravao *Taravao Hospital*	Km. 59 E.
9	Tombeau du Roi POMARE V *Tomb of King POMARE V*	Km. 5 E.	25	Gendarmerie de Taravao *Police Station of Taravao*	Km. 59 E.
10	Plages d'Arue - Ski nautique				

Ile de tahiti



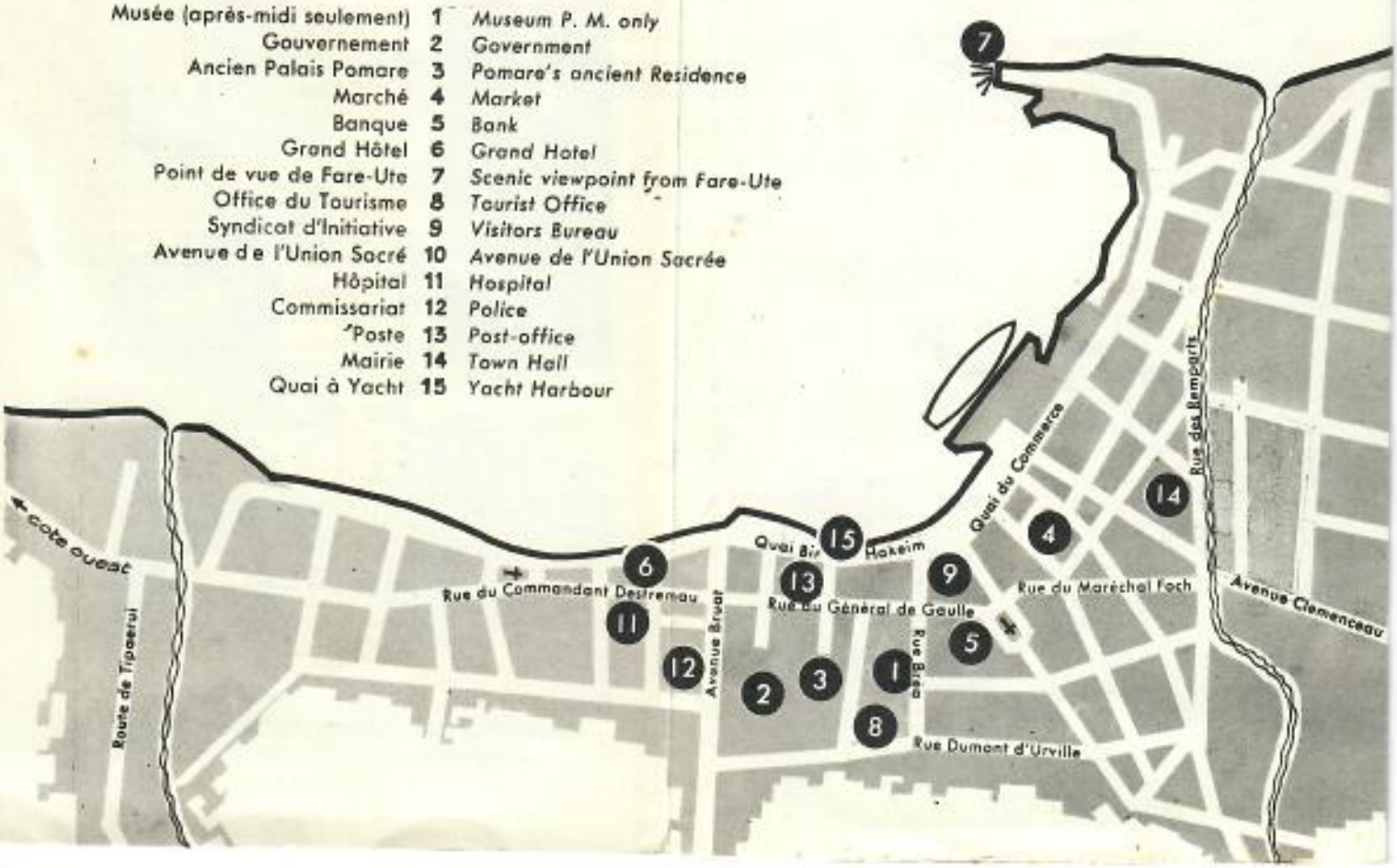
9	Papeiha - Plage - Bain de rivière *Papeiha - Beach - River swimming*	Km. 47	E.
10	Plage de Faaone *Faaone beach*	Km. 50	E.
11	Fonds coralliens de Faaone *Under water coral gardens*	Km. 52	E.
12	Hôtel-restaurant de Faratea *Faratea Hotel-Restaurant*	Km. 58	E.
13	Village de Tautira - Point de vue - Bain de rivière - Excursions au Pari - à l'îlot Fenuaino Relais "chez Pepe" Stevenson Lodge - Possibilités d'excursions *Before crossing the isthmus make the 18 kilometers side trip to the Village of Tautira - Scenic view point - River swimming - Motor Boat Excursions to Fenuaino islet; cliffs, valley* *Pepe's Tavern - Stevenson Lodge - Excursions*	Km. 71	E.
14	Hôpital de Taravao *Taravao Hospital*	Km. 59	E.
15	Gendarmerie de Taravao *Police Station of Taravao*	Km. 59	E.
36	Atimaono "	Km. 43	W.
37	Marae Maha i atea *Papara valleys, and the ancient Marae (temple) of Maha i atea*	Km. 39,5	W.
38	Grotte de Maraa *Maraa Grotto*	Km. 28,5	W.
39	Marae Arahurahu *Visit the restored Marae (temple) of Arahurahu*	Km. 22,5	W.
40	Gendarmerie de Paea *Police station of Paea*	Km. 21	W.
41	Hôtel Tahiti Village *Tahiti Village Hotel*	Km. 16	W.
42	Club Méditerranée *Mediterranean Club*	Km. 16	W.
43	Plage de Punaauia - Lagon de sable blanc *Punaauia white sand beach*	Km. 15-18	W.
44	Vallée de la Punaruu - Fortins *Punaruu Valley - Forts*	Km. 15,5	W.
45	Emplacement de la demeure de GAUGUIN *Site of GAUGUIN's home*	Km. 12	W.
46	Hôtel Iaorana Villa *Iaorana Villa hotel*	Km. 11	W.

	Arue Beaches - Water skiling	Km. 5-6 E.
11	Point de vue du Belvédère de Taharaa *From the heights of Taharaa a breath taking view and a "photographic" must*	Km. 8 E.
12	Pointe Vénus - Monument du Capitaine Cook Plage - Point de vue *Point Vénus - Captain Cook's Monument Swimming from the black sand Beach*	Km. 10 E.
13	Plage de Hitimahana - Bain dans la rivière Tuauru *Hitimahana Beach - Tuauru River Swimming*	Km. 10 E.
14	Vallée de Papenoo - Bain de rivière - Plage Excursions *Papenoo Valley (Largest in the island) - River Swimming - Beach - Excursions*	Km. 18 E.
15	Arahoho - Trou du souffleur - Bain de rivière Plage - Cascades Faarumai 1 km 500 *Arahoho - Blow hole - River Swimming - Beach Faarumai waterfall*	Km. 23 E.
16	Plage et bain de rivière de Mahaena *Mahaena bridge; beach and river swimming*	Km. 32 E.
17	Mouillage de Bougainville *Bougainville's anchorage*	Km. 37 E.
18	Cascade de Fatautia - Bain de rivière - Plage *Fatautia waterfall - River Swimming - Beach*	Km. 45 E.

26	Vallée de Vaiote *Vaiote valley*	
27	Plateau de Taravao - Point de vue *Taravao plateau - Scenic view point*	
28	Restaurant "Atchoun" *Atchoun Restaurant*	Km. 60 W.
29	Village de Tehaupoo Excursions aux grottes Vaipoiri en bateau *Village of Teahupoo - Motor boat excursion to Vaipoiri grotto*	Km. 78 W.
30	Jardin botanique et forêt de "mape" (inocarpus edulis) *Botanic gardens; forest of tahitian chestnut trees and tropical vegetation*	Km. 51 W.
31	Cascade de Vaipahi *Vaipahi waterfall*	Km. 49 W.
32	Rivière légendaire de Vaima *Vaima River*	Km. 48 W.
33	Lac Vaihiria *Vaihiria Lake*	
34	Point de vue vers l'intérieur du pont de Vairaharaha *View of interior valleys from Vairahara bridge*	Km. 47 W.
35	Plage de Mataiea *Mataiea Beach*	Km. 47 W.

ville de papeete

Musée (après-midi seulement)	1	*Museum P. M. only*
Gouvernement	2	*Government*
Ancien Palais Pomare	3	*Pomare's ancient Residence*
Marché	4	*Market*
Banque	5	*Bank*
Grand Hôtel	6	*Grand Hotel*
Point de vue de Fare-Ute	7	*Scenic viewpoint from Fare-Ute*
Office du Tourisme	8	*Tourist Office*
Syndicat d'Initiative	9	*Visitors Bureau*
Avenue de l'Union Sacré	10	*Avenue de l'Union Sacrée*
Hôpital	11	*Hospital*
Commissariat	12	*Police*
Poste	13	*Post-office*
Mairie	14	*Town Hall*
Quai à Yacht	15	*Yacht Harbour*



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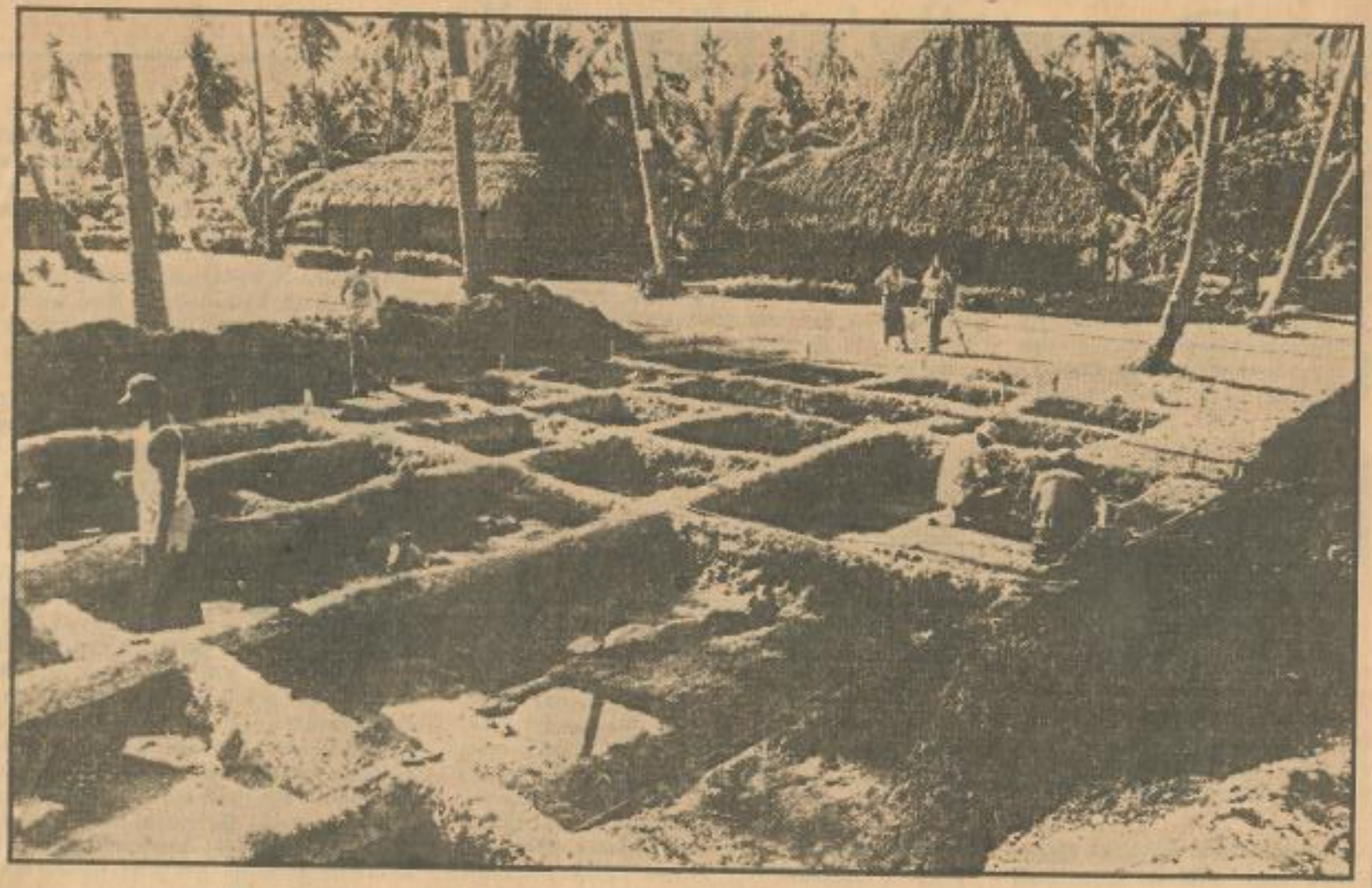
35	Plage de Mataiea *Mataiea Beach*	Km. 47 W.

47	Vaipoopoo (Bungalows) " "	Km. 10 W.
48	Lotus Village " "	Km. 9,5 W.
49	Hôtel Moana-Nui *Moana-nui Hotel*	Km. 8,5 W.
50	Bel Air " "	Km. 8 W.
51	Aerodrome TAHITI-FAAA *Faaa airport*	Km. 5 W.
52	Route de Pamatai - Point de vue *Road leading to scenic view from heights*	Km. 3,5 W.
53	Hôtel "Les Tropiques" *" Les Tropiques" hotel*	Km. 3 W.
54	Hôtel Tahiti *Tahiti Hotel*	Km. 2 W.
55	Hôtel Matavai *Matavai Hotel*	
56	Hôtel Tiki Tapu *Tiki Tapu Hotel*	
57	Grand Hôtel " "	
58	Hôtel Temehani *Temehani Hotel*	



Excavations on the tiny island of Huahine Nui are carefully planned so each artifact found can be logged on a map. The resulting grid gives a patchwork effect to the dig.

Unearthing a Polynesian Past

Star-Bulletin

Today

Features
Entertainment

Section B

Friday, May 14, 1982 Honolulu

By Lindy Washburn
Associated Press

THEY sailed against wind and wave, navigating without instruments across the trackless Pacific, settling islands scattered as far as Hawaii, Tahiti, Bora Bora and Tonga. When the walls of Troy fell, their first sailors already had touched land in Fiji. Their accomplishments predated and dwarfed those of the Vikings.

The story of the Polynesian navigators gradually is being unearthed in a rare archeological find on the tiny island of Huahine Nui, 110 miles northwest of Tahiti.

Like Pompeii in the first century, Huahine was devastated by a natural disaster. But the tidal wave that was a grave misfortune to villagers 11 centuries ago was fortunate for Dr. Yosihiko Sinoto and his team from Honolulu's Bernice P. Bishop Museum.

Buried beneath the mud and sand that swept inland are the wooden objects and organic materials of a complete Polynesian village, the first to be found intact in the Pacific Islands. Among the cultural artifacts unearthed are the first discovered remnants of a Polynesian voyaging canoe, dating to the year 850 and believed to have measured 60 to 80 feet long.

"We knew ancient Polynesians had sailed between islands, but before it was speculative or legendary," says Sinoto. "Now we have the actual, ocean-going canoe. That's most significant."

The discovery was made accidentally. A backhoe clearing ground for tennis courts at the Hotel Bali Hai Huahina in 1977 ran into two huge wooden planks, buried in the mud of an ancient stream bed. Stretching 23 feet underground, the wood bore marks of expert craftsmanship—careful polishing, evenly spaced holes drilled to permit lashing, and lap joints hewn into the plank ends to fit them to other pieces.

That discovery came five years after groundbreaking began at the hotel, first calling Sinoto's attention to the site. By coincidence, he was working on a project nearby and heard from villagers about an unusual amount of whalebone being dug up at the Bali Hai.

The hotel's contractor had saved an odd tool he found in the digging. It was the only thrusting weapon ever discovered outside New Zealand, Sinoto informed him. Sinoto asked permission to dig a test pit, and came up with another thrusting weapon.

"It was a most extraordinary find," he says. "It soon became apparent this was not a simple small site, but an entire village."

BEFORE THE tidal wave struck, Sinoto says, the village had separate areas for storing food, religious worship, household tasks, canoe-building, and sleeping.

"I estimate its population has about 200 people," he says.

"People were drinking kava (a ceremonial drink), fishing with nets, sleeping on mats, wearing tapa (bark cloth) clothing and eating from bowls," he says. "Usually in an archeological site you cannot find perishable materials. But the wooden items survived intact here for more than 1,000 years because the air-breathing organisms that cause decay could not live in the mud.

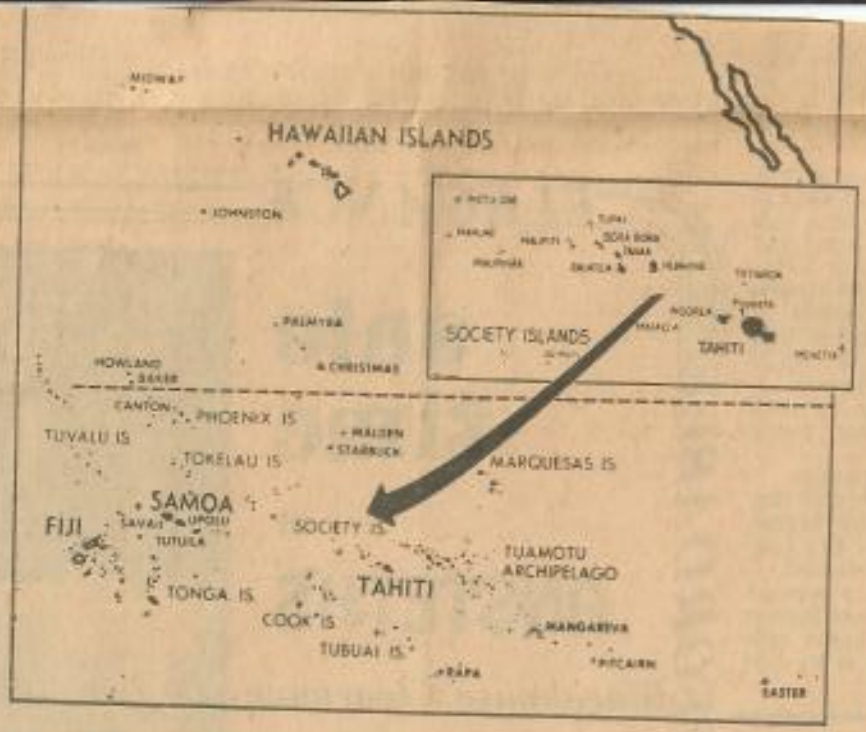
"With this material culture," he adds, "we can reconstruct their social and economic systems, and their methods of fishing and farming."

Among the more profound conclusions from the Huahine evidence was that this early Polynesian society already had attained a high degree of sophistication. The surplus food supply implied by storage huts meant this group already had the leisure to spare certain members from the drudgery of finding food, thus allowing them to specialize. There were canoe builders and signs of a pearl-shell industry that produced scrapers and graters for trade.

A whale-tooth pendant and a wooden staff gave clues that one person, perhaps a chief, was distinguished from others in terms of rank.

And the similarity between an oval-shaped building foundation and religious remains found at other, later Pacific island sites, hint that the villagers on Huahine Nui also had their own primitive religion.

The findings push back the evolution of a complex Pacific culture and modify theories of Polynesian migration, Sinoto says. Later, the Huahine Nui prototype of an aristocratic society, producing goods for trade and canoes for voyaging from a rich agricultural base, would flower into the Polynesian civilization discovered in the Hawaiian Islands by Capt. Cook in 1778.



But more important to Sinoto was the evidence—huge doubled-hulled canoes—that these already were seafaring people, not passive captives of wind and wave, who forced their way against currents and trade-winds to populate the Marquesas, the Society Islands and Hawaii.

"These planks are the oldest parts of this type of vessel discovered," says Sinoto. "It is increasingly apparent that, long before Columbus embarked for America, skillful sailors used stars, winds and currents in navigation. They explored, settled and regularly traveled a part of the Pacific greater than Europe and North America combined."

Sinoto ordered the planks covered over for four years while he arranged procedures necessary to preserve the sponge-like wood.

Sinoto sent an assistant to learn techniques for preserving water-and mud-soaked wood from conservators in Washington state who had handled artifacts of a Northwest Indian village wiped out in a mudslide. He persuaded the Tahitian government to fund a museum for the display and study of these clues to Polynesia's past.

LAST YEAR, after six weeks of gentle washing to clear the debris of centuries, the planks were lifted clear of the mud.

"The day of the lifting, the workers were anxious but quiet," says anthropologist Sanford Low, who filmed the excavation for a documentary on Polynesian navigators. "They put plywood under the plank and slowly, slowly lifted it over the lip of the excavation. Then it was wrapped in pandanus leaves."

Chemical treatment at the Tahitian museum is expected to take two years. Work on the site has halted for that period until space becomes available in the treatment tanks.

"I know exactly where I want to look next at Huahine Nui," Sinoto says. "We should get more parts to the canoe. So far we've found a 37-foot mast, the outrigger boom, a steering paddle, bailers, and smaller paddles. Then I'd like to do soil analysis so we can figure out what food was stored in those storage houses. "As far as accidental findings go," he adds, "this is one of the greatest. At 57, I am very lucky. Often you don't hit something like this in a lifetime."

Isle Scientists Explore Remote Atoll of Reao

By Helen Altonn
Star-Bulletin Writer

Two Hawaii scientists participated recently in the first extensive expedition to the remote atoll of Reao in the Tuamotu Islands, attempting to find its place in Polynesian culture.

Yosihiko H. Sinoto, chairman of the Bishop Museum's anthropology department, and Jack Ward, University of Hawaii linguist, spent six weeks on Reao.

Kanazawa University sponsored the expedition with a grant for overseas research by Japan's Ministry of Education and sent two geologists and two anthropologists, including Sachiko Hatanaka, the project chief.

Discussing their preliminary findings in an interview, Sinoto said the people of Reao and nearby Pukarua are very dark and short compared with other Polynesians.

About 150 persons live on Reao.

IT WAS BELIEVED BOTH islands might have been settled by early Polynesian immigrants, possibly connected with Polynesian migration farther east.

Hatanaka found that both groups are linguistically very different not only from major islands of eastern Polynesia but from many other Tuamotu islands.

Kenneth Emory of the Bishop Museum studied the marae (religious structures) on Reao in 1929-30 in the first and only archaeological survey done there.

He said they were survivals of the same culture

SINOTO SAID THE MARAE weren't his primary interest on the atoll until he discovered a completely different form than Emory had described.

He found three marae half buried on top of a dune on one of the coral islets on the lagoon side. Those found by Emory were all on the reef side of the island and had different construction, Sinoto said.

Although the marae that he found buried were badly disturbed, he said it is believed they are older than the Reao type of structures.

He said this supports Emory's revised interpretation that they could be a modified version of the marae to the west.

Sinoto found a stone-lined wall indicating human occupation of the dune area but not a single artifact that he said could be used to interpret the culture and time period of the people who lived there and built the marae.

HE SAID HE CAN USE charcoal from many firepits in the area to date the location, but without artifacts he can't relate it to the rest of East Polynesia.

Sinoto noted that Emory had recorded 25 marae on Reao but said he was informed there were 25 more on the island.

Emory described some marae with upright slabs that had fallen. Sinoto said he found them in the exact position. "Nobody has touched them."

Sinoto restored four of the marae while doing detailed mapping and said he learned a great deal about them in the process.

He said there is one village on Reao and around it are many taro planting ditches. Some were still

which left prehistoric marae on Necker Island in Hawaii; that they represented a form employed by the earliest settlers in Hawaii and southeastern Polynesia.

Sinoto said Emory revised his idea later, saying the Reao marae could be a modification of religious structures to the west. But Sinoto said, "One of my aims was to find out if this was so or not."

THE SCIENTISTS NOTED THAT Reao and Pukarua are on the eastern fringe of the Tuamotu Islands, which are 3,000 miles southeast of Honolulu and comprise more than 75 atolls and reef islands stretching over 1,000 miles.

Ward said changes found in the language of the Reao people do not support the idea that Reao speech was divergent from early Polynesian language.

"Generally, there seems to be quite a bit of vocabulary specialization in the Tuamotu," he said.

"Words begin to characterize an island in a set of islands because of isolation.

"Some innovations are shared throughout a good portion of the Tuamotu, but not on Reao and Pukarua. So while they look Tuamotuan in origin, in terms of isolation there is evidence of considerable local development.

"Some words that show a relationship outside of the Tuamotu might be borrowings," he added, noting that Mangareva is close by.

SINOTO EXCAVATED FOUR test sites, hoping to find a cluse as to whether Marquesans might have settled Reao in their travels southeast.

Previous investigations by Sinoto and Emory point to the Marquesas as the origin of settlers of the southeast Pacific islands, including Hawaii.

"If they left the Marquesas, moving in a southeast direction, they would have hit Henderson, Pitcairn, Mangareva and Easter islands, and some voyagers might have hit Reao and Pukarua," Sinoto said.

He couldn't find evidence linking the material culture on Reao to the East Polynesia settlement period.

However, he said the type of marae and artifacts on Reao indicate it most likely was occupied by people from the west, and this is supported by Ward's linguistic findings.

functioning when Emory visited but none are in use now.

Sinoto prospected around the present village and another area where he was told there had been a pre-missionary village.

HE COLLECTED A DOZEN tridacna adzes, pearl shell fishhooks, a bonito hook point and discovered a shrine at one site between the two village areas. But the artifacts were all on the surface and nothing turned up in excavations.

Sinoto returned to that site later and extended test pits over a large area. Then he began to find artifacts. He hit a house site with a fireplace and post hole and found pearl shell fishhooks, innerpart rejects of single hooks, sea urchin spine files and tridacna adzes.

Unfortunately, he said, it was his last day on the island.

He said much work remains to be done to answer questions of how the Reao-type marae developed from the western form, when Reao was first settled and what its relationship is to the rest of the Tuamotu Islands and East Polynesia.

He said the type of fishhooks and method of manufacture are similar to those in the west and central Tuamotu Islands. The Tuamotuans used the unique method of cutting the inner part of hooks with a sharkskin bow saw.

Other types of artifacts found on Reao are related to later Tahitian culture, Sinoto said.

He said neighboring atolls should be investigated, as well as Reao, to determine how Reao fits into the puzzle of early Polynesian migrations.

RESTORED MARAE—Reao atoll has many religious structures such as this one, shown after the upright slabs were restored by Yosihiko Sinoto.

POLYNESIAN PUZZLE—Scientists are trying to find where tiny Reao atoll fits into the prehistoric Polynesian cultural pattern.

N-Test Protest Planned

During the lunch hour Monday, on Bastille Day, a demonstration against France's program of nuclear testing in French Polynesia will be held at the Financial Plaza of the Pacific, according to the Nuclear Free Pacific Conference.

The demonstration will call attention to the more than 69 atmospheric and underground nuclear weapon tests conducted by the French at Mururoa and Fanga Taufa Atolls, 800 miles southeast of Tahiti, spokesmen for the conference said.

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Aug 1, 1977

More Freedom for French Polynesia

A 5-B

PARIS (AP) — The South Pacific islands of French Polynesia have increased financial and administrative autonomy under a new status voted by France's parliament, a government spokesman said today.

He said inhabitants of the islands celebrated the new arrangement July 14, French independence day, at their territorial capital of Papeete on the island of Tahiti.

Since then, the territory has been setting up its new governmental structure, the spokesman said, under which the governor appointed by Paris becomes a commissioner with reduced powers in running day-to-day internal affairs.

The governor maintains his final say in other matters such as dealing with the Paris government and Pacific neighbors of French Polynesia, which counts 120,000 residents on dozens of islands spread across 1,545 square miles. Some 80,000 people live in Papeete.

In Paris, the spokesman for the Ministry of Overseas Departments and Territories emphasized that the change was not intended as a step to quick independence.

"That is not envisaged at all," he said.

French N-tests turning South Pacific atoll into Swiss Cheese Isle

By THOMAS O'TOOLE
and KEVIN KLOSE
Washington Post Service

WASHINGTON — France has so badly damaged parts of the South Pacific atoll of Mururoa where it conducts its underground nuclear weapons tests that it may be forced to move the tests to another island in French Polynesia as early as next year.

No decision has been made by France to abandon Mururoa but nuclear weapons sources in the United States and in France have said that test holes are already being drilled in the nearby atoll of Fanga Taufa to see if it can accommodate weapons testing. France conducted its first two underground tests at Fanga Taufa in 1975 before moving the tests to Mururoa.

Sources said the 29 nuclear weapons that France has exploded in the past four years under Mururoa have left the island "looking like a Swiss cheese."

Test holes have been drilled under the 60-feet-deep lagoon as far down as one mile into the volcanic rock that underlies the coral-and-limestone atoll. The French have not said when the first test will take place under the lagoon but it could come in 1981.

France never announces a nuclear weapons test and never confirms one after it takes place. France simply acknowledges that it conducts occasional tests.

Even the number of explosions

France has conducted in Polynesia is supposed to be secret, but U.S. sources place them at 31, two at Fanga Taufa and 29 at Mururoa.

France also keeps secret the size of its tests, most of which it insists

See DAMAGE on Page A-4

Damage to Mururoa forcing France to move N-test site

From Page 1

are under 20 kilotons. Sources say that most French tests are engineered to miniaturize their weapons so they can be more easily carried by missiles and aircraft.

The last large French test was understood to be the 200 kiloton test of July 24, 1979, that triggered a small tidal wave the French newspaper Le Matin said happened when the weapon stuck half-way down the 800-meter-deep shaft leading to the test pit and was fired in that position.

While admitting the explosion set off a mini-tidal wave, French sources denied that the weapon was stuck and denied the explosion took place half-way down the shaft.

One source said the explosion set off an underground landslide of limestone, which lay above the volcanic rock where the weapon was exploded. The source freely admitted that the limestone may have been loosened by previous blasting.

In any case, the earthslide occurred three or four hours after the explosion when French test personnel had emerged from bunkers where they stay during a test.

Less than three weeks before the tidal wave incident, there was an accident on Mururoa involving the handling of plutonium used to make the French explosives. French sources said an electric drill used to machine the plutonium set off a spark that triggered an explosive chemical fire that killed two workmen.

"It was a stupid accident," one French source said, "but had nothing to do with nuclear testing."

New Zealand newspapers have said that the explosion that triggered the tidal wave also vented dangerous amounts of radioactivity into the atmosphere, which French sources also denied.

One source said that most testing on Mururoa takes place in pits about two-thirds of a mile down, which he said is deeper than the U.S. tests in Nevada and is more than deep enough to prevent venting. The source said that bubbles of radioactive gas often escape but insisted they are so small and dissipate so rapidly in the atmosphere that they present no threat to the environment.

The ahu or altar of Tapu-tapu-a-tea.

Photo by Yosihiko Sinoto

Great Temple on Raiatea

Tales of Old Hawaii

By Russ and Peg Apple

OPOA, Raiatea — *Hawai'i* was the ancient name of Raiatea island, and its Opoa district was the ancient center of Polynesian royalty down through early European contact times in these Society Islands.

Opoa's great temple of human sacrifice, *Tapu-tapu-a-tea*, was restored by Dr. Yosihiko H. Sinoto, of Hawaii's Bishop Museum, in 1968-1969 for the French Polynesian government.

Tapu-tapu-a-tea's box-like altar is 140 feet long, 24 feet wide and its sides of coral slabs as high as 12 feet. Behind the outer slabs are others which represent a smaller and lower altar.

The temple of Tapu-tapu-a-tea, in the Opoa district of Raiatea, was the most sacred in the Society Islands.

SOMETIME in French Polynesia's prehistory Tapu-tapu-a-tea's priests and congregation outgrew the smaller altar and enlarged it by enclosing it in a bigger box.

Feather loin-cloths which invested high chiefs at Tapu-tapu-a-tea, human sacrifices and giant box-like altars are features of the Polynesian religion imported to the Hawaiian Islands about A. D. 1250 by the priest Pa'ao and high chief Pili from these Society Islands. But which one?

Pili was an ancestor of the seven kings and one queen of the historic Kingdom of Hawai'i.

No serious scholar of Polynesian migrations has done more than suggest the possibility that Raiatea Island in the Society Islands is the source of migrations to Hawai'i, 2,500 miles north, or that Pa'ao and Pili were perhaps even consecrated in Tapu-tapu-a-tea temple before they left for Hawai'i. No one knows for sure today.

STILL, STANDING in this sacred temple of Polynesia, the most sacred in the Society Islands, you feel the antiquity and wonder if this was not indeed the homeland of Hawai'i's royalty. *Te Po* (the night) was the name of this Opoa district, in contrast to the rest of Raiatea which was called *Te Ao* (day). Only royalty and victims for the altar entered Opoa under the ancient culture.

In its heyday, Tapu-tapu-a-tea's victims came from Moorea, Tahiti, Huahine, Tahaa, Borabora and Maupiti islands.

Stones from the sacred Opoa district went to the other islands as the key foundation blocks for new major temples.

Legends say that Tapu-tapu-a-tea was first built by laying two stones, one brought from Borabora and one from Huahine.

Even the haughty high chiefs of Tahiti island acknowledged social precedence to the high chiefs of Opoa.

ON THE PAVED ceremonial area before the altar, the high chiefs of Opoa were invested. Upright stones in the pavement mark the traditional seats and backrests of branches of royalty.

A high chief of Opoa waiting to be invested stood all but naked before a stone pillar. All the subordinate chiefs were in attendance. One by one he was presented with the sacred symbols of his office — a wooden pillow, a fly-flap, a hat, a spear, a staff, and finally the red-feathered loin-cloth. He could then sit on the throne.

But not for long, for he was then lifted to the shoulders of four chiefs and carried to his double canoe. On its platform he sat beside the image of his "spiritual father," the god 'Oro (Hawaiian: Lono). A circuit of the bay brought him back to the beach beside Tapu-tapu-a-tea.

SHOULDER-BORNE again, the new high chief was placed back on his throne.

An eye plucked from a victim was offered to him, and it is said he only pretended to eat it.

The image of the god 'Oro was then put to bed in a house on the temple. Feasting and celebration followed.

Polynesia fears for its economy after N-test halt

By David Crary
Associated Press

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PARIS — They're not yet chanting "Un-ban the bomb." But leaders of French Polynesia are dismayed by France's suspension of nuclear tests at Mururoa atoll and demanding compensation to minimize the economic fallout.

Since the testing operation was established in the idyllic South Pacific territory in 1964, local backing has been widespread. The program generates an estimated 20 percent of the islands' economic net worth and provides jobs, directly or indirectly, for about 10,000 of the 190,000 residents.

"Polynesians have faithfully supported the nuclear effort since its start," said Gaston Flosse, the territorial president. "Today, their confidence has been betrayed. This injustice must be rectified."

Flosse is head of a 14-member delegation of Polynesian officials that has spent two weeks in France lobbying for money and help in diversifying the islands' economy.

A conservative, Flosse firmly disagrees with the moratorium announced April 8 by Premier Pierre Beregovoy, and says no territorial leaders were consulted in advance.

Beregovoy said the tests would be suspended for one year and indicated they might never resume if other nuclear powers made similar gestures.

The testing site at Mururoa and large technical support centers in Tahiti, 600 miles away, will remain open during the moratorium, retaining their 1,400 employees on the chance that full operations will resume next year.

But even Flosse, who believes France should keep its nuclear deterrent, doubts tests will recommence. Many foreign governments, especially in the South Pacific, hailed the moratorium, and France would incur resentment from them and environmental groups if the much-protested tests resumed.

Beyond nuclear testing, Polynesia's main revenues are from tourism (150,000 visitors a year), and exports of pearls and coconut oil.

French nuclear test site: Is it radioactive or not?

Reuters

MURUROA ATOLL, French Polynesia — If ecologists are to be believed, standing at "point zero," 800 yards above the spot where a nuclear bomb exploded six years ago, is pure folly.

If the French nuclear physicist standing next to me is right, the radioactivity levels are lower than in the French region of Brittany.

"If this water wasn't salty, I'd drink it," says Jean Armagnacq, of the brackish water covering the cemented borehole where a 10-kiloton nuclear device — two-thirds the size of the bomb dropped on Hiroshima — was exploded in 1986. Armagnacq is a physicist at France's nuclear weapons test site on Mururoa Atoll in French Polynesia.

The debate over the safety of nuclear testing has raged for years and French military and civilian nuclear experts are keen to rebut specific accusations.

"There is no reason to be worried about the safety of this atoll ... potentially it is capable of being a testing ground for several decades," said Jean Lichere, of France's Atomic Energy Commission (CEA).

"We hope you will enjoy your stay here and that you'll take the chance to have a swim in the lagoon," Lichere added.

France has exploded about 190 nuclear devices in Mururoa and at the neighboring atoll of Fangataufa since 1966, 46 of them in the air and the rest in boreholes drilled either under the coral atoll or under the lagoon.

Critics, including some scientists and the environmental group Greenpeace, say the testing has deposited radioactive elements in the South Pacific seas and is threatening the regional environment.

But Lichere noted the nuclear devices are not exploded in the reef. They explode about 700 yards further down, in black, basalt rock.

French scientists insist all radioactive substances will be inert long before any seepage takes place.

However they acknowledge that testing is damaging the fragile coral reef. "Our tests, with the mini-earthquakes created, can but accelerate the relative aging of the coral," said Lichere.

Explosions, depending on the size of the nuclear device, create a cavity about 50 yards in diameter in the rock.

That action causes subsidence in the atoll, which is only about five yards above sea level at its highest point.

On Mururoa, concrete slabs mark the "point zero" at ground level of each explosion.

All of them on the atoll itself are spaced around 200-300 yards apart.

Testing was transferred to the waters of the lagoon itself in the 1980s.

By then, there was little space left on the narrow strip of land.

Lichere said France had decided that all large nuclear tests — over 100 kilotons — would be carried out on Fangataufa, some 25 miles away, to avoid placing further stress on the populated Mururoa atoll.

Lichere, saying the veil of secrecy thrown over Mururoa had been a mistake that added to an aura of mystery and doubt, opened up his laboratories, clinics and test sites during my two-day visit.

"For years they (French authorities) told us, 'Say anything about this and you'll be betraying the national interest,' " said Lichere.

For the 2,000-odd Foreign Legionnaires, Polynesians and French civilians based here, the Mururoa lagoon is a playground. They swim and frolic in the water, dive to look at tropical fish and jog on the white sand beach.

"I've been coming here for 27 years, I swim in it all the time and I'm in perfect health," said Lichere. Jean-Yves Treguer, chief doctor on the atoll, said 4,000 radiation checks are carried out annually on personnel, as well as 400 other tests. All were negative.

Officials on the atoll dismissed Greenpeace's allegation as either dangerous exaggeration or fabrication.

The most serious incident, the French acknowledge, was the dispersal of plutonium some 20 years ago following a "safety test" in the air in which there was no nuclear explosion but in which plutonium was scattered over part of the atoll.

Tarmacadam was laid to seal the plutonium in the ground, but a storm washed part of the seal away in 1981.

Armagnacq said the clean-up took several months and the radioactive material was packed into barrels and buried in a bore hole.

Some plutonium escaped into the lagoon, but no evidence of it could now be found, he added.

Much of the ecologists' criticism concerns what is happening under the sea.

They fear water carrying radioactive materials is seeping out of rocks where explosions took place and into the sea.

French scientist and explorer Jacques-Yves Cousteau discovered fissures in the atoll's coral reef during research, which led to widespread protests.

COOKING UP A STORM—The breadfruit tastes good (above) when it's cooked on the round, as (from left) Mina, Rina, Jeny, Kilora and Alme know. At right, Takmi Silk, an RES eighth grader watches TV inside the Alele Museum under the cover of an outrigger exhibit. Below right, Zebly Abo and Naan Anbar make good use of a two by four, a piece of plywood and an oil drum for a hot game of ping pong.

JALUIT BANANAS—The Micro Chief (above) pulled into Majuro earlier this week on a special trip that brought in hundreds of pounds of produce from the outer atoll. Naptaly loads the produce, while Philipo and Kaisen watch.

A GREAT MEAL — Hesbar deBrum and Ereke Lalimo chop up a large turtle for cooking.

COPRA LOADING FROM THE MICRO PILOT — *take a coffee break? Of course not. You take a coconut*

Polynesians dismayed over

By DAVID CRARY
The Associated Press

PARIS — They're not yet chanting "Un-ban the bomb." But leaders of French Polynesia are dismayed by France's suspension of nuclear tests at Mururoa atoll and demanding compensation to minimize the economic fallout.

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French bomb test moratorium

resentment from them and environmental groups if the much-protested tests resumed.

Flosse says Polynesia will lose hundreds of millions of dollars because of the moratorium. After meetings this week with President Francois Mitterrand and the minister for overseas territories, Louis Le Pensec, Flosse said he expects lengthy negotiations over financial assistance.

Beyond nuclear testing, Polynesia's main revenue sources are tourism (150,000 visitors a year), and exports of pearls and coconut oil.

By some standards, Polynesia is well off. Per capita income is more than $8,000 annually, and some of the laborers based at Mururoa reportedly earn $40,000 or more a year.

Yet Flosse is not exaggerating when he warns of potential economic catastrophe. Unemployment has been close to 15 percent in recent years, and Tahiti, the main island, has been wracked periodically by riots and labor unrest.

Since the first test in 1966, France has exploded 168 devices at Mururoa and nearby Fangataufa atoll, 41 in the atmosphere and 127 underground.

The tests' critics included the governments of New Zealand, Australia and smaller South Pacific states, and the environmental group Greenpeace, which waged a prolonged protest campaign.

Flosse insists their claims of environmental damage from the tests were unfounded.

Almost as close to the United States as to Australia, Polynesia consists of more than 130 islands spread across an area larger than Europe but covering only 1,620 square miles. About 70 percent of the population lives on Tahiti. Two-thirds are of Polynesian origin, 10 percent European and 17 percent of mixed ancestry.

Sunday Travel
The Sunday Star-Bulletin & Advertiser

Tahiti and the

By Jan TenBruggencate
Advertiser Staff Writer

PAPEETE, Tahiti — Hawaii made a big impression on Tahiti during the July Bastille Day celebrations, the Fetes or Tiurai, and Tahiti made a big impression on Hawaiians.

But the impressions weren't entirely positive.

On the streets of Papeete, tree-lined and noisy, "howzit" vied with "bonjour" as the favored greeting in the French-controlled Pacific territory. There were nearly 1,000 Hawaii residents here. Many came on the eight charter flights from Honolulu.

The biggest chunk was made up of canoe paddlers. There were hundreds of them from eight Hawaii canoe clubs, prepared to race in three open-ocean races and two days of lagoon sprints.

Hawaii didn't win any, but placed teams in the top 10 of each distance race and in several of the mad scrambles on the Papeete Harbor, which were great pitched battles compared to Hawaii's races.

The canoers fought more than other canoe teams, though. Their dormitory-style living caused quick spread of viral infections, including a painful eye inflamation called pinkeye. And even hotel-boarded Hawaii residents suffered intestinal problems apparently related to the drinking water.

Wise travelers drank from plastic jugs of pure water, inexpensive and called Eau Royale or Te Vai Arii, water of the chiefs.

Fete is a mad time in French Polynesia. Employers complain they can't get peole to work. During the height of activities, banks and other establishments simply shut down.

Advertiser photo above by Jan TenBruggencate

Bicyclers speed down Papeete's waterfront (above) in Tahiti while a snorkeler (right) chooses to cool off in one of the island's blue lagoons.

Tiurai is the Tahitian pronunciation of July, and the partying lasts most of the month on most of the many islands of the Societies, the Tuamotu, the Gambiers, the Australs and the Marquesas, the five island chains making up French Polynesia.

Much of the celebration surrounds sporting, some of it familiar and some of it quite odd by Hawaii standards.

There was bicycle racing through the streets — and traffic on the main waterfront boulevard was blocked off for hours to accomodate the race. There was bareback horse racing and the first Tiurai marathon.

The marathon saw only 57 percent of its 112 starters finish, but all seven Hawaii entrants completed the course, led by barefoot Gilbert Lum of Honolulu.

There's another footrace in which entrants must carry 100 pounds of fruit more than

spirit of

a half mile. There's a copra-making contest in which teams of three split coconuts, cut out the meat and bag it.

In the javelin throwing contests, entrants heave eight-foot spears at a single coconut perched atop a 30-foot pole. There are stripes on the coconut, and the high[illegible] on it you stick your spear, [illegible] better the score. The

Prepared by the staff of the Honolulu Advertiser August 1, 198
1982

Bastille Day

coconut comes down looking like a pincushion.

And there's more. Papeete is frenzied with the sports, and with entertainment. Singing and dancing is everywhere, and Hawaii had a role here, too.

Entertainer Dick Jensen was there for several shows. The Malie Aloha Singers performed, along with the Pupukahi Otea Halau.

But to get a feeling of the more sedate traditions of these islands, you have to go island-hopping. Swim or snorkle in the pale blue lagoon waters of Bora Bora or Moorea, relax with a Hinano beer at Huahine's mooring to watch burlap sacks of taro loaded on the freighter for Papeete's market, commune with a coconut crab on a motu off Raiatea.

I recall scenes from a relaxed bicycle ride at midday around Bora Bora.

There was, in the hamlet of Anau, a chicken playing ostrich on the beach, its head down a crab hole.

A dark brown girl nearby held a cat as long as she was tall, its head at her face and its tail draped by her feet.

They have a rare form of public transportation here. Naked children rush out to the bicycles and push them. But they're shy, and when you offer to give them a ride, they scurry off, only to rush back as soon as you start pedaling.

We bought tall, brown bottles of beer from a young man named Ylari, whose father had paddled in the Molokai-to-Oahu canoe race. He likes Honolulu women better than Bora Bora women, he said. Why? Because he's related to all the girls on Bora Bora.

Ninety percent of Bora Bora's recently-installed electric plant's output is produced by burning coconut husks. They are piled at the roadside by copra makers, and kept in great metal hoppers next to the generators at the power plant.

Most of the houses are small. Many have wooden shutters propped open with sticks. No screens. Many are dirty and shabby and old. But they are simply for shelter and sleep. The living in Polynesia is done almost entirely outside.

In the Society Islands, there's very little flat land. The high islands leap up almost immediately from the shore, so houses are almost all within walking distance of the water, where dugout canoes remain common and fishermen's nets hang on posts to dry.

There is little vegetation without usefulness in people's yards. There are coconuts for copra and fuel and thatching and more. There are breadfruit trees for food, and lime trees for juice to soak fish in, and hibiscus and gardenia plants to dress up the hair.

At Faania Bay, there's a classic church. It's whitewashed stone, with a red, corrugated roof. There's no sign to tell you its name or denomination. And the bell for hailing the faithful is of brass and it hangs from the limb of a tree out front.

Aside from the lagoons and the little coral islets — the motu — offshore, the high islands of Tahiti and its sisters could be Hawaiian. The Hawaiian people originated from the region, and many of the plants they brought to Hawaii came from here.

The similar vegetation and volcanic origin are reminiscent of our islands, but the packed coral roads, the living closer to nature, the laughing children, the uncrowdedness, all recall a time long past for Hawaii. And a time worth remembering.

A crowded trip on the

By Jim Borg
Advertiser Staff Writer

HUAHINE — Doubt first dawns with the small print on the ticket.

"The proprietor/shipowner and the captain are not responsible for any damage to persons or baggage," it says in French, "or for accidents, fires, explosions, fortunes of the sea, bad weather or for general risks of the sea or risks of war."

France remains at peace, but there are other ingredients for adventure aboard the Taporo IV, a 244-foot freighter that makes the overnight cargo run from Tahiti to the islands of Huahine, Raiatea and Bora Bora.

We arrive at 4:30 on an overcast afternoon at Papeete's commercial pier. The Taporo sails at 7, but we're told some passengers began as early as noon to stake out space on the wood-slat deck with blankets and mats.

The human cargo includes whole families. Some people wear pareus, the traditional Tahitian wrap. Others wear shorts. You see straw hats and ball caps, a lot of American-style running shoes, and, on one brown-faced boy, a Philadelphia Eagles T-shirt.

The warm air carries the smell of coconut. A Polynesian woman breastfeeds a child. On the wharf, a lunch-truck offers French bread, plates of cold chicken, submarine sandwiches, boiled eggs and soft drinks in cans. A radio in the truck plays cheery tunes, including a French rendition of "Red Sails in the Sunset."

The Taporo, which means "lemon" in Tahitian, has a red hull, no sails.

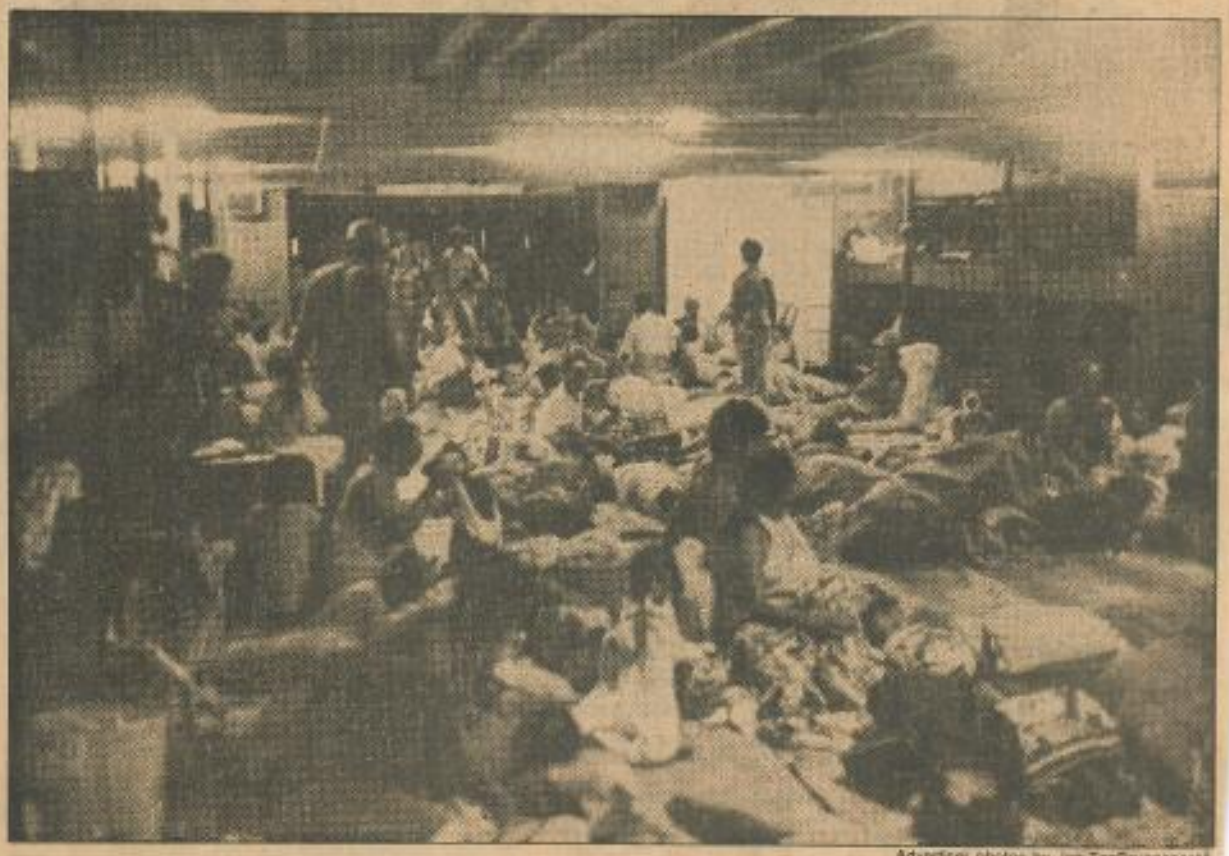
There are about 50 people on the open deck, but most passengers clearly show their intention to spend the night in the bunk compartment, a broad breezeway that runs fore-and-aft through the ship's superstructure.

In here, along the walls, under maybe a 10-foot ceiling, are 26 beds, mostly double-deckers, available by reservation and at extra cost. Along the starboard wall stand three single-customer johns for men, mirrored to port by closets marked Vahine Femme Women.

In between lies Mat City. Nearly every inch of the breezeway deck, maybe 12 yards across, is covered with grass mats, many anchored by children ordered to defend the family turf while the adults roam around.

Grass mats, blankets, air mattresses, woven baskets with French loaves protruding, coolers, guitars, ukuleles, radios. Walking through here is a delicate and diplomatic operation.

With no space left inside, a Canadian couple camps next to the forward cargo hold, under a greasy pully and wires. An American couple takes in this whole scene for about half hour, then hastily leaves the ship.



Advertiser photos by Jan TenBruggencate

Most passengers aboard the freighter choose to spend the night in the bunk compartment, a broad breezeway that runs fore-and-aft through the ship's superstructure.

Taporo

Most tourists have a choice about these things, but for many residents of French Polynesia and visitors on a tight budget, freighters are the practical answer to inter-island travel. Deckspace on the Taporo, for instance, costs 700 Pacific francs or about $6.75 for the voyage to Huahine, 102 miles to the northwest. That compares to 4,900 francs or $47 for the one-way flight on Air Polynesia.

Riding a freighter also has the ring of romantic enterprise, which is why at 7, as a gray dusk settles, vacationing Advertiser staffers John Strobel, Jan TenBruggencate and I remain on the manifest.

The aft cargo boom lifts the gangplank up and swings it aboard, nearly decapitating two passengers standing idly by. With a blast of the whistle, the ship pushes away from the pier and heads out to sea with a warm-blooded cargo of 200 people, three dogs and two goats.

The run to Huahine should take nine hours.

"Get a job — Boom, sha-na-na-na-na!" At the snack bar on deck, for anywhere from 50 to 300 francs (less than $3), you may buy Tahitian coffee with milk, boiled eggs, Coke, Fanta, Sprite, cigarettes, Eskimo Pies, something called Piggy Snax, something called Twisties (corn munchies, looks like), peanuts and Crackerjack. The radio inside plays American oldies for free. "Love was in her eye-eye-eyes, the night before!"

At night, the light in the snack bar is the only light, making that area of the deck the only place you can read a book, except for the breezeway, which is wall-to-wall bodies.

After a while things settle down and people doze off, at which point a crewman comes by with a flashlight and wakes everybody up to check tickets.

We hunker down against the forward cargo bulkhead, next to the Canadian couple, near a kid strumming a guitar, singing "Beyond the Reef." And for a while it's nice.

The Taporo IV experiences rough seas as it leaves Tahiti for an overnight voyage to Huahine.

The diesel engine vibrates the deck. The lights of Papeete, rocking up and down, grow distant off the starboard stern, and Moorea slips by on the left. Phosphorescence glows in the bow wake.

It's windy now and we put on long pants and jackets.

A little past 9, the vibrations stop.

The Taporo sloshes to a halt, rocking in the swells. A goat bleats. The sea is kicking up now.

The snack bar is closed, so the only light comes from the breezeway, where a Burt Lancaster movie is in progress on a small screen. Black and white, dubbed in French.

The swells are really rolling now, and when people in Mat City move around they do it on their knees. Outside, passengers walk in elliptical loops as the deck rocks. Occasionally, they are thrown off balance into the railing. Among the younger folks, this is accompanied by giggling.

Boxes and coolers slide back and forth. Luckily, no one is in the way when one big swell sends the unsecured gangplank crashing to port.

About this time TenBruggencate remarks that there are no lifeboats. He is correct.

Kathy Tseu, a Big Island school teacher we met earlier, says, "Well, going into the Pacific is not like going into the Atlantic, right?" The Atlantic being much colder, of course. On that optimistic note, we huddle under the

see Taporo on page 6

France suspends nuclear testing in French Polynesia

By David Crary 4/8/92 HSB
Associated Press

PARIS — Premier Pierre Beregovoy, in his first policy speech, announced today that France will suspend its nuclear testing program and urged other nations to follow suit.

France has conducted nearly 200 atmospheric and underground tests in French Polynesia since 1966 despite protests from environmental groups and South Pacific governments. France has no other nuclear testing sites.

Beregovoy told the National Assembly that President Francois Mitterrand had ordered a halt to this year's tests in hopes of encouraging other nuclear powers to negotiate further accords on disarmament and testing limits.

"We've got to put a halt to overarmament and the endless accumulation of atomic arms," said Beregovoy, who replaced Edith Cresson Thursday.

The United States has conducted at least one underground nuclear blast in Nevada this year. Some lawmakers have urged a ban, but the Bush administration has not supported halting tests.

Beregovoy said France was not prepared to dismantle its nuclear force, but favors a "balanced reduction" of the world's nuclear arsenals.

"I can't believe it," said Lena Hagelin, a spokeswoman for the environmental group Greenpeace. "This is fantastic.

"We've been trying for 20 years to put nuclear testing on the French political agenda. This moratorium will allow us to start working toward an international comprehensive test ban treaty."

The Greenpeace flagship, Rainbow Warrior, was sunk by French commandos in 1985 as it prepared to leave on a protest voyage to the testing site at Mururoa atoll. A photographer aboard was killed.

Jacues Chirac, the leader of the largest conservative party, accused the government of making the decision unilaterally and risking a "weakening (of) the defense of our country and that of Europe."

France has conducted nuclear tests since 1960, six years after it began building its nuclear force. France's first nuclear device was exploded above the Sahara in southern Algeria. Testing in Algeria ended after its independence from France in 1962.

On July 2, 1966, the first French nuclear test in the Pacific was conducted in the atmosphere above the Moruroa atoll. The testing moved underground in 1975 after France signed an international accord banning atmospheric tests.

French will continue

Few people, if any, are likely to miss two South Pacific atolls that are now being destroyed by French nuclear tests, since these lonely sand pits have never been inhabited by humans anyway. But the manner of their destruction is a legitimate matter of international concern that Pacific islanders have not been slow in pursuing.

NUCLEAR TEST explosions at Mururoa, about 800 miles southeast of Tahiti in French Polynesia, are said to be causing that atoll to sink into the sea. Possibly for this reason, though nobody has said so, the French are shifting the operation to nearby Fagataufa. *Au revoir*, Fagataufa.

People keep asking the French why they do not have the tests of their own territory, if they are as harmless as the government says in distant Paris. As a matter of fact, the South Pacific test sites are indeed on French soil, a compliant French Polynesian legislature having ceded Mururoa and Fagataufa to France in 1964, as the nuclear program was beginning.

However, the change in political status did not alter geography. Understandably, each detonation has been followed by outraged protests from the region. South Pacific island governments have been particularly upset, fearing that possible nuclear contamination of Pacific waters will be disastrous to fish, potentially their most important economic resource.

NONE OF THE outcry has daunted the French, a pragmatic bunch who are never in doubt as to where their national interests lie. The consistent response from Paris has been that the environment is unaffected by the tests, and that they will continue.

To the disappointment of leftists, the advent of a Socialist government under President Francois Mitter-

robert trumbull

The writer was a foreign correspondent for the New York Times for 36 years, mostly in Asia and the Pacific, and now does special assignments for that newspaper from a Honolulu base. He writes this column for The Advertiser.

and has made no difference. Obviously, the new group in power is French first and Socialist second.

France moved the nuclear program to the South Pacific from Algeria when that former French colony became independent two decades ago. The annexation of Mururoa and Fagataufa cleverly obviated a new political threat to the project should the nationalists in French Polynesia succeed in separating those widely

Pacific N-tests despite 'fallout'

scattered islands and atolls from French rule.

SINCE THEN, the sea and sand crabs on Mururoa have undergone a horrible ordeal. Between 1966 and 1975, 41 atmospheric explosions pounded the atoll. Another 45 fearsome blasts have been recorded since the tests moved underground.

Fagataufa, the scene of nuclear tests in 1975, is now back in center stage. Mururoa seems to have had it, at least for the time being, although the French, in announcing the new underground program on Fagataufa, have carefully specified that Mururoa will continue to be retained as a nuclear proving ground.

Meanwhile, the credibility of French reassurances as to the safety of the experiments has been severely shaken by reports of physical damage to the atoll, accompanied by the dispersal of radioactive material. The account, issued in Paris last month by a group of union members who had worked at Mururoa in the employ of the French Atomic Energy Commission, has been partially confirmed by the Mitterand government.

THE REPORT makes scary reading. It says, among other things, that fissures in the underlying coral structure have lowered the height of the atoll by nearly five feet since the subterranean detonations began in 1975. One underground blast in 1978, described in the report as having amounted to a major earthquake, was said to have done significant damage to storage areas for contaminated waste.

Furthermore, according to the workers' report, irradiated material has been leaking into the surrounding waters since the beginning of the underground explosions nearly seven years ago.

A frightening little sidelight, disclosed separately, described the inadvertant jamming of an "explosive device" in a tunnel so that it could neither be removed nor detonated. And there it stays, unless one can believe the routine official denials.

Finally, the unionists' report stated that a severe storm last March 22 had swept away the asphalt covering on a nuclear waste storage pit, which then was flooded, causing the deadly garbage to be washed into the Mururoa lagoon, from where it washed back into the beaches.

A CLEANUP effort was foiled by another storm last August, the report said, adding that nothing more has been done to repair the damage.

The French minister of defense, Charles Hernu, who visited the atoll soon after the August storm, stated in the French National Assembly, when pinned down, that the second storm had indeed scattered nuclear waste from an explosion earlier last year. However, he insisted that there was no danger from the mishap.

One need only examine our own nuclear experience, from the tragic fallout from the Bikini blast in 1954 to the alarming leak at Three Mile Island 25 years later, to conclude that any skepticism of official reassurances in these matters is understandable. But this is unlikely to deter the determined French.

The Sunday Star-Bulletin & Advertiser, Honolulu, January 10, 1982 B-3

AP wirephoto

Hurricane hits paradise

A damaged church surrounded by debris shows the aftermath of Hurricane Veena near Papenoo, Tahiti. The hurricane hit late last week. The French government flew 122 civil defense personnel, three doctors, food and water purification chemicals to the islands to aid in the recovery effort.

SAN BERNARDINO SUN APRIL 18, 1983.

Direct Flights to Tahiti to Be Revived

By Kathy Titchen
Star-Bulletin Writer

Hawaii will have direct air service to Tahiti and more flights to American Samoa under a new route announced yesterday by South Pacific Island Airways.

The regional air carrier, based in Pago Pago, American Samoa, plans to restore Honolulu-Pago Pago-Papeete service Feb. 27, using a Boeing 707 purchased from American Airlines.

A new division of the airline based in Honolulu will handle the route.

It will be the first time Honolulu has had direct service to Tahiti since Pan American World Airways suspended its flights there in October 1979.

South Pacific is the second carrier in the past two months to announce plans for service to Tahiti. Evergreen Airlines announced on Oct. 16 that it planned to fly a once-a-week public charter, at about $500 round trip per passenger, to Tahiti starting in April.

South Pacific plans three flights a week from Honolulu to Pago Pago, two of them going on to Papeete.

No fares have been announced. Currently the one-way economy fare from Honolulu to Pago Pago is $320. South Pacific officers say their fare will be lower.

ACCORDING TO company President George A. Wray, a lack of stable service in the South Pacific prompted the venture by the small island carrier, which operates two-engine DeHavilland Otters connecting American Samoa, Western Samoa and Tonga.

Wray said he wasn't criticizing the U.S. trunk carriers — in this case Pan Am and Continental, which have served these routes over the years — because "they have other responsibilities" and the South Pacific routes haven't proved profitable for the larger carriers, which have shifted to wide-body aircraft that can be operated more economically on long-range flights.

"For the past few years we've gone from five to two to five to three frequencies a week in Samoa," Wray said. "What we're doing is something we have to do for ourselves out there, for our community. The island economies are maturing and we need a stable air service."

Wray said when Pan Am reduced its service from Honolulu to Pago Pago in 1978, community leaders asked South Pacific to fill in the gap. "In a small nation life is pretty intimate," he said. "People expect you to do what you can. We did some studies and grudgingly decided it looked feasible. Then Continental came in (with new flights) and we backed off, thinking this is wonderful."

WRAY SAID THAT when Continental reduced its flights to Pago Pago to three a week, the issue was revived again. Since two of Continental's flights are on weekends, he said, the cutback has reduced the frequency of mail service to American Samoa, which has an impact on the business community.

Bernard Lal, vice president of the airline, said surface shipping to Samoa is limited and "a substantial amount of cargo goes by air," so the airline expects a healthy business in air cargo shipment too. "We believe every bit of our space will be used," he said.

The new flights will also make travel between Samoa and Tahiti easier, according to Lal. "I just got back to Honolulu from Tahiti, by way of Los Angeles," Lal said yesterday. "To get to Papeete I had to fly from Pago Pago to Fiji, and then to New Zealand, and from there to Tahiti...18 hours flying time. It takes two hours and 50 minutes from Pago Pago if you can fly direct."

There is already provision for a U.S. carrier to serve Tahiti from Honolulu. Formerly Pan Am had the route but suspended service a little over a year ago. South Pacific is in the process of obtaining that authority from the Civil Aeronautics Board and Lal said the "paperwork should be finished next week."

Lal said the flights should help boost Tahiti's tourist industry, which has been stagnant for some time. "When I was staying at the Hotel Maeva in Tahiti," he said, "I don't know how many people were in the hotel but I never saw more than 15 or 20 people at a time."

AMERICAN SAMOA, which attracts 50,000 to 60,000 people a year, has experienced a "slight drop", he said. "Our tourist industry has been fairly static in the last three or four years," he said. "One problem, though, is that people who go to the South Pacific want to see all of the South Pacific. They want to see Tahiti, Samoa, Tonga and Fiji on one trip. This has been difficult because the service (between the island groups) hasn't been there. Now they will be able to do this."

Lal will open the carrier's Honolulu office in mid-January, on the ground floor of Grosvenor Center. The Honolulu-based division will operate the company's one 707 under a management contract with PanAm World Services, a subsidiary of Pan Am. Pan Am will provide a five-person management team including a general operations manager, chief pilot, flight operations director, financial comptroller and director of maintenance.

The 2,000-square-foot office will include a tourist information center for the South Pacific, where prospective visitors will be able to get material on hotels, rental cars, flights, cultural events and other information pertaining to the South Pacific island groups.

France Explodes a Nuclear Device

WELLINGTON, New Zealand (UPI) — France exploded a nuclear device at its test site at Mururoa atoll in the South Pacific, scientists said today.

Seismologist Murray Lowry of the Department of Scienific and Industrial Rsearch said its laboratory at Rarotonga in the Cook Islands recorded the explosion early yesterday.

He said it was the second in the current series of nuclear experiments and was estimated at 4 kilotons. The first explosion a week ago was estimated at 20 kilotons.

The environmental group, Greenpeace, which predicted the test several days before the explosion, said France was currently engaged in a series of five or six nuclear tests which would run through July.

They said it was believed France was testing a device understood to be warhead for a submarine-launched multiple warhead missile known as the M-4.

Honolulu Star-Bulletin Tuesday, June 24, 1980

France Confirms Mururoa N-Tests

PARIS (AP) — The government confirmed yesterday it carried out two underground nuclear bomb tests in the South Pacific.

The statement said the tests were conducted last,Saturday and Tuesday at the French atoll of Mururoa, the regular French nuclear testing site. It did not reveal the power of the test explosions.

The New Zealand government, which first reported the tests yesterday, said its scientists measured the first at 8-10 kilotons and the second at 15 kilotons.

New Zealand said the tests were the continuation of a series begun Nov. 11, which the French also confirmed at that time.

France has denied it is testing neutron warheads, but the Socialist government has said it is studying possible development of such weapons.

French ecologists claim tests at the atoll have severely damaged the area and allowed radioactive material to leak into the ocean. The government denies this.

A-12 Honolulu Star-Bulletin Friday, December 11, 1981

Sunday Travel
The Sunday Star-Bulletin & Advertiser

Cruising through

By Jerry Hulse
Los Angeles Times Travel Editor

COOK'S BAY, Society Islands — Hugh Kelley stared open-mouthed at the cruise ship Majestic Explorer that was beached at his Club Bali Hai resort on Cook's Bay, Moorea.

The big man shook his head. "The captain must have lost his rudder," he said.

An associate of Kelley's suggested that perhaps engine trouble was to blame.

As it turned out, they were wrong on both counts. First, Capt. Robert Patronsky knew precisely what he was doing when he hit the beach at Bali Hai. And mechanically, the ship was without fault.

"We stopped," said an officer, "because several passengers asked to be picked up here at Bali Hai."

informality (no jackets, ties) that's seldom observed on big ocean liners.

Still, there are minuses on these five- and six-day cruises. First, they aren't cheap: The minimum for the shorter cruise is $759 per passenger based on double occupancy. Secondly, because the ship's shallow draft affords such excellent opportunities to explore the lagoons, there's an unwelcome and persistent roll in deeper water. There is also the matter of meals, which are wholesome but not particularly imaginative and are served family-style at a single sitting.

So it boils down to this: If one isn't disturbed by motion and the adventure seems more important than luxury, a cruise on the Majestic Explorer is a rare travel adventure.

peete, sailing over on a copra boat between her island and Tahiti.

To her knowledge, there never has been a crime on Huahine. And only in recent years has a gendarme been stationed on the island to help quell an occasional family disturbance.

Even with air service, Huahine still remains remote. One can travel miles without seeing another soul. In such a setting, the Majestic Explorer made an unscheduled stop at a small village near Yolande's home. With her husband, Bruce, she flagged down a dilapidated old bus. Other ship passengers joined her, and 30 minutes later she was home, in the arms of her Chinese-speaking parents, who welcomed Yolande and her fellow passengers to a fish fry in the family garage. Just like that — no notice, no invitation. Plain old Tahitian hospitality.

He explained that the passengers had jumped ship, so to speak, to go sightseeing earlier in the day when the vessel had visited another bay on Moorea.

Because of its surprisingly shallow draft, the Majestic Explorer can be beached practically anywhere the captain chooses and explore lagoons where larger cruise ships seldom sail.

Remember the old film clips showing cruise ships steaming into remote South Seas islands and of islanders rowing out to meet them with garlands of flowers? Because of the jet, those were scenes half-forgotten until the introduction in November of cruises by the Majestic Explorer.

The pluses of the Tahiti cruise are numerous: exploring little-known coves throughout the islands; picnic lunches on deserted beaches; snorkeling in remote corners of lagoons where few, outside of islanders themselves, have ever swum. There's also the intimacy of a small ship (capacity: 88 passengers) and an

We sailed from Papeete on a cloudy Tuesday afternoon, crossing the Sea of the Moon to Moorea's lovely Opunohu Bay. After dinner, the sky blazing with stars, we sailed again — this time for the island of Huahine and a going-home adventure for one passenger, Yolande Inglebrecht, a 28-year-old Tahitian of Chinese extraction who left Tahiti to seek her fortune in California. Now she was returning to learn the answer to a gnawing question: Had she left her real contentment on Huahine?

Huahine, 100 miles south of Tahiti, is one of those color poster dreams that's a lifetime from the pace of Tahiti's port city of Papeete. Until six or seven years ago, Huahine was left to slumber. Trading schooners called infrequently and the airplane still hadn't arrived. Yolande Inglebrecht recalls washing her clothes in the river that pours from the mountains near her parents' home. She fished with a net and helped tend the chickens and pigs, and later she attended high school in Pa-

In her brief visit, Yolande learned the answer to that business of contentment. Thomas Wolfe was right, she decided. Had she not left, well, perhaps that contentment could have been fulfilled. But for her it is impossible to go home again, even to a paradise like Huahine. She doubts, too, that other Americans could stay long on Huahine. For a month, maybe, but after that she figures they would grow restless and return to the old madness.

For a visit, though, Huahine provides all the elements of the dream. We strolled into the village of Fare, to catch up with the Majestic Explorer and to watch the interisland schooner that arrives weekly and is loaded with watermelon, breadfruit, limes, fresh fish and other goods destined for Papeete. As towns go, Fare is small, only a couple of blocks long with a population of 450. But on Huahine, it's Manhattan and Los Angeles combined, the biggest town on the entire island.

Prepared by the staff of the Honolulu Advertiser January 16, 1983

the Society Islands

The Majestic Explorer will cruise through Tahiti and the rest of the Society Islands through May of this year.

This beach near Raiiatea is the perfect setting for romantic walks and swims or the beach party and barbeque that highlights the Majestic Explorer cruises.

The Hotel Marara on Bora Bora was built by Dino De Laurentiis to lodge his cast and crew while filming "Hurricane." It offers 66 thatch-roofed beach cottages and a glass-walled restaurant, above.

We stopped by Kiau Lai Wong's grocery, where specials were posted on onion soup, mushrooms and canned chestnuts imported from Paris. But wily old Wong doesn't stop just with groceries. He also sells bicycles, electric fans, garden hoses and windsurfing outfits. A few doors away, Wing Kong still turns out bread, just as he did when Yolande was a small girl.

It is a five-minute stroll to the finest resort on Huahine, the Bali Hai with its thatched bungalows and man-made lagoons. But if it's an old island atmosphere one seeks, then there are two choices: the ramshackle Hotel Hawaii (five rooms) and the Hotel Huahine whose 12 rooms feature beds, tapa cloth curtains and little else but whose dining room is judged the best on the island.

From the terrace of the Hotel Huahine, one can catch the action — the dock with its mountain of watermelon, the mynah birds kicking up a fuss in the garden, the street people passing the entrance.

While waiting to reboard the Majestic Explorer, we took a table at Te Marara, an open-air snack bar on the waterfront, where we sipped beer and watched the windsurfers. A Tahitian singing group was practicing for a show that night and so the entertainment was free. The group was still singing as the Majestic Explorer sailed for Bora Bora, the island that James Michener contends is the most beautiful on earth.

Lining the dock at Bora Bora was a troupe of Tahitian dancers hired by the operators of the Majestic Explorer. It was a welcome that recalled another century altogether. While passengers boarded buses for a 17-mile circle island trip, I stayed behind to stroll through the village of Vaitape and to learn if success had spoiled Bora Bora. Well, I looked in on Chin Lee's grocery and it was still the same controlled confusion, so happily nothing had changed there. On the street outside, chickens crossed the road, wings beating furiously before oncoming motorbikes, a scene much the same as I had remembered it.

Once the entire island was lighted by kerosene. Now it mostly has been replaced by electricity, and a friend, Erwin Christian, tells how there are nearly 50 telephones and that Hyatt intends to build a 150-room hotel. In the beginning, there were to have been 150 swimming pools — one for each hotel room — but the idea was scrapped because Bora Bora suffers a water shortage already. Besides, why a swimming pool with that magnificent lagoon?

Bora Bora is the place to find seclusion in one of the world's most beautiful tropical settings.

Hotel Bora Bora is still the island's pride, although the Hotel Marara that film-maker Dino De Laurentiis built while filming "Hurricane" is doing nicely, too. A California couple, Elaine and Greg Claytor, bought Hotel Oa Oa, which they saw for sale in the Wall Street Journal. They spent a small fortune renovating the thatch-roof bungalows.

Still the best buy on Bora Bora is a cottage at Hotel Matira for $29-$35 a day, including an outrigger canoe. That's hard to beat anywhere in the South Seas and especially in French Polynesia. The bungalows feature four single beds, a kitchen, bathroom and screened windows. And in case it's too much of an effort to do the shopping, guests give their lists to Gaston at the restaurant Matira and he does the buying and delivering for them.

Neither films nor war have reduced Bora Bora's charm. The islanders are happy. They pay no income tax, no property tax and although few fish and farm these days, there appears to be no unemployment problem, what with so many jobs provided by tourism.

But mainly there are the incredible scenes that set the spell on Bora Bora, as passengers on the Majestic Explorer learned when the ship sailed one sunset: Waves pounded the reef and the distant island of Maupiti was aflame with clouds while a Tahitian glided by in an outrigger, a silhouette against the peaceful waters.

For information about the Majestic Explorer, contact your travel agent or Exploration Holidays and Cruises, 1500 Metropolitan Park Building, Olive Way at Boren Avenue, Seattle 98101. For other details, write UTA French Airlines, 9841 Airport Blvd., Los Angeles 90045, or telephone (213) 649-1810.

French-Tahitian Sign Language Works Fine

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Next morning we greeted a fresh Pacific sunrise and were on deck for arrival at the small port of Farerea on Huahine, 12 hours after departing Papeete.

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Returning to Papeete, the *Vaitere* retraced her outbound route. In a few days and nights aboard this island trading schooner, it was possible to feel how it might have been when others like her were the only link between these remote islands and the rest of the world . . . and indeed, between these islands and the people of their own world.

I'd say there is only one way to beat seeing Tahiti, Raiatea, Huahine, and Bora Bora aboard the *Vaitere*, and that would be aboard your own cruising sailboat.

It's being done. We saw many visiting yachts anchored along the Quay de Commerce at Papeete, and in the incomparable, quiet coves on Moorea, the island nine miles north of Tahiti.

But until the lucky sailor can do it that way, the *Vaitere* points her long bowsprit out through the coral reef of Papeete every week and heads into clear, blue Pacific waters to islands nice to read about but much nicer to see from a moving deck.

$12 Cruise

From Tahiti to Bora Bora On a South Seas Schooner

Story and Photos by TOM MUTCHLER

A HANDSOME INTER-ISLAND trading schooner slipped through the deep, blue water. Ahead was the opening in the coral reef with the sharply contrasting turquoise water of the lagoon inside.

The island was Bora Bora, a magic name in mid-Pacific. Coconut palms bent over the beach, a warm midday sun bathed the small quay where the schooner would tie up.

Aboard, a tall, sturdy Tahitian was at the wheel. His eyes were on the captain who stood atop the foc'sle and signaled directions. Golden-skinned crewmen were ready with hawsers to make fast.

Sounds like something out of the past? Days gone by? Memories of the romantic but no-longer-real era of an unspoiled Polynesian paradise?

It is still happening today. My wife and I were aboard — the only non-Tahitians on a four-day round trip from Papeete on the island of Tahiti, to Bora Bora and other fabled islands in the Society group.

The *Vaitere* makes the trading trip every week. She is one of the few remaining authentic trading schooners still carrying goods and a few passengers on the inter-island route from Tahiti. Modern ships compete, but the *Vaitere* still holds her own. With one exception she is little changed over the years; she no longer goes under sail, but instead relies on her powerful twin diesels. But her sturdy masts still grace the sky high above her shapely hull.

And even without the white wings with which she once flew, she still breasts the waves and moves through the water with the thoroughbred grace of a grand lady of the sea.

I hung in the ratlines as we entered the lagoon at Bora Bora and marvelled at the view down into the translucent water. Far from shore, on the reef, several fishermen stood ankle deep on the coral necklace which surrounds the island. They paused to watch the *Vaitere* slide past, but were soon back to their business.

The dramatically rugged and grand silhouette of this renowned island dominated the seascape. A sheer wall of dark, moist stone broke through the dense green and rose almost straight up from near the beach and the quay. At the water's edge, coconut palms hung over the sandy shore like a movie set, or a scene out of Nordhoff and Hall.

It was hard to believe that Tahiti is only eight hours away by jet from Los Angeles, with a connecting flight to this small island in the middle of the Pacific. As we slipped into the lagoon and under the lee of the island, Los Angeles and jets seemed more than a world away.

There aren't many bargains left in this day of inflation, but this has to be one of the greatest buys today for the boat lover. We had booked passage on this voyage of the *Vaitere* for $12 each.

I hasten to point out that passage and a bunk is just about all we got in way of accommodations. However, it was adequate. We had two of the four berths in the community cabin. There is an ample head aboard. And, of course, typically Tahitian, everything is exceptionally clean.

Other passengers, traveling from one island to another, rolled out grass mats and slept on top of the cabin or on the cabin floor.

Food was a personal matter. You supplied your own. But we often were invited by other passengers to share their fare. The arrangement made for conviviality and provided an opportunity to get to know the friendly Tahitians who were fellow passengers and crew.

Being in French Polynesia, of course the language is French and Tahitian. As bad as our French is, our Tahitian is worse. We saw again the marvels which can be wrought with persistence and sign language. No problems.

How did we find the *Vaitere*? Sheer luck. Ione and I were headed for Tahiti on vacation — a wedding anniversary gift to ourselves. We were booked into the new Maeva Beach Hotel near Papeete. A friend sent me a tourist magazine with an article on Tahiti and prominent mention of the hotel. We were reading the story on the plane and caught a comment on the little-known availability of passage on the *Vaitere*.

Since we hoped to see the other islands, and being boaters (our *Kitrina* is a Danish Folkboat), we preferred to see the islands via the water if possible. The *Vaitere* piqued our curiosity and struck our fancy.

We decided to look into it when we arrived and see if we could arrange to make the trip. We didn't know we would have to turn detective to do it.

The magazine story only mentioned the *Vaitere* in passing and gave no information about where passage was handled, or indeed much more than a few sentences saying the boat made weekly trips through the islands and one could travel with her if he liked to rough it. It also mentioned the reasonable price.

So a few days after arriving in Tahiti, we started inquiring around Papeete for the *Vaitere*. The first day

1970

French-Tahitian Sign Language Works Fine

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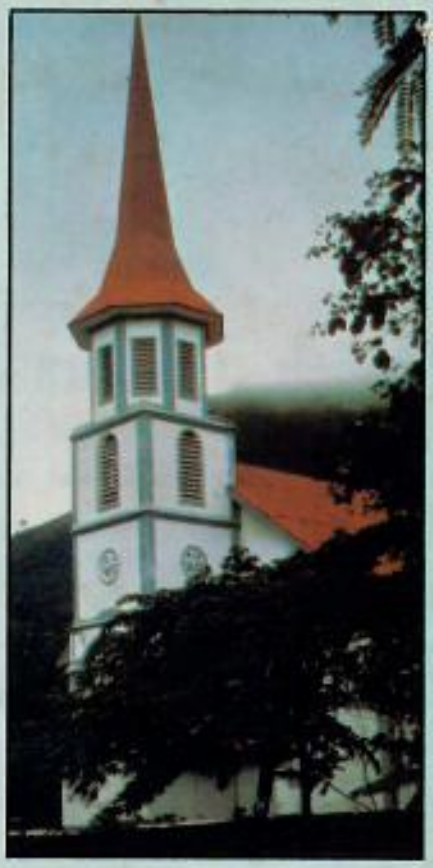
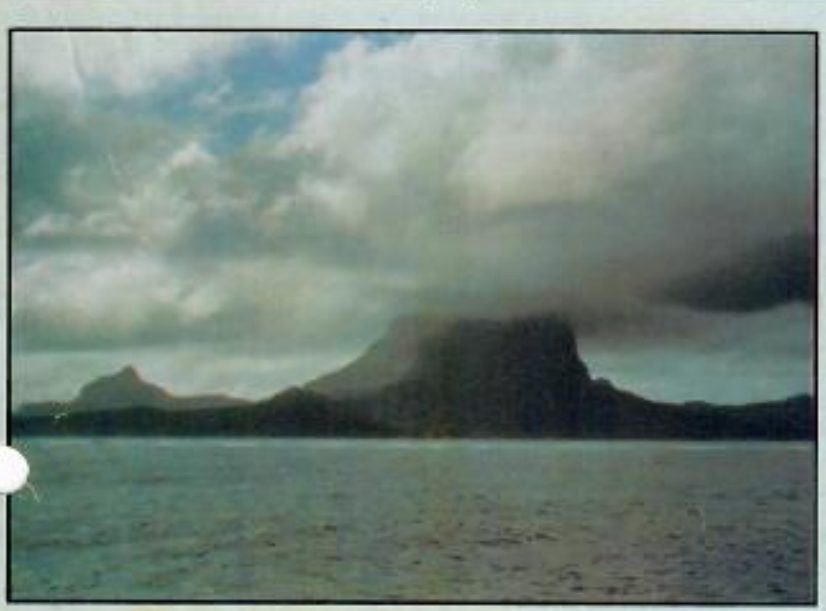


Right, clockwise; Palm-thatched roofs are common on Bora Bora. Missionaries played a major role in the development of the islands. This church still serves the people. Vaitere overhangs both ends of the narrow quay at Bora Bora while transferring goods.



Left, counterclockwise: Bora Bora wears her island crown of misty clouds as she rises from the Pacific. Outrigger canoes and drying fish nets are common sights on the islands. Tahitian sunsets must be the most beautiful in the world. This is part of Papeete's waterfront with visiting yachts, fishing boats, Quinn's Bar and typically Tahitian landmarks.

N05 May 1972
Noumea, N.C.

The South Pacific Islands
Fisheries Newsletter

PROGRESS OF THE MARINE TURTLE PROJECT

The study of problems related to the protection of marine turtle species endangered by human exploitation in the tropical Pacific concerns all the territories within the scope of the Fisheries Agency.

In 1971 two consultants, Professors Hirth, of Arizona University, and Hendrickson, of Utah University, visited most of the area covered by the Fisheries Agency. Their reports are now available: Professor Hirth's was circulated in October 1971, and Professor Hendrickson's has just reached us. Territorial Administrations now have documentation they can use to undertake limited but effective action.

From a number of recent developments it is plain that the project is being pursued vigorously. Firstly, to the documentation already available has been added a first class document, with the publication in February and the distribution in March, of the synopsis of biological data on green turtles (Chelonia mydas) published by FAO in Rome and written by Professor Hirth, the Agency's consultant.

In addition, through the co-ordinated action of the Agency's consultants, Hirth, Hendrickson and Glude, it was possible to meet rapidly an urgent demand for tagging equipment to continue current operations and undertake new activities. Tagging equipment was ordered specially in the United States and forwarded at the end of April to Western Samoa, the Trust Territory of the Pacific Islands and French Polynesia.

In the latter territory a special mass tagging operation was conducted in a very short time by the French Polynesian Department of Fisheries.

Following Fisheries Agency's consultants' recommendations, the Territorial Assembly of French Polynesia, on proposal of its Department of Fisheries, enacted, on 23rd December 1971, a new regulation on the capture and marketing of green turtles (Chelonia mydas), the text is attached.

In accordance with this regulation, about 200 green turtles found stocked - and intended for sale - in the Scilly atoll (at the extreme West of the Society island group), were confiscated by the administration at the beginning of March. On 16th March the Fisheries Agency in Noumea received a telegram from Tahiti, requesting urgently equipment and instructions for tagging green turtles before release into the sea. As a result of a rapid exchange of cables and correspondence between Noumea, Tahiti, Tucson (Arizona) and Salt Lake City (Utah),

88 tags and a pair of pliers were delivered 10 days later in Tahiti and transported urgently to Scilly where the Polynesian Fisheries Department tagged and released, on 31st March, 67 female adult turtles, measuring between 87 and 110 centimetres at the longest part of the shell.

The Fisheries Agency, the Polynesian Fisheries Department and the consultants, Professors Hirth and Hendrickson, because of their immediate co-ordination and close co-operation, were able to meet a new and unexpected situation which ended with a first mass release of tagged green turtles, in an area where, at present, we have no accurate data regarding movements and behaviour.

In addition studies on green and hawksbill turtle rearing are continuing in some territories and we are grateful to Mr James McVey, biologist of the Marine Resource Division in the Trust Territory for forwarding to us, for the information of our readers, the first results of his experiments on growth and feeding of young hawksbill turtles. We look forward to receiving similar notes on current experiments from territories.

Lastly, to show its interest in this project which covers all territories, the South Pacific Commission has decided, as counterpart, to participate in the purchase of equipment. and to bear the cost of publication of the extension handbook on marine turtles in the Pacific.

* * *

Resolution No. 71-209 dated 23 December 1971 on the control of MARINE TURTLE (Chelonia mydas) FISHING IN THE TERRITORY OF FRENCH POLYNESIA

Article 1. All fishing of marine turtles (Chelonia mydas) whose carapace is under 65 cm in length is prohibited in the whole territory of French Polynesia.

Article 2. The capture, on land, of regulation size turtles is prohibited between 1 November and 31 January.

Article 3. The capture, at sea, of regulation size turtles is prohibited between 1 June and 31 January.

Article 4. Turtle concentration grounds are open to fishing according to a quota allotted to each zone and fixed by Council of Government decree on proposal of the head of the Fisheries Department.

Article 5. The holding of live turtles for more than 10 days is only permitted in a fish pond fitted with a sun shade. Live turtles may only be transported if shaded from the sun and provided they are not ill-treated in such a way as to cause unnecessary suffering.

Article 6. The gathering of mature turtle eggs on land is prohibited.

Article 7. Permits for the capture of turtles of all sizes and for harvesting of mature eggs may be granted for scientific research purposes by the head of the Fisheries Department. M. STEIN. Six.

Article 8. Slaughtering of turtles shall be carried out in good, sanitary conditions and especially away from flies, dust and any polluting or infectious matter.

Article 9. The sale of sea turtles is prohibited throughout French Polynesia.

Article 10. Anyone found to have collected mature eggs on land without permission and anyone who sells live whole turtles or turtle flesh shall be punished in accordance with the scale of sentences provided in Decree No.2792/AA dated 24 October 1968 under the fifth category of offence.

Anyone who fishes turtles of non regulation size during the open fishing season or female turtles, on land, which have not finished laying their eggs will be punished according to the scale of sentences provided in Decree No.2792/AA dated 24 October 1968 under the fourth category of offence.

Anyone who fishes turtles during the closed fishing season will be punished according to the scale of sentences provided by Decree No.2792/AA under the third category of offence.

Anyone who fails to comply with any other provision covered by this Resolution shall be punished according to the scale of sentences provided by Decree No.2792/AA dated 24 October 1968 under the second category of offence.

Article 11. This Resolution is adopted for implementation by all concerned.

* * *

GROWTH RATE AND FOOD CONVERSION IN YOUNG HAWKSBILL TURTLES (Eretmochelys imbricata)

James P. McVey, PhD.

The hawksbill turtle (Eretmochelys imbricata) is considered an endangered species by the United States Department of Interior and is placed on the list of protected species. However, there are still viable populations within the Trust Territory of the Pacific Islands and particularly within the Palau District. Increased predation from fishermen and the local practice of eating turtle eggs have led to a decline in hawksbill populations. The Marine Resources Division of the Trust Territory has, as a conservation measure, embarked on a programme to raise the turtles from the egg to a stage large enough to avoid most predation in nature. The growth rates and conversion ratio of food weight to turtle meat is also being explored to determine future possibilities of farming the hawksbill turtles. The following information was obtained from the first of a series of experiments on growth rate and food conversion in hawksbill turtles.

Hawksbill turtles were collected on their hatching day (3-2-71) from natural nests in the southern uplifted rocky reef limestone rock-island area of the Palau District. The turtles were measured and weighed to determine average weight (12.3 gms.) and carapace length (3.1 cm.) upon hatching. Approximately twenty turtles were placed in two twelve-foot diameter ferro-cement tanks supplied with running sea-water from an inert marine pump. The hatchlings were fed a mixed diet of tuna and bonito meat, sardines and benthic algae (Laurencia and Padina). Fish was the preferred diet; only traces of algae were consumed.

The turtles were divided into two groups as a means of checking the reliability of the experimental method. Monthly measurements of turtle weight and carapace length were made. During the period 6-30-71 to 8-22-71, when the turtles were approximately four to five and one-half months' old, the daily food ration per turtle was computed. This data was then compared to the average weight gain per turtle to estimate the food conversion ratio.

Figure I shows the weight gain and carapace length with time for ten randomly selected turtles. In six months the turtles grew from an initial average of 3.1 cm. to 14 cm. in carapace length, while their average weight went from 12.3 gms. to 361 gms. in the same period.

Table I shows the food conversion ratio for the two groups of turtles. For each group (Group A--19 turtles, Group B--20 turtles) the conversion ratio was very close to three indicating that it takes about three pounds of food for one pound weight gained.

Several difficulties were encountered while raising the turtles. Young hawksbills are more pugnacious than green turtles and frequently injure each other during their aggressive feeding. Once a sore develops it is picked at by others until the injured animal dies. Separation of injured animals until they were healed helped to reduce this mortality. Gentian violet was used as an antiseptic for the wounds and was applied by dipping the animals in a 1% solution. Noticeable improvement occurred after treatment, and several animals were returned to the group tank after two to three weeks.

Frequently, a salt-like formation would appear in the corners of the eyes of the hatchlings. This could be removed mechanically by using a toothpick wrapped in cotton to scrape the encrustation from the eye.

One of the most persistent problems was the growth of algae on the backs of the young turtles. This was overcome by brushing the back of each turtle at two-week intervals. Putting a roof over the tanks helped to reduce this problem by reducing the light intensity for photosynthesis.

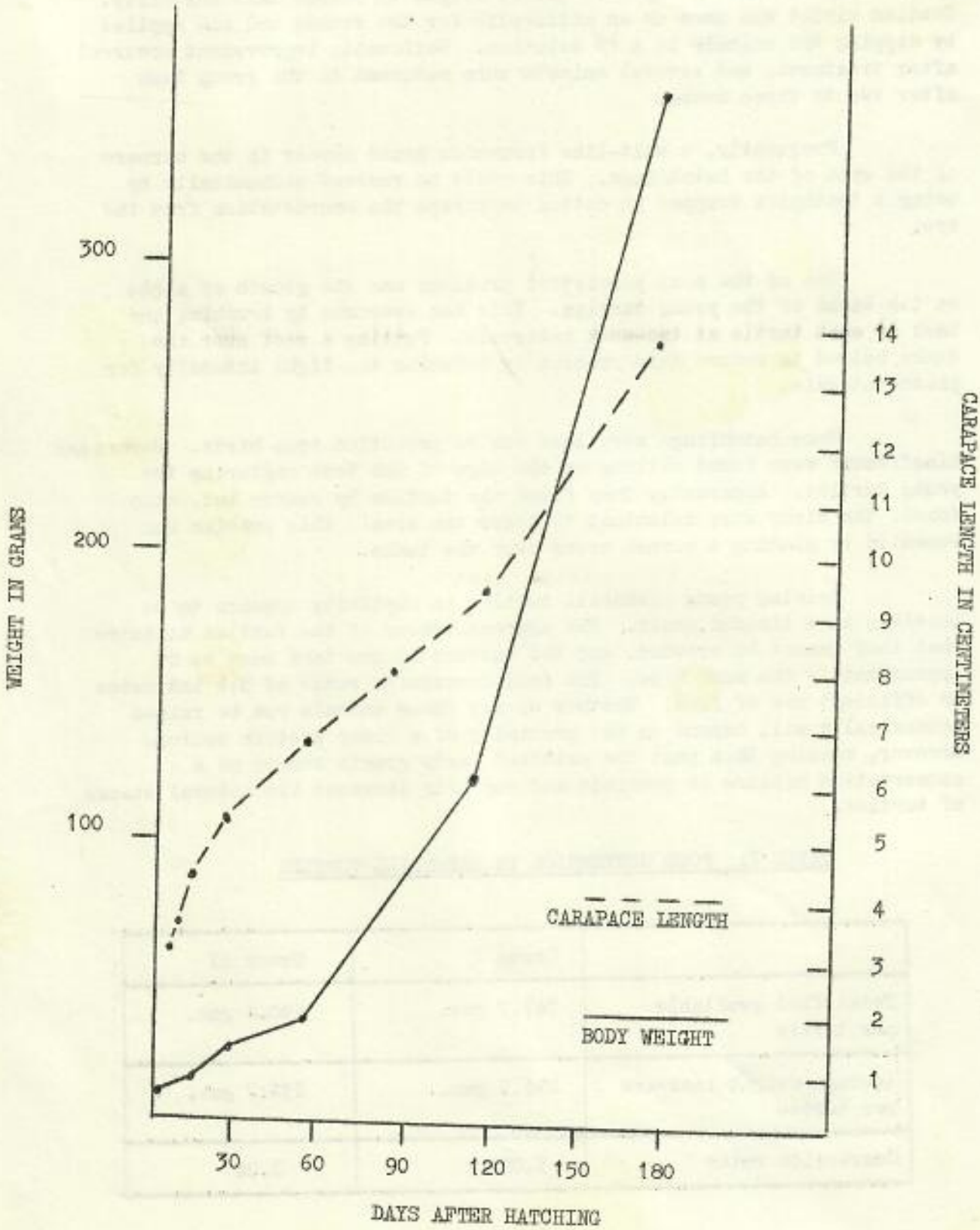
Some hatchlings were lost due to predation from birds. Herons and kingfishers were found sitting on the edge of the tank capturing the young turtles. Apparently they found the turtles by chance but, once found, the birds were reluctant to leave the area. This problem was remedied by placing a screen cover over the tanks.

Raising young hawksbill turtles in captivity appears to be possible on a limited scale. The aggressiveness of the turtles dictates that they cannot be crowded, and the turtles in one tank must be of approximately the same size. The food conversion ratio of 3:1 indicates an efficient use of food. Whether or not these animals can be raised economically will depend on the proximity of a cheap protein source. However, raising them past the critical early growth stages as a conservation measure is possible and may help increase the natural stocks of turtles.

TABLE I: FOOD CONVERSION IN HAWKSBILL TURTLES

	Group I	Group II
Total food available per turtle	747.7 gms.	680.4 gms.
Average weight increase per turtle	244.5 gms.	232.7 gms.
Conversion ratio	3.05	2.92

FIGURE I: TURTLE WEIGHT AND CARAPACE LENGTH INCREASE WITH TIME



No 6 Sept 72

CAPTURE OF TURTLES TAGGED BY THE FISHERIES SERVICE OF FRENCH POLYNESIA UNDER SPIFDA AUSPICES

The last issue of the Newsletter (No. 5 of May 1972) made reference on pages 21 and 22 to the tagging of sixty-seven female green turtles (Chelonia mydas) which were then released on 31 March 1972 by the Fisheries Department of French Polynesia off Scilly Atoll (Fenua Ura) to the west of the Leeward Islands in the Society island group (16°30 south - 154°40 west).

One of these turtles, bearing tag no. 26, was caught on 28 July 1972 off the Fiji islands in the vicinity of Savu Savu (Vanua Lava island), 16°49 south - 179°15 east. In 120 days this green turtle had therefore travelled about 1,800 nautical miles (3,300 kilometres).

Another was captured in the Vavau Islands (Tonga) on 9 August 1972, representing a movement of about 2,091 kilometres over 130 days.

These long-distance recoveries are the first ever to be reported from the South Pacific and point to the value of tagging programmes.

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LOBSTER FISHING TRIALS OFF THE ISLAND OF RAPA IN THE AUSTRAL SEAMOUNT CHAIN, FRENCH POLYNESIA

Rapa, in the Austral Chain, is the most southerly of the islands of French Polynesia (27°36 south - 114°18 west). The isolation, the cool and rainy climate and the exiguity of the island do not make for an easy existence for the population which despite emigration is increasing rapidly: 279 habitants in 1956, 342 in 1962 and 384 in 1971. In an effort to explore new resources, lobster fishing trials were conducted from 29 March to 10 April 1972, and for this purpose the French Polynesian administration chartered the New Zealand vessel PICTON equipped for lobster pot fishing.

Metal mesh traps 120 cm x 20 cm x 40 cm were used, of 5 cm mesh, the main opening being 30 cm x 40 cm.

Four varieties of crustacean were caught - two well-known species, the Panulirus penicilatus lobster and the mantis shrimp (Scyllare) Parribacus antarticus, and two other species which have not yet been identified, a lobster which may be Panulirus lalandii and a syllaridae which would appear to be a new species.

The fishing catch was poor in spite of particularly good weather. About 300 crustaceans were caught, the female lobsters measuring between 17 and 31.5 cm (an average of 21 cm) and the male lobsters between 15.7 and 39 cm (an average of 29 cm). Apparently the fishing trials took place at a period unfavourable to the use of lobster traps, a large percentage of lobsters being in spawn or in moult.

Bait seemingly most practical for use with the traps was the flesh of shark and Japanese saury (Cololabis saira). No catch was made when using New Zealand sea perch, Polyprion moeone, or blue cod, (Parapercis colias. Fishing trials off the isles of Bass (Marotiri), 27°55 south, 143°26 west, produced no results.

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FRENCH POLYNESIA

from Weins -

Danielsson (1955 p. 190) found that the people on Raroia Atoll had names for eight different varieties of turtle.

Seurat (1904, p8.) wrote that the Pukapuka (my comment - presumably Tuamotu) natives catch the green turtle, but that the hawksbill turtle, although occurring also in the Tuamotu, is rare. Marine turtles have been abundant in some of the Tuamotus: Napuka, Fagatu (?), Fakahina (?), Tatakoto, Pukaruha, Reao, Vahitahi (?), Tikei, Tepoto, and Matahiva, among others (Donat and Seurat, 1904 pp 926-31).

Donat and Seurat (1904) Sur Quelques Similitudes des langues et des coutumes des indigenes de Funafuti et des indigenes des iles de la Societe de l'archepel des Tuamotu. p926-31
Proc. of the Linnean Soc of NSW, 28

On Raroia in the Tuamotus, which is a much larger atoll than Ifalik, the total number of turtles caught in 1950 was 17 and the average number per season generally has been between 15 and 20. As on Ifalik and most other atolls, turtle flesh is highly prized on Raroia, and the men are ready to abandon all other occupations when a turtle is sighted (Danielsson 1955, p. 193).

The season at Raroia lasts lasts from June to September, during which months a small number of turtles appear in the sea immediately west of Raroia fairly close to shore. At the beginning of the season, ~~most of the turtles~~ both male and female turtles are caught when they breed in the water. At the end of the season, most of the turtles caught are females that have crawled onto the sand beaches to lay their eggs. Seurat (1906) said that at Pukapuka the green turtle comes near the shore to mate and lay eggs starting in October when the Pleiades rise in the east.

6/4/79.

Dear Linda and George,

It looks now like I am simply running out of time. It's been rough – no house-renters, no way to get to see Kiki graduate and the awful travel mess – everything seemed adverse. I got some problems solved but not the time. I was in Hawaii 1 day but had to rush back – I was most unhappy. Anyway here I am to say good-bye till Oct. when we'll have to have a piz nic (UK Christa walking by them).

Much love and Aloha

Hilde.

HILDE K. CHERRY
2115 Rocky Hill Place
Honolulu, Hawaii 96822

ia ora te natura

B.P. 2 542 – C.C.P. 0212
ADR. TELEG. : TENATURA, PAPEETE.
(TAHITI)

Papeete, le MARCH, 9, 1978

Mr WILLIAM V. CHUNG
2115 Rocky Hill Place
Honolulu, Hawaii 96822

Our ref. : V.PDT/IN/17/78

Dear Mr WILLIAM V. CHUNG,

We thank you very much for your contribution to our goals. Please find attached your membership card for this year.

We should stay in close contact and exchange our experiences.

The conservation problems are more and more challenging in Polynesia as well as elsewhere. We do have to fight strongly against powerful promoters.

If you do come by Tahiti once, please let us know it and we will certainly get together on common practical matters which will prove very constructive for all.

Concerning the tahitian sea turtle we are fighting a case in court to maintain a territorial reserve, the atoll of Scilly. We do need to go further on this problem, chelonia mydas is in danger of extinction.

We send you our best regards and remain,

Ecologically yours,

Vice-President

ASSOCIATION POUR LA PROTECTION DE LA NATURE EN POLYNESIE FRANÇAISE
IA ORA TE NATURA

encl. 1

Service de la Pêche

Centre Frigorifique

AVATORU - RANGIROA

CHELONIA MYDAS

Budget - none

18 November 1971 : 20 egges are taken from a nest at FURUMAI (Secteur of Avatoru - Rangiroa) on the Ocean side) and transported to the village; distance about 4 km.

16 December 1971, 6.oo h.
20 little turtles were crawling in the enclosure,
4 babies were taken by Pari for his time.
Survival : 20/20.

Note : Those egges were picked up and placed in the box very carefully; the same position as they were in the nest, and without shock.

16 December 1971 : Measurement of the young ones - average weight.

Date	Weight gr.	Carapace Length cm	Large cm		
16.12. 1971	19	4,5	3,5	average	Fed 3 times a day: 7.30 a.m., 11 a.m. 16.p.m. - with fish choped finely, careful, very careful the first month.
"	20	4,8	3,9	biggest	
"	15	3,8	2,7	smallest	
16. 1. 1972	97	7,8	6,6	average	This is important after the 4th day, they start eating, it's important to check that the stomach will be full - plastron pushed out - not curved in the opposite way.
"	115	8,5	7,4	biggest	
"	80	7,2	5,6	smallest	
16. 2. 1972	167,5	9,5	7,5	average	
"	250	11	9	biggest	
"	85	8	6,5	smallest	
16. 3. 1972	325	12	9,5	average	This month 1 dead: stomach air in the stomach. The first dead - observation: cannot dive for food (save 3 others by pocking very tender herbe through the annus to let the air out. Fermentation of food, other cure preferable, but we are not equipped.
"	450	13,5	11	biggest	
"	200	10,5	8	smallest	

./...

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NOUVELLE-CALEDONIE

In reply, please quote CONF 2/9/9/1

PLEASE ADDRESS REPLY TO
THE SECRETARY-GENERAL

16 August 1979

Dr George Balazs,
Hawaii Institute of Marine Biology,
Coconut Island,
P.O. Box 1346,
KANEOHE,
Hawaii 96744. USA.

Dear Dr Balazs,

As you know, a "Workshop on Marine Turtles in the Tropical Pacific Islands" is being held in Noumea, New Caledonia, from 11-14 December 1979. This workshop is organised under the joint auspices of the South Pacific Commission and the U.S. National Marine Fisheries Service.

As little is known on marine turtles in this part of the world the meeting is aimed towards the drafting of recommendations for future action. As your world wide experience would be highly beneficial to the meeting, I am pleased on behalf of the above mentioned organisations to invite you to attend as a consultant.

I fully appreciate that you have many other duties - particularly as you will no doubt also attend the "World Conference on Sea Turtles" scheduled 26-30 November in Washington D.C. Therefore I will be particularly grateful if you agree to participate.

If you are able to attend, all necessary arrangements will be made by the South Pacific Commission Fisheries Adviser, Mr René Grandperrin. However, as there is presently a shortage of hotel accommodation in New Caledonia, I would strongly recommend that you forward us the accommodation form sent to you a few days ago.

Yours sincerely,

M. Young Vivian
Secretary-General

c.c.: Mr Richard Shomura
South-west Fisheries Center
P.O. Box 3830, Honolulu, Hawaii 96812.

Los Angeles Examiner Sept. 17, 1978

8 Island-Hopping Voyagers Pick Up Tropical Disease

SACRAMENTO (AP) — Eight Californians who recently returned from Tahiti and nearby islands picked up an acute tropical viral disease from mosquito bites, the Department of Health Services has said.

The department said three were from Los Angeles County, two from Orange County and one each from Alameda, Santa Clara and Siskiyou counties.

Dr. Ronald Roberto of the department's infectious diseases section said the Californians who contracted the disease, dengue fever, stayed chiefly on Moorea, where there are many mosquitoes.

Several had also traveled to nearby Bora Bora in the South Pacific.

Typically, Roberto said, five to 15 days after an infected mosquito bites a person, the person suffers a sudden high fever, severe headache and joint and muscle pains.

Three or four days later, a rash may appear on the person's body, spreading from the chest to the arms, legs and face.

Though the department described the disease as usually mild, it said recovery could take a long time because of persistent fatigue.

The department said travelers should tell their doctors if they suffer any acutely feverish illness within two weeks of returning from Tahiti.

A-12 Honolulu Star-Bulletin Monday, Nov. 6, 1978

Dengue Fever in Tahiti

SACRAMENTO (UPI)—A state health official has reported that 28 Californians returning from stays in Tahiti, the Caribbean and Central America have contracted dengue fever, a non-contagious but painful illness.

Twenty-five victims contracted the disease from mosquitos in Moorea, Tahiti, said Dr. Ronald R. Roberto of the Department of Health Services' infectious disease section. Others were infected in Puerto Rico and El Salvador.

(In Hawaii, state health department officials said there have been no recent reports of dengue fever.)

A dot in an oil-thir

By VICKIE ONG
Advertiser Staff Writer

A once primitive South Pacific atoll has gone modern and now, in common with Hawaii and the rest of the "up-to-date" world, it is dependent on global oil supplies to maintain its life-style.

Takapoto is an atoll shaped like a hot dog, 9.3 miles long and 3.1 miles wide, in the Tuomotu archipelago 2,100 miles south of Hawaii.

On a map of the South Pacific, it is just a dot.

But to Jan Newhouse, associate professor of general science at the University of Hawaii, there are some important lessons to be learned from Takapoto's experiences of the past few years.

Newhouse specializes in human ecology and teaches courses on "The Atoll" and "Technology, Ecology and Man." He feels that the atoll experience can be generalized to the larger global situation.

Thus, Takapoto is a microcosm of both Hawaii and the world.

Newhouse spent part of the summer this year taking an inventory of the energy consumption on Takapoto, which has a resident population of 196.

He found to his dismay that Takapoto was consuming energy like a "westernized" community — and paying the price of modernization.

In an interview, Newhouse said Takapoto's radical change from a somewhat primitive society to a modernized one stems from two major incidents in the past five years.

In 1970-71, a French fishery research group decided to put a research station on Takapoto. Then in 1972, an airstrip was built on the atoll.

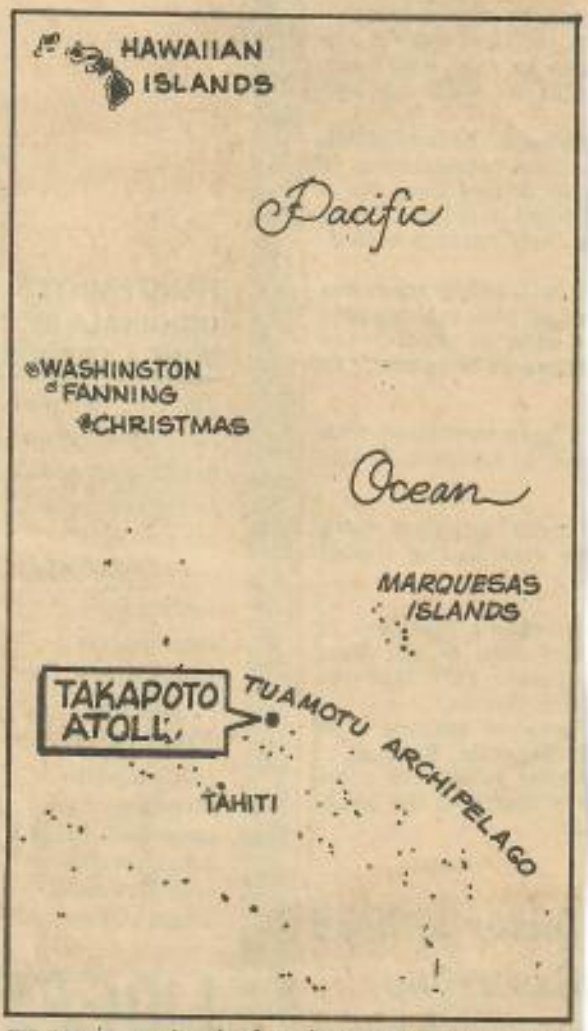
"Because of the airstrip and the research station, the attitude of the people toward the atoll and the outside world and their expectations have been changed just radically," Newhouse said.

Newhouse said that just a few decades ago, the islanders were "primitive," dependent on their skills and natural resources for survival.

The people fished, ate breadfruit and taro, covered their houses with thatched roofs and had that warm, outgoing attitude long associated with Polynesians. The aloha spirit thrived on the atoll and the islanders welcomed visitors to eat and sleep at their houses.

Not anymore.

"They have developed the attitude of the kind we see in westernized society. The atoll is completely westernized — like downtown Chicago. There's been a marked change. Now the accent is on materialism, which is most unfortunate," Newhouse said.



How materialistic can a small group of Polynesians be?

Newhouse shakes his head. "Now they fly in their bread from Papeete rather than make it themselves. They fly in their newspapers. They

'sty world

waterski. They have up to 115-h.p. Chrysler outboard engines for their canoes.

"There's only one sailing canoe and only one man who knows how to make a sailing canoe. The only indigenous food that's eaten is fish. Everything else is brought in by boat or plane. Everything comes in a can. There's been a complete switch in five years."

Newhouse takes out a notebook and reads off his survey of high-energy goods owned by the Takapotoans. But he makes it sound like he's reading a list of the world's worst diseases.

On Takapoto, there are nine trucks, 26 motorbikes, 11 power lawnmowers, a total of 1,116 horsepower of outboard motor engines and 22 sewing machines. One home has two freezers and two electric refrigerators. One person has waterskis.

"Only one family out of 44 still cooked with an underground oven or over flame. Every other family had a stove, most of which run on butane gas. Not one family has thatched walls and only one had a thatched roof. Status now is to have large sliding glass doors and glass louvers," Newhouse said.

He said the islanders are now very status-conscious and every new modern commodity adds to a family's prestige. The latest fad is to live inland, not near the beautiful lagoon but instead close to the road "because you want to watch the cars go by — view means nothing."

Newhouse said the islanders were first exposed to "modern living" when the 1970 fishery research group provided well-furnished homes for its scientists. The houses were complete with stoves, fresh running water, freezers, refrigerators and glass louvers.

"The people saw these houses and helped build them. So they decided, 'Aha, follow the great white man!' So everybody became a haole."

Newhouse said the "keeping up with the Joneses" attitude seems intrinsic in almost all societies.

"There are a few cultures which do not wish to have transistor radios in their pockets. But it seems whenever people get the first taste of what I call the 'bitter fruit' they seem to yearn for it."

The islanders now depend on sales of copra and

Continued on Page A-25

Don't bite hand that feeds you

Newhouse
Dark days ahead

The following are samples of Newhouse's aphorisms and quotes which indicate his philosophy of man, ecology and the future.

"The only creature on earth capable of making a meaningful choice may not make it — both meanings."

"Earth holds a royal flush and man is betting on a pair. Human ecologists have looked over earth's shoulder."

"Making do can become a way of life."

"The infinite wisdom of man is measurable."

"It's easy to tell when times are rough. What you want and what you need are the same thing."

"Fly now, flea later."

"How advanced a civilization when its members can hear of and see the new ration stamp issue over color television!"

"We are eating heart-of-palm salad today at the expense of our children's coconuts tomorrow."

"When the realities of nature are in conflict with the realities of economic and political life, there can be only one one conclusion. To recognize this is to recognize the future."

"Caution: The world may be hazardous to your child's health. Caution: Your child may be hazardous to the world's health."

"The creed that what is good for today will be also good for tomorrow can be called shortsightedness."

Atoll's life geared to oil supply

Continued from Page A-24

pearls to provide the income for Western goods. At the same time, they have become almost totally dependent on fossil fuel, said Newhouse.

Each month the atoll imports 1,646 gallons of gasoline, 670 gallons of kerosene, 700 gallons of diesel fuel, 66 quarts of oil and 30,445 cubic feet of bottled butane gas.

Newhouse said the islanders consider this amount insufficient for their energy needs and would like a larger share. The imports are limited by what the boats can carry.

"Concurrent with this, they have lost — along with the aloha spirit — the old skills and techniques which had formerly allowed them to live in harmony with their environment. They lost their knowledge of the ecosystem.

"Their music now is not Takapotu music. It is music composed in Tahiti, on 42nd Street and in Waikiki. They have nothing of the old music and old dances. That's completely gone.

"To my knowledge, only one woman was left who knew the ancient legends. She considered them her private property and wouldn't pass them on."

Newhouse said modern life for Takapotu has meant "the dependency on fuel and the loss of beauty of the people. There has been a loss in the quality of life. And if one measure of happiness is the smile on faces, I say no, they aren't happy. They don't smile, sing or play as often."

Since there is only a limited amount of oil, Takapoto — and Hawaii, for that matter — is in for a big change in life-style when oil prices skyrocket and the available energy supply decreases.

Takapoto is not so far gone or so completely dependent on oil products that it cannot take a "step backward" should an energy crisis develop.

"You can lay out options when the fossil fuels are coming in to the present degree. You can set up 'schools' to retain the old skills and techniques," Newhouse says.

"With a high-energy life, we are decimating our resources. We have done things to our environment so it has lost its ability to support life. This is what we're doing in Hawaii."

The facts, says Newhouse, point to a dark future. Within 20 years an oil shortage will make life dramatically different from what it is today. The highly touted alternative sources of energy will not ease the crisis because of the lead time, cost and fuel needed for research and development and the expense of converting equipment and machines to handle the new energy, he says.

And in a widespread energy shortage, Hawaii will be particularly vulnerable since its tourism industry is dependent on others having excess energy, Newhouse says.

He gives an example. Suppose a man is driving in the dark and knows that somewhere in front of him is a wall. Does the man slow down or accelerate?

Newhouse thinks it's time man cut down on his energy consumption.

"We can give up a lot of our desires. There are so many ways to save energy in this State," Newhouse said.

But to get people to actually do those drastic things to conserve energy – as opposed to just talking about it — will require massive reeducation of the people, he says.

And even then there will be those who believe that "because it's unthinkable, it cannot happen."

Newhouse is dead serious as he says, "We will be self-sufficient. Hawaii may not have a choice but we will become self-sufficient in energy. But there'll be a lot of hardship between now and then."

And then, as if to underscore his warning, Newhouse points to a quotation in his collection of aphorisms concerning the future:

"Sometimes it's awful lonely being right."

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In reply, please quote CONF 2/9/9/1

27 June 1979

PLEASE ADDRESS REPLY TO
THE SECRETARY-GENERAL

Dr Georges Balazs,
University of Hawaii at Maona,
Hawaii Institute of Marine Biology,
P.O. Box 1346,
Coconut Island,
KANEOHE,
Hawaii 96744. USA.

Dear George,

Many thanks for the copy of the letter from "ia ora te natura". Please find enclosed a copy of my letter to this association. Find also enclosed an interesting copy of a letter of a friend of mine who is director of the ORSTOM Centre in Papeete. His letter is a reply to a letter from me requesting him to try to push the Service de la Pêche to do something for the workshop. As you see it is not easy to induce them to produce a document. Wait and see!

Yours sincerely,

René Grandperrin
Fisheries Adviser

Encl.

RÉPUBLIQUE FRANÇAISE

OFFICE DE LA RECHERCHE SCIENTIFIQUE
ET TECHNIQUE OUTRE-MER

CENTRE ORSTOM DE PAPEETE
B.P. 529 - Tél. 2.98.87
PAPEETE - TAHITI
Polynésie Française

PRO 7/3/7

N/Réf : JF/lm/562/

Papeete, le 13 Juin 1979

J. FAGES
Directeur du Centre ORSTOM
de Papeete

à

Monsieur R. GRANDPERRIN
Conseiller aux Pêches
Commission du Pacifique Sud
B.P. D5 - NOUMEA-CEDEX -
Nouvelle-Calédonie

Mon cher Gep,

Bien reçu tes correspondances, trouvées à mon retour d'une mission rapide auprès du siège de l'ORSTOM à Paris. MARCILLE avait lancé un premier ballon vers le Service de la Pêche pour connaître leurs intentions en ce qui concerne la rédaction d'un rapport sur les tortues. J'ai repris l'affaire avec BROSSE qui est le seul individu sérieux de ce Service. Il semblerait donc que l'essentiel des données concernant le programme de marquage des tortues soit indisponible car peut être perdu, et que, dans ces conditions il est bien difficile de rédiger un quelconque rapport. Toutefois ta lettre leur étant bien parvenue, il semblerait que cette question puisse remonter à la surface et que des recherches soient envisagées pour rechercher les données et que, s'il existe des traces de ces opérations, un papier soit rédigé.

Pour me résumer, il ne semble pas que l'on puisse obtenir une réponse rapide, quelle qu'elle soit, et je crois que toutes les interventions du monde n'y pourront rien changer. J'ai pris bonne note de tes préoccupations et garde ta lettre à portée de la main pour relancer périodiquement le Service de la Pêche sur ce problème. Peut-être qu'une solution apparaîtra finalement.

Je ne manquerai pas de te tenir au courant si des éléments nouveaux intervenaient.

Bien amicalement à toi et aux tiens. A bientôt à Tahiti ou à Nouméa en septembre.

CENTRE ORSTOM ★ LE DIRECTEUR ★ B.P. 529 PAPEETE-TAHITI

J. FAGES

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In reply, please quote CONF 2/9/9/1

PLEASE ADDRESS REPLY TO
THE SECRETARY-GENERAL

Nouméa, le 27 juin 1979

Monsieur le Président
Association pour la protection de la
nature en Polynésie française
B.P. 2542
PAPEETE, Tahiti
Polynésie française

s/c de Monsieur le Haut-Commissaire
de la République
Chef du Territoire de la Polynésie
française
PAPEETE, Tahiti
Polynésie française

s/c de Monsieur le Second Délégué français
à la Commission du Pacifique Sud
NOUMEA

Monsieur le Président,

Veuillez trouver sous ce pli copie d'une lettre adressée au Service de la pêche de Polynésie française. Elle a pour but de vous informer que la Conférence Régionale Technique des Pêches de la Commission du Pacifique Sud (5-10 décembre 1979) sera suivie de journées d'études sur les tortues marines (11-14 décembre).

Vous recevrez prochainement une invitation à assister à cette réunion en tant qu'observateur. Compte tenu de vos préoccupations actuelles en matière de sauvegarde des espèces en danger, j'ai toutefois pensé qu'il vous plairait d'être informé le plus tôt possible afin que vous puissiez éventuellement collaborer, avec le Service de la pêche à la rédaction d'un document.

Veuillez agréer, Monsieur le Président, l'expression de mes salutations distinguées.

R. Grandperrin
Conseiller aux pêches

P.J.:
Copie de la lettre au Service de la Pêche

M. STEIN PRESENTE

LE SERVICE DE

Elles viennent de naître : elles émergent du sable et restent immobiles, attendant que leurs carapaces durcissent au soleil. Puis ce sera la grande aventure de la vie.....

"Elle est l'occasion de donner au Chef de Service et à tous ses collaborateurs, la possibilité de remercier tous ceux qui ont contribué, qui contribuent et contribueront au développement de la peche dans le Territoire et ce, dans tous les domaines. Je profite d'ailleurs de l'occasion qui m'est offerte pour remercier M. le Secrétaire Général TISSIER qui, malheureusement, n'a pu se joindre à nous. Monsieur TISSIER en effet, suivait et s'intéressait tout particulièrement à nos travaux ;

"Elle permet en retour aux divers responsables, de constater ce que le Service de la Peche a réalisé durant les années écoulées et ce qu'il compte réaliser à l'avenir ;

"Elle permet à mes collaborateurs responsables de certains projets, généralement ignorés dans le véritable rôle qui les occupe au sein du service, de rencontrer toutes les autorités soucieuses de progrès et de bienfaits pour le Territoire. Et, ici, je n'oublie pas tous les gens des îles qui collaborent avec nous et qui ont acquis notre confiance ;

Enfin, elle permet aux uns et aux autres et ensemble, d'apprécier et de commenter les premiers résultats des nombreux efforts déployés par tous ceux qui ont coopéré et collaboré pour le développement de la peche".

Je ne voudrais pas m'étendre davantage dans des discours dithyrambiques, ce n'est pas mon genre. Mes collaborateurs, qui n'ont pas ménagé leurs peines, car ils ont dû comme vous le remarquerez, faire face à de très nombreux problèmes, tant d'ordre technique que financier, vous présenteront le bilan de leurs travaux...".

"... Je souhaite que cette visite ne soit pas la dernière et qu'elle permette à l'avenir de mieux faire connaître et comprendre les besoins et les difficultés de ce jeune service, entièrement dévoué au service du public, du Territoire et de son Gouvernement. Ceci, dans le but d'agir encore, avec plus d'efficacité, pour le bien de tous...".

AU GOUVERNEUR

LA PECHE

M. ANGELI a ensuite visité la section de M. Philippe SIU qui a fait le point de ses recherches pratiques concernant l'élevage des chevrettes. Il vient d'obtenir le premier cycle complet de métamorphose de chevrettes importées, les trois espèces de chevrettes locales étant encore très peu connues. C'est une tahitienne, Mme Simone DARIUS, née GRANT qui les a identifiées et étudiées. Mme DARIUS est Docteur en Biologie de l'Université de Montpellier.

M. Jean TAPU, qui travaille sur les nacres perlières avec M. REED a obtenu d'autre part l'éclosion et la survie en "chambre" des tortues marines. Des bébés tortues qui venaient d'éclore quelques heures auparavant, pourront ainsi se vanter, lorsqu'elles seront centenaires d'avoir eu un gouverneur penché sur leur berceau....

M. Bill REED a exposé les résultats positifs obtenus en matière de culture de perles aux Tuamotu. C'est maintenant, on le sait aussi par les résultats parallèles obtenus par la société de Manihi, une affaire de commercialisation. Il s'agit en même d'éviter la main mise des Japonais sur la culture perlière tahitienne que ceux veulent truster grace à leurs techniciens. Gageons !

Enfin, M. Sylvain MILLAUD a fait apprécier d'une manière toute gustative, les huitres d'élevage, que tous les participants à cette réunion ont pu gober fraîches et couteuses, un bon verre de vin frappé à la main pour porter un toast au Dieu Neptune et à ses richesses.

M. Sixte STEIN reçoit M. ANGELI

Avec M. Bill REED

Avec M. Sylvain MILLAUD

Avec M. Philippe SIU

Les huitres de RAIATEA sont savoureuses : M. ANGELI, Mme LENOIR, conseillère des Australes, et son homonyme M. LENOIR, Secrétaire Général Adjoint, les apprécient.

LE GOUVERNEUR S'EST PENCHE SUR LEUR BERCEAU

De jeunes tortues marines sont nées hier matin au service de la Pêche, tandis que le Gouverneur y était reçu par M. Sixte STEIN.

quête. Avec, en plus, la crainte fondée que la « Maison bœuf-carottes » (Inspection générale des services) ne leur demande des comptes pour une caisse de champagne livrée à domicile ou pour un « condé » accordé à une respectueuse transformée en serviable indicatrice.

Quant aux locaux de la brigade, ils ne sont pas plus reluisants : des bureaux miteux et sombres du deuxième étage du Quai des Orfèvres, le tout à peu près inchangé depuis Clemenceau.

Tel est l'univers où les 150 inspecteurs de la Mondaine déversent chaque nuit leur moisson de voyeurs, proxénètes, homosexuels, travestis, drogués, exhibitionnistes, toute la faune trouble et souvent pitoyable du Paris vicelard.

Il en faut de la conscience, à ces messieurs, pour rester vertueux !

Dire que M. Sixte STEIN, Chef du Service de la Pêche a "présenté" son service au Gouverneur est certes exagéré. Il serait certes étonnant que M. ANGELI ne le connaissai pas. Mais c'est la formule consacrée et M. STEIN avait tenu, en ce début d'année, à dresser un bilan des activités diverses qui sont celles de son équipe.

Hier en fin matinée, devant le Gouverneur et le Conseil de Gouvernement au grand complet, de nombreux conseillers territoriaux tant de la minorité que de la majorité, et des personnalités du Territoire, M. STEIN avait rassemblé le personnel de son Service, dans la cour de ses installations, à Fare-Ute.

Il s'est adressé au Chef du Territoire en ces termes :

"Le privilège m'est offert aujourd'hui de vous accueillir M. le Gouverneur, dans les installations du Service de la Pêche, en votre qualité de Chef de Territoire et de la Fonction Publique.

Depuis l'année 1969 que j'assure la responsabilité de ce Service, cette initiative inhabituelle, sera volontiers à ce jour placée sous le signe de la compréhension, de l'efficacité et de la continuité.

Elle a été en réalité motivée par les raisons suivantes :

(SUITE PAGE 6)

Honolulu STAR-Bulletin & Advertiser 30 July 1979

500—Real Estate For Sale/Wanted

500—Real Estate For Sale/Wanted

THIS IS HUAHINI IN FRENCH POLYNESIA

IT IS JUST 80 MILES FROM PAPEETEE, TAHITI

NOW YOU CAN DEVELOP PARADISE!

Vacation rentals are needed and the French government is begging for foreign investors and development with full protection of rights. As you can see, the beach is miles long with beautiful sunsets and views of Bora Bora, Raiatea and other motus. Opposite the beach frontage there is Lake Maeva, with over 1,000 acres of fresh water. Property is located adjacent the government airport and the Bali Hai Hotel. The owners are here to negotiate and are extremely flexible. You may purchase in lease or fee, with unheard of terms. I have been there, and talked to the government officials, and I can show you the way.

Neil Petagno (R) 377-5121

Fred Vonnegut (RA) 923-8758

Neil Petagno, Inc. Realtor 521-5022

CABLE ADDRESS :
" SOUTHPACOM " NOUMEA
TELEPHONE : 26.20.00
TELEX : SOPACOM 139 NM

SOUTH PACIFIC COMMISSION
POST BOX D 5
NOUMEA CEDEX
NEW CALEDONIA

In reply, please quote CONF 2/9/9/1
PRO 7/3/7

PLEASE ADDRESS REPLY TO
THE SECRETARY-GENERAL

ADRESSE TELEGRAPHIQUE :
" SOUTHPACOM " NOUMEA
TELEPHONE : 26.20.00
TELEX : SOPACOM 139 NM

COMMISSION DU PACIFIQUE SUD
BOITE POSTALE D5
NOUMEA CEDEX
NOUVELLE-CALEDONIE

Noumea, le 11 juin 1979

M. le Chef du Service de la Pêche
B.P. 20
PAPEETE, Tahiti
Polynésie française

s/c : Monsieur le Haut-Commissaire de la République en Polynésie française
PAPEETE, Tahiti
Polynesie française

s/c : Monsieur le Second Delégué français à la Commission du Pacifique Sud
NOUMEA

Monsieur,

J'ai l'honneur de me referer à ma lettre du 17 mai concernant les journées d'étude sur les tortues marines qui se dérouleront du 11 au 14 decembre au siège de la Commission du Pacifique Sud, à Nouméa, et dont copie est jointe. Veuillez aussi trouver sous ce pli copie d'une lettre du Dr G. Balazs, expert en tortues, qui présidera la réunion. A sa lecture, vous constaterez qu'il attache une grande importance au programme de marquage exécuté par la Polynésie française.

Il paraît donc essentiel que votre Service produise un document sur ce sujet. Ce document permettrait, de plus, de faire le point de l'importance économique de ces animaux dans votre zone. Ainsi qu'il est précisé dans ma lettre du 17 mai, l'un des buts de ces journées d'étude est de tenter une estimation des quantites de tortues et d'oeufs qui sont prélevees chaque année dans la zone d'action de la CPS, ceci dans l'espoir de mettre en place une reglementation régionale ou, plus modestement, de definir une politique de conservation ou de gestion des stocks.

Il serait souhaitable que ce document nous parvienne avant le 15 septembre afin que sa traduction en soit faite avant la reunion.

Veuillez agreer, Monsieur, l'expression de mes meilleurs sentiments.

p.j.

R. Grandperrin
Conseiller aux pêches

cc: Dr G. Balazs ✓
University of Hawaii at Manoa
Hawaii Institute of Marine Biology
P.O. Box 1346
Coconut Island

SERVICE DE LA PÊCHE

B.P. 20-PAPEETE-TAHITI
TÉL. 2 03.46 - 2.81.48

Liberté - Egalité - Fraternité

N° 990 / Pêche

Papeete le 10 juillet 1979

YB/HM

CONF 2/9/9/1

Geoff
Victory!...
René

A/Fisheries Expt.
FISHAD BU

LE CHEF DU SERVICE DE LA PECHE

A

Monsieur le CONSEILLER aux PECHES de la COMMISSION DU Pacifique Sud
B.P. D.5 NOUMEA CEDEX

9/8/79

s/c de Monsieur le Délégué Français à la Commission du Pacifique Sud
NOUMEA

s/c de Monsieur le Haut Commissaire de la République en Polynésie Française
P A P E E T E

Vu et Transmis
Le Haut-Commissaire
par délégation
Le Secrétaire Général

Objet : Journées d'études sur les tortues marines

Réfer.: Votre lettre Conf2/9/9/1 du 17 mai 1979

Monsieur,

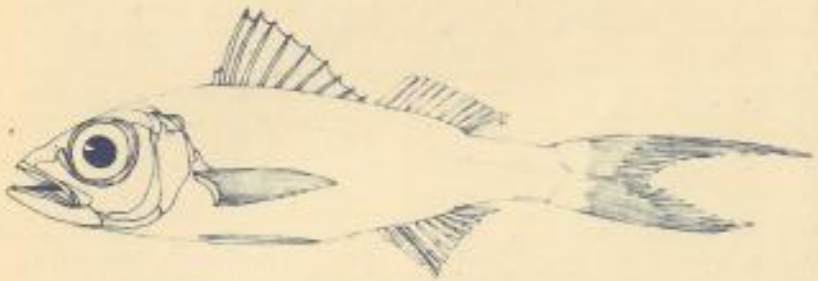
Notre réponse tardive est due à la difficulté à ressembler les données éparses que nous avions sur ce sujet afin de savoir si la mise en forme d'un document homogène était possible.

La réponse est affirmative et nous vous ferons parvenir un document comportant :
- les données brut de marquage
- une analyse succinte
- quelques résultats d'expérience d'élevage, et ceci avant le 15 septembre.

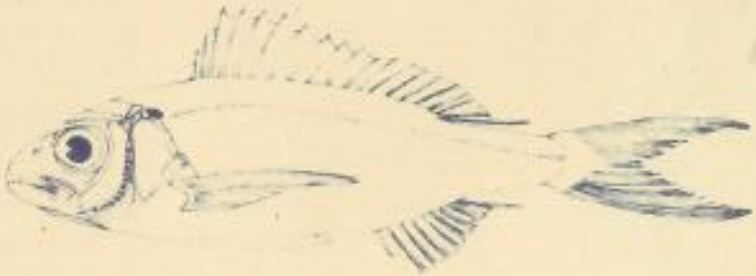
Je vous prie d'agréer, Monsieur, l'expression de mes meilleurs sentiments.

Le Chef de Service

Rough translation
Our late reply is due to the fact that we wanted to make sure that we had enough information available to produce a document.
The document will provide:
- existing data on tagging & other data
- a simple analysis of
- some results on culture experiments
The document will be forwarded to you before mid September.

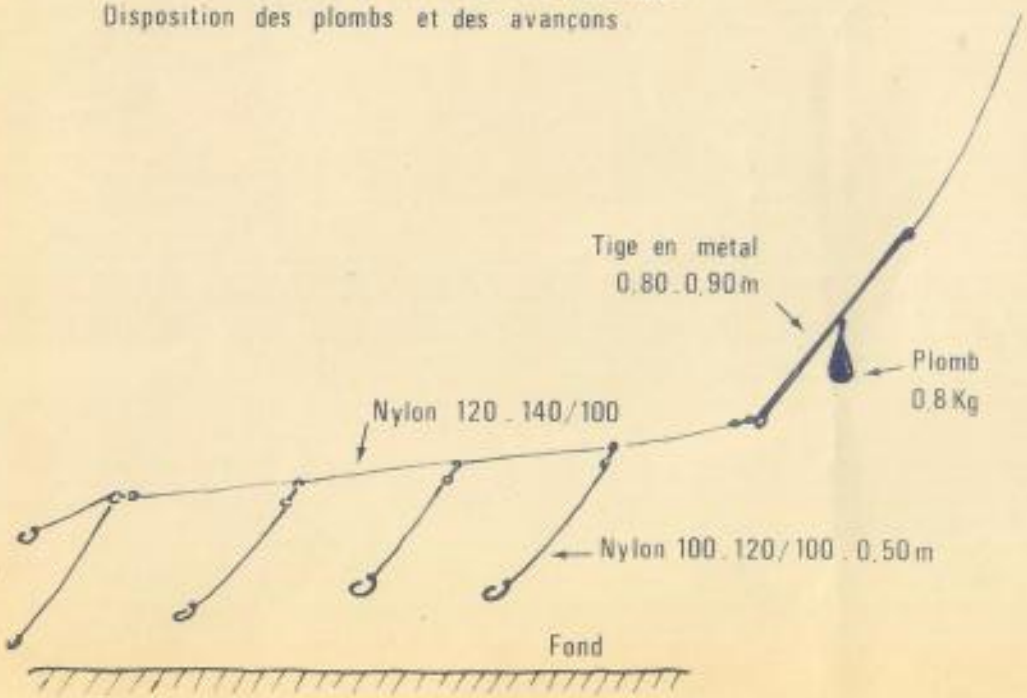


Etelis oculatus . L.S. 42 cm

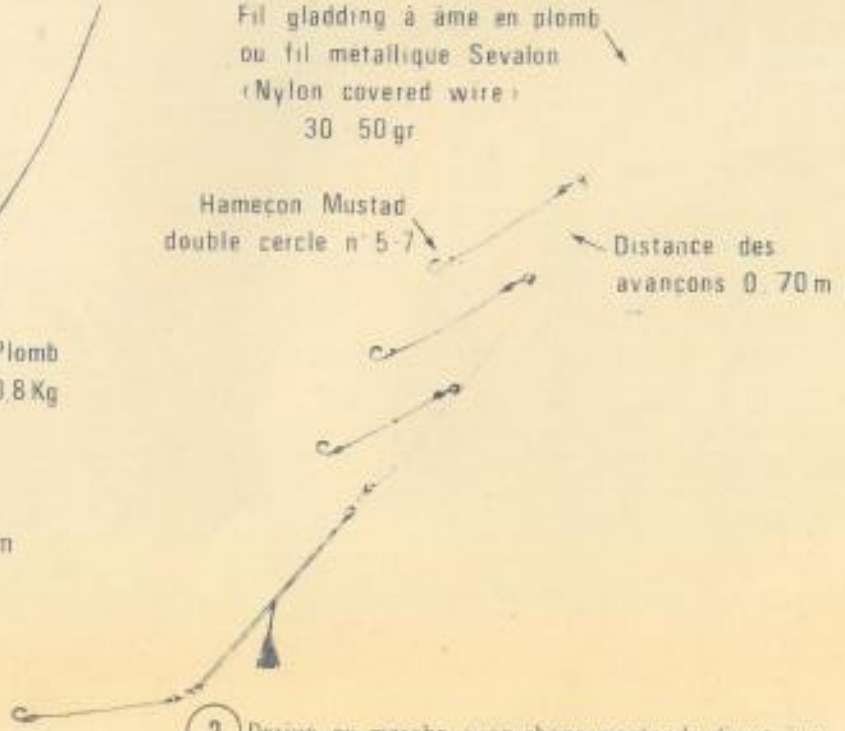


Pristipomoides filamentosus L.S. 45 cm

PECHE A LA LIGNE A MAIN OU AU MOULINET
Disposition des plombs et des avancons



(1) Dérive ou marche lente dans le même sens



(2) Dérive ou marche avec changements de direction

The Citizen's Conservationists in Tahiti's French Polynesia

by Steve Montgomery

One of my most rewarding experiences during four months of travel in the Marquesas and Society Islands was meeting several leaders of Ia Ora te Natura (Life to Nature), which was founded in 1973 and remains as French Polynesia's only environmental group. In the belief that persons with concerns and feelings for the Hawaiian Islands will also find inspiration in the actions of the kindred spirits I discovered 2,000 salty miles to the south, I want to tell you about their accomplishments and plans.

In windows and offices around Papeete, I came across three posters announcing activities like Nature Week. The designs, done by young students, artfully depicted the interdependence of plant and animal lifeforms. A poster of a seabird in flight informs the viewer that Votre peche depend de lui ("your fish depend upon him") because boats follow the boobys to schools of aku.

Educational activities have focused on preparing a series of booklets on the distinctive environment of the South Pacific for use in the school systems. Other than an excellent color handbook, Birds of Tahiti, by J. C. Thibault, there are few local environmental references for the serious teacher and layman.

I was given two issues of a magazine format published and edited by Jacques Drollet and other volunteers with articles on sea turtles, marine park proposals, environmental aspects of agricultural developments and the origins of Polynesian life. One issue is almost wholly devoted to the benefits and problems of introduced or exotic species. The African snail and Troca shell, foreign birds, the water hyacinth and insects of medical interest each have an article (usually printed in both French and Tahitian). They want to know more about our island's experience with carnivorous mollusks brought into control the African snail and have a warning for Hawaii about the Melastome plant, Miconia, which has proliferated uncontrollaby in their lowland forests.

Working out of a tiny rented office staffed by a half-time secretary, it is only the personal committments of members like the teachers, housewives and biologists I met that get things done. When the French government has not responded to environmentalist's concern, the group has taken the issue to court, as, for example, when mother-of-pearl shell gathering was permitted in the Isle of Scilly marine preserve. Continued dissatisfaction with official policies has led several members, especially Drollet, Philippe Siu and Marie-Therese Danielsen, to become active in campaigns with a new and growing political party.

Address: B.P. 2542 Papeete F. Pol.

Reprinted from

BIOLOGICAL CONSERVATION

Volume 5 No. 1 — January, 1973

Unique Dry-island Biota Under Official Protection in Northwestern Marquesas Islands (Iles Marquises)

Bryce G. Decker

Seed sown deep in Gallic soil during the 'age of reason' is bearing unexpected fruit in the Polynesian Antipodes, where three seldom-visited, but extremely interesting, islands in the northwestern Marquesas

Fig. 1. Hatutaa Island: view towards south-west, with Eiao in background; tussocks of Eragrostis xerophila, *shrubs* Waltheria lophanthus *and* Cordia lutea, *and herbs* Portulaca lutea *and* Portulaca oleracea, *are prominent in foreground by young gannet; windswept trees in background are* Pisonia grandis. *Photo: W. H. Hambuechen, April* 1960.

group (Lat 140·5°W; Long 8°S) are among several uninhabited French Polynesian islands that were assigned protection status in 1971—as was announced in the 'Islands for Science' session of the Twelfth Pacific Science Congress at Canberra.

The islands—'*classées et protégées par le Domaine*'—are remarkable for the contrasts between them. *Eiao*, the largest, is severely damaged by feral livestock and erosion. *Ile de Sable* is a tiny sand cay upon the only extensive coral-reef formation in the Marquesas. *Hatutaa* (Hatutu on many charts) is a pristine terrestrial ecosystem—the only sizeable one left undisturbed in the central Pacific dry zone.

Protected from livestock introduction by its lack of perennial water, Hatutaa teems with bird life and is richly vegetated (Figs. 1 & 2). By contrast Eiao, with its several springs, is a barren gullied desert of rock and orange clay. Only scraps of the former Eiao forest remain, inaccessible to the feral sheep that run freely over the island (Fig. 3), starving, and preyed upon by feral swine.

The face of Hatutaa is uniquely Marquesan, dominated by clumps of scrub and comely tussocks of the fine-stemmed native grass, *Eragrostis xerophila*, upon which Gannets like to nest. An important seabird rookery, Hatutaa annually fledges thousands of Sooty Terns, Frigate Birds, and Fairy Terns, and is also a last refuge for flocks of the little Marquesan Ground-dove, *Gallicolumba rubescens*. The flora comprises 30 known species, six of them endemic to the Marquesas archipelago—including a sweetly aromatic succulent, the very rare Marquesan Tobacco, *Nicotiana fatuhivensis*.

The rarity of type and biological significance of Hatutaa cannot be overemphasized. It is an intact ecosystem productively functioning in the harsh central Pacific climate, subject to near-constant desiccation by dry trade-winds and to severe droughts that regularly persist for two to three years, only to be broken at these long intervals by torrential rains.

These episodes of rainy weather redden the sea with suspended soil all around Eiao (Fig. 4) and other

Fig. 4. Eiao Island: upland plateau, showing destruction by feral sheep and swine: boulders on pedestals of soil suggest extent of soil erosion. Photo: W. H. Hambuechen, February 1960.

denuded islands to the south-east, while the vegetation of Hatutaa holds back its soil. Thus in April 1960, there cascaded down its steep cliffs and slopes rain-waters that were quite potable and barely turbid. The sea around Hatutaa remains clear, demonstrating the power of a remarkable terrestrial ecosystem to protect and maintain itself against all *indigenous* hazards.

Scientifically, the Marquesan biota is the most neglected in Polynesia. The devastation wrought by grazing and erosion upon all the larger islands is truly appalling; yet every biological collecting expedition to this archipelago yields important novelties that demonstrate how little is known about the biology of the Marquesas Islands.

Questions remain about how effectively a protection policy can be pursued. Remote and expensive to travel to from existing administration centres, lacking secure anchorages, and perilous to land upon, these islands pose formidable management problems.

Official resolve to restore Eiao and protect Hatutaa and other islands comes none too soon, for the passing heedless—yachtsmen, military helicopter crews, and other modern threats to life on obscure islands—will surely increase for many years to come.

Dec 11 77

Dear George,

Betsy H. Gaigné sent me 2 of these posters from Wau, P. New Guinea after her visit to Noumea. The posters were spread all over the town, she writes, and were produced by a small but effective envir. group.

My French Polynesian trip was very productive. The Gov't fisheries research head, Philippe Siu is a dynamic biopolitician you should meet if you visit. I'm interested to hear about the Cook Islands trip if you write a report or give a lecture.

Yours, Steve Montgomery

need: Reference this from; Figure 133; Reference to Wilson, 40

Emory, K. P.
Stone Remains in the Society Islands.

B. P. Bishop Mus. Bull. 116.
Honolulu, Hawaii
Published by the Mus.
1933.

pp 176-177.

The ceremonial "headdress" petroglyphs on Raiatea, Bora-bora, and Tahiti may have functioned to represent magically the continued presence, surveillance, or influence of a chief mourner. The human figure at Tipaerui, Tahiti, attempts to represent something symbolically, for it is not realistic and it is not an idle scrawl. Tut it would be a mistake to attach symbolic significance to all Society Islands petroglyphs.

As in Hawaii (21, p. 120, figs. 17, 20), the Marquesas (39, pp. 96-99), New Zealand (28), and New Caledonia (41), in the Society Islands common petroglyph forms appear also as motives in burnt decorations or in tattooing, or both. Among the other motives burnt into the Tahitian bamboo quiver with the headdress motive are turtles (fig. 133), represented in much the same way as in some of the petroglyphs. Ellis (17, vol. 1, pp. 262-266) says that circles, goats, dogs, fowl, fish, clubs, spears, and men engaged in battle and manual exercise were tattooed on the natives, and that, though some of the figures were probably invested with special meaning, they were adopted by the majority of the natives merely for decoration. In Wilson's painting (40, vol. 1, p. 140) of a group of distinguished natives at Matavai, Tahiti, in 1797, Tahitian tattooing is clearly illustrated. On the left

hip of one native are tattooed an outer circle of dots with three concentric circles, a common petroglyph motive.

As petroglyphs in Polynesia are thus also decorative motives they may be classified as "artistic manifestations," to borrow a term from Luquet's study of New Caledonian petroglyphs (41, p. 54); what he concludes about them seems to apply in large measure to the Polynesian carvings. He says, "The figures were evidently not intended to decorate the surface on which they are drawn and which simply served the purpose which a piece of paper would with us." Therefore he sets them up as "independent art" to distinguish them from "decorative art". I would say of the petroglyphs in the Society Islands that some of them may have been carved with the idea of embellishment and some probably as symbols, but that in the main they are simply the record of rudimentary artistic impulses.

August 1, 1978

Polynesie Francaise

No. 602/Peche
Papeete, le 10 Septembre 1975

Le Chef du Service de la Peche
a
Monsieur F. A. Gauld
Fisheries Officer Honiara - Solomon Islands
Fisheries Division

Subject: Information on tagged marine turtle.
RVL F/10/8 of 1/9/75

Sir:

I thank you for communicating to me the information on a turtle tagged by the Fishery Service. This was a scientifically important discovery.

In effect, the French Polynesian Fishery Service has tagged the species *Chelonia mydas* since 1972 to study its migrations, and to assure a hope of survival.

Dans la meme optique, le Territoire de la Polynesie Francaise a d'autre, fait prendre des mesures reglementaires tres emergiques dans le seul but de sauvegarder l'espece en voie de disparition. (Ci-joint, le texte en question).

The following information is provided to satisfy your curiousity about the turtle (*Chelonia mydas*), registered n 1081-TAHITI, captured by M. Ramoni. This animal originated from a clutch that was artificially raised by the Fishery Service at Avatoru, Rangiroa Atoll in the Tuamotu Archipelago. Mr. Les Tokoragi worked on this project.

- Date of birth May 4, 1972
- Raised in captivity at Avatoru (turtle was fed fish, algae, and herbaceous terrestrial plants)
- Released August 3, 1973 in the Rangiroa lagoon, Taeoo section (the lagoon has two large passes and a surface area of more than 700 square miles)

8-75 - Malaita, Solomons ?

Morphological data

	at release	at capture
weight:	6.700 kgs	?
carapace length:	36.9 cm	48 cm.
carapace width:	34.6 cm	45 cm.
head width:	6.5 cm.	?
circle of chest:	69 cm	?
plastron width:	29.9 cm	?
sex:	female	?
age:	15 months	+ 39 months

This capture demonstrates the interest of our work in marking, and permits us to contradict certain theses which claim that a turtle raised in captivity from the egg stage to seven months and further, with a diet different from natural surroundings, loses the sense of orientation for traditional migrations. This capture proves the great difficulties of adaptation in the natural ocean surroundings for nourishing and escaping the attacks of numerous predators.

I am informing you further that the turtles tagged in French Polynesia make their way in their migrations in a full west direction across the Pacific seeing that they are just today being discovered in Tonga, Samoa, Fiji, Wallis-Futuna, New Hebrides, New Caledonia, and the last, in the Solomons.

A compensation on the order of US $4-5 is in effect allowed to all fishermen who have captured and transmitted the reports on turtles which have been tagged by the Territories of the South Pacific. The organization charged with payment is the ADPIPS of the South Pacific Commission (SPC) - Noumea.

Please accept, Mr. Chief of the Service, the assurance of my highest consideration.

(signed)

S. Stein
Fishery Service
French Polynesia

+ green — From Rangiroa →

Vaughan - p 23 Aug 73 F. Poly.
killed in Malaita in 8-75
(see McKeown 1977) check at HIMB

+ pers comm. Stein

Hawksbill
Vaughan - ARNAVON, Solomons
7 30 S 158 E (25 km each from ?
N. Ysabel & eastern Choiseul
MTN 1) ARNAVON → TO Fishermans Is. (Central Province PNG
2) Sakewan Reef, Torres Strait → TO ARNAVON

Greens - Salmons paper SPC-NMFS 25 oct 79

1) Scilly → Vavau Islands
2) " → Rabi, Fiji (Vanua LEVU)
3) " → Maskeline Is. (Vanuvatu) (SE tip of Malekula)
4) " → N. Caledonia
5) " → Malekula, (Vanuvatu)
6) " → N. Caledonia, Baie de Gomen
7) " → ANATOM (Vanuvatu)
8) " → Fiji KANDAVU
9) " → Fiji kandavu
10) " → Fiji DRUADRUA Is. NE Vanua Levu
11) " → WALLIS
12) " → Cami Pt. Suva, Viti Levu

Douwangi SPIT North

SPECIES DOCUMENTED:

① GREENS
② LOGGERHEADS
③ HAWKSBILLS
④ FLATBACKS(?)

ADULTS

Pacific migrations

① see Limpus MS
② see Hawksbill Spring & Meylan migration manuscript
③ See Vaughn - MTN
④ S.P.C. Coleron report
⑤ Vaughn recent report - Solomons
⑥ ~~latest report~~ Brandon - Torga Recovery?
⑦ See Hirth
⑧ My report to SPC

SCILLY tagging - recoveries - Migration MOVEMENT LINES

HAWAII " " " "

ARAVON (SOLOMONS)

HERON ISLAND, etc.

? see ⑨ Pritchards PNG report
? see ⑩ S. Spring Conf. Paper

~~French Curve~~

① USE SPC MAP ② List MAJOR References

CETTE TORTUE AU MANTEAU DE CUIR

For information
Best wishes
Pierre
1/02/80

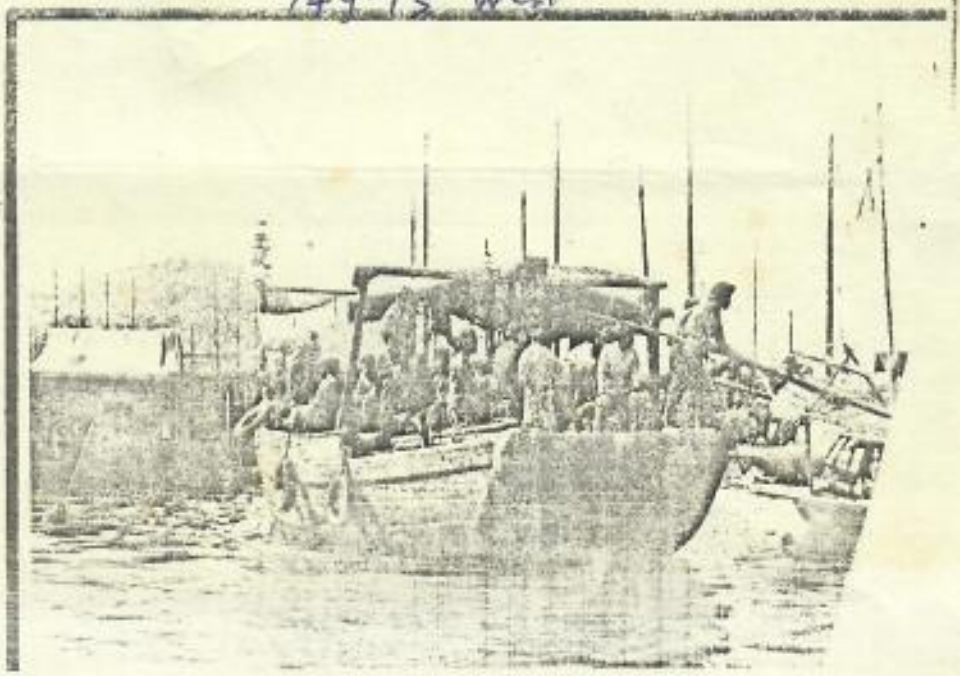
long line for Tuna

PESE 150 KGS ET MESURE 2 METRES D'ENVERGURE

caught 18°00 South 149°15 West

C'est une capture peu commune que les pêcheurs du bateau de M. ALLEAUME ont faite à la ligne de fond japonaise, lundi au large de VAIRAO : une tortue mais d'une espèce rarement vue à Tahiti car vivant volontiers dans les grands fonds, il fallait le procédé de la longue ligne pour en capturer un spécimen. Celui-là est de taille : 150 kilos, 2 mètres d'envergure, 1,70m de long.

(Suite Page 5)



Newspaper "LA DEPECHE DE TAHITI" 7 MARCH 1968
Turtle caught on MARCH 3, 1968 = ↖ May 1968 =

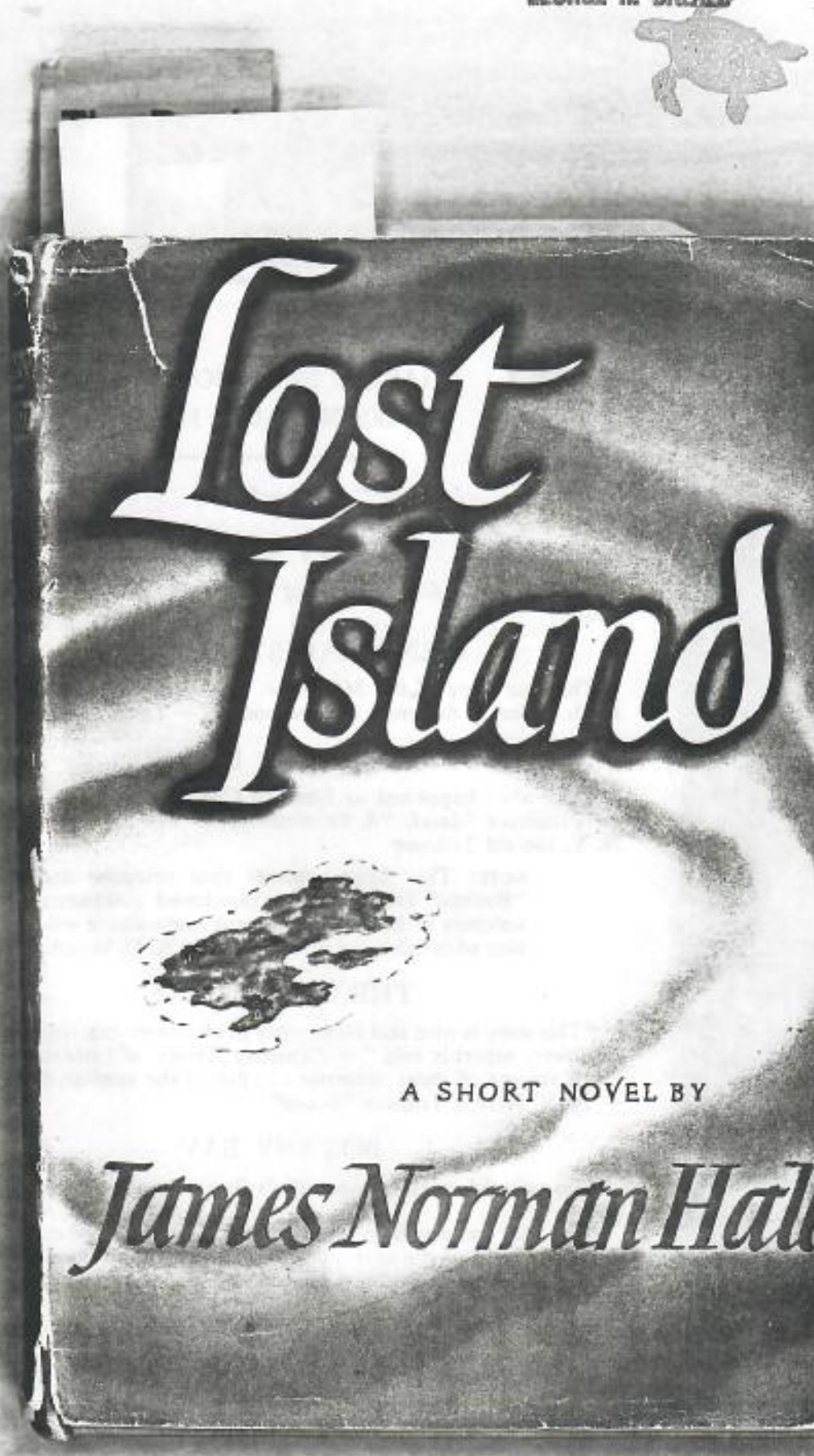
CETTE TORTUE AU MANTEAU DE CUIR SE 150 KGS ET MESURE 2 METRES D'ENVERGURE

Mais ce n'est pas par sa taille et son poids que cet ancêtre de la gent tortue est le plus surprenant : sa particularité, c'est d'avoir une carapace aux saillies longitudinales dont la couleur et la consistance rappellent celles du cuir. Son nom anglais l'indique : LEATHER BACK, tortue au dos de cuir, et pour les scientifiques :

DERMOCHELYS CORIACEA (LINNE). La carapace à elle seule mesure 1,30m par 0,75m et le bec dentelé massif et tranchant, doit être terriblement efficace. Dans la gueule se trouvent des excroissances souples en forme de dents qui ressemblent à celles qui se trouvent dans l'estomac. Elles semblent avoir pour rôle

de retenir les proies au moment où elles sont avalées.

M. ALLEAUME a fait apporter le reptile au Service d'Ichtyotoxisme du Docteur BAGNIS - Car cette tortue, dont l'aspect n'inspire d'ailleurs l'idée d'un plat de choix, est réputée terriblement toxique.



By
CHARLES NORDHOFF and
JAMES NORMAN HALL

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MUTINY ON THE BOUNTY

"A sea novel as fine as anything since Stevenson." — Christopher Morley

MEN AGAINST THE SEA

The epic story of the 3600-mile, open-boat voyage of Captain Bligh. "One of the great sea romances." — Lewis Gannett

PITCAIRN'S ISLAND

Tells what happened to Fletcher Christian and the mutineers on Pitcairn's Island. "A fit successor to two superb books." — N. Y. Herald Tribune

NOTE: The three volumes that compose the "Bounty" Trilogy may be purchased in separate volumes or in the magnificent one-volume edition with full-color illustrations by N. C. Wyeth.

THE HURRICANE

"This story is wise and kind, witty in character drawing, horrible in power, superbly told." — Saturday Review of Literature

"A voyage of sheer romance . . . full of the anguish of hearts." — N. Y. Herald Tribune "Books"

BOTANY BAY

The colorful story of Australia's first colony, the penal settlement.

"It is not too much to say that the . . . yarn is the outstanding historical novel of the year. . . . Vivid and violent, a shrewd balance of adventure, love, suspense, history and sociology. — Charles Lee, Philadelphia Record

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LOST ISLAND

By JAMES NORMAN HALL

This is the story of a *motu*, a pin point of Polynesia, drowsing in the Pacific, untouched by the war. This is the story of George Dodd, an American engineer from Detroit who lands on the tiny island with a blueprint in his pocket. This is the story of the transport, Seabees and the bulldozers who came after him to convert the atoll into a coral carrier for American bombers. This is the story of Viggo (the head man of the village) and his three daughters. This is the story of Father Vincent, the Catholic missionary, and those refugees, the Lehmanns, who were washed up on the islet. This is the story of the giant turtles who once used the peaceful lagoon for their nest.

In this novel whose prose is memorable for its purity and poignancy, James Norman Hall has shown us the human impact of the war as it strikes home, even in Polynesia.

This book has not been published as a serial prior to book publication.

Jacket drawing by George F. Kelley

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THE ATLANTIC MONTHLY PRESS

PRINTED AND BOUND IN THE U. S. A. BY
KINGSPORT PRESS, INC., KINGSPORT, TENN.

To

CARL BEECHER, WALTER G. SMITH,
and J. FRANK STIMSON

V

EARLY NEXT MORNING I SET out with Viggo and a dozen of the natives to make a circuit of the atoll from inside of the lagoon. We were to spend the night on the turtle *motu* diagonally across the lagoon, ten miles from the village. I felt that Viggo was on pins and needles to reach this islet. He was afraid the last of the pits of turtle eggs might hatch before we could get there. However, he was very considerate. Knowing that I wanted to see all the *motu* along that far side, he suggested that we take them in on the way.

It was a glorious day, with clear skies and the wind blowing fresh from the southeast. We skimmed along at between twelve and fourteen knots, according to Viggo's estimation. He told me that such a canoe would easily do sixteen in a strong wind. His two sons managed the big steering paddle and the other fellows watched the trim. As the gusts heeled us down they would leap to a kind of runway built across the hull to the outrigger, to offset the pull of the sail. Sometimes the gusts were too quick for them; the outrigger would leap clear of the water and come

smacking down again; I thought half a dozen times that we were about to capsize. On the other tack the men would bunch on the runway to the hull side to prevent the outrigger from being buried in its turn.

We went first to an islet almost in the center of the lagoon, six miles from the village. It was not more than twenty paces across; with its clumps of green scrub and a few old trees that seemed to be growing there as perches for sea birds, it made as pretty a picture as one could wish to see. We dropped the sail here and the canoe was sculled slowly around the islet to give me a view of the steep walls of coral falling away to the depths of the lagoon. I'd no idea, before, that there were so many kinds of corals, of such fantastic shapes and colors. Viggo had a small box, open on one side, the bottom covered with a watertight pane of clear glass. Set upon the water with the pane side down, it takes off the glare from the surface and you look into the depths as though you were looking through an open window. Shafts of sunlight lit up ravines and caverns far below where fishes as gorgeously colored as the corals themselves were hovering along the steep walls in countless numbers. You can imagine how the sight would appeal to a Middle Westerner used to ponds and streams so muddy you can scarcely see your hand held six inches below the surface of the water. I would have been

content to stay there for the rest of the day, looking through the water-glass window. Viggo told me that the atoll was one of the best in that part of the Pacific for pearl oysters.

"I suppose that's why Boyle wanted it," he said. "He's made a pile of money from pearls and pearl shell, but the market's gone for pearls, since the war."

He asked two of the boys to give me a demonstration of how the diving is done. They trussed up their waistcloths in the fashion of swimming trunks and over the side they went. Meanwhile, Viggo attached a line to the handle of a bucket and let it down till it rested on a ledge of coral far below. The two men, holding to the side of the canoe, breathed deeply for half a minute or so, filling their lungs again and again, then they went down. Viggo had let out a hundred feet of line, but I could still see the bucket and the forms of the men diving toward it with the fish streaking on either side as they descended. From above one had the illusion that they were being splashed away by the divers, and they moved with such lightning speed they were mere streaks of brilliant color in the shafts of sunlight. The men walked, so to speak, along the coral walls far below, using both hands and feet. Pearl oysters grew thickly there and the bucket was soon filled; then with a light spring the divers rose toward the surface, their arms pressed closely to their

sides, their faces turned upward. I timed the dive. One man was under water a minute and thirty-five, the other a minute and forty-eight seconds. Viggo told me that dives from two minutes to two minutes and twenty seconds were common, and that three minutes was the longest one he had ever timed. He also told me that he had known divers to go as deep as thirty fathoms but that they could not work at such a depth.

We sailed along the far side of the lagoon, making short boards away and back again so that I could examine every *motu* along the whole extent of the reef from the northwest to the far southeast end of the atoll. There were twenty-three in all, most of them tiny islets of no more than two or three acres. The largest was about a quarter of a mile from end to end and well planted to coconut palms. I saw that it would be large enough, but no more than that, to accommodate the people when the time came to shift them from the village islet.

We reached the turtle islet a little before sunset and Viggo hurried away at once to see whether or not the turtles had hatched. He returned a few minutes later, his broad face beaming.

"We're in time," he announced. "It will be tomorrow, almost certain."

"How can you tell?" I asked.

"The eggs hatch in seventy-five days. If I know when they're laid I make a record of it, but the old lady who left this lot didn't let me know about it in advance. But the hermit crabs are gathering round and that's a sure sign it won't be long."

This was the kind of islet a small boy dreams about without really believing in its existence. The beach on the lagoon side was of pure coral sand, pale gold in the westering light, and marked with the prints of sea birds' feet and the wavering tracks of hermit crabs. The seaward reef was fifty or sixty yards across, dotted with broad salt-water pools that were mirrors for the evening sky. On the landward side of it was a great rampart of coral fragments torn from the reef and heaped up there by the storms of past generations. Viggo and I seated ourselves on this rampart to watch the others spearing fish; meanwhile, two of the men had gone along the reef to another *motu*, all but joining this one, for sea birds' eggs.

The bird islet was a fascinating sight at this hour of the evening. High above it, so high that one could scarcely see them, the frigate birds were patrolling singly or in small squadrons, awaiting the return from fishing of the respectable, hard-working members of the bird community. The gannets appear to be their favorite victims. When the frigate birds spy one or two or half a dozen gannets coming in from sea, they

go down in power dives that would make Jimmy Doolittle envious. The gannets are superb fliers, but so are the frigate birds, and these latter are fighters. The gannets are so many feathered Daladiers and Neville Chamberlains: peace in their time appears to be the idea with them. When hard-pressed they give a disgorging squawk and up comes the gulletful of small fish they were so hopefully carrying home to their young. The frigates dive for the spoil and seize it in midair.

When we had finished our supper of broiled fish and roasted birds' eggs, Viggo and I strolled to the place where the turtle eggs had been laid, a scarcely perceptible mound that I would not have noticed if he had not pointed it out. A score or two of hermit crabs had collected there as though waiting for something to happen. These crabs are small creatures that make their homes, as you probably know, in discarded snail shells. The full-grown crab manages to thrust his unprotected rear end into a shell about the size of your fist. They all snapped into their shells as well as they could, at our approach, and lay still. Viggo gathered them up, two or three at a time, and threw them to a good distance.

"That won't hurt 'em," he said. "I've got a kind of liking for hermit crabs. They're such harmless creatures, usually, feeding on pandanus nuts and the like

of that. But they can't resist baby turtle. Blessed if I know how they can tell when the eggs are going to hatch. I think they must smell 'em. They're always on hand a little while before the turtles come out."

We seated ourselves near by at a spot where we had a clear view of the adjacent bird islet. Beyond it the reef curved away to the northwest and disappeared over the slope of the world. Thousands of birds were still in the air, flying idly back and forth in the last faint light. They seem to enjoy the day's end as much as humans do. Viggo broke a long silence to remark: —

"I wish you could be here in December, Mr. Dodd, to see the big turtle come ashore to lay their eggs."

"Do many come?" I asked.

"Not so many as there used to be; they're getting scarcer all the time. They're having as hard a struggle as the whales, these days. You know what's happened to the whales? Their last refuge was in the Antarctic. The Japs and the Norwegians have about wiped out what's left of them even there, with their big ships and modern methods of killing. This war's had at least one good effect: it's stopped the slaughter of whales, for a while, anyway."

"Are sea turtle hunted commercially?" I asked.

"Yes, but not so much in this part of the Pacific. The great trouble for them is that there are so few

places, nowadays, where they can find a safe refuge for egg laying. But this *motu* is one. I see to that. I'm as partial to a fine turtle steak as any of the natives, but I've come to realize that watching them is a hundred times better than eating them. They start coming in around October, but November and December are the big months. I've seen as many as three huge turtle come ashore on the same night."

"Aren't they shy about being seen?"

Viggo didn't appear to have heard me. Presently he asked: "Excuse me, what was it you said?"

"Aren't the turtle afraid of being seen?"

"I was thinking of the strange feeling it gives you to come face to face with a big sea turtle at night, in such a lonely place as this," he replied. "And some of them *are* big: they'll weigh three, four, up to five hundred pounds and they look as old as time. . . . No, I can't say that they show any fear, but I'm always careful not to disturb them. Once a mother turtle starts digging the pit for her eggs she goes right on with her work. I've watched by moonlight and starlight. You can sit within three paces, in plain view, and she pays no more attention than she would to a bush or tree. On dark nights I've lit my lantern and set it close by. When she sees the light she halts for a bit and turns her head slowly in your direction; and that's when the queer feeling I spoke of comes over you. I

don't know how to describe it. It's like . . . it's like . . . I don't know *what* it's like. You want to get up very quietly and go away. You know you have no business to be watching.

"But if you stay where you are, she soon forgets about you and goes on with her digging, using her hind flippers, first one, then the other. She digs the hole as deep as she can, say around eighteen or twenty inches, then in go the eggs, all the way from a hundred and fifty to two hundred and fifty – even more. She uses both flippers to cover the hole, patting down the sand and pressing it under her shell till she has made a good workmanlike job of it. Then she uses her powerful front flippers for the first time, scattering sand and gravel in every direction. I suppose the idea is to try and hide the place where the eggs are. She seems to forget the track she's made leading to it, and the one she'll make back to the sea."

Viggo broke off, and was so long silent that I took the occasion to say: "What happens next?"

"Mr. Dodd," he said, "it would be worth your while to come all the way back here some day to see the whole business from beginning to end. It really would. I don't know but what the most interesting part is when the old mother turtle is resting for a bit before she goes back to the sea. After watching and studying them for so long I've come to believe that

turtles have a kind of sad wisdom. It stands to reason they should have when you remember how long they live, if they're given a chance to live. They're acquainted with grief, as the Bible says, especially with regard to their young ones.

"There's the tragedy. Of all the two or three hundred baby turtle that will come out of that pit in the sand, probably not a dozen will live through the dangers they'll have to meet while they're little and defenseless. I more than half believe the mother knows this. When she's resting beside the hole filled with the eggs she's tucked in and covered so nicely, you'd say she was thinking sadly about the future. A turtle has a curious hoarse way of breathing. All of a sudden she will let out a sigh it startles you to hear. It's as if she were thinking: 'I know what's to come, but there's nothing I can do about it . . . Nothing.' Then, without even a glance in your direction, she starts slowly back to sea."

"Have baby turtle so many enemies?" I asked.

"Enemies! They have nothing but enemies! Maybe you'll have a chance to see for yourself. When you remember that a mother lays two batches of eggs a year, probably four or five hundred in all, and how few grown turtle there are . . . yes, you may well say they have a hard struggle to survive. And if human beings grab every lonely sandbank that's left in the

Pacific, as they seem to be doing these days, it will mean the end of the sea turtle."

I don't know what prompted me to speak out at that moment. A sense of guilt, perhaps; the need to confess and get it over with. However that may be, I gathered up my resolution and told Viggo why I had come and what the making of a military and naval base would mean to that lonely atoll. I made no attempt to soften the blow. By the time I had finished he knew the whole desolate truth. He heard me through in silence, and the silence that followed was the only possible comment.

But at last he exclaimed, in a low voice: "Oh dear! . . . Oh dear! . . . Oh dear!"

I would not have believed that this mildest of exclamations could contain such genuine anguish of mind and heart. I managed to say: "Never in my life have I had so hateful a task to perform," and little consolation that could have been.

"Will . . . will my turtle *motu* have to go?"

"I don't know," I replied, "but you must be prepared for it. The freighter that's coming will bring a naval engineer who will decide where the various installations are to be placed. There will be anti-aircraft guns on various islets around the lagoon, that is certain. This may be one of them. . . . How will the people take this when they know the full truth?"

"It will be hard on the older ones."

"Will you be able to make them see the necessity? Can you explain what the United Nations are fighting for, and how their own welfare is concerned here?"

"Yes, in a way . . . but . . ."

"But, what?"

"You must remember, Mr. Dodd, how cut off they are from the rest of the world. The only book they have in their own language is the Bible. They know it from end to end, much better than most white people, but that's all their reading. You can't expect them to have any clear notion about the war and the countries outside. I've shown them pictures now and again of towns and great cities and railroads and tall buildings and the like of that. It don't interest them much. It's all too strange and different from their own kind of life. Someone's sure to say: 'Where's the lagoon?' or 'Where's the reef?' I've found it's useless trying to explain what a continent is.

"Then there's another thing. They have a love for their islands that goes deep down. They love every inch of ground, every little *motu* along the reefs, no matter how small. You'd have to live here and know the natives to realize how great that love is. Having so little land, it's very precious to them."

"Yes, I can well understand that."

"Well, when they see what's going to happen now,

they'll ask me questions I'll have a hard time answering. They will say: 'Viggo, you and Father Vincent have told us about the Germans and Japanese and what they would do to our islands if they had a chance to come here. But see what the friendly nations have done! How are we going to live?' What can I say, Mr. Dodd? It won't be a fair question, but how can I explain?"

I had no suggestions to make. I didn't see how it *could* be explained.

"I'm not worrying so much about the young people," he added, bleakly. "They will be so interested in what happens after the ship comes they won't think of anything else, at first. But it will be a terrible blow for the older people. . . . Then there's Father Vincent, and the Lehmanns. There's no way, you think, of saving the father's church and his garden?"

"No. They will have to go. As for the Lehmanns . . ."

I didn't complete the sentence. Old Boyle's words came back to me: "When I sent 'em out there I thought I was doing a good turn for once in my life. Guess I was too late makin' a start." I could not summon up even a bitter smile as I thought of the irony of the situation as it applied to the Lehmanns. Where on this tormented planet could a refuge be found if not here? But my one meeting with them was enough

to convince me that they would take this new development with the stoicism they had learned from hard experience.

"When did they come?" I asked.

"The Lehmanns? Eight months ago. In July, last year."

"They've had that, at least."

"Yes," said Viggo.

He sat with his chin in his hands, his elbows propped on his broad knees, gazing at the path of glory in the lagoon made by the first-quarter moon, now low in the west. Presently he said: "Mr. Dodd, here's what I suggest. A week from tonight the people will have one of their *himinés;* it's a kind of song service. Every now and then they get together to sing their old songs that have been handed down from generation to generation. I think you'd enjoy hearing them."

"I certainly would," I replied.

"Well, I'll say nothing till that's over. I can tell them that same night, after the singing. They'll all be together then."

"Good," I said, "it's an excellent suggestion."

The moon had set when we returned to the place where the camp had been made. Viggo's sons and the other men had spread the sail of the canoe for their own bed. Mats with pillows and coverlets Viggo had

brought were laid out for us. I was impressed by the prayer service in progress as we came in. All those young fellows took part in it with a complete lack of self-consciousness. They were repeating prayers of the Catholic Church, but there was nothing perfunctory in their manner of doing so. The loneliness of the place, with the empty sea around and the great vault of sky, spangled with stars, overhead, gave a peculiar solemnity to that brief evening service. I felt that worship meant something to these people; that it was a necessary part of their daily lives.

I couldn't go to sleep for a long time, and, although we had no further conversation, I knew that Viggo was as wakeful as myself. But at last I heard his measured breathing, with intervals of snoring between. I lay on my back staring into the sky. In those Southern latitudes, with no human lights, or dust, or smoke to obscure the view, the vast arc of Milky Way is of awe-inspiring splendor. I felt that I had never before really seen the Milky Way, but what chance do most of us Northerners, city dwellers, give ourselves to see it? Near the constellation of the Southern Cross is that abyss of blackness so inadequately named "the Coal Sack," opening into ancient and eternal Night. I thought I heard a chorus of mocking voices – the Ironic Spirits of Thomas Hardy's "Dynasts" – issuing from the void: –

Pour all your troubles down the old Coal Sack
And smile, smile, smile.

But I lack the cosmic point of view. Human concerns are all-important to me, so I was not comforted.

VI

NEXT MORNING THE TURTLES hatched out. I'm tempted to give you a full account of that, but it's something to see rather than to hear about. One of Viggo's boys came to wake me. He spoke no English, but his gestures were eloquent; I knew at once what was happening and hurried after him to the seaward side of the *motu*. The others were already on hand, and there was Viggo, rushing up and down the beach from the turtle pit to the reef, waving an old brown coconut frond over his head to scare the birds away. And down from the pit, about fifty yards inland, came a thin line of baby turtle, each of them about the size of an American half-dollar, scurrying toward the sea as fast as their tiny flippers would carry them. They could walk and swim from the moment of birth, but otherwise they were as helpless as newly born human infants.

"Excuse me for waking you up, Mr. Dodd," said Viggo, "but I thought you'd want to see this."

"I certainly do," I replied, and, in fact, I wouldn't have missed the strange sight for anything. But I was fully as interested in watching Viggo as I was in the

turtle. He might have been old Father Turtle himself, trying his best to protect his host of harassed children as they made toward the sea. The birds hovered above them in clouds, and despite all that Viggo and the boys, under his direction, could do to keep them off, they would swoop down and seize the tiny defenseless creatures. Viggo would gather up a hatful and hurry down with them to the water, but he had even less chance to protect them there than before: the fish were as eager for those tender morsels as the birds.

The surf was thundering over the wide reef, flooding the pools and channels in the coral, and the spume thrown high filled the air with a perpetual cloud of rainbow-colored mist.

"There she is, Mr. Dodd!" said Viggo, pointing to a wide pool in the reef, a good forty yards out. "You see her?"

"Who?" I asked.

"The old mother turtle. She must have come in last night."

I was incredulous.

"You tell me she knows when her eggs will hatch?" I asked.

"My goodness! Why shouldn't she? Of course she knows! This isn't the first time I've seen it happen. . . . Look! . . . There! You see her splashing? It's

like she was saying: 'Hurry, children! Here's your mother!' " and away he went again, waving his palm frond. He had completely forgotten, for the moment at least, the sorrow to come.

For all his efforts and those of the native boys, there was a woeful slaughter of baby turtle that morning. I could see the fish streaking across the shallows after those that had succeeded in reaching the water. Presently Viggo came back to where I was standing. He was puffing and blowing, and although the sun was not yet an hour high, his shirt and trousers were soaked with sweat.

"I expect you think I'm an awful fool," he said, with an apologetic smile.

"Not in the least," I replied, "but it does seem hopeless, trying to save them."

He nodded, glumly.

"You see now what I meant when I spoke about their enemies? I don't suppose more than thirty or forty of the whole lot will live to reach the sea, if that many. And the danger isn't over then. Far from it!"

He told me he had a pen fenced off in the shallows of the lagoon where he raised many baby turtle until their shells had hardened and they were able to fend for themselves; then he let them go. "It's a nice

hobby," he said. "I certainly enjoy it." Of a sudden he remembered, and I shall not soon forget the expression that came over his face as he added: "But I don't suppose I'll be able to do it any more, after the ship comes."

"Remember, Viggo; this is only for the duration of the war," I said.

"I know . . . there's that to think of." He shook his head, slowly. "But I'm afraid it will never again be like it is now . . . Well, we can hope, anyway."

We spent the day and the following night on the turtle islet. The experience gave me the true "feel," so to speak, of Low Island life. I could imagine this sort of thing going on year after year, generation after generation. Those native boys were as much a part of the natural history of the place as the sea fowl, the hermit crabs, the turtle and the fish. They belonged there. They had been molded by the environment into as fine a type of primitive man as, I believe, could be found anywhere. I don't like the word "primitive," in this connection, with its connotation of slow wits and darkened minds. Slow-witted they certainly were not. Their minds were, no doubt, dark in the sense that they contained little knowledge except that useful to them in their daily lives; but how wide that knowledge was I had occasion to ob-

serve at all hours. I was the dark-minded, slow-witted one here. My ignorance of their kind of knowledge was abysmal.

It was a treat to see their "at-homeness" whether on land, on the reef, or in the sea. Viggo kept a small outrigger canoe on this *motu*. He thought it would interest me to see how they spear fish in the sea beyond the reef, and I willingly accepted the chance. The canoe – large enough for four occupants – was carried to a place fairly free from the villainous knife-edged coral that covered much of the reef. Here we embarked, Viggo, two of the boys, and myself, and the canoe was paddled through the broken water foaming across the reef to a V-shaped opening on the seaward side where it could easily be launched despite the surf. At least, so Viggo said, but as I watched the combers piling in I didn't see how it was to be done. At the moment I would gladly have renigged this expedition planned for my benefit, but pride wouldn't allow me to. So I sat fast and waited, taking heart from the expressions of complete assurance on the faces of the others.

Two men held the canoe while the seas piled in, and when the precise moment came Viggo shouted an order. We were given a shove; the paddlers pulled with quick hard strokes, and we shot out toward the long steepening slope of a comber sweeping majestically in to break on the reef. Up and over it we went, and thirty seconds later we were riding easily over the swells past all danger. I learned anew from that experience how readily old Mother Ocean – sometimes, at least – will aid the purposes of men. But there's no sentiment about her. Meet her conditions and thrive. Fail to meet them and suffer the consequences.

Meanwhile, here came the fish spearers. They swam out through the surf, trailing their slender, single-pronged spears which they clasped with their toes. Imagine one of us trying to clasp anything with his toes, least of all while swimming through a heavy surf!

The canoe was paddled slowly along a little way beyond the break of the seas, while the spearers were at work. I couldn't see them well at that distance, but I caught an occasional glimpse as they went down toward the steeply sloping wall of the reef. Then a head would break water, the diver now holding his spear upright, sometimes with two fish impaled, one above the other. They pulled them off on the sides of the canoe and down they would go again. They wore homemade diving goggles that gave them an odd scholarly look, and scholars they were at that business: they could read a coral reef, and come away with their knowledge of it impaled on the point of

a fishing spear. They were piscatorial Ph.D.'s and Litt.D.'s.

That was a memorable experience for me, but I was relieved when we were safely over the reef again. The coming in was as beautifully timed and as neatly done as the going out. I saw that anyone could do this kind of thing as easily as breathing, even the fishing part of it, if his ancestors had been Low Islanders for several centuries.

I felt that I was getting to be a pretty good amateur Low Islander, so when we had crossed the outer ledge of reef I got out of the canoe to walk across the shallows to the beach. The water was no more than thigh deep.

"Look out for the sea urchins," Viggo warned. He had already spoken of these; you see them everywhere on the reefs. They are beautiful things to look at, of a deep shade of blue or purple, covered with long needle-pointed spines that stick out on all sides. But those spines can give you a lot of grief if you chance to bash a hand or foot against them. The pain is soon relieved, Viggo said, if you apply urine to the spot; apparently the ammonia dissolves the points of the spines that break off in the wound. But I had no desire to be urinated upon so I walked warily.

I was wading slowly along, examining the strange forms of marine life, both animal and vegetable, when

one of the boys who was with me grasped my arm and drew me back just as I was about to take a step. "*Nobu,*" he said. That meant nothing to me. Following his glance I peered into the clear water but saw nothing there to be alarmed about. With an underhand thrust of his spear he impaled what I thought was a gorgeously colored lump of coral; but the color was the only gorgeous thing about it. It was a fish, and a more monstrous-looking thing I have never seen. You would have said that it was the embodiment of the Spirit of Evil: Schickelgruber, in the form of a fish; I was tempted to say, "*Heil,* Hitler!" Viggo had come up by this time.

"Mr. Dodd," he said, "if you had stepped on that fellow, within five minutes you would have wished you were dead. And you might have been dead before many days had passed."

He pointed out two hollow ducts in the spines of the dorsal fin.

"He lies amongst the coral with that fin erect," said Viggo. "Why, only the devil knows; and if you step on him he squirts into your foot poison that *is* poison. It's worse than any rattlesnake bite."

"Are these things common?" I asked.

"No, heaven be thanked!" said Viggo. "But you can never be sure where you will find one. They seem to take on the color of whatever part of the reef they

inhabit. I've seen *nohu* with no color at all lying amongst fragments of dead coral. All that you can say for this fish is that it's very good eating."

I proved that for myself at our midday meal. It was excellent eating, and thankful I was that it was the flesh and not the poison I had partaken of that day.

We returned to the village early the next morning. With a good following breeze we fairly flew down the lagoon, covering the ten miles in forty minutes. While we were still a good distance off, Viggo, who was looking ahead, remarked: "That's strange! The schooner's gone!" He couldn't account for it. "Tihoti always stays three or four days when he calls here," he added. "He said nothing about leaving early this time."

We soon learned the reason for his going. During our absence a small cutter had arrived from an island eighty miles distant. An old woman was dying there and she had begged to have Father Vincent sent for; she could not die in peace unless he was present to perform the last rites; therefore, some members of her family had come for him. This island was dead to windward and it would have taken the cutter several days to beat up to it. The schooner, using her engine, could reach it overnight, so Captain Tihoti, with Father Vincent, set out at once. The captain was

going on to the southeast, afterward, and would call for the priest on his homeward voyage.

Upon hearing this news, I confess that I had, at first, a feeling of profound relief. Chance had spared me the hateful task of telling Father Vincent what I had decided to tell him immediately upon our return to the village. But, upon reflection, I greatly regretted that I had not spoken that first afternoon when we met in his garden. Now, almost certainly, he would not return until at least a week after the arrival of the freighter. By that time . . .

"I believe it's best as it's turned out," Viggo said when I spoke of this. "Since it has to come, Mr. Dodd, I believe the father would *want* to be away, if he could. I'm glad he's not here to see what's going to happen."

"But think of his return," I said.

"I know," said Viggo, bleakly. "Well . . . there's nothing we can do about it now."

The arrival of the cutter gave me another glimpse into island life. A young native, about twenty, had taken the chance to come with it for the purpose of seeking a bride for himself. Viggo told me that this sort of thing happened often.

"The natives are very careful about inbreeding," he explained; "more careful, even, than we are: you

never hear of one of them marrying a cousin. They would consider that the next thing to incest. There are not many inhabitants on any of the atolls. This one is about typical of the numbers you'll find all through the Group. So when young men are ready to get married and settle down, they often make long voyages to some other island to find a wife that has no blood relationship with their family. Sometimes they will stay on the wife's island, and sometimes they will bring their girls back to their own."

He spoke of one fellow who had come for a wife from an island at the far end of the archipelago, six hundred miles distant. Father Vincent had married the pair, and they were waiting for their first child to be born before going to the husband's island.

"They haven't long to wait," said Viggo. "The child is expected any day."

As a matter of fact, it arrived three days later. There was no physician to attend the mother, but that didn't matter. Old Papa Viggo was on hand; and every island woman of middle age or beyond has had long practice in midwifery. Later I saw this infant, a fine lusty boy. If he lived out his allotted span he would see the year 2012. I wondered, none so hopefully, what kind of Polynesia there would be at that distant date.

During that week, I was busy indoors and out.

Viggo provided me with a large table to work at, and with his data and what I myself collected, I made a large-scale map of the atoll marked with the shoals in the lagoon and every *motu* large and small on the reef. Although the final decision as to where the various buildings and other installations were to be placed rested with the naval engineer coming with the freighter, I sketched on the plan my own suggestions. I left blank Viggo's turtle refuge and the adjacent bird islet.

Viggo was worried about the burying ground. "You know, Mr. Dodd," he said: "the natives have great reverence for the dead. I don't know but what you might better call it 'fear.' If the dead are disturbed the living will suffer for it: they're as certain of that as they are of tomorrow's sunrise." I set his mind at rest about this. The cemetery was at the far end of the village *motu* near the spot where old Kamaké had his hut. It was enclosed by a low wall and there were no trees within it. The islet lay northwest and southeast, in the eye of the prevailing wind. Planes landing would skim over the cemetery, and those leaving would taxi to that end and turn into the wind just by the wall. They would have the full length of the islet – a good 2400 yards – for the takeoff, a sufficient distance even for bombing or transport planes. I assured him that the cemetery was safe,

but I was not so certain of the repose of the dead, under those circumstances.

Viggo was sitting in my guest-room "office" while I worked on the map.

"I don't see how we will do for fresh water," he said, "with two or three hundred extra men here." He could scarcely believe me when I told him that we would have a distilling unit capable of furnishing six thousand gallons per day.

"My goodness! Is that so?" he exclaimed. After a long silence he added: "It's going to be terribly interesting to see all this . . . but oh dear! . . . Oh dear! . . ."

I thought "terribly interesting" just about expressed it, from Viggo's point of view.

The weather during this week was perfect, and I mean just that. Throughout the day the trade wind blew cool and fresh, tempering the midday heat. At sunset or a little after it would die away, and the reef-enclosed lagoon had the purity of stillness one sees in a mountain lake. The moon was coming on toward the full, and the shadows of the coconut fronds, of the pandanus trees with their tufts of long slender leaves, of the old pukatea trees, the patriarchs of the island, seemed to be woven into the texture of the white sand beneath them. The far-off incessant thunder of the surf along the outer reefs accentuated the

peace within. It was as though the reefs were saying to the clamor coming from the outside world: "Thus far and no farther!" One soon ceased to hear, consciously, the roar of the surf. Despite it, perhaps because of it, the silence within the circle of woven sound was perfection itself.

I remember with especial pleasure an evening when Viggo, the Lehmanns, and I paddled in a canoe far out on the lagoon and then drifted. We talked little, well content to let the voices of the night speak in our stead. Now and then a sooty tern would pass high overhead uttering its curious harsh cry; it seemed to be dropping hard pellets of connected sound, making ripples in the great pool of silence. Some of the natives were line-fishing off the shoals not far from the passage. We were a good mile distant, yet we heard their voices plainly; but they too were silent for the most part. Occasionally, one of them who had a beautifully clear tenor voice would sing a little refrain and, after an interval of silence, would repeat it in another, higher key. To me it was the very voice of mid-ocean solitude. I have only to hum it to see again the island as it was that night. No one spoke of it then; no comment would have been adequate to express the effect of the refrain that seemed to come from an immeasurable distance; but three nights later, when Viggo and I went over to spend an hour with the Lehmanns,

we heard it again, woven into a sonata for violin and piano. Mr. Lehmann had composed it during the interval, and I doubt whether Mozart himself could have done it more beautifully.

On the Saturday night the people gathered for the *himiné*, as they call it – the song service. It was held on an open plot of ground near Viggo's house. They brought mats to sit on and arranged themselves in a wide semicircle facing the lagoon, the view of it framed by two old trees growing on the beach. Miss Lehmann was there. I saw her chatting with some of the women as easily as though she herself were a Low Islander, but I suppose the fluency was less real than it seemed to be. In any case it was a remarkable achievement, I thought, to have learned so much of the native speech in a period of eight months. Viggo had brought out chairs for himself and me and we sat facing the others, a little to one side. He said we could best get the effect of the singing at that distance.

Presently the laughing and talking died away. An old man got up in his place and, in a simple, dignified manner, made a brief speech, addressed, apparently, to Viggo.

"It's for you," Viggo said, when he had finished. "He says you are welcome here. They are happy to learn of the great ship that is to pass this way. Now they will sing you some of their ancient songs."

"Am I supposed to reply?" I asked.

"No. When the singing is ended I will speak for you."

A moment later they began. There was no leader for the chorus; they had not even a tuning fork to give them the pitch, and needed none. Singing is their great art, perfected over the centuries, handed down from generation to generation. But how am I to describe this kind of singing? It's impossible. I can only say that it made a deep and strange impression upon me. The effect of it, heard on such a night, in such a place, was one never to be forgotten.

A woman's voice invariably opened each song. It was an extraordinary one, clear and sweet and true, with an astonishing range; the highest notes were almost beyond the reach of hearing. I tried to pick out that particular woman, but all sang with such apparent ease that I could not distinguish in the moonlight the one who carried that leading part. When I inquired of Viggo, he replied, with a pleased smile: "That's my old woman. I guess her voice is what made me a Low Islander. But she was a mighty pretty girl twenty-five years ago."

The singing continued for at least an hour and a half. During this time I felt rather than saw Viggo's increasing anxiety as the moment approached when he was to tell the people of what was to come. I felt sorry

for him, sorry for Father Vincent and the Lehmanns, sorry for me, and, above all, sorry for them. It seemed to me that the impending sudden and brutal change in their lives demanded by the harsh necessity of war, to be imposed upon them whether they would or no, was a tragedy for the entire human race. We are all members of one great family, and the health of the whole comes, in part at least, from the variety of the contributions made to the sum of living. When the uniqueness and the integrity of any contribution is lost, something precious and irreplaceable has been lost forever. There was no doubt in my mind as to the value of what was about to be destroyed here. Ten days on the island had more than convinced me of its worth.

When the singing ended, Viggo got slowly to his feet and paced back and forth for a moment or two; then he turned to address them. He had acquired the same dignity and simplicity of manner in speaking which comes as second nature to the Polynesians, or he may always have possessed it. Perhaps it was both native and acquired. He was one of those men who haven't a grain of deceit in their natures; who are men of good will in the high sense. As I have said, he had a big heart – big rather than soft, filled with sympathy and compassion for others in their griefs and trials.

I could not understand his words, but knew well

enough, of course, what he was saying. Studying the faces of his audience as well as I could in the bright moonlight, I had a feeling of reassurance. They appeared to be taking in what he said very quietly, as though neither surprised nor angered. No bitter looks were cast in my direction, but Viggo, I felt certain, would explain that I was a mere agent, without responsibility in the matter, except with respect to the task I had been sent out to perform.

When he had finished, several of the older men rose, in turn, to reply briefly. Their voices, insofar as I could judge, had in them neither heat nor bitterness. Then the crowd quietly dispersed, and Viggo and I were left alone. He suggested that we go to his bench on the seaward side of the *motu*. We walked in silence and seated ourselves there. At last I was constrained to remark: "They seem to have taken it very well."

"They don't understand," he replied, sorrowfully.

"They don't understand? How is that possible?" I asked.

"Mr. Dodd, I told them just what is going to happen. I explained everything as you have explained it to me. And still they don't understand. They heard my words, but they haven't grasped the meaning of them – not yet, anyway. They're not dumb, as you might think from this. But they can't conceive of such

a thing happening to their island. It doesn't make sense to them."

"I don't wonder," I replied. "It *doesn't* make sense, from any customary point of view."

"I expect we'd feel the same," said Viggo, "if strangers were to come to our own lands and tell us we must get out at once – crowd ourselves into a corner and let them have the rest to do what they pleased with. We wouldn't believe them."

"Well?" I said.

"There's nothing to be done about it. We'll have to wait and let the truth come in to them little by little. They'll realize soon enough, after the ship comes."

I left Viggo when we crossed the path leading to the church. He returned to the village. I walked on to Father Vincent's garden. In the bright moonlight both church and garden seemed enchanted places that might vanish even as I looked at them. How close that was to the truth of the matter no one knew better than myself. The place was deserted now, but that same afternoon the whole village had gathered there while Viggo divided among the children the fruit of the fine orange tree. They in turn had shared with the grownups so that there was at least a part of an orange for everyone.

Walking slowly along the paths I came to the jam-

fruit tree, casting a circle of shade so deep I would not have noticed that the bench beneath it had an occupant. I stopped short as my name was called. Miss Lehmann was seated there.

"I'm still under the spell of the singing," she was saying a moment later. She spoke so quietly and calmly that at first I thought she might not have understood what Viggo had told the people.

"You've heard it before, of course?" I replied.

"Yes. I never miss the *biminés*. Usually my father comes too. Have you ever heard stranger music, Mr. Dodd? I've never seen my father so stirred as he was when we first listened to these songs. He has tried to get some of them down on paper, but he says it's impossible. It can't be done."

"He succeeded wonderfully well with the refrain we heard the fisherman sing," I replied.

"I know, but that was only a phrase, quite different from this other choral singing. Did you like what he did with it?"

"Very much," I replied. "I don't believe that Mozart or Beethoven could have bettered that sonata."

"Oh, you mustn't say that!" I could see that she was shocked by the comparison. "My father has real talent at musical composition, but he would be the first to say that it goes no farther than talent."

We fell silent. I knew that she was waiting for me

to speak first of what was in both our minds. Presently I said: "You understood, Miss Lehmann, what Viggo told the people this evening?"

She nodded, without speaking.

"I can understand what a blow this will be to you and your father."

"To us? What does it matter?" she replied, mournfully. "But the poor people . . . They haven't yet grasped the truth of it, Mr. Dodd."

"That's what Viggo told me."

"They are thinking more of the ship that's coming than of what will happen after it comes."

"What of yourself, Miss Lehmann? What will you and your father do now? What will you want to do?"

"Can you ask me that? We would like to stay, of course."

"Do you realize what we shall have to do in making a naval and military base here? The place will be stripped bare. . . . There will be nothing left but the climate," I added, grimly. "Even that will be changed with most of the trees gone."

"Stripped bare? The whole of it? How are the people to live?"

I spoke of the *motu* on the far side of the lagoon to which they would be moved. "Aside from that," I added, "I'm afraid there'll be nothing left except the bones of an atoll."

"Mr. Dodd," she said, "I believe I'm almost as sorry

for you as I am for the natives. I can see how you love the island already. To have to destroy it before you've had a chance to really know it . . ."

That was unexpected. I didn't reply for some little time; then I said: "I'm an engineer, Miss Lehmann. This kind of a job is right down my street, and I shan't have to stay here after the job is finished. Meanwhile, among other . . . among other matters, I've got to think of your and your father's situation."

I could not see her face clearly, but I thought I could detect a kind of mournful gaiety in her voice as she replied: "Why didn't you say 'problems' as you were about to do? The old problem of the Jews, individually or collectively! It gathers age with the passing of the centuries, but that is all the years bring to it. The solution is as far away as ever."

"Miss Lehmann, do you really want to stay here?"

"Of course. Where else *can* we go?"

"Then you shall," I said. "I'll take it upon myself to promise that in advance. I don't yet see how it's to be arranged, but we'll manage it."

She shook her head, slowly. "I won't have you making promises. You might be compelled to break them. When I said 'Where can we go?' I didn't really mean it. One thing Jewish refugees have learned is that, outside of Nazi-held Europe, we can, somehow, continue to exist."

"How did you manage in Portugal?"

It was a thoughtless question. I was sorry the moment I'd spoken.

"Father and I had a difficult time there because so many refugees were crowded into that small country. But . . . we did survive."

"Difficult" – I could imagine what lay behind that understatement. The Lehmanns were not the kind of people who would push themselves forward in a bitter struggle for mere existence, or make a show of wretchedness in the hope of sympathy.

"When is the ship expected?" she asked, a moment later.

"Any day, now."

She got to her feet. "Then I'm going for a walk to the end of the *motu*. Will you come? It may be the last chance to see it as it is now."

Many a young man would have envied me that experience, in that company. For all the fact that I have a son and daughter older than she, it was reassuring to find that my middle-aged heart could respond to the attraction, so unconsciously exerted, of that charming presence. However, the heart had not middle-aged for nothing. I was not even tempted to make a fool of myself.

What chiefly attracted me was the rare combination of youth and maturity of character. One felt no desire to "talk down" to her in the fashion that so

often seems necessary when a man in his fifties tries to make conversation with a girl in her teens. There was a level head on those young shoulders, one filled with sad wisdom and profound common sense.

I spoke of old man Boyle, painting a somewhat flattering picture of the impression he had made upon me.

She heard me through, and then said: "Mr. Dodd, my father and I could never, never repay him for his kindness to us. But we have never before been objects of charity, and that is what our situation here amounts to. This seems a small-minded thing to say. One should be able to accept a generous gift in the same fine spirit in which it is offered; but we have our accursed pride. It's a defect in both of us, but there it is!"

I might have protested, with truth, that Boyle's obligation to them was far greater than theirs to him. What he had done for them had cost him nothing but the money involved and he was well able to afford that. His unselfish act – the only one in a lifetime, if Captain George was right about it – had, unquestionably, greatly salved his feeling of self-contempt. But I could hardly speak of this. I knew, of course, that Miss Lehmann was entirely right in thinking that Boyle had not really needed them to care for his home here. He had been under no necessity of sending all

the way to Europe for assistance in that matter. So I said nothing. I hate dissimulation, even for a good purpose.

"No," she added, "much as we love the island, Father and I could not have remained indefinitely as pensioners here."

"Had you made any plans for the future?"

"Yes. At the end of the year we hoped to return to the other island, the seat of government. Father feels certain that he could find a position there, teaching violin in the schools and privately. I am a stenographer. I believe I could find work in some office, perhaps for Mr. Boyle himself."

"Are you a good stenographer?" I asked.

"Better than that – expert. I can say it without self-flattery. I type in English and French as easily as in German. I was employed in the office of the university where my father was Professor of Ancient History. I carried this work in addition to my studies there."

"In that case, I believe we can find a job for you here, if you really want to stay," I replied.

"That would suit me very well," she said, "but you're to make no promises and you're not to worry about us. Whether we stay or go, Father and I will be all right. . . . Mr. Dodd, it's heaven for us merely to breathe free air. We could live on that alone, if

necessary. You'd have to be a Jew from Central Europe to realize how nearly that comes to being sober truth."

We walked slowly on to the end of the *motu*, skirting the end of it from the ocean side to the lagoon beach. Approaching old Kamaké's hut we saw him seated in bright moonlight near by, plaiting palm fronds; he was, evidently, preparing a new roof for the hut. He plaited rapidly; his old hands seemed to have lost none of their skill at that work. As we passed, Miss Lehmann greeted him with the customary "*Kia ora na.*" He made no reply except to raise his head for a brief glance, as though regarding something that had neither meaning nor interest for him.

"He seems a surly old fellow," I remarked, presently. "Has he ever spoken to you?"

"Never. Father Vincent told me that he has not been able to exchange a dozen words with Kamaké in all the years he has lived here."

"How do the natives regard him?"

"With great respect, mingled with fear."

Both Miss Lehmann and her father had read Viggo's copy of *The Worship of Kiho-Tumu*, and had been as deeply impressed by it as myself.

"Think of his extraordinary memory," she said, "carrying those ancient chants, word for word, in his head all these years!"

"I'm surprised that he could have been persuaded to repeat them," I said.

"He didn't want them to be lost; that was his reason, evidently. My father says this record alone is enough to convince him of the antiquity and the high origin of the Polynesian race. No primitive island people, he thinks, could have conceived that worship of a supreme god. They must have brought it from some ancient homeland."

We passed through the burying ground, lying in full moonlight. Many of the older graves were marked only with borders of shells or coral fragments. Others had headstones of coral lime with a cross and the names and ages of those sleeping beneath. There was one larger stone over the grave of an Englishman who had died here years ago. Viggo had told me of this man. When dying he had asked to have the single word, REPOSE, carved on his tomb. The word seemed to ring soundlessly in the air of that lonely spot.

Miss Lehmann turned to me.

"Will Kamaké have to be moved from the *motu* with the others?" she asked.

"I'm afraid so," I replied. "That old tree that shades his hut will, certainly, have to go."

"I wish he was safely here," she said. "I wish he could die before the ship comes!"

VII

THAT WISH WAS NOT TO BE fulfilled. The freighter arrived thirty-six hours later. The night before she was sighted I spent alone on the small *motu* in the middle of the lagoon. I wanted a taste of complete solitude while the chance offered, so Viggo took me out there in one of the sailing canoes. I could not have chosen a better place or a better night for such an experience. My only companions were about a dozen gannets and frigate birds that made their home on the *motu*. They perched in the few low trees and bushes regarding me with a kind of watchful indifference. I was surprised to find the timid gannets hobnobbing on the same small islet with their enemies, the frigate birds. Perhaps the few I saw there were the Quislings of their species.

Presently the waning moon rose directly behind a *motu* on the far side of the lagoon, revealing its scattered coconut palms and pandanus trees in clear silhouette, at the moment of rising.

> The moving moon went up the sky,
> And nowhere did abide;
> Softly she was going up,
> And a star or two beside . . .

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15

BECHE DE MER—TREPANG

BY CHAS. R. TURBET, B.V.Sc., M.R.C.V.S.

(Read 25th May, 1942)

Bêche-de-mer or trepang is the trade name given to dried *holothurians* used in the preparation of gelatinous soups considered a luxury by the Chinese and other Eastern peoples. The name was not originally French but is gallicized from Portugese bicho-da-mar, sea worm.

Most residents of the country are familiar with the general appearance of the living bêche-de-mer, or trepang, as it is known in Malay. Its sausage-like shape makes it easiiy recognisable to those who have occasion to visit the reefs. The descriptive term sea-cucumber also aptly describes it, so that, having that name in mind, even the most inexperienced would easily identify the creature.

Zoologically the bêche-de-mer are classified under the Phylum: *Echinodermata* (spiny skinned). Class: *Holothuroidea.*

In the sea-cucumbers the skeleton is represented only by isolated nodules of calcium carbonate. The body wall is highly muscular. The mouth and anus are situated at opposite ends of the body, the mouth being surrounded by a ring of buccal tentacles or feelers. Ambulacral grooves (represented by closed canals) run from near the mouth to the proximity of the anus. Movement is accomplished by means of podia, aided by worm-like contractions of the body.

Another organ which opens into the cloaca is the *Cuvierian organ.* This consists of a number of unbranched tubes. If a sea cucumber is held by the head end and strongly flicked, the thin wall of the cloaca breaks, liberating the tubes of the Cuvierian organ. These secrete a sticky substance capable of ensnaring an enemy. The animal is itself able to bring about the intrusion of these tubes by contraction of its muscular walls. This self mutilation is not necessarily fatal since, if the animal is left alone, it can regenerate the whole of these organs.

The *water vascular system* is a complex arrangement of tubes and spaces by which the turgidity of the body cavity and the action of feelers and podia is controlled.

Sea cucumbers have both nervous and blood systems. The genital organs consist of a single group of branched tubes which converge to a short genital duct which leads to a pore situated on the mid-dorsal line a short distance behind the feelers.

Living sea cucumbers vary in size from six to eighteen inches or more in length, the size in these waters varying with the species. It is unusual to find big variation in the size of individual members of the same species present on the same reef. Some may bear on the skin spicules or prickles of lime, fewer on the better. All the commercial kinds are capable of great extension and contraction of the body.

The food of bêche-de-mer consists chiefly of the microscopic calcareous-shelled animals known as *Foraminifera*, which are swallowed in combination with a large percentage of sand and broken fragments of shells and corals. The process of feeding (1) is in all varieties identical and somewhat remarkable. The tufted, mop-like tentacles are one by one swept over the surface of the ground or reef upon which the animal is feeding and in corresponding order they are recurved towards the mouth and thrust with adherent food matter down the creatures throat. In reverse order they are extended to annex more food.

Sea cucumbers are found chiefly in tropical waters on coral reefs as mentioned above. They also occur on the Californian coast where the trade is large. Non-commercial varieties are quite well represented in temperate waters.

The process by which bêche-de-mer is prepared for the market is as follows:—

The "fish" are first collected in sacks by wading on the reef during the low spring tides or by diving over the edge of the reef. Whilst still fresh the fish are taken to a shore curing station or treated on the deck of the fishing vessel.

Salt water is brought to the boil in a cauldron and the whole "fish" is plunged in and boiled for twenty minutes. With the large varieties boiling up to one hour may be necessary. An easy method of determining if sufficiently boiled is to take a "fish" out of the boiler and drop it about six feet onto a board or other smooth surface. If sufficiently boiled it should bounce like a piece of rubber.

Bêche-de-mer (particularly the Sucu Walu) should be boiled as soon as possible after being collected from the sea, otherwise the skin breaks and the prepared fish has a ragged appearance.

The "fish" are taken from the water and split longitudinally along the dorsal surface with a long, sharp-pointed knife. They are then gutted. In order to expose the body cavity the split sides of the "fish" are best held apart by the insertion of wooden splints.

If the weather is favourable, sun drying until most of the moisture has evaporated is economical and tending toward the production of a good quality article. It may be necessary, however, in Fiji, owing to the likelihood of rain, to commence to dry the "fish" in a smoke house. The latter may be of corrugated iron, timber or thatch construction, ten to twelve feet high

and fitted in its upper half with two or three tiers of wire netting upon which the bêche-de-mer is laid in single layers, insides downward.

The wood most suitable for the smoking process is the Tiri or Mangrove *Rhizophora mucronata*.

If the "fish" are placed in the smoke house after preliminary sun drying, twenty-four hours is a sufficient period for this operation. If, however, the "fish" are passed directly into the smoke house after gutting they should remain in for forty-eight hours. If sunshine becomes available it is a good plan to expose the bêche-de-mer to further drying after smoking to expell the last possible moisture. The spreader sticks should be removed before the "fish" becomes too dry so that it may neatly curl up again into its original shape.

From three to four hours should be a sufficient period before removing the wooden spreaders. At this time it is advisable to mould the slug between the hands as it is then comparatively soft. If this is done the bêche-de-mer will keep fairly straight during the subsequent smoking. It is imperative that the "fish" are cured straight and not crooked.

Great care is necessary in the smoke drying otherwise the fish is liable to become scorched and blistered. In fact the greatest care and attention is required during the whole curing process if the best price is to be obtained: they should be properly boiled, neatly cut, well dried and smoked.

Before being bagged bêche-de-mer should be quite cold and it is wise to tip them out and expose them to the air and sun as much as possible. An essential matter that demands the attention of those engaged in the bêche-de-mer industry is the maintenance of the cured "fish" in a thoroughly dry condition. The prepared product readily absorbs water: should it get wet or have been insufficiently cured it has a tendency to dissolve into a tenacious glue-like mass of the most repulsive aspect and abominable odour.

As bêche-de-mer is sold in China, usually in small retail shops, it naturally follows that the best cured specimens bring good prices and badly cured fish (badly cut, ragged, twisted up like the sole of an old boot) must be sold very cheaply.

When the fish are cured and dry they shrink to about one-eighth their size and weight when fresh.

The "fish" are found in all the reef protected waters of the Fiji Group. Calmer waters are preferred. Large areas of comparatively shallow waters such as found along the north coast and western end of Vanua Levu are favourable localities as well as the waters between the Tailevu coast and the main ocean reef extending south from Ovalau. Sand covered patches are frequented by the "fish."

VARIETIES.

Sucu Walu: Teat Fish. This is the most valuable species. It is brown in colour, large. The presence of eight tubercles or podia on either side is responsible for its name, eight-teats. It is found on the sandy bottoms at a depth of from three to eight fathoms.

Dri Loa: Large Black Fish. This also a valuable species. It is jet black in colour even when taken from the sea. Sandy bottoms in water from three to eight fathoms are favourite locations for this fish.

Dri Dina: This fish is found on and under the reef.

Tarasea: A small variety, reddish in colour, ranking slightly below the first two mentioned in value.

Vula: Whitish-yellow in colour when taken from the sea, this fish with only slight pressure emits large quantities of sticky white threads. It is very common on the surface of the reef but also occurs in deeper water. Live fish are fairly large but on curing the size shrinks very considerably and greater than other commercial varieties.

Dairo-Volovoto: This is a small, black fish with prickles or spiny protuberances. Fairly common and occurs in shallow water on top of the reef. It has no value as bêche-de-mer, but Fijians occasionally use it.

Loli: Very plentiful on shore reefs. In colour it is greyish. Little commercial value, although it is sometimes prepared and offered for sale as bêche-de-mer. Local Chinese are said to use the varieties and the Fijians boil the fresh "fish" for food.

In regard to the first historical record concerning the quest for trepang in the Fijis, Captain Aikin on the 13th May, 1805, two or three weeks after his return to Sydney after a voyage to New Caledonia in quest of trepang, addressed a memorial to Governor King of New South Wales asking for permission to depart from Sydney in an American vessel ostensibly in quest of sandalwood and "Beechleymar" among the islands of Fiji. Governor King addressed a despatch on the 30th April to Earl Camden setting out the circumstances of Captain Aikin's voyage in quest of bêche-de-mer. Although they failed in their quest, the presence of sandalwood in the Fiji Islands, a group hitherto not much known, was brought to light.

Between 1805 and 1813 a flourishing trade in sandalwood developed. So great were the profits that Lockerby described the trade as being equal to the coining business. The connection with the coastal natives made through this sandalwood trade enabled an immediate change over to bêche-de-mer collection possible on the breakdown of the former industry. In this connection I quote from *The Journal of William Lockerby*, edited by Im Thurn and Wharton:—

"The year 1813 is memorable for the visit of the East India ship *Hunter*, Captain James Robson having with him Peter Dillon: for this visit lead to an affray with the natives of Wailea, so serious that it finally put an end to the already dwindling chance of successful trade for sandalwood with the Fijians."

This fact lead to the masters of ships engaged in the sandalwood trade to turn their attention to the collection and preparation of bêche-de-mer for the China market. The narrative goes on and after some detail of their adventure appears the following passage:—

"But the Waileans bringing in sandalwood only very slowly: there was little work for the boat hands to do on the ship, and these were therefore taken over and placed at 'a place called Camba,' near the island of Bow to procure bêche-de-mer . . ."

It should be noted that the *Hunter* is the first European ship recorded as having approached and touched at the south-eastern corner of Viti Levu: also that this camp of bêche-de-mer hunters is the first known instance of Europeans, other than the few beach-combers who got to Bau from wrecks in the Lau Islands, remaining, even for a brief period, anywhere on the mainland of Viti Levu.

Historical.

In the following years the bêche-de-mer trade appears to have largely supplanted sandalwood collection. Passing the interim years to 1829 I quote from the volume *Wrecked Among the Cannibals of the Fijis*, Endicott-Jenkins, Salem, Massachusetts.

"On the 24th (Nov., 1829) . . . the Captain contacted with one of the principal chiefs to build three houses on shore for the purpose of curing bêche-de-mer* at a place called Sub-a-sub (Savu Savu). On the 10th December the First and Third Officers went ashore with ten men and commenced purchasing the bêche-de-mer.

"We employed great numbers of natives, frequently upwards of 80 canoes averaging 10 men each, besides great numbers on shore procuring wood (of which we used great quantities) and assisting us in curing the cargo [purchased by trade articles].

"We also purchased a kettle of Captain Kinsman (ours being too small to make any progress). On 21st December the brig *Quill* sailed for Manilla, having on board 800 piculs of bêche-de-mer. [Picul = 140 lbs.]

Illustrating the difficulties which beset the early bêche-de-mer fishermen, the account continues:—

"We continued curing bêche-de-mer on shore, whilst those on board were putting the ship in order and nothing particular

* *Wrecked Among Cannibals in the Fijis*. Endicott-Jenkins, Marine Research Society, Salem, Massachusetts.

occurred until the 30 January (1830) when the natives on shore maliciously set fire to our houses and destroyed 60 piculs of bêche-de-mer.

"The next morning we discovered that they had broken our kettles for the purpose of getting our wrought iron . . . on the 2nd February we recommenced curing fish, in the houses of the King, the blacksmith having mended the kettles.

"On the 10th February as the bêche-de-mer began to grow scarce on the reefs, it was determined on the advise of the King to go to another bay, about 40 miles distant (Ngaloa) and build new houses and employ the natives in that place . . . We found on April 9th that we had upwards of 1,000 peculs of bêche-de-mer, 350 tortoise shell and some sandalwood so we settled with the natives and burned our houses" [so that they would not be used by other traders].

The life of the early bêche-de-mer fishermen was hard and often fraught with much danger.

After William Endicott had spent the night in the witnessing of the horrors of a cannibal feast he recorded in his diary "about sunrise, I went to the bêche-de-mer house and set myself to work collecting the bêche-de-mer on the battens (*vatas*) in readiness to be put into the bags when the boat came off."

Development of the Trade.

From the book *The Cruise of the "Curacoa"* I quote:—

"The disputes which took place latterly between the fishermen on the coast of Macuata have diminished the yield of bêche-de-mer, nevertheless the price is good being 1,200 dollars per picul of 140 pounds and for inferior, 1,000 dollars."

Statistical records of the trade are wanting, however, until 1875 when the publication of export trade figures in the *Blue Book of Fiji* became available. There follows a table of average annual trade figures for ten-year periods.

Period	Quantity Tons	Value £
1876-1885	45	2,111 annually
1886-1895	36	1,852 "
1896-1905	17	1,180 "
1906-1915	6	480 "
1916-1925	34	3,952 "
1926-1935	62	6,368 "
1936-1942		

During these sixty-seven years boom periods have occurred as follows:—

Period	Quantity Tons	Value £
1875	113	3,411
1920	116	17,545
1930	133	13,886
1931	143	16,045
1932	103	8,801

Since the commencement of the Sino-Japanese war the trade has fallen off to negligible proportions. Apart from the difficulty of trade during war time there is a peculiar and characteristic Chinese reason for this. Previously a considerable proportion of the bêche-de-mer consumed in China was Japanese produce. When Japan attacked China, the latter placed an embargo on trade with Japan and since there was no means by which the Chinese citizen could differentiate the Japanese product from that produced elsewhere, the Chinese refused to consume bêche-de-mer from any source, so that today they do without this luxury as a war effort.

Curing.

Great care must be taken in all stages of curing bêche-de-mer. All foreign matter such as sand and shell has to be cleared, it is then boiled and the " innards " taken out, and then dried over a slow fire. Wire netting or a grille of bamboo is used to hold the bêche-de-mer over the fire. Sun drying is too slow. Expert attention is required, for if selection of quality is careless, or if boiling is too little or too long, it will not dry but remain a pulpy mass whch soon begins to rot and smell, and has to be discarded.

After proper curing, and if kept in a dry place, it will remain in good condition for several years.

Food Value.

As a food, opinion differs amongst the Chinese, but in any case it is not considered to be an aristocrat dish like bird's nest, shark fin, or eel tripe soup.

It is not used by itself, since it has no culinary taste of its own, but is used as one of the ingredients, giving its name to the dish, when making soup or pork or poultry, and it simply helps to bring out or improve the taste of these two meats. The dish is served up hot in bowls on the table, the bêche-de-mer, chicken, pork and all ingredients swimming in the soup. The guests to the dinner help themselves to the liquid, but eat very sparingly of the bêche-de-mer. But the left-overs of all courses of the dinner is carefully retained by the chef, and next day an all-in mixture is prepared again, which is very palatable (compare chop suey, rissoles and hash). The bêche-de-mer by this time has borrowed and absorbed all the flavours of the remains of the other courses, and now is exceedingly tasty.

The guests having eaten their dinner the day before, of course, do not partake in this hash dish, but the host often sends a portion of it to his relatives and intimate friends, and it is very much welcome.

Preparation.

The bêche-de-mer is placed in water and brought to a boil. Then a stiff brush is used to clean away the foreign matter clinging thereto. The bêche-de-mer is then cut up into small slices and put in to another change of water and boiled again. This boiling takes several hours and some chefs prefer to do it overnight.

Another change of water is made for the final process, and pieces of pork and poultry, and probably some bamboo shoots, and the usual seasoning are added to it. The whole is then boiled again until everything becomes tender. The whole process from start to finish takes about ten hours. No great skill is required, but some patience is desirable.

Great care is taken in preparing bêche-de-mer for food, and it is well sterilised and cleaned of foreign matter in several changes of boiling water before the final cooking takes place. Being a sea product, there is every reason to think that it possesses health-giving properties, something like kelp, for its phosphorous and iodine content must be substantial. The popularity of sea food amongst the Chinese in the maritime provinces may explain the reason for the small incidence of goitre.

Economic Value.

Some years ago, Fiji bêche-de-mer found good markets in China. It was shipped to Hongkong, but the bulk of it was not consumed in Hongkong or Canton, but actually went to markets in Shanghai and north China.

Japanese fishermen, whether at home or in other places where bêche-de-mer abounds, make a good livelihood fishing for and curing this product, and the Chinese public long had the idea that it was a Japanese product. When the wave of nationalism passed over China some years ago, the public opinion called for a boycott of Japanese goods, Fiji bêche-de-mer was also adversely affected, as the Chinese thought that all bêche-de-mer was a product of Japanese enterprise.

Acknowledgments.

My special thanks are due to Mr. P. R. Whysall of Suva, Mr. L. Dietrich of Levuka and to Mr. G. D. Hill of Suva for notes on the species encountered in Fiji and for the method of preparation for market. To Mr. Cheng for notes on food and economic value and preparation of bêche-de-mer soup. I am indebted to Mr. Honson for the samples of bêche-de-mer demonstrated.

GHB

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center Honolulu Laboratory
2570 Dole St. • Honolulu, Hawaii 96822-2396

May 8, 1989 F/SWC2:GHB

Dr. A. Lebeau
C.O.P.
BP 7004 Taravao
Tahiti, French Polynesia

Dear Dr. Lebeau:

I am writing to reestablish contact with you regarding your tagging and monitoring study of green turtles at Scilly Island and Mopelia in French Polynesia. As you may recall, we exchanged correspondence several years ago after you obtained my name from Dr. Rene Grandperrin.

I would like to know more about your current work, and especially the number of nesting turtles you have been able to tag each season. Have any international migrations been documented from your tagging?

I look forward to hearing from you again at your earliest convenience. Best regards.

Sincerely,

George H. Balazs
Zoologist

November 22, 1985 F/SWC2:GHB

Dr. Patrick Galenon, Director
Department of the Sea and Aquaculture
(Service de la Mar et de l'Aquaculture)
B. P. 20
Papeete, Tahiti
French Polynesia

Dear Patrick,

Many thanks for sending me the index of scientific and research organization for French Polynesia. This will undoubtedly prove to be a useful reference document.

With this letter I have enclosed several recent publications covering our work on marine turtles. I would be most interested to learn if any turtles have been tagged at Scilly atoll during recent years. Do you have any plans to initiate research to monitor the seasonal nesting? This would be a valuable project to undertake.

Best regards.

Sincerely,

George H. Balazs
Zoologist

Enclosure

cc: Balazs
HL

TAHITI FILE

Alain LEBEAU
C. O. P.
BP 7004 TARAVAO
TAHITI French Polynesia

VAIRAO, octobre 14th 1982

Mr G. H. BALAZS
Hawaii Institut of marin. biology
P.O. Box 1346 KANEOHE
HAWAII 96744 U.S.A

Sir,

I am presently in charge of a research program on the green turtle in French Polynesia, wt including information gathered about other species, the main purpose of which lies in obtaining some new and more complete information and knowledge about green turtle green turtle populations of our area.

This work will be done under the control of the Centre National pour l'exploitation des Oceans (CNEXO) and of the local fishing service, O.R.E.R.O.

Two years ago, I have been working on green turtle of Europa and Tromelin islands (Indian ocean) through 1978 & 1979.

The present study is just at its beginning and although being late for this season, I intend to spend some time mainly on Scilly Island and also on MOPELIA, TUPAI, etc., for a counting, measuring, and tagging work and to collect new information on the general conditions of the egg laying and hatching activities.

An other part of this program will be a field survey of the other islands, mainly in TUAMOTU, SURVEY in order to make an assessment, at least grossly approximate, of the breeding activity of the green turtle.

This same study will be repeated in (1983/84)

and I hope, for the following years, to be able to make more here feel the necessity of such a program on a yearly basis for a better evaluation of the different breeding stocks and of the general environment.

I was informed of your interest in our fisheries by Mr Grandperrin, so I would greatly appreciate if you could send some information on your recent works in Hawaii and more generally in Pacific.

I thank you for your help - looking forward to hear from you

Alain Ghasarossian

September 15, 1980 F/SWC2:GHB

Dr. Patrick Galenon
Chef des programmes des
recherches
Service de la peche
B.P. 20
Papeete, Tahiti

Dear Patrick,

I was pleased to have the opportunity to meet with you during your visit to Honolulu and discuss the possibilities of starting a turtle tagging project at Scilly Atoll. In my opinion, this is an extremely important activity that should be started in the very near future. As I mentioned, I would be happy to provide you with whatever assistance that you may require.

I tried to telephone you at the Waikiki Marina Hotel on the Saturday following our visit. Unfortunately, you had moved to a different hotel and I had no way of contacting you. I would like to have invited you for dinner at my home. Perhaps, we can do this on your next trip to Hawaii.

Best regards.

Sincerely,

George H. Balazs
Fishery Biologist

GHB:vi

bc: Balazs
HL

Pacific Science (1979), vol. 33, no. 2

Rhizophora in the Society Islands[1]

F. J. TAYLOR[2]

ABSTRACT: *Rhizophora stylosa* Griff. is recorded from Moorea and Bora Bora in the Society Islands. Earlier records from the Society Islands of *R. mangle* L. by Forster (1786) and *R. mucronata* Lam. by Gray (1854) are probably the result of mislabeling, and there is no evidence that the present stands of *Rhizophora* are not recent introductions.

ON CAPTAIN COOK'S second voyage of discovery (1772–1774) the naturalists on board the *Resolution* were J. R. and G. Forster. The latter published a list of plant records that included: "202 R. mangle, foliis acutis, fructibus sublatoclavatis M.S.V. p. 442 n. 5 Societatis, Amicorum, nouarum Hebridum insulae et nova Caledonia" (Forster 1786:35).

While *Rhizophora* still occurs in the Friendly Islands (Tonga), the New Hebrides, and New Caledonia, most botanists have regarded the Society Island record as erroneous. As far as I can discover, Guillemin (1836–1837) was the last person to cite this record. In the first part of his paper he lists *R. mangle* in his "liste des plantes qui existent simultanement dans l'Archipel de la Société et dans les autres Îles de la Mer du Sud," but *Rhizophora* is not mentioned in the subsequent enumeration of Tahitian plants.

A second record of *Rhizophora* in the Society Islands, this time of *R. mucronata* Lam., was made on the United States Exploring Expedition 1838–1842 (Gray 1854), but Gray considered the record to be the result of mislabeling.

PRESENT DISTRIBUTION IN THE SOCIETY ISLANDS

In a guide to the Society Islands, T'Serstevens (1950) noted the presence of mangroves at Vaianahe Bay, Moorea, a record repeated by Papy (1956:189) in an account of the vegetation of Tahiti without, however, any suggestion that he had seen the plants. In September 1975 I visited this locality and confirmed the presence of *Rhizophora stylosa* Griff. Subsequently, I visited Bora Bora and recorded the same species at Aheatauiti Bay, near Anau.

On Moorea, 63 trees were counted. Although most were about 2 m high, there were well-grown trees up to 3 m high and numerous seedlings about 1 year old. There was only a narrow, discontinuous fringe of mangrove along the shore, which can be correlated with the low tidal range. (The mean range at spring tides is approximately 0.3 m.) The *Rhizophora* occurred on both sides of the bay, on coral sand to the west and on mud and in depressions in grassy (*Paspalum vaginatum* Swartz.) areas to the east. Associated with the trees was *Acrostichum aureum* L. Fiddler crabs (*Uca chlorophthalamus crassipes* Adams & White) were present in the substratum, with a mean of 35 crab holes/m^2 in the muddy areas and 5/m^2 in the coral sand. *Littorina scabra* L., a common Indo-Pacific gastropod on mangroves, was found on the leaves. Behind the *Rhizophora* were scattered trees of *Hibiscus tiliaceus* L., which is the dominant shoreline species elsewhere along the coast.

The Bora Bora locality was similar, but the trees were taller and all were growing on mud that supported a growth of *Halophila* sp. and a population of fiddler crabs. There was no *Acrostichum*, but there is a small fishing village to the rear of the site. There were no evident signs of clearing of the

[1] Manuscript accepted 16 July 1978.
[2] University of Auckland, Marine Research Laboratory, R.D. 1, Leigh, New Zealand.

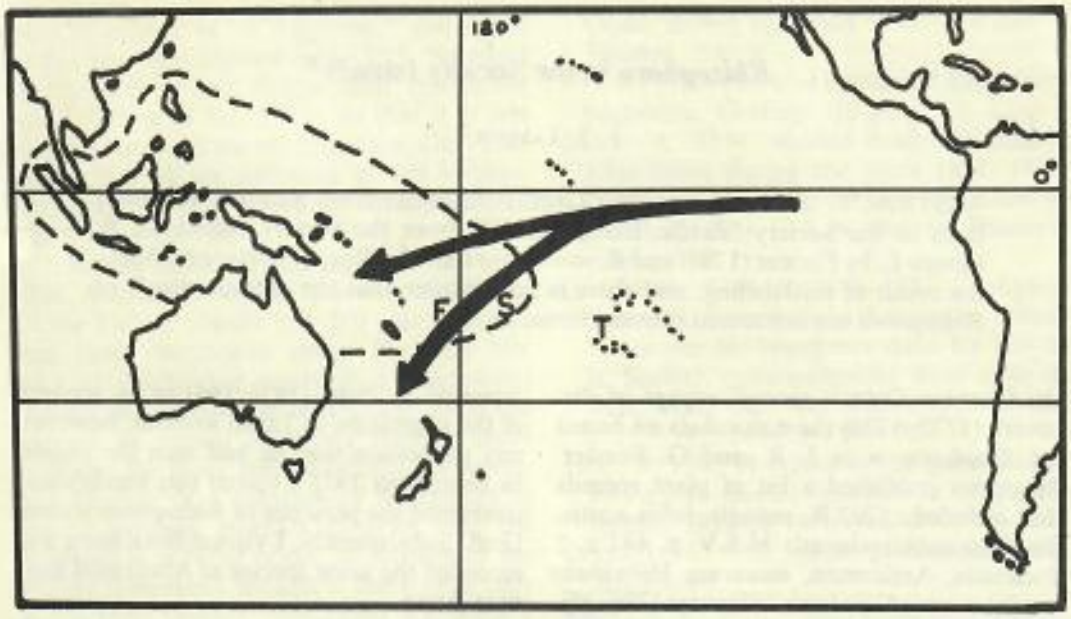

FIGURE 1. The distribution of *Rhizophora stylosa* (dotted line), based on Tomlinson (1978) and personal observations (1970). The broad arrows indicate the general direction of the south equatorial current. F, Fiji Islands; S, Samoa; T, Society Islands.

Rhizophora by the villagers, though a number of the larger branches had obviously been cut with an axe.

DISCUSSION

T'Serstevens (1950) assumed that the Moorea *Rhizophora* population had been deliberately planted. I have been unable to trace any evidence for this. On Bora Bora the old local inhabitants declared that the *Rhizophora* had been there "toujours." However, there was a U.S. Naval Station at Anau during World War II (from 1942 to 1946), and it is possible that it was then introduced accidentally from elsewhere in the Pacific. M. Erwin Christian examined the file on this base for me, but found no references to mangroves.

The probability that *Rhizophora stylosa* reached the Society Islands by natural dispersal is low. The nearest locality is Samoa (where the plant is usually referred to as *R. mucronata* Lam., but this is the result of misidentification—Tomlinson 1978; personal observations 1970), which is 2400 km to the west (Figure 1). Although this distance is not excessive for an ocean passage by a genus adapted to marine conditions, the ocean currents in this part of the Pacific Ocean travel westward, so that any natural dispersal by floating would involve a considerably longer voyage. Nor does *R. stylosa* occur on the intermediate island group of the Cook Islands, although there are apparently suitable habitats. These are both arguments against a natural dispersal of the species to the Society Islands.

If Forster's (1786) and Gray's (1854) records of *Rhizophora* in the Society Islands were correct, it would raise the possibility that it had been overlooked for 100 years. It would also mean that the arrival of *Rhizophora* there predated European discovery, though this would not necessarily imply natural dispersal as it could have been introduced by early Polynesian voyagers as suggested by Chapman (1970) for *R. mangle* L. var. *samoensis* Hochr. in Fiji, Samoa, Tonga, and the New Hebrides.

Rhizophora is a Linnean genus, and Forster

would interpret the species in terms of *Species Plantarum* (Linnaeus 1753). Here Linnaeus recognized five species, of which four have subsequently been transferred to other mangrove genera. The one remaining species is *R. mangle*. More recent taxonomists have distinguished a number of other species, and in the latest revision, Hou (1960) recognized seven species, five of which occur in the Pacific. Though there is no general agreement on the status of several of the taxa, this is irrelevant to the present argument.

Forster's record of *Rhizophora mangle* could therefore have been of another taxon, possibly *R. stylosa*, and this is borne out by his mention of "foliis acutis," which is characteristic of the Pacific taxa other than *R. mangle* [and the Fijian/Samoan/Tongan/New Caledonian taxon variously included in *R. mangle* L. or *R. samoensis* (Hochr.) Salv., but which Tomlinson and Womersley (1976) recognize as *R. mangle* var. *samoensis* Hochr.]. *Rhizophora mangle* and *R. samoensis* have obtuse leaves. That Forster included these other species in his concept of *R. mangle* is made clear by his record of it from the New Hebrides (Forster 1786). In his account of the voyage (Forster 1777) the only mention of mangroves in the New Hebrides comes from Port Resolution on the southeastern corner of Malekula Island. The only *Rhizophora* species present at Port Resolution are *R. stylosa* and *R. apiculata* Blume (personal observations, 1974).

These problems could be cleared up by examination of Forster's specimen. Hou (1960) states that it is at Kew, and he examined it there (C. Kalkman *in litt.* 1977), but searches of the Pacific *Rhizophora* there have failed to reveal it (P. S. Green *in litt.* 1976; M. Bywater *in litt.* 1977). Correspondence with the herbaria indicated as having Forster material in Stafleu and Cowan (1976) has failed to bring any of his *Rhizophora* material to light. The only Forster mangrove material it revealed was a sheet of leaves labeled "*Rhizophora gymnorhiza*" [*Brugiera gymnorhiza* (L.) Lamk.] without locality or date, in the Systematisch-Geobotanisches Institut, Göttingen, and a single leaf with the same annotation and no date or locality in the Biological Faculty of the Lomonosar State University of Moscow. These presumably come from Tonga, as the only record for this species in Forster (1786) is "Namouka archipelagi, Amicorum."

Hou's statement is interesting in that the specimen could not be located 100 years ago. Seeman (1865–1873:92) comments: "Forster mentions a mangrove as occurring in the Society Islands, but there is no specimen from there." It may be that Seeman did not consult any plants at Kew, though this seems unlikely, for although he worked and consulted Forster's herbarium in the British Museum, he deposited his specimens at Kew.

There is another possible line of attack on the identification. Hou mentions that Forster's specimen bears the annotation "common name: wabitatin malabar." The linguistic origin of this name appears to be Melanesian rather than Polynesian. The general Polynesian term for mangroves is *tongo* (R. M. Clark *in litt.* 1977) [cf. *togolei* given by Yuncker (1959) as the local Tongan name for *R. samoensis*]. This suggests that the specimen was not Polynesian, and thus not Tahitian. Unfortunately, the limited amount of material available on the languages of New Caledonia and the New Hebrides [the only Melanesian localities given by Forster (1786) for *R. mangle*] does not permit a more definite localization at present.

In his account of the voyage Forster (1777) mentioned mangroves in Tonga, New Caledonia, and the New Hebrides, corresponding with his published records (Forster 1786), but he does not mention them while in the Society Islands. M. E. Hoare (*in litt.* 1977) examined Forster's unpublished journal and has confirmed that there is no mention there of mangroves in the Society Islands. On Tahiti, Forster botanized mainly around Point Venus. Mangroves do not grow there today and the shore there is not suitable for them (personal observations 1975). He did not visit either Moorea or Bora Bora, but did visit Huahine, which I was unable to visit.

Rhizophora mucronata and *R. stylosa* have been confused for many years, and Gray's (1854) record of the former could well be of the latter. Unfortunately, the specimen

was described as "a fragment," and again it has not been located in the U.S. National Herbarium at the Smithsonian Institution (J. J. White *in litt.* 1977), so that it is not possible to check the identification. Gray also notes that in his narrative of the voyage, Pickering does not mention mangroves in the Society Islands.

The two early records lead one to think that *Rhizophora stylosa* possibly did occur in the Society Islands 150–200 years ago and has been overlooked since. The very low (0.3 m) tidal range results in discontinuous stands of *Rhizophora* that could easily be missed by casual observers making short visits to the more remote islands. However, the absence of a mention of mangroves in the expedition journals suggests that the evidence is in favor of the mislabeling of the earlier specimens, though if there were only a few trees present, they might not merit a mention. There is thus no reason to suggest that the present stands are not recent introductions, though they already appear to have developed part of the characteristic mangrove fauna.

ACKNOWLEDGMENTS

I am grateful to all the correspondents who have replied to my queries, to the directors and staff of the various herbaria, and to P. B. Tomlinson for a draft of his paper on *Rhizophora*.

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Frantisek Lichtenberk is a postdoctoral fellow in Oceanic descriptive and comparative linguistics, University of Auckland.

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Schütt, Little. See SZIGETKÖZ.

Schuy-ler \'skī-lər\. 1 Counties in three states of the U.S. See tables at ILLINOIS, MISSOURI, NEW YORK.

2 City, ⊛ of Colfax co., E Nebraska, on Platte river 30 m. W of Fremont; pop. (1980c) 4151; diversified agriculture.

Schuy-ler-ville \'skī-lər-ˌvil\. Village and tourist resort, Saratoga co., E New York, on W bank of Hudson river 32 m. N of Albany; pop. (1980c) 1256; settled 1689 and called Saratoga; for history, see SARATOGA 3.

Schuyl-kill \'skül-ˌkil, 'skü-kəl\. 1 River, SE Pennsylvania; 130 m. long; rises in Schuylkill co., E cen. Pennsylvania, flows SE into Delaware river at Philadelphia.

2 County in Pennsylvania. See table at PENNSYLVANIA.

Schuylkill Haven. Borough, Schuylkill co., E cen. Pennsylvania, on Schuylkill river 5 m. S of Pottsville; pop. (1980c) 5977; clothing, footwear; dye works.

Schwa-bach \'shfäb-ˌäk\. City, N Bavaria, West Germany, 8 m. SSW of Nürnberg; pop. (1980c) 35,387; metalworking; 15th cent. church; chartered 1371.

Schwaben. See SWABIA.

Schwä-bisch-Gmünd \'shfā-bish-gᵊ'münt\ *also* **Gmünd.** City, Baden-Württemberg, West Germany, 28 m. E of Stuttgart; pop. (1980c) 56,901; chartered as city 1162; free city until 1803 when it passed to Württemberg.

Schwäbisch-Hall \-'häl\ *also* **Hall.** City, Baden-Württemberg, West Germany, 34 m. NE of Stuttgart; pop. (1980c) 31,562; salt mines.

Schwa-ner Mountains \ˌskfän-ər-\. Range in SW cen. Borneo, Indonesia, S of the Kapuas river; highest peak Raja 7474 ft.

Schwang-au \'shfäŋ-ˌaù\. Village, SW Bavaria, West Germany, NE of Füssen; resort; two notable castles (Hohenschwangau and Neuschwanstein).

Schwarz-burg \'shfärts-ˌbü(ə)rg\. Village, Gera dist., East Germany; ab. 9 m. SW of Rudolstadt.

Schwarze Elster. See ELSTER 1.

Schwar-zen-berg \'shfärt-sən-ˌbe(ə)rg\. City, Karl-Marx-Stadt dist., East Germany, in the Erzgebirge 20 m. SE of Zwickau; pop. (1970e) 14,717; metalware.

Schwarzwald. See BLACK FOREST.

Schwe-chat \'shfā-ˌkät\. Town, Lower Austria, on the Leitha, SE suburb of Vienna; pop. (1981c) 14,844; scene of defeat 1848 of Hungarians by Prince Windisch-Graetz.

Schwedt an der Oder \'shfät-än-der-'ōd-ər\. City, Frankfurt dist., East Germany, 50 m. NE of Berlin; pop. (1970e) 34,134; tobacco processing; sawmills; founded 1265; to Brandenburg 1469; largely destroyed in World War II.

Schweidnitz. See ŚWIDNICA.

Schwein-furt \'shfīn-ˌfů(ə)rt\. City, Bavaria, West Germany, on Main river 66 m. E of Frankfurt am Main; pop. (1980c) 52,445; chemicals; river port; 15th cent. church, 16th cent. town hall; first mentioned 791; made imperial city 1282; in World War II center of German ball-bearing production; heavily bombed by Allied planes 1942–45; taken by U.S. forces Apr. 12, 1945.

Schweiz *or* **Schweizerische Eidgenossenschaft.** See SWITZERLAND.

Schwelm \'shfelm\. Manufacturing city, North Rhine-Westphalia, West Germany, E of Wuppertal; pop. (1980c) 31,108; rubber and iron goods, paper, damask; chartered 1496.

Schwen-ning-en \'shfen-iŋ-ən\. City, Baden-Württemberg, West Germany, 34 m. E of Freiburg; pop. (1969e) 34,954; clock manufacturing center; machinery, footwear, beer.

Schwe-rin \shfā-'rēn\. 1 District of East Germany. See table at GERMANY, EAST.

2 City, its ⊛, on SW shore of Lake Schwerin; pop. (1981c) 122,179; cigarettes, ceramics, pharmaceuticals; food processing, shipbuilding (fishing vessels); 13th cent. Gothic cathedral; mentioned 1018; chartered 1160; ⊛ of former Mecklenburg state.

Schwerin, Lake *or Ger.* **Schwe-ri-ner See** \'shfā-rin-ər-ˌzā\. Lake, Schwerin dist., East Germany, 8 m. S of Wismar; 14 m. long; 24 sq. m.; max. depth 177 ft.; drains into the Elbe river.

Schwer-te \'shfert-ə\. Industrial city, North Rhine-Westphalia, West Germany, on Ruhr river 7 m. SSE of Dortmund; pop. (1980c) 47,810; iron and nickel ware, textiles; 15th cent. town hall; chartered 1397.

Schwiebus. See ŚWIEBODZIN.

Schwyz *also* **Schwiz** \'shfēts\. 1 Swiss canton. See history and table at SWITZERLAND.

2 Commune, its ⊛, E cen. Switzerland, 22 m. E of Lucerne; pop. (1980c) 12,100; tourism.

Schyl. See JIUL.

Sciac-ca \'shäk-ə\. Seaport, Agrigento prov., SW Sicily, Italy, on Mediterranean Sea 30 m. NW of Agrigento; pop. (1981p) 34,294; hot sulfur and ferruginous springs nearby.

Sci-eli \'shē-klē\. Commune, Ragusa prov., SE Sicily, Italy, 9 m. S of Ragusa; pop. (1981p) 24,165.

Scil-la \'sil-ə, 'shē-lə\ *or anc.* **Scyl-la** \'sil-ə\. Headland projecting into the Strait of Messina from the coast of Reggio di Calabria prov., S Italy. See CHARYBDIS.

Scil-li-um \'sil-ē-əm\ *or* **Scil-la** \'sil-ə\. Ancient town, Byzacium, Roman province of Africa, near modern Sbeïtla in Tunisia; gives its name to the *Scillitan martyrs*, twelve Christians, seven men and five women, executed in Carthage July 17, 180 A.D., whose martyrdom is the earliest on record for the Roman province of Africa.

Scil-ly Isles \'sil-ē-\ *or* **Scilly Islands** *or* **Isles of Scilly.** 1 Group of 140 small islands off Lands End, SW England; 6 sq. m.; pop. (1971p) 2428; main town Hugh Town; administratively a part of Cornwall; tourism, market gardening, and flower growing; formerly a haunt of pirates, and later of smugglers.

2 *or Fr.* **Îles Scilly** \ēl-sē-lē\. Group of islets forming atoll, W Society Is., S Pacific Ocean, ab. 150 m. W of Bora Bora.

Scio. See CHIOS.

Sci-o-to \sī-'ōt-ə\. 1 River, cen. and S Ohio; ab. 237 m. long; rises in Auglaize co., W Ohio, flows E, then S through Columbus and Chillicothe to empty into Ohio river at Portsmouth, S Scioto co., S Ohio.

2 County in Ohio. See table at OHIO.

Scit-u-ate \'sich-(ə-)wət\. 1 Town, Plymouth co., SE Massachusetts, on Atlantic Ocean 16 m. ENE of Brockton; pop. (1980c) 17,317; summer resort; truck and fruit farms.

2 Town, Providence co., N Rhode Island, W of Cranston; pop. (1980c) 8405; settled 1710.

Scituate Dam *and* **Scituate Reservoir.** See GAINER MEMORIAL DAM.

Sco-bey \'skō-bē\. City, ⊛ of Daniels co., NE Montana; pop. (1980c) 1382; coal mines, oil wells; grain farms.

Scodra. See SHKODËR 2.

Sco-field Reservoir \'skō-ˌfēld-\. Reservoir in NW Carbon co., E cen. Utah.

Sco-glit-ti \ˌskōl-'yē-tē\. Town on S coast of Sicily, Italy, SE of Gela; in World War II a beachhead in Allied invasion of Sicily, secured by U.S. forces July 11, 1943.

Scone \'skün\. Parish, Tayside region, Scotland, just NE of Perth; New Scone is a modern village, Old Scone site of abbey founded 1115, destroyed 1559; Scottish kings crowned at Scone until 1651; the *Stone of Scone* or *Stone of Destiny* upon which early Scottish kings sat at coronation is said to have been brought to Scone by Kenneth MacAlpin (d. 7858 A.D.) from a castle on Loch Etive; it was taken to England by Edward I 1296 and is now in Westminster Abbey beneath the coronation chair.

Sconset. See SIASCONSET.

Sco-pus, Mount \-'skō-pəs\ *or Heb.* **Har HaZofim** \ˌhär-ˌhä-zō-'fēm\. Mountain, N extension of the Mount of Olives, NE of Jerusalem, Israel; 2694 ft. Site of old campus

possessions in India were returned [illegible] permanently established, restored [illegible]

French Indochina. See INDOCHINA 2.

French Lick \'french-'lik\. Resort town, Orange [illegible] Indiana, SSW of Bedford; pop. (1980c) 2265; sulfur springs.

French·man Bay \'french-man-\. Inlet of Atlantic Ocean on SE coast of Maine, E of Mt. Desert I.

French Morocco. See MOROCCO 1.

French Pol·y·ne·sia \-,päl-ə-'nē-zhə, -shə\ *or Fr.* **Po·ly·né·sie fran·çaise** \pȯ-lə-nā-zē-fräⁿ-sez, -säz\; *formerly* **French Oce·an·ia** \-,ō-shē-'an-ē-ə, -'ä-nē-ə\ *or Fr.* **Éta·blisse·ments (fran·çais) de l'Océ·a·nie** \ā-,täb-lē-smäⁿ-(fräⁿ-se)-də-lō-sā-ə-nē\. French overseas territory in South Pacific Ocean, comprising Marquesas, Society, Gambier, and Tubuai Is. and Tuamotu Archipelago; 1261 sq. m.; pop. (1977c) 137,382; ✱ Papeete on Tahiti, Society Is.; covers wide area, approx. from 7°S to 29°S and 132°W to 156°W; exports include phosphates, copra, vanilla.

History: Tahiti explored by Louis de Bougainville 1766 and Marquesas visited by French missionaries in late 18th cent.; Oceania visited by Dumont d'Urville 1837–40; annexation of Marquesas and protection of Society group accomplished by French in 1842 and remainder taken over by close of 19th cent.; placed under single administration 1903; administration reorganized 1946; French nuclear tests conducted in region 1966 and 1968.

French River. See FRENCH.

French Shore. Neutralized territory on W and N coasts of Newfoundland, Canada, from Cape Ray in SW to Cape St. John (50°N); established 1713 when Newfoundland was ceded to Great Britain with certain rights granted to French fishermen, esp. that of drying fish on land; above limits defined 1783; source of much friction 19th cent. bet. England and France and of trouble with American fishermen (settled by convention 1909).

French Somaliland. See AFARS AND ISSAS.

French Southern and Antarctic Territories *or Fr.* **Terres Au·strales et Ant·arc·tiques fran·çaises** \ter-ō-strál-zä-ànt-ärk-tēk-fräⁿ-sez, -säz\. French overseas territory, consisting of Adélie Coast and the following S Indian Ocean islands: Amsterdam I., Crozet Is., Kerguelen Is., and St. Paul I. (*qq.v*); established 1955.

French Sudan. See MALI.

French Territory of the Afars and the Issas. See AFARS AND ISSAS.

French Togo. See TOGO 1.

French Union *or Fr.* **Union fran·çaise** \yü-nyōⁿ-fräⁿ-sez, -säz\. The French federation formed by the Constitution of the Fourth Republic of Sept. 29, 1946 (confirmed by referendum of Oct. 13, 1946), comprising France with its overseas departments and territories and the associated states; superseded 1958 by the French Community (*q.v.*).

French·ville \'french-,vil\. Town, Aroostook co., N Maine, on St. John river E of Fort Kent; pop. (1980c) 1450.

French West Africa *or Fr.* **Afrique Oc·ci·den·tale fran·çaise** \á-frēk-ȯk-si-däⁿ-tál-fräⁿ-sez, -säz\. [illegible]

[illegible]res·ni·llo \frez-[illegible] [illegible]ez Eche·ve·rria [illegible] [illegible] Zacatecas state, cen. Mex[illegible] [illegible] mines (1555), near silv[illegible]

Fres·no \'frez-(,)nō\. 1 County in S[illegible] CALIFORNIA.

[illegible] City, its ✱, 155 m. SE of San F[illegible] Valley; pop. (1980c) 218,202; [illegible] center—livestock, feed, fruit packi[illegible] City Coll. (1910), California Stat[illegible] Fresno Pacific Coll. (1944); found[illegible] incorp. as city 1885.

Fresno Dam. Dam across Milk ri[illegible] 111 ft.; completed 1939; impound[illegible]

Fretum Gaditanum. See GIBRALTA[illegible]

Fretum Gallicum. See DOVER, STR[illegible]

Frey·ci·net Peninsula \,frās-ᵊn-,ā-\[illegible] Tasmania, Australia, 42°13'S, ab[illegible]

Fria, Cape \-'frē-ə\. Cape extending[illegible] NW coast of South-West Africa, [illegible]

Fri·ant Dam \,frī-ənt-\. See SAN JO[illegible]

Friaul. See FRIULI.

Fri·bourg \frē-'bu̇(ə)r\ *or Ger.* F[illegible] -,bərg, -,bu̇(ə)rk\. 1 Swiss canto[illegible] products: tourism. In ancient ti[illegible] Helvetii; conquered by Franks in 6t[illegible] Empire 1032; remained Catholic [illegible] under French rule 1798–1814. See [illegible] 2 Commune, its ✱, on peninsula in [illegible] of Bern; pop. (1980c) 37,400; food p[illegible]ing; chemicals; 13th cent. cathedral. [illegible] as military post 1157; became mem[illegible]tion 1481.

Fri·court \frē-'kü(ə)r\. Village, Som[illegible] near Albert; destroyed in World W[illegible]

Fri·day Harbor \,frī-dē-\. Town and [illegible] co., NW Washington; pop. (1980c) [illegible]

Frid·ley \'frid-lē\. City, Anoka co., [illegible] Anoka; pop. (1980c) 30,228.

Fridt·jof Nan·sen, Mount \-,frit-yōf-'[illegible] Antarctica, 85°21'S, 167°33'W; 13,0[illegible]

Fridtjof Nansen Land. See FRANZ JO[illegible]

Fried·berg \'frēd-,bərg, 'frēt-berk\. Ci[illegible] many, near Usa river 15 m. N of Fra[illegible] (1980c) 24,233; sugar; apparel.

Friedek–Mistek. See FRÝDEK-MÍSTEK.

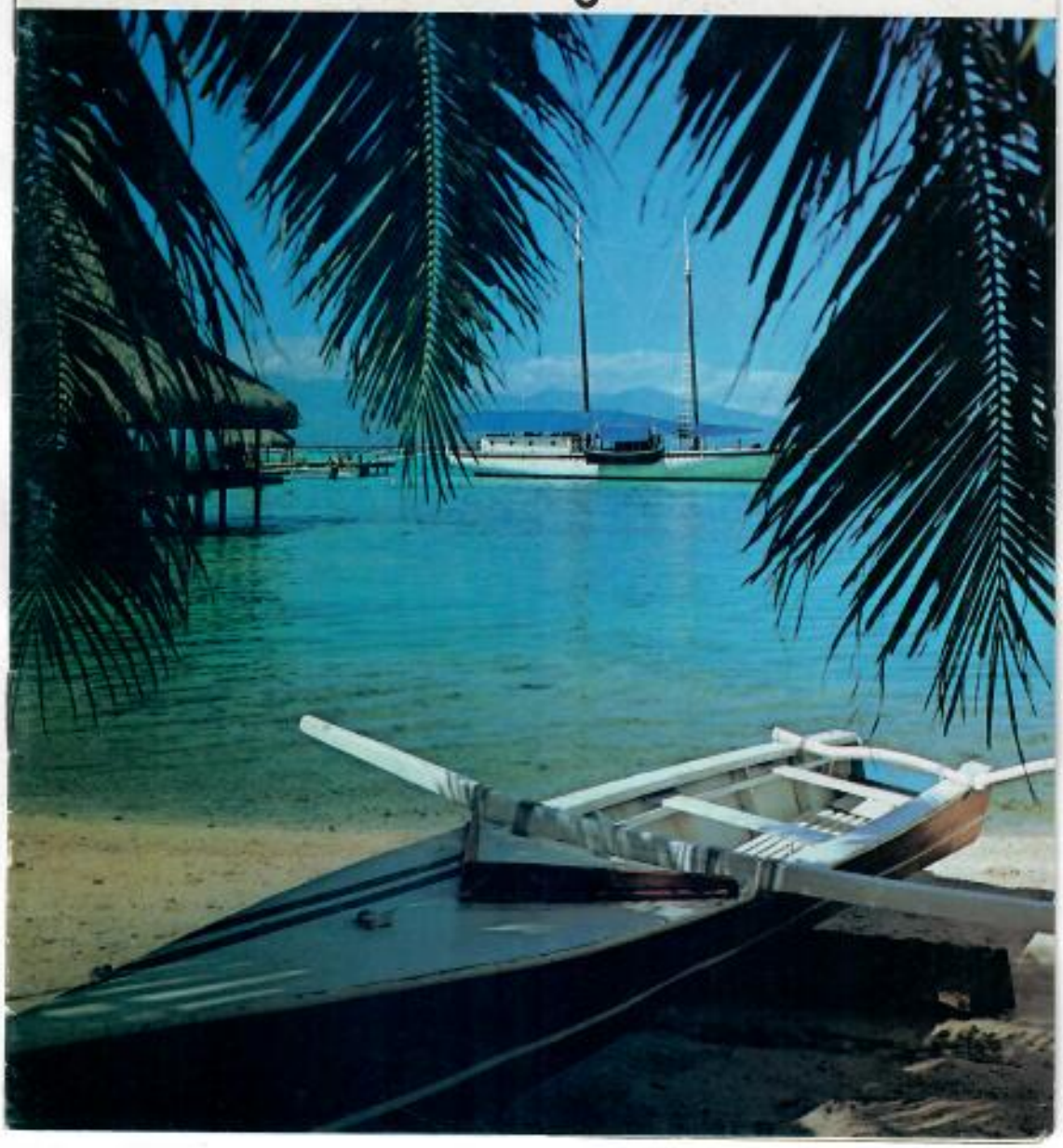
Friedland. See PRAVDINSK.

Fried·ling·en \'frēt-liŋ-ən\. Battlefield [illegible]den, West Germany, on the Rhine [illegible] Mulhouse; scene of victory of duc d[illegible] William of Baden 1702 (War of Spa[illegible]

Frie·drichs·ha·fen \,frē-driks-'häf-ən\ [illegible] **horn** \'bük-,hȯ(ə)rn\. City, SE Baden-[illegible] Germany, on Lake Constance 14 m. [illegible] (1980c) 52,080; precision instruments[illegible]

Tahiti

air new zealand



Tahiti:
French Polynesia

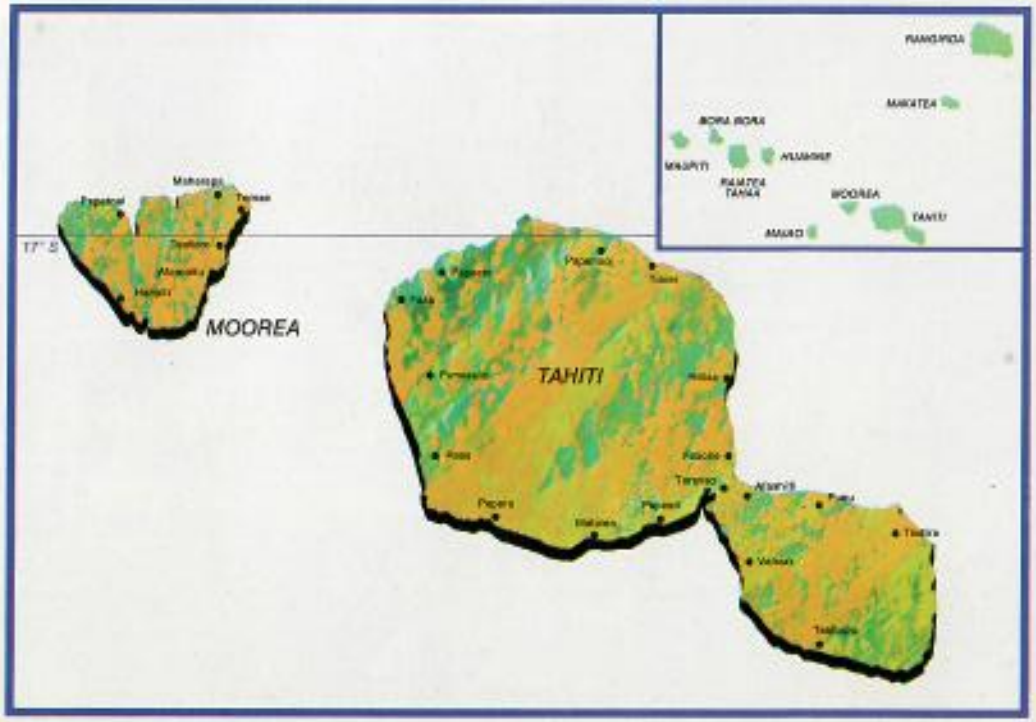
Tahiti is by far the largest island (400 sq miles) of French Polynesia. A very beautiful island with two volcanic peaks rising around seven thousand feet to the sky. An emerald island rich with dense tropical foliage. A place of spectacular vista. Of waterfalls cascading from the high interior . . . of narrow coastal parts and palm fringed beaches . . . of blue lagoons and protective crashing reefs . . . of tradewinds and balmy skies.
Tahiti is an island that is nearly two islands . . . turtle-shaped, with the neck just a narrow isthmus joining Tahiti Nui, the body, to Tahiti Iti the head.

But the legendary paradise of the south seas is more. A second island twelve miles across the Sea of the Moon is Moorea with its famous sharp serrated peaks and deep cleaving valleys. This is the island the world at large thinks of as Tahiti. The postcard island that makes spectacular play with tropical sunsets and provides the town of Papeete on the real Tahiti with an extra, special attraction.

Tahiti . . . Moorea . . . only two of a long list of tourist delights to be sampled in the Society Island archipelago. Islands that continue to be grouped under the name 'Tahiti', despite the fact that many people (the writer James Mitchener included) claim Bora Bora to be the most beautiful island in the world . . . the perfect vision of south seas escape. Raiatea, historically the most significant . . . said to be Hawaiiki the ancient home of all polynesian culture. Huahine 110 miles from Papeete . . . a million miles from the world. And there's more. Tetiaroa . . . Marlon Brandon's island. You can get there, as you can to every other island in the group, by boat and in most cases by air. New airfields are opening up communications and local airlines take you sweeping in for day trips or longer.

French Polynesia is a feast of 130 glorious islands, atolls and coral outcrops spread far and wide . . . many offering a tantalising variety of south sea lifestyles. Catered for by magnificent hotels of super sophistication . . . others, like the Club Med establishments, are complete fun environments for the young at heart. Most accommodations are visually stunning in the thatched roof polynesian style. Fares stand on stilts over the lagoons or nestle among the palms a few yards from the water edge.

Choosing your destination among this collection of rare jewels is a matter of luck . . or a matter of purpose. Rangiroa in the



Taumotu Group 250 miles to the North East of Tahiti has the biggest lagoon (400 sq miles) in the world and is known to skin divers as one of the very best underwater locations in the world. Temperate Tubai one of the Austral Group lies 450 miles south of Tahiti. Ua Huka and Hive Oa, the resting place of Gauguin, lie in the remote Marquesas 850 miles North by East, And, finally The Gambier Group 100 miles south east completes a picture of French Polynesia that spreads 1500 square miles of land-pieces across an ocean area the size of Europe.

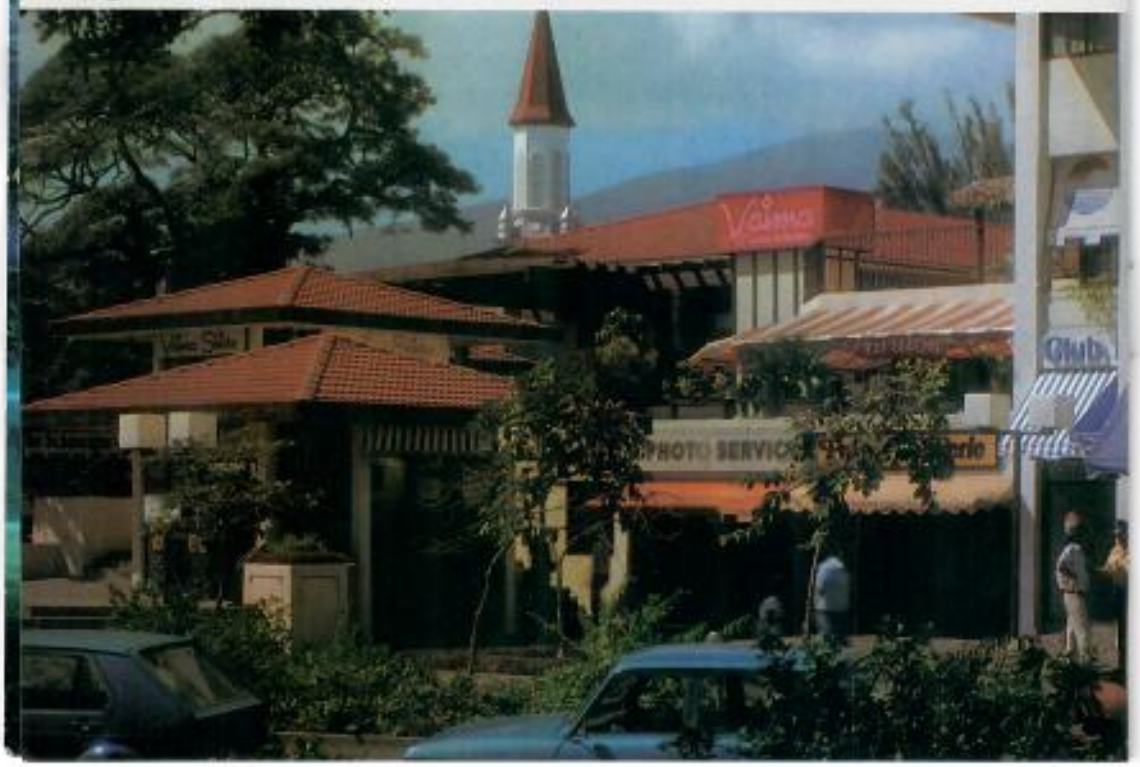
Papeete: A scootling bustling enterprise

Papeete... your mind and your senses are caught up with the intense activity that belies the fact it has only 35,000 inhabitants. Much to your surprise you don't see a run down, sleepy hollow ... or a seedy tropical port ... nor a sailor's waterfront staggering to the raucous times of the infamous Quinn's Bar and La Fayette nightclub. In place of legend there's a startling display of prosperity, vigorous reconstruction and refurbishment. Instead of Quinn's there's a modern office block which typifies the momentum of this growing, changing town. There's a new neatness in the order of French formality. Papeete has a flavour as international as Paris. The gendarme. Rue Charles De Gaulle ... Rue Dumont D'urville ... Bouganville Park. In your mind you fluently put together these European words ... fascinated to hear the language come pleasantly to your ears here in a Pacific paradise. But it's in keeping with the French Tri-colour ... formal government buildings ... banks ... restaurants and boutiques ... and sidewalk cafes under striped awnings in the wide shady boulevards.

The marketplace — live theatre of Polynesia.

From dawn the city has been jumping. Tahitian fishing boats unload fresh bonito, mahimahi, carangue, tuna, lobster, shrimp and the tridacna clam delicacy known as 'pahua'. Everybody is going to market. The Chinese, playing their role, are the market gardeners ... driving in from their cultivations with non-traditional produce ... lettuce, tomatoes, wombok, beans, artichokes, cabbages, potatoes, onions, carrots ... and fresh meat – pork and beef, smoked and pate. The Tahitians arriving with the traditional fruits of their heritage ... banana, pineapple, oranges, papaya, lime, mango, avocado, coconut.

Between rue 22 Septembre and rue Francois Cardella, the four-shed marketplace offers up a cornucopian display of every good reason why, tonight, you will be enjoying a life's experience in this gourmet capital of the Pacific.



In Tahiti food is a tradition

But not only is it a delight for gastronomes, the marketplace is a living theatre capturing the essence of French Polynesia. The proper French types going about the serious business of food selection ... a seriousness emphasised by the 'proprietaire' who daily must defend the good name and reputation of his establishment against the critical French palate. The Chinese restauranteur keenly scrutinising ... looking to upkeep the traditions of superb oriental cooking. Its going to be a battle of the world's two most famous cuisines ... with you emerging the victor. Best of the theatre are the happy Tahitians ... hearty in their greetings ... kissing, comparing shopping, gossipping and laughing. You are going to sample their traditional menu at the Tamaaraa ... at most hotels, a weekly feast prepared in underground ovens ... offering up succulent pig, fresh fish, poultry and the flavours of coconut milk, taro, manioc and banana.

Le Truck — Public Transport without timetables

Around the market is the centre of Tahiti's chief form of transport, 'le truck' ... it's the cheapest also. Back to your hotel ... around the back streets filled with a hundred shops and restaurants, snack bars, cinemas, grocery stores and ice cream parlours ... around greater Papeete ... into Tahiti countryside. There's no timetable. By six thirty in the morning, Papeete's streets are alive ... cars, trucks, velos, sportscars keep to a relentless pace until noon when the motors cut and it's time for a two hour respite. Home for a glass of wine, a large lunch and a small nap before life returns preparing for the evening rhythm.

Tahiti nights. A romantic time

A spectacular sunset gives way to the romantic time cloistered by the warm night, a time for eating and drinking ... dancing and laughing. Papeete turns on. As expected, most hotels are a scene in themselves with restaurants, bars, poolside eating, outdoor and indoor entertainments, hot or cool dance bands, cabarets, and the Tamaaraa feast as a prelude to the Tamure dancers. To the exciting tok-tok-tok Tahitian drum rhythm copper-bronze, sultry-eyed maidens sensuously weave a dance spell of famous Tahiti symbolism ... their warriors complementing with the rituals of ancient times.
Papeete caters to every partying whim ... from the very expensive and very chic ... to disco clubs. Patrons can enjoy all night dancing (particulary the weekends) or at least

to 4 a.m. There are dance bars and night clubs. The contrasts of entertainments are surpassed only by the restaurants. The international dishes that flow out of Tahiti's kitchens – thanks to the cultural mix of the Polynesians, French and Chinese – are gastronomically glorious.

Eating is a passion

And dining out is a pastime so popular, you must book early despite the unusually high number of really excellent restaurants.

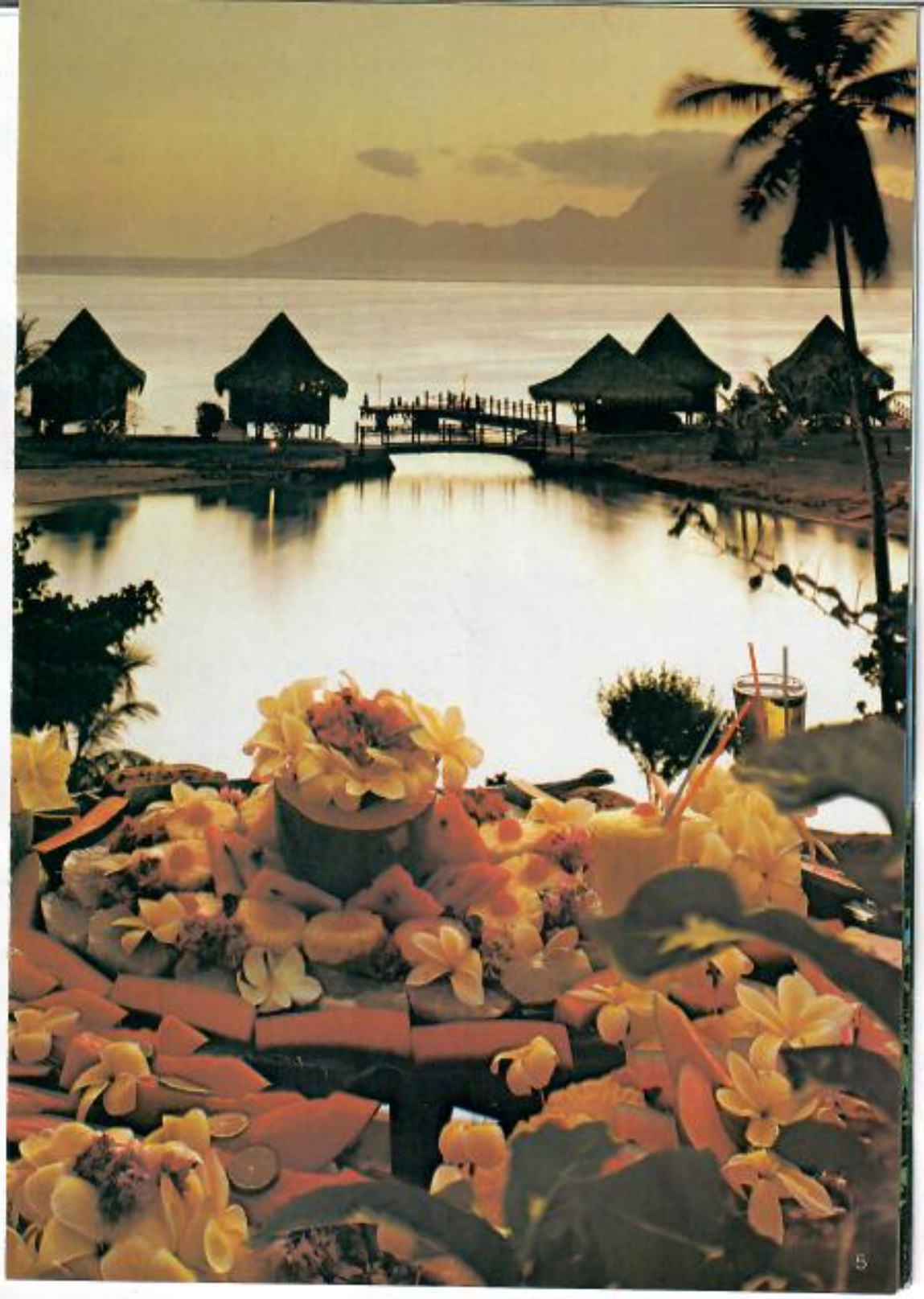
But excellence comes in all decors, guises and prices all over town. One of the memories of Papeete will be 'Les Brochettes' – vans that turn empty waterfront carparks into al fresco eating places after five p.m. A favourite supper place when nightclubs close. Portable charcoal fires serve barbecued steaks and chicken and shrimps piled high with French 'pommes frites'. The price is in keeping with the beautiful waterfront environment, the wooden stools and pie-cart-style counters. One van, one course. Wander across to another van for Dessert ... a huge crepe with sugar, sprinkled with Grand Marnier, or chocolate or jam.

Late night revelry

And so it goes on. Papeete is one town in the Pacific where it is accepted and expected that you should enjoy life to the full. Where only the first rays of dawn suggest an end to the previous day. But even then there is no hurry to be home. The heavily flower-scented air and the sight of Papeete Roads harbour draw a deep, dreamy response. The white schooners remind you of other Tahitian destinations ... luxury cruise liners loom large on a colourful canvas of rusty cargo ships ... an assortment of beaten and scarred tubs, scows and busy fishing boats. Pangs of wanderlust are felt as you wander along the solid, luxurious line of yachts moored bow or stern to the waterfront boulevard at this place called Port of Pleasure. And close to this international gathering, a beautiful, permanently moored Chinese junk entices passersby for a drink or two or three ... La Jonque opens early and closes late.

Bastille Day. A huge party

The 'we never close' feeling about Tahiti is heightened on the weekends and reaches an unbelievably colourful frenzy on the 14th of July each year. A huge party sparked by the



French observance of Bastille Day. It starts with a salvo of cannon ... then a starch and brass review ... lots of uniforms and um-pah-pah bands presided over by the elected dignitarys and officials. The Parade of Parades. Tok-tok-tok drums fill the air ... fete Queens smile and wave ... high stepping, baton-twirling troupes of marching girls ... floats and firemen ... youth groups ... stunting motor cyclists and dance groups.

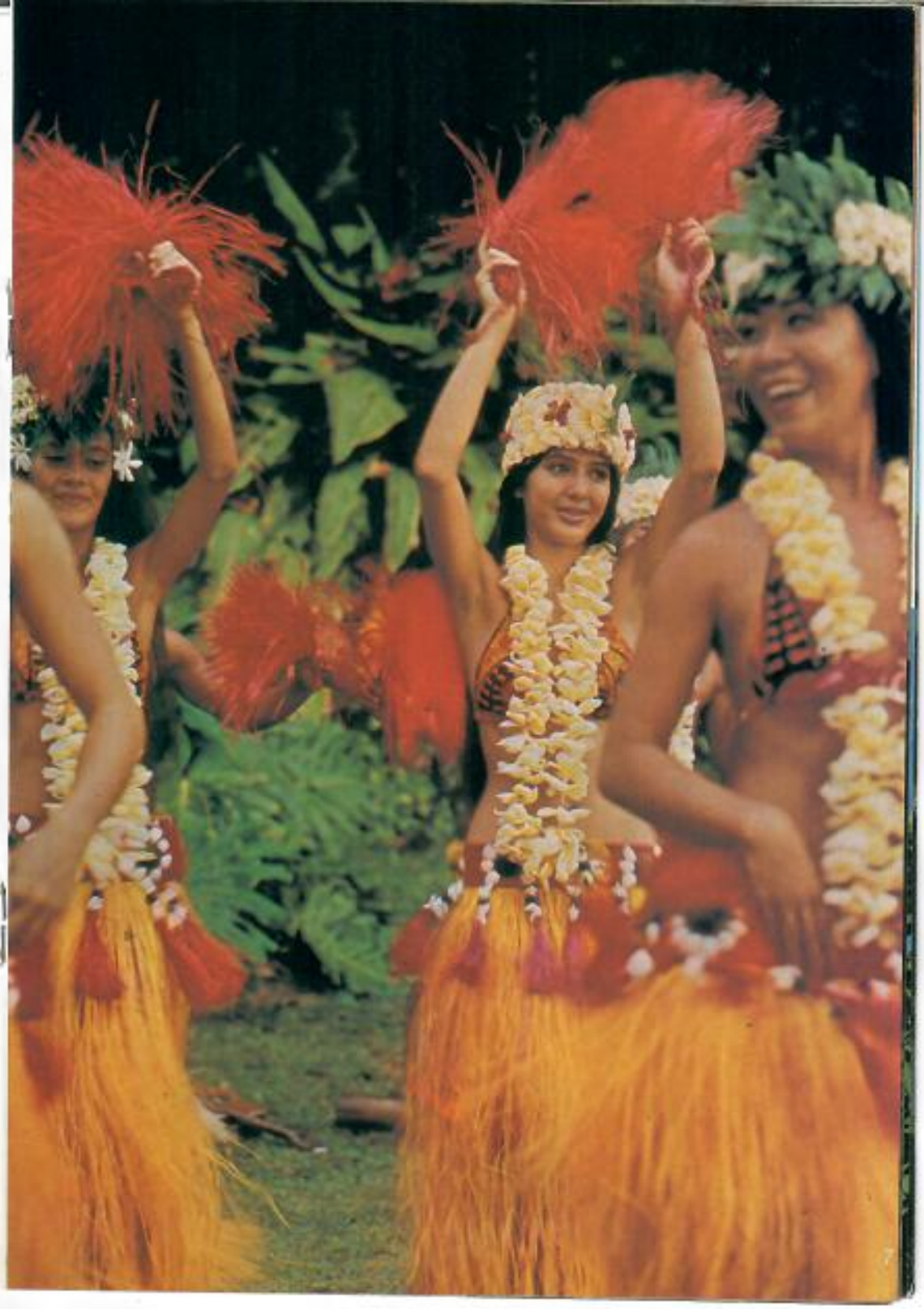
The residence of the High Commissioner marks the end of the opening parade where groups of native dancers are presented to Tahiti's guests and return the singular honour with gifts of flowers, fruit and wooden bowls or a short dance from rehearsed competition routines.

Thus begun, Bastille Day is destined to follow its official course until July 22nd. For the Tahitians however, the day will last the month out. The carnival of dancing, singing, playing and friendly competition rolls them altogether in one huge emotional skyrocket. A montage of events that includes a week-long song and dance contest ... water ski exhibitions ... horse racing, motorboat racing, yacht racing ... golf tournaments ... javelin throwing ... and the most prestigious and hard fought of all competition – spectacular canoe races.

Ancient ceremony and colourful ritual

Throughout French Polynesia the 'day' will be celebrated, bringing live enactment of ancient ceremony and colourful ritual ... revival of almost time-lost arts and crafts. Feathers and cloaks and splendid headdress come together with high priests, witch doctors, evil spirits, warriors and maidens and torch light ceremony. All at once the fine polynesian culture of the Pacific lives. The Grand Ball on the lawns of the Commissioner's residence starts the merry pace ... the original formality of the affair has gradually softened by champagne and rhythm provided by the 'old timers' of Quinn's Bar. As the sun rises into the second day ... the Grand Ball is still going strong.

Papeete waterfront is ready for the canoe races. The crowd is huge with rowers, girl friends, boy friends, relatives, tourists and crowds from other islands. Boulevard Pomare is loudly jammed with cars, brochette refreshment vans, merry-go-rounds, candy floss ... kids, babies, grandparents, neighbours laughing and joking ... men and women dressed in pareus and wearing flowered couronnes. It is a happy festival scene. Bastille Day ... uniquely Tahiti.



The legendary pastime of beach-combing

By now you are beginning to realise why Tahiti is full of people who came to visit, and never went home. They embrace the polynesian attitude . . . natural, easygoing, funloving . . . a rhythm unbounded by formal time and pressure restraints of the civilised world.

Revival of the senses is inevitable anywhere in these south seas. Swimming always comes easily because the heat has moistened the brow and forced you into the lightest, most informal gear you can find. At any time of the year the temperature will be around the high seventies (21°C-27°C).

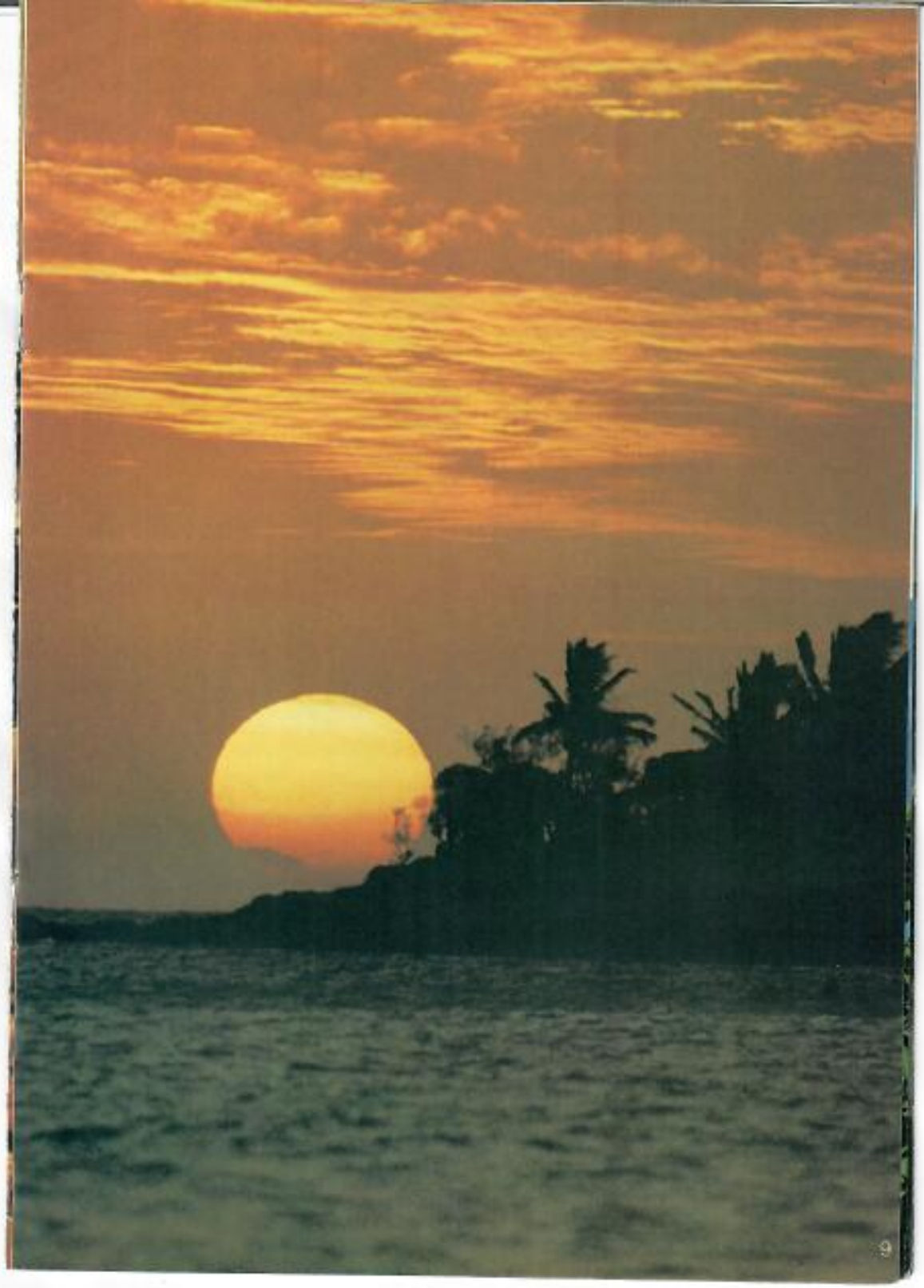
When you tire of looking at the white line of breaking surf on the reef from beneath your woven pandanus hat, it's time to explore the lagoon, coral gardens and fantasy of brilliant fishes by glass-bottomed boats or the privacy of your own mask and snorkel. Or you can waterski, fish or sail a brisk, warm tradewind as the fancy takes you. That's the thing about Tahiti and her sister islands . . . the countless ways of enjoying the sea around. The fast runabout . . . the colourful sailing boat . . . the native pirogue (canoe) . . . all kinds of craft. They're all part of almost every hotel scene, with the likes of diving gear and tuition supplied.

Other aquatic ambitions are fulfilled with deep sea sport fishing aboard air conditioned luxury cruisers. Fishing is all year but the exciting part of the season for the best gamefish is November to July. From Papeete and many of the islands, charter yachts either self sailed or crewed, are available.

Tahiti Tour. In the footsteps of Cook and other adventurers

In Tahiti there is little to do . . . or lots . . . depending on your frame of mind. You can be organised or just take each day and night as it comes. There are round trips of great visual and historical interest beginning not far from the northern outskirts of Papeete.

"Below in the sheltered protection of Matavai Bay, the converted collier Endeavour lay at anchor. Above in the encampment of Point Venus, Captain James Cook prepared for that day in 1769 when Venus would transit the sun."



It's intriguing to stand there on the spot where western civilisation of the south seas all began. Nearby at the small museum of Discovery it is well documented . . . early polynesian explorers . . . Wallis, Cook, Bouganville, Bligh . . . missionaries . . . and a cannon dated 1576 – a reminder that the Spanish and Portugese were probably the first Europeans to sail through these waters.

About the same distance south of Papeete, the full fascination of French Polynesia's geography and ancient history through to the twentieth century is on display at the Musee de Tahiti et des Iles. Armed with the knowledge of the islands' history and culture, Tahiti and the whole of French Polynesia take on a rich perspective as you tour.

The drives on Tahiti are bounded by the seas, coconut palms and lush botanical adventure . . . punctuated with blowholes, waterfalls, fast flowing rivers, the Gauguin Museum, villages, caves, hotels, ancient marares. The inevitable lagoon-side restaurant invites you to swim in the clear waters before relaxing with a bottle of French wine and a seafood feast.

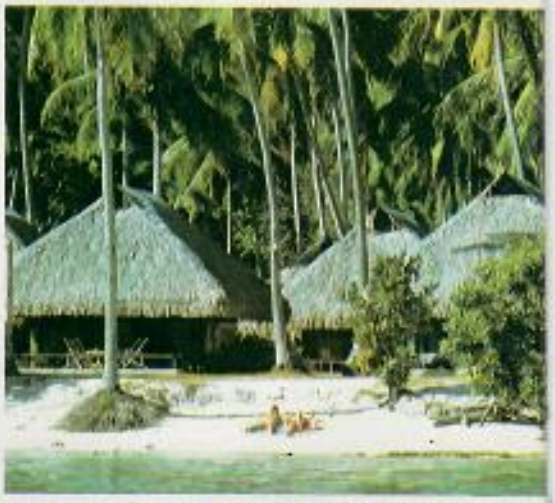
Touring Tahiti is complemented with many other means of soul satisfying activity . . . hiking and climbing to quiet places and huge vistas . . . tennis, squash, trap shooting, golf, horse riding . . . galleries of art of considerable merit . . . superb churches, shellshops, craft shops, flower stalls, souvenir places and exotic, international boutiques.

Papeete is the Paris of the Pacific

A myriad shopping thrills. French and Swiss houseware. French perfumes. Local and imported artifacts and art objects. Hand blocked print fabrics of exceptional quality and style by local French artisans – and handcrafted jewellery, much of it intricate mother of pearl.

The Tahitian Pareu, national dress of French Polynesia are available anywhere and everywhere at all kinds of prices. But not so the exclusive, expensive boutique collections of the latest European apparel labelled Pierre Cardin, Guy Laroche, Lanvin.

To Papeete the centre of French Polynesia come the crafts of all the islands . . . tie dyed pareus from Moorea . . . black pearls from Manihi . . . Marquesan wood carving from Ua Huka . . . shell hatbands from Rangiroa . . . fine woven hats from Tubai . . . Tapa from Fatu Hiva . . . shells and shell crafts from all over.



Getting about.

To the islands by boat or by air. Around by taxi or rental car or the independently operated 'le truck'. There are also mini-tour buses and larger air-conditioned ones. Remember to drive on the right. And take care. As in Paris, so Tahiti. Traffic is fast.

Language

French, Tahitian and enough English to get by. Shop keepers, hotel personnel, waiters, drivers and tour conductors are helpful.
Common Tahitian words:

ia ora na . . . good day
maururu . . . thankyou
maeva . . . welcome
maitai . . . good
nana, nana . . . goodbye

Entry

Varies according to nationality and intended length of stay; consult your travel agent, AIR NEW ZEALAND office or the nearest French Consul.

Tipping

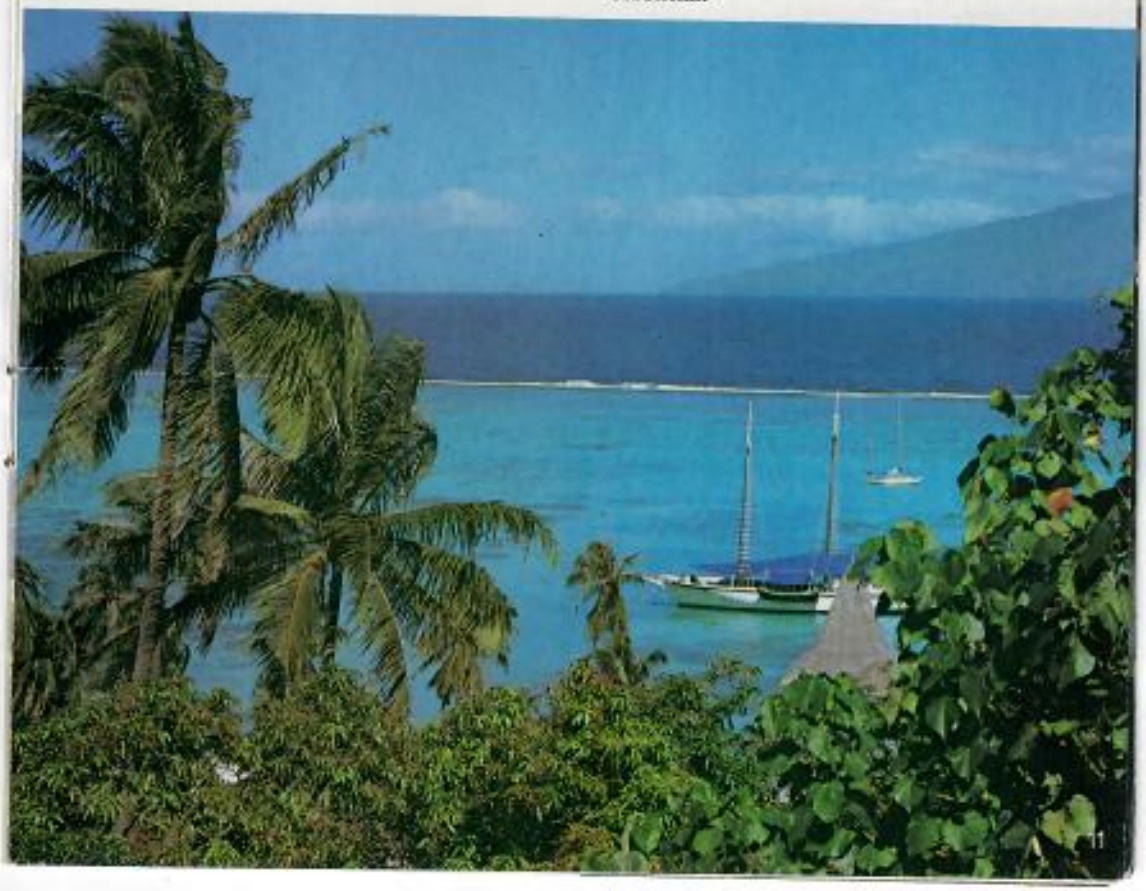
Tipping is not practiced in Tahiti, it is considered insulting and contrary to polynesian custom.

Money

Centre Pacifique Franc.
Coin: one, two, five, ten, twenty, fifty and one hundred Franc denominations.
Notes: five hundred, one thousand and five thousand Francs.
Banks open from 7.30 a.m. until 3.30 p.m. Saturday 7.30 a.m. to 11.30. They do not close for the customary two hour lunch.

Climate

Rainy season (usually heaviest at night): November to April.
Dry season: May to October. Average temperature 75 degrees (22 celcius) humidity average is 78%.
Ladies wear lightweight dresses and sandals, men shorts or light slacks, cotton shirt and sandals.
Sun is strong. Protection for the skin is essential.



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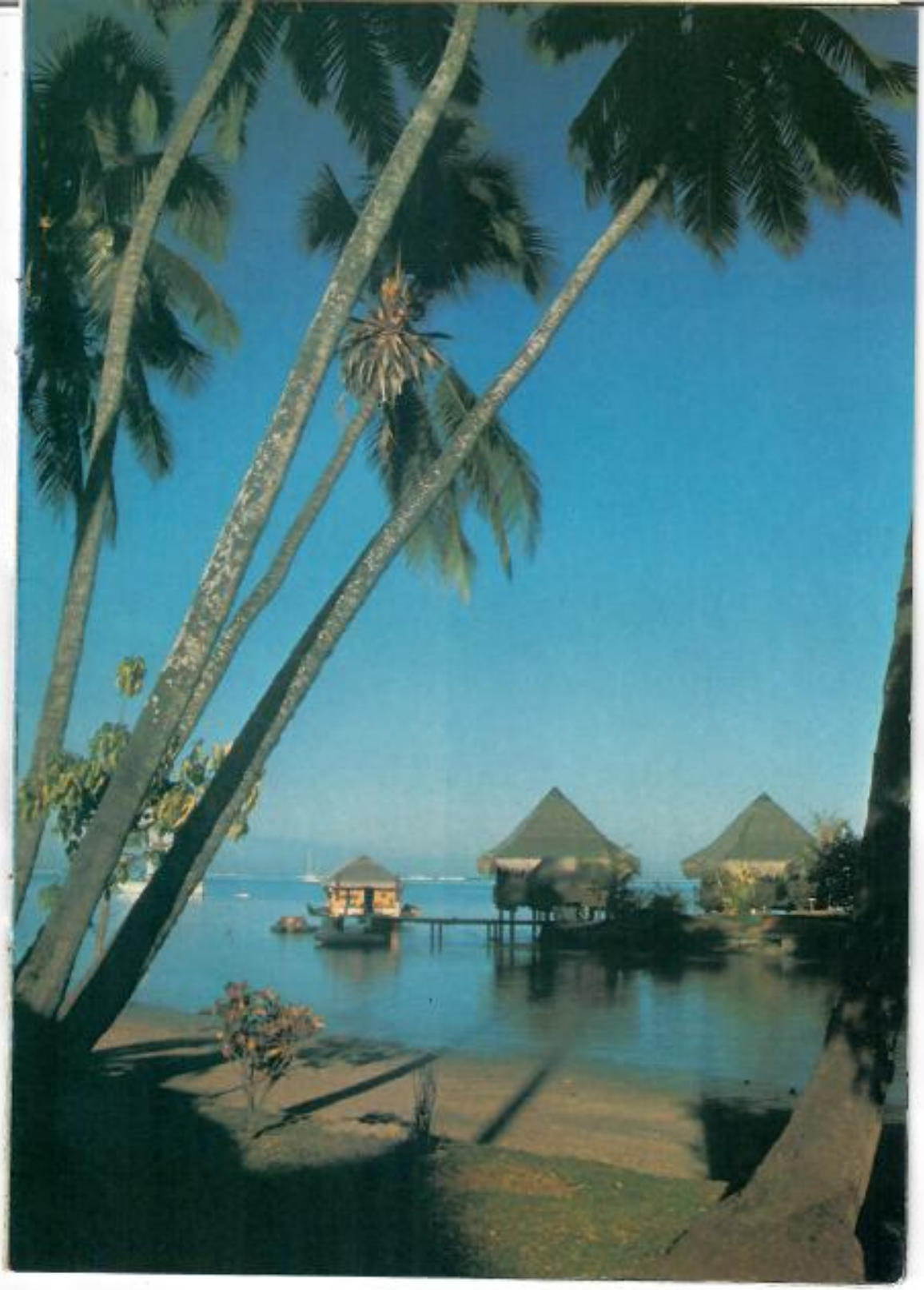
Any day of the week Air New Zealand makes at least 240 flights between any two of 37 airports in 11 countries around the Pacific basin. Twenty-three of these airports are in New Zealand and the others spread between Australia, Fiji, Western Samoa, New Caledonia, Norfolk Island, Tahiti, the Cook Islands, Hawaii, North America, Asia and the Orient.

Air New Zealand treats its guests to everything, and more, than they are accustomed to receive elsewhere in the world. The welcome as you step aboard your Air New Zealand aircraft reflects not just great pride in the presentation of a commercial service, but a real happiness that you have chosen to discover and share our South Pacific paradise.



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