

# paradise

in-flight with Air Niugini



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# paradise

Winner, 1989 PATA Gold Award  
for best Travel Story.



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telex NE22225).

Welcome aboard,

The art of making a Kundu drum, one of this country's major communicating and musical instruments and featured on the Papua New Guinea crest, is demonstrated to us by people from the small village of Wasu in the Southern Highlands.

Travel down the Fly river, one of this country's great rivers, a river that enables supplies to be transported from Port Moresby to the copper and gold mine of Ok Tedi; and meet the friendly Huli people who ensure your visit to Ambua Lodge will be unforgettable.

Enjoy your flight.



Mr Joseph J. Tauvasa, MBE  
Chairman  
National Airline Commission

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**Cover:** Huli bridge builders made this classic span of branch, bamboo and vine in the Tari Basin. (see page 22).  
Photography by Liz Thompson.



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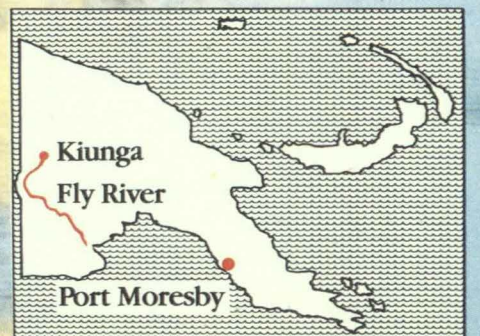
"A portion of a large quantity of steel water supply pipes for Bougainville Copper Ltd., Panguna, externally treated with Dimet Tarsel Standard High Performance Tar Epoxy, to 400 micron dry film thickness. Application by Minenco Pty. Ltd."

# Steaming The Fly—

Story and photographs by John Ross



*One of the many big vessels which cruise the jungle waters of the Fly River.*



**F**arewelled by a brilliant sunset, the Hiri Chief glided through the moonlit Fly River. The lights of Kiunga port quickly receded, leaving only the silky smooth river smothered on either side by huge equatorial forest. The Hiri Chief is a 57-metre cargo boat, one of many Steamships Ltd boats operating between Port Moresby and Kiunga, supplying the Ok Tedi mine and its service town Tabubil. I secured passage on the Hiri Chief simply by asking the captain as he was unloading the last of the cargo. My unusual request was met with an emphatic yes and a wide betelnut stained grin.

Boats are a common means of transport. Kiunga and Tabubil are linked by one road and this has been cut only recently from virgin rainforest. Kiunga is several hundred kilometres inland, far in the north-west region of Western Province.

The Fly is one of the world's greatest rivers, navigable by medium-sized craft for 1,000 kilometres of a total 1,200

kilometres. The river empties sufficient water into the sea to provide more than 25 litres every day for each person on earth. Rising on the rugged ranges that form the backbone of Papua New Guinea, the Fly ends in a huge island-filled mouth, staining the sea brown for up to 60 kilometres from the coast.

Travelling down the Fly was like moving back to the beginning of time.

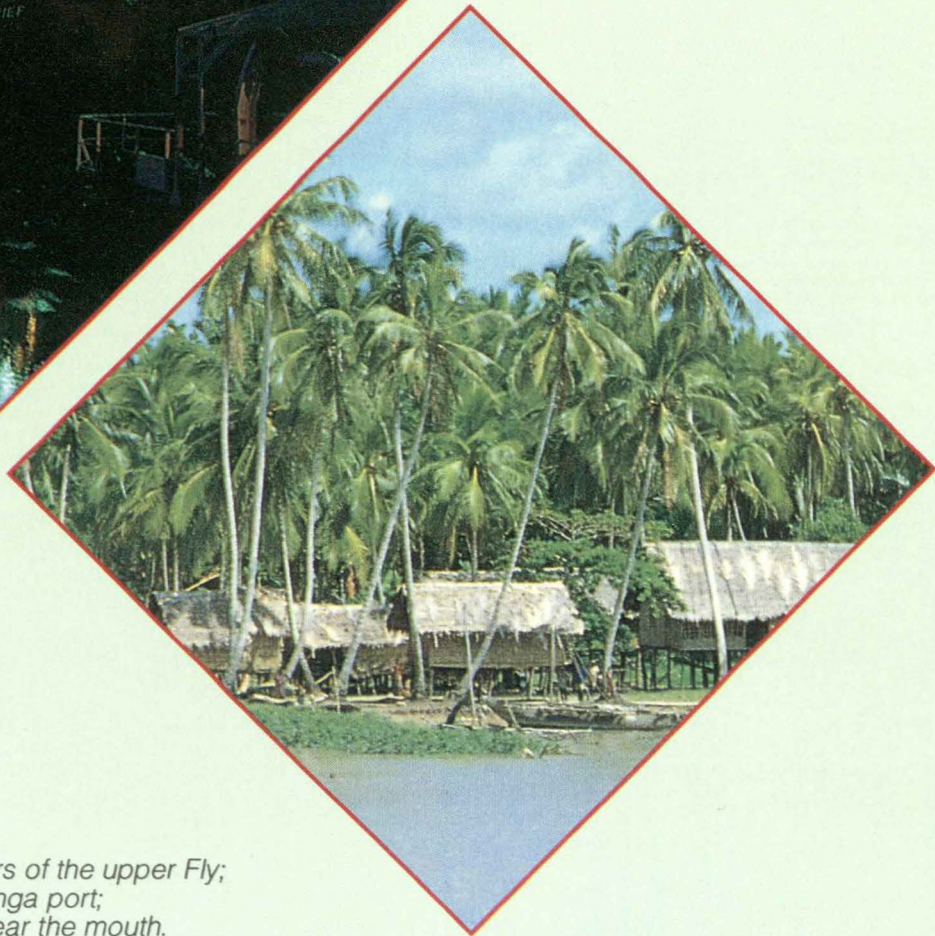
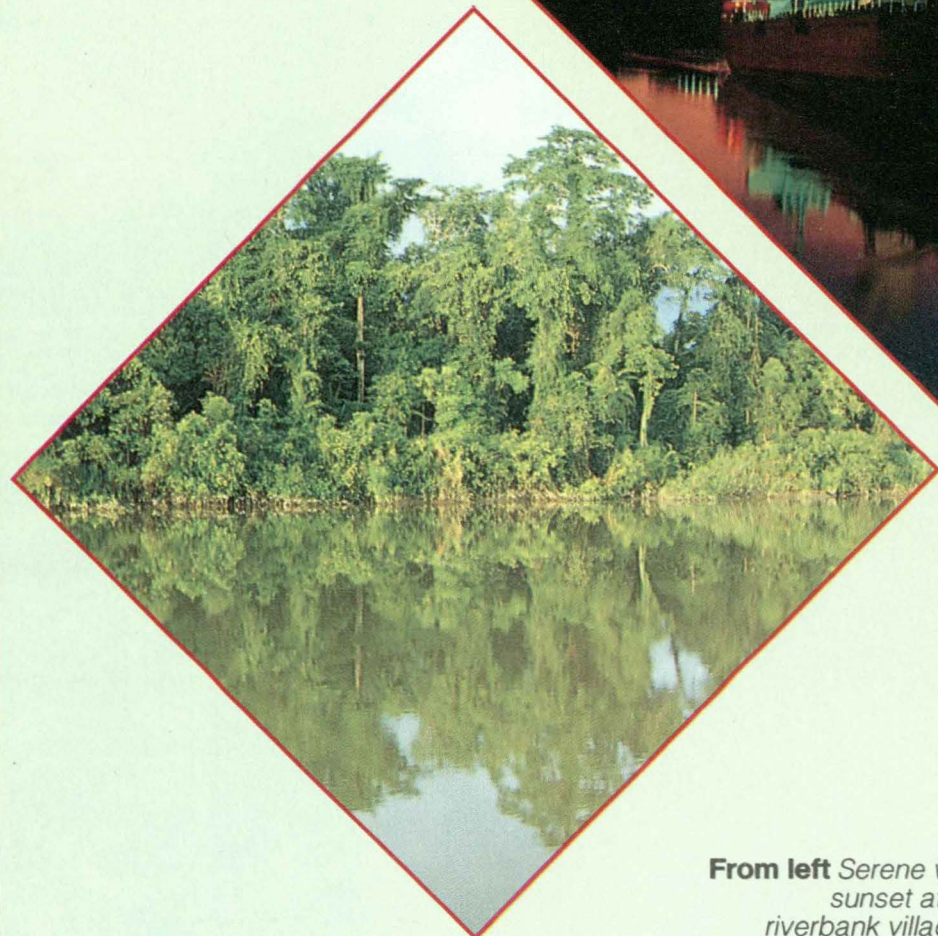
I woke early the next morning to watch the delicate colors of sunrise. The beautiful yellow sunlight illuminated the luxuriant forest, which was then reflected on the river, distorted in weird and wonderful patterns by the wake of the ship. The wildlife was prolific;

everywhere were white herons, equally beautiful in flight and at rest. Eagles soared overhead; numerous unidentified noises came from the forest. The river's wildlife was also hidden. The chocolate-colored waters held too much sediment to reveal their underwater life. The scenery was continually changing. The sinuous path of the river kept the boat turning.

That first night the ship arrived in the small settlement of Obo. We were to deliver supplies for an oil exploration team, but the mosquitoes were maddening, and with four of the 12 man crew already sick with malaria we waited until morning to unload.

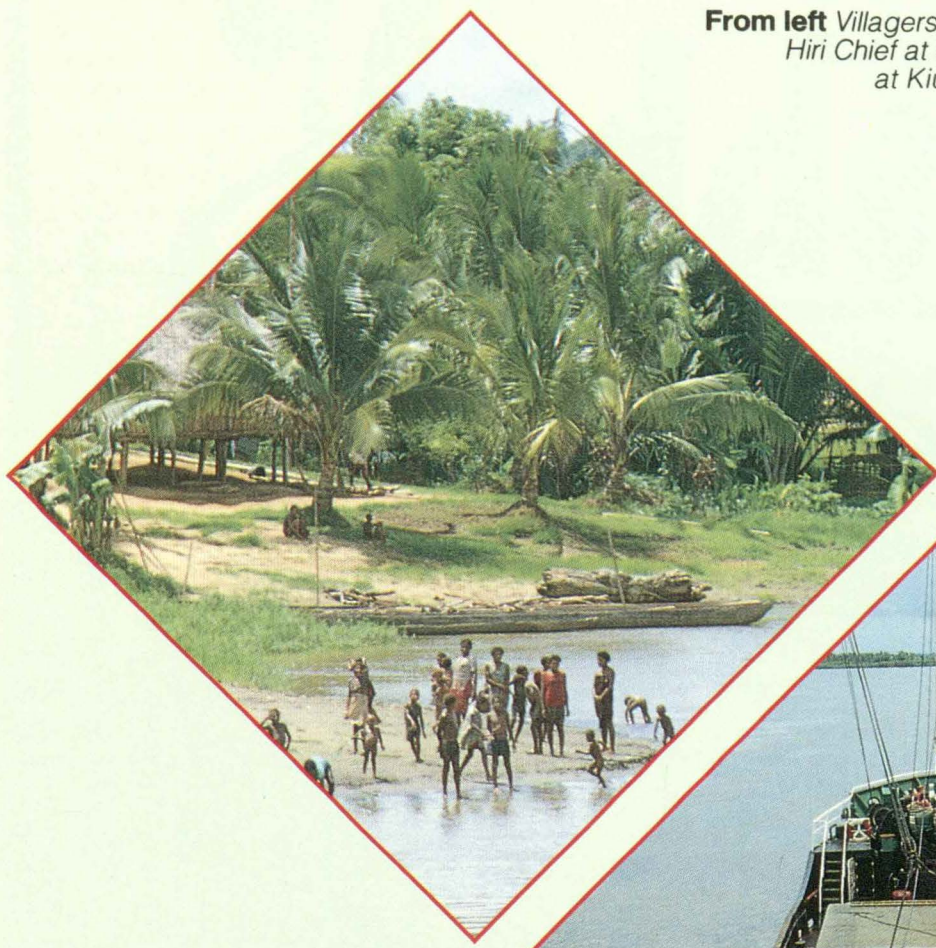
Departing at lunchtime, we could see the river was again changing. The mighty Strickland River had joined forces with the Fly, becoming wider, slower and less sinuous. The rainforest gave way to seasonally flooded savannah-like grassland. This annual flooding, together with malaria, keeps the population density extremely low. Wildlife abounds. The area is teeming with crocodiles, deer, wallabies and cassowaries. The riverbanks became more distant and the sky began to dominate. What skies! Incredible colors and clouds of every imaginable shape. The drama in the sky climaxed in the late afternoon when dark, heavy thunder-producing clouds produced lightning well into the night. All the time the great river mirrored the sky. The beauty was intoxicating!

The Fly is beautiful but dangerous. It has numerous navigational hazards, constantly changing bars; and huge floating logs often joined to form floating islands. Most destructive and spectacular of all are the 'bores' or tidal



**From left** Serene waters of the upper Fly; sunset at Kiunga port; riverbank village near the mouth.

From left Villagers watch the ships go by;  
Hiri Chief at full steam ahead;  
at Kiunga port.



waves. On the first three days of every new moon the incoming tide overpowers the river flow. A two metre wall of water surges upriver as far as the Strickland tributary, 240 kilometres from the mouth.

Despite this, as early as 1876 the Italian explorer Luigi D'Albertis penetrated the vast, unexplored interior along the navigable length of the Fly in his small steamer, The Neva, 12 metres long with neither deck nor cabin.

D'Albertis' description of the journey is a great adventure and an insight into a past way of life: "The people live in communities, sometimes of more than a thousand inhabitants in well-built villages, worthy to be called small towns, both for their order and cleanliness. The houses are built on pillars composed of large tree trunks at about six feet from the ground. The houses are very spacious with a very high pointed roof."

The longhouses have disappeared but the few villages we passed were still picturesque, built entirely from natural materials. No ugly

corrugated iron or plastic. Passing a village, the children would rush to the water's edge to wave and shout at us but the reception experienced by travellers in the past was not always as friendly. The people of the Fly were ferocious headhunters and a number of early missionaries made the 'ultimate sacrifice'.

The Hiri Chief made good speed, maintaining 10.5 knots as we sailed into the third night, with another 20 hours before the mouth would be reached. The trip from the mouth to Port Moresby would be another 22 hours. The captain made a few unscheduled stops, pulling up next to the rainforest to collect wild betelnut and later palms

to decorate the boat for Christmas, now only a few days away. When the Hiri Chief stopped near a village to buy food, a flotilla of boats was launched. Within minutes we were encircled and the bartering began. We exchanged store goods for coconuts, bananas, crabs, pineapples and even that starchy staple of Western Province, sago.

The boat hugged the northern coast of the river, the southern side little more than a faint pencil line on the horizon. The river was more like a sea now. Leaving the huge mouth the water gradually changed from brown to blue and overhead dark cloud gave way to blue sky. The sharpness of the horizon was startling

after three days of gentle curves when the division between water and sky was softened by a lush mantle of vegetation.

Staring into the moonlit sea, a warm ocean breeze blowing against my face, I reflected on four wonderful days. I had seen so many beautiful and interesting things although they were a mere sample from the Fly's wonders. The last few hours of the voyage passed quickly as the crew and I busily applied the finishing touches to the boat's Christmas decorations, a combination of tinsel and foliage on the bridge and huge palms around the sides. As the Hiri Chief eased into Port Moresby harbor we were welcomed by bewildered and smiling faces. The captain and crew were also in high spirits, looking forward to spending the festive season with their families. I smiled too. My trip had been an early Christmas present and my New Year's resolution was to return to explore the upper reaches of the Fly and its tributaries.

# It takes more than paint to hold Papua New Guinea together

From the rusty reds of the Sepik to the vivid vermilions of Milne Bay, the faces of Papua New Guinea tell a story rich in tradition and culture. But paint is skin-deep, as we at ICI DULUX know only too well.

Behind the colourful ICI face, our Chemical Division quietly gets on with the job of supplying industry with a wide range of chemical products, and providing plantations with the fertilizers, herbicides, fungicides and insecticides that keep PNG agriculture producing.

ICI Plastics wrap everything from seedlings on a New Ireland plantation to vegetables in a Port Moresby supermarket.

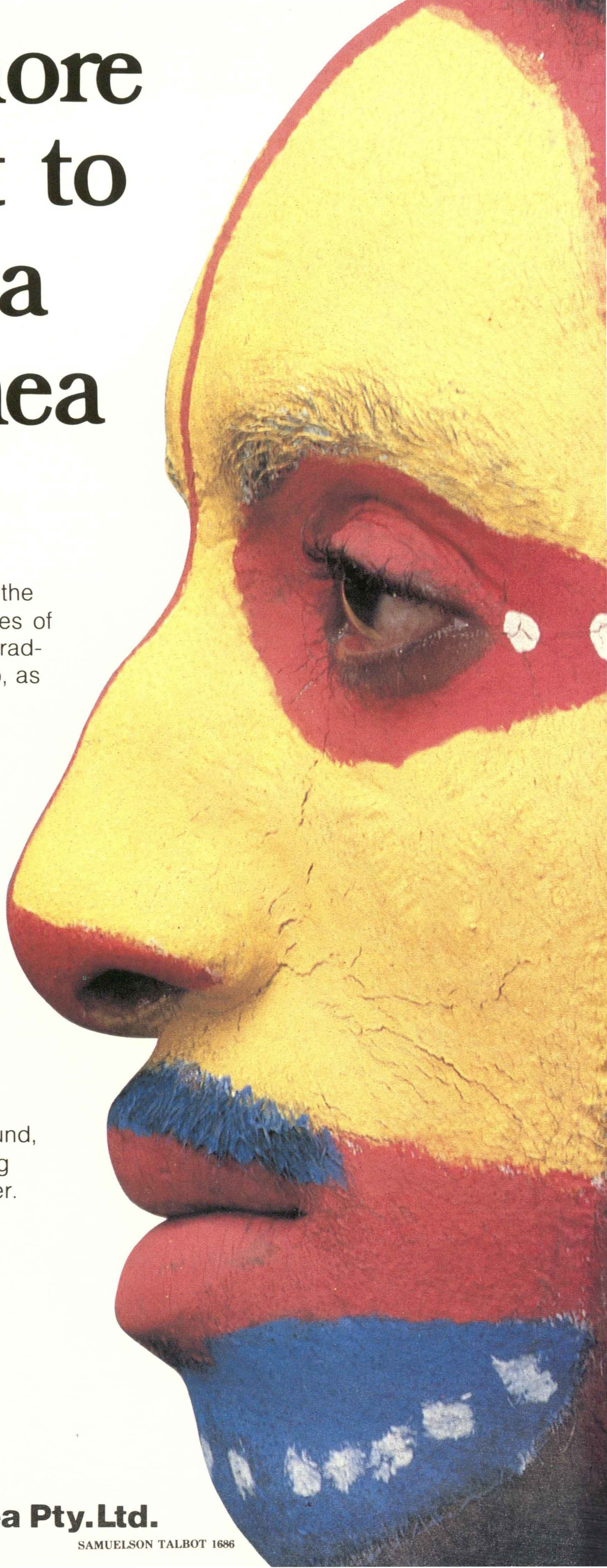
We sell explosives to break new ground, and adhesives, sealants and concreting products needed to hold things together.

All in all, there's a lot more holding ICI DULUX together than just paint. Rather like Papua New Guinea.



**ICI Dulux Papua New Guinea Pty. Ltd.**

SAMUELSON TALBOT 1686





# Hidden Valley

W R E C K

Story and photographs by Dr John D'Arcy



The C47 Dakota roared through a hole in the cloud and began its descent in to Wau. It was cold and the noise in the cargo bay was deafening. Off the port wing and through the flimsy cloud that was lifting out of the valley, another Dakota droned across the tree tops, high over the Owen Stanley Range. Behind and just visible through the cloud was a third.

This mission was as routine as you can get in wartime. The aircraft carried food and ammunition to resupply the Australian troops defending the Wau and Bulolo goldfields against Japanese commando groups based in Lae and Salamaua.

The young American sitting

closest to the door looked at his mates cramped between the cargo and the fuselage. He finished his tea, cursed the rotten brew and tipped the last few drops from the lid of his vacuum flask onto the floor. At least it was hot and sweet, more than those poor guys down in the valley were getting.

He screwed the top back on just as the plane turned violently to port, narrowly missing the other aircraft. It slewed first to starboard then again to port. The thermos fell from his hand and rolled across the floor. The engines changed pitch, digging frantically for air, as the pilot tried to gain height.

The aircraft straightened

**Above** Tagaguchi (left) and Tokana wait for helicopter pilot (right) to whisk them back to a horror scene of 46 years before.

and the crewman's head hit wall. He was dazed and nauseated. Through his fear he felt the ominous sensation of falling. Holes were appearing in the fuselage where cannon shells from the Japanese Zero, two hundred feet above, were passing into the bowels of the plane. Like a rollercoaster, the Dakota suddenly lurched a full 180 degrees. He heard a crash, and found himself falling through the cargo door before the plane hit the ground of Hidden Valley and caught fire. The young airman wasn't thinking of his friends. It had happened too quickly for that.

This was 1942, the Battle of the Coral Sea had trapped the Japanese in a pincer movement. The Australians and the Americans had landed at Salamaua and dropped into the valley at Nadzab.

Tagaguchi was with the Japanese troops. Even if he had had a choice he would have chosen to march. The men were lead out of Lae by a soldier who had run an Olympic marathon. They were on a trail that would lead them across the Saruwaged Range towards freedom. This was the only way out.

The troops were tired, hungry and ravaged by malaria. They wore the summer kit that had been issued many months before. Tagaguchi walked along the rivers that were sometimes in flood. When the rain stopped and the rivers fell, the rocks were wet and slippery.

At 2,000 metres altitude it was cold; some soldiers burned their rifle butts to keep warm, chewing their leather straps to ward off hunger. At 4,000 metres, the cold was unbearable. They could see the ocean but it was too far away for some. They gave up. Tagaguchi remembers some gave their comrades their dogtags, said, "Remember me to my family", and jumped off the cliff. The local people say the eagles made nests of their bones.

Thousands of troops died



*Helicopters made light work of the rugged terrain in which the Americans and Japanese parties went about their task of finding soldiers' remains from World War II.*

of malnutrition and malaria in battle. It would take more than 40 years before their stories would be told.

I grew up, fascinated by tales of the hardship and valor of World War II, but it did not touch me in a personal way until September 1988 when, with a group of US Army soldiers from the Central Identification Laboratory, I took the winding road from Lae to the mountain town of Wau in the Morobe Province of Papua New Guinea. Our destination was Hidden Valley.

The mission for the platoon was to honor the promise made to every American soldier who fights overseas for his country. No matter what the cause, no matter what the cost, his body will be located, accounted for and returned to his homeland, to be buried with full military honors.

The road to Wau turns through rainforests until it reaches the grasslands of Zenag and finds the Bulolo River, running with the river



until it reaches deep gorges lined with tall klinky pine. Thirty metres below the road, the locals still sluice for gold.

This is the place of the great PNG gold rush, which attracted the misfits, mercenaries and missionaries of the west. They descended on a culture thousands of years old, challenging the people and their ownership of land.

The dredges remain, hunks of history seven storeys high, now lying aground and rusting in the rain. The Wau airstrip runs downhill. To locate Hidden Valley stand at the airstrip, look up at the sentinel klinky pine and take a line south. A day's walk from here is Hidden Valley - that's if you are fit and know the bush.

For our team it was a helicopter transport to a helipad cut about 2,000 metres into the side of the rainforest. The chopper could not land, just a skid on the landing zone and jump off.

Captain Bennie Woodard and Sergeant Larry Wafer had



**Above** The distinctive markings of the US Army Air Force Dakota No. 4138658 after nearly a half-century in the jungle. **below left** US Army Central Identification Laboratory team setting out on their mission. **below right** Hidden Valley seen from helicopter.

arrived first to cut a trail 200 metres to the crash site. A yellow ribbon marked the way through the undergrowth. Despite sturdy boots our feet were soon soaked as we slipped and slid on the roots and rotting leaves.

We came on the aircraft without realising. It had almost been reclaimed by the jungle. The wing and fuselage were covered by moss and fungi. Where the metal was torn the yellow paint was as fresh as the day of production. On the dry earth under the wing, a flier's boot had been dragged or had fallen and was rotting; the US Army Air Force's star was visible under the moss.

We stood in silence for a moment. Rain was falling through the higher canopy, the weird sounds of the cassowary came from up the hill. Stones in the river, forced along by the heavy rain, made clunking sounds.

The Dakota had rolled on to its back in its last moments. The cargo door lay open. The CIL team found the remains of one airman outside and for others inside. As if to symbolise a return to the earth, a tree had grown around a bone, claiming it as its own.

With their detailed forensic and archeological work done, the scientists and the soldiers packed up their cameras and tools of trade; the site had 'been cleared'.

A young soldier looked up at the twisted wreck, shook his head and said: "Well, they are going home. It's 40 years but we are taking them home..."

The Americans were not the only ones reviewing the past. Tagaguchi, 71, stood looking up into the 4,000 metre peaks of the Saruwaged. He was dressed more for the Swiss alps than the heat of Lae but it didn't seem to worry him. He trained his binoculars on the mountains and prayed for a break in the cloud. The patch of blue sky was slowly widening and shafts of sunlight crossed in the valley as the last of the overnight rain





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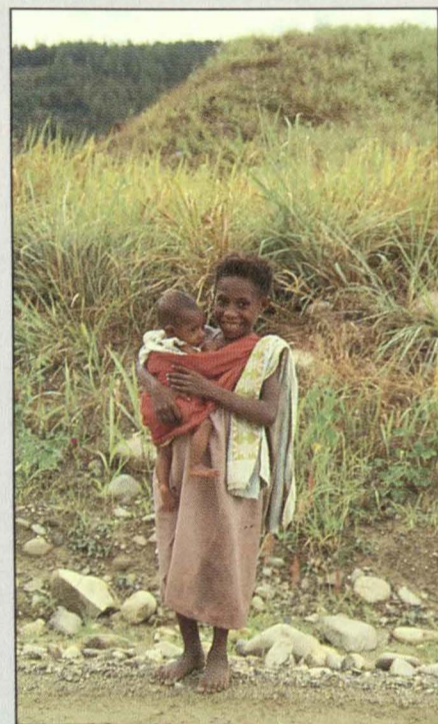
**Mobil. The No. 1 Team.**

cleared and the mist was burned off by the rising sun.

Tagaguchi's companion Tokana, a much younger man, packed their tents, radio equipment, food and supplies for their helicopter flight, 4,000 metres to the tundra plateau of the Saruwaged.

Tokana had devoted his life to this trip, a journey of discovery to the place of his father's death. Tokana knew his father only from the letters the soldier wrote to his, then unborn, son. Letters of comradeship, of hope and valor. The son's passion, like that of his travelling companion and the other old men on the expedition, was to honor the dead and collect their bones.

The helicopter moved cautiously in the mist. Below the land was so steep much of it had landslipped to the valley floor. Streams fell out of the heights as waterfalls, tumbling hundreds of metres to the river. Here and there a pig fence marked a garden. In six minutes the helicopter travelled a route that had taken the retreating Japanese weeks. Six minutes. Tagaguchi said: "It was cold here. At night we huddled around the small fires



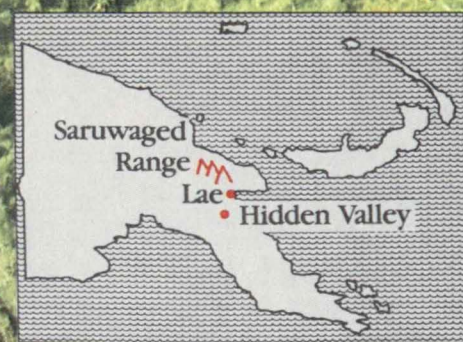
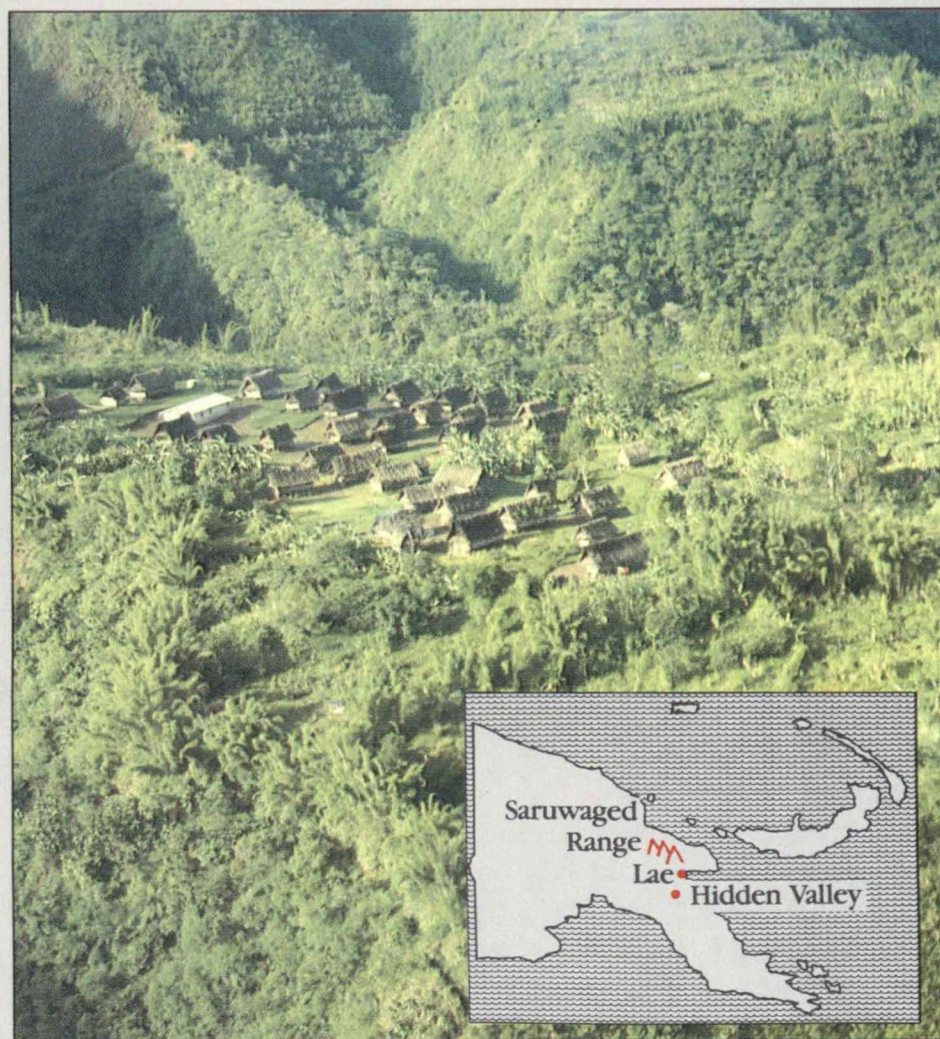
**Top** No. 4138658 lay undisturbed for 46 years. **above** Water bottle, bayonet and flying boot. **left** Villager and child. **lower left** Japanese advance party in the Saruwaged foothills. **lower right** The host village.

and in the morning we separated ourselves from the dead and continued to walk up."

A wall of stone indicated the valley's end and the full magnificence of the Saruwaged, thousands of metres high, was overwhelming. We were silent, the only sound being the wump of the rotors in the thin air as it dropped into the tundra basin. The old men walked with difficulty, slowing to drag the scarce oxygen into their lungs. The helicopters moved off to collect the rest of the party and we were left alone, sharing the past. The old men shuffled through the grass searching for their fallen colleagues. The soldiers lay where they fell all those years before: skeletons in boots.

Tokana cradled an unknown skull. Tears filled his eyes. He said in English: "Japanese soldier". Tokana had found his ancestor's spirit; he knew his father for the first time.

Tagaguchi and the older men collected the bones. Like the Americans, they too were going home.



# Post Art

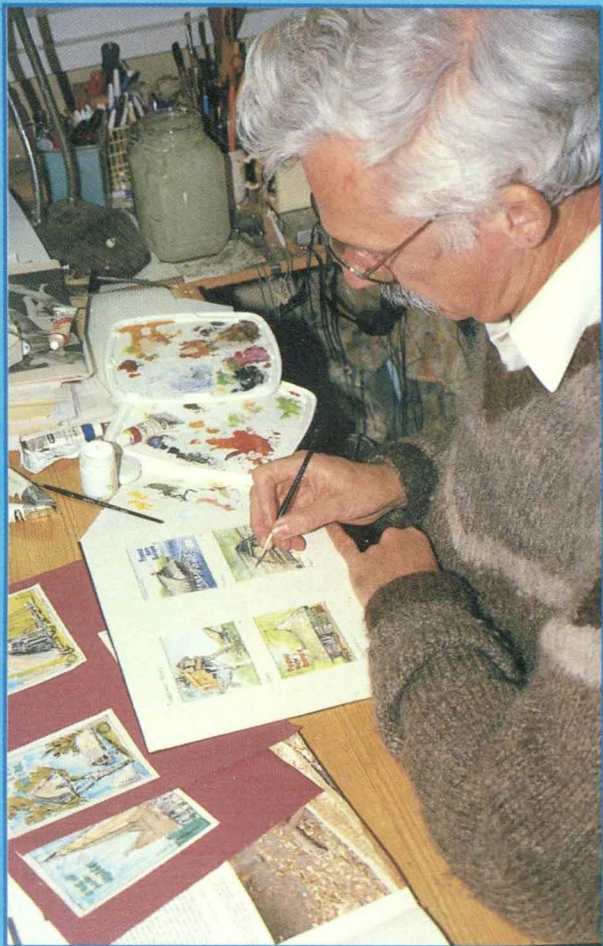
The stamps of Papua New Guinea are equal to any in the world. The main purpose of these little squares of colored paper is to pay for the carriage of mail. A drab sticker from a machine in the post office will do the same job and cost the department almost nothing, so it is not only for this use that stamps are produced. Stamps are a celebration of the nation, its cultures and achievements. Looking at previous stamp issues shows that PNG has come a long way from when messages were sent across mountain tops, over the great valleys by the sound of the 'garamut'. The stamps depict radio transceivers, telephones and solar-powered microwave repeater stations set on lofty peaks; mail being loaded on to planes. They show the world the sophistication of PNG's telecommunications network and wide ranging nature of our postal system.



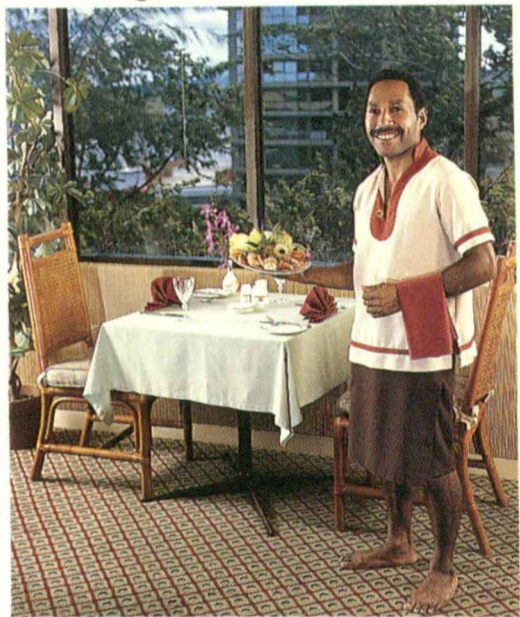
Above Mission Aviation first day cover.  
right Gogodala long house.

Momentous events like self government, Independence or the opening of the new Parliament House were shared with many nations via our stamps. The nutrition stamp issue had a valuable purpose in educating people of the need for a balanced diet. A centenary celebration, recognition of the police force, the army and the scouting movement have each been depicted. An issue honoring early missionaries reminded modern citizens that these people ventured into isolated areas, to settle, learn local languages and open schools and medical services, while spreading the Gospel, the only message able to unite people of more than 700 languages and cultures. They built airstrips in difficult places and even today the only contact for hundreds of small groups is by Mission Aviation.

Some countries produce stamps depicting things outside their own land and have resorted to many



Left Artist Graham Wade at work.  
above First day cover celebrating traditional buildings.



# The obvious choice.

## *The Port Moresby* **Travelodge** SOUTHERN PACIFIC HOTEL CORPORATION *Limited*

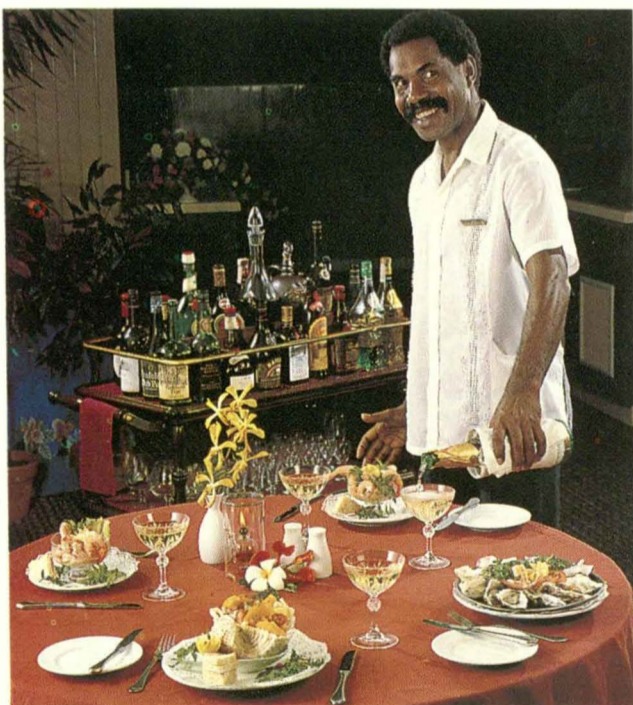
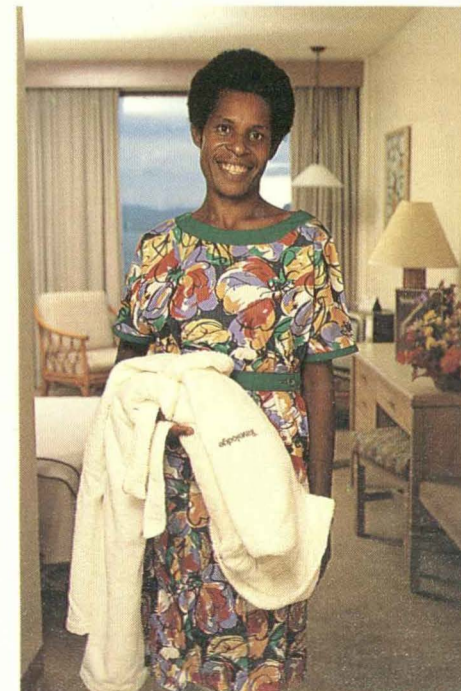
If you've ever visited Port Moresby, you'll know why the Travelodge is the city's top international hotel.

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approaches to sell stamps. PNG has resisted this gimmick and has maintained a policy of producing serious stamps relevant to the country. They retain a photographic quality and accuracy rather than using cartoon figures, line drawings or abstract subjects. Because of this, our stamps are highly regarded and eagerly sought by collectors around the world.

Most of us buy our sheets of stamps without thinking about how they were produced. Information printed in the sheet margins gives some clues.

One name that often appears is G. Wade. Graham is a commercial designer and has directed films and videos for the Philatelic Bureau, Standards Australia, Jones Lang Wootton, APCM, African Enterprise and the Bible Society, through his firm Pilgrim International. He lives with his family in a quiet bushland setting in a northern suburb of Sydney.

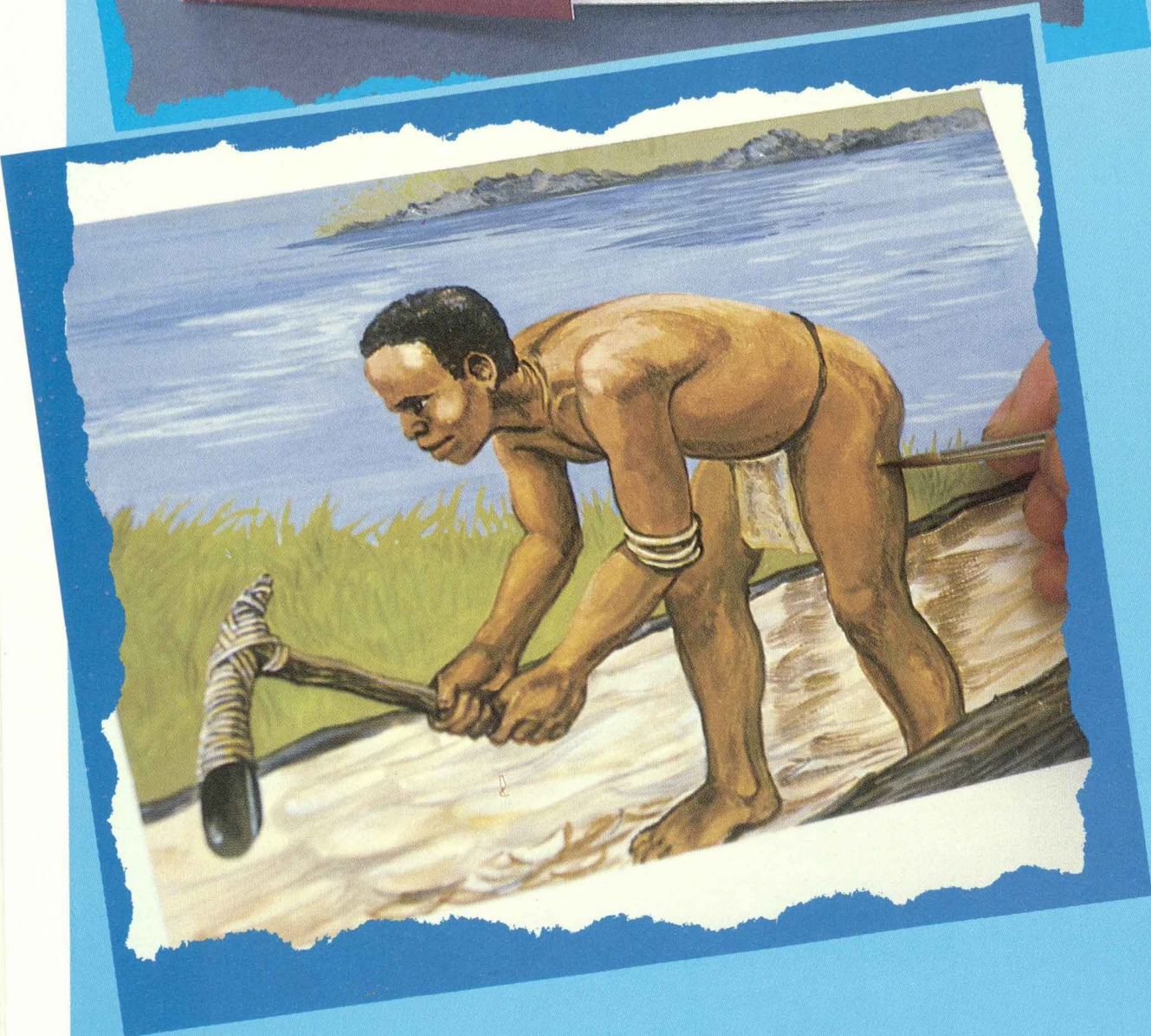
Graham is one of several artists who play a large part in the production of PNG stamps. A request from the Philatelic Bureau sets him researching picture books to get inspiration and accuracy for the proposed theme. Sometimes he will work out a series on his own, producing rough sketches about twice the size of the finished article. If the concept is approved by the bureau, it is sent to the Stamp Advisory Board who approve and return it. Working initially with the artist, the Bureau then has the job of producing and distributing millions of stamps.

Up to two years is needed from the initial sketch to the First Day when the public sees the new issue. A tremendous amount of organisation goes into getting an issue out to coincide with coming events, such as the opening of Parliament House or the Queen's visit.

If approval is given on submitted sketches, Graham produces a painting about five times the size the stamp will be, in the correct proportions. A clear sheet of film is



**Top** Artist Graham Wade.  
**bottom** A typical Wade design.

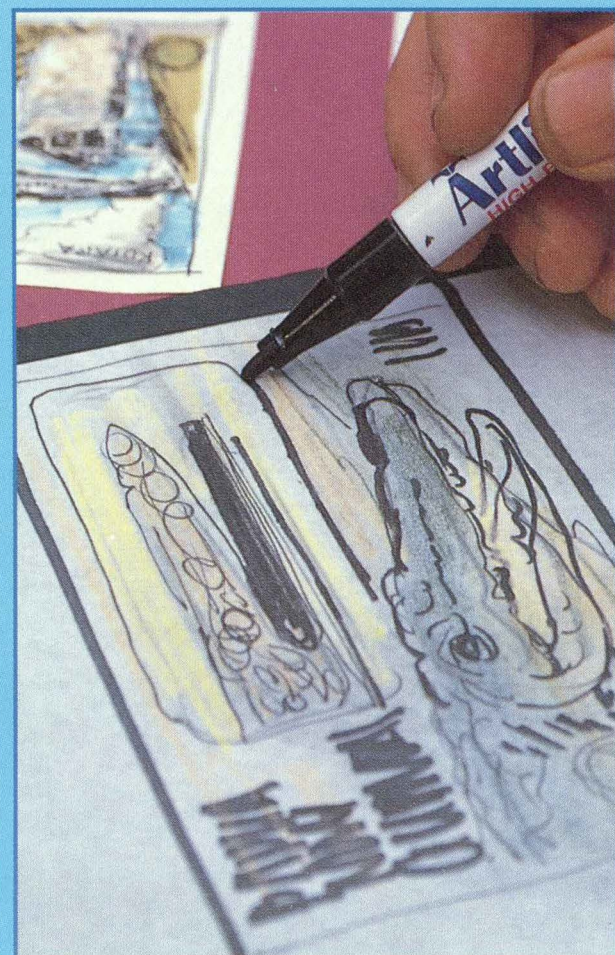


**Top** Marking 75 years of Scouts in PNG. **above and right** Initial rough sketches for submission to Philatelic Bureau.

laid over the finished painting and the wording, denomination and artwork such as the Scout badge, are reproduced in black rather than on the painting's surface. Graham regularly checks the picture through reducing glasses to see it in the exact size it will be printed. Visual gaps must be left so they can join in pleasing proportion in the final reduced product. Four designs are usually submitted but perhaps only two will be chosen.

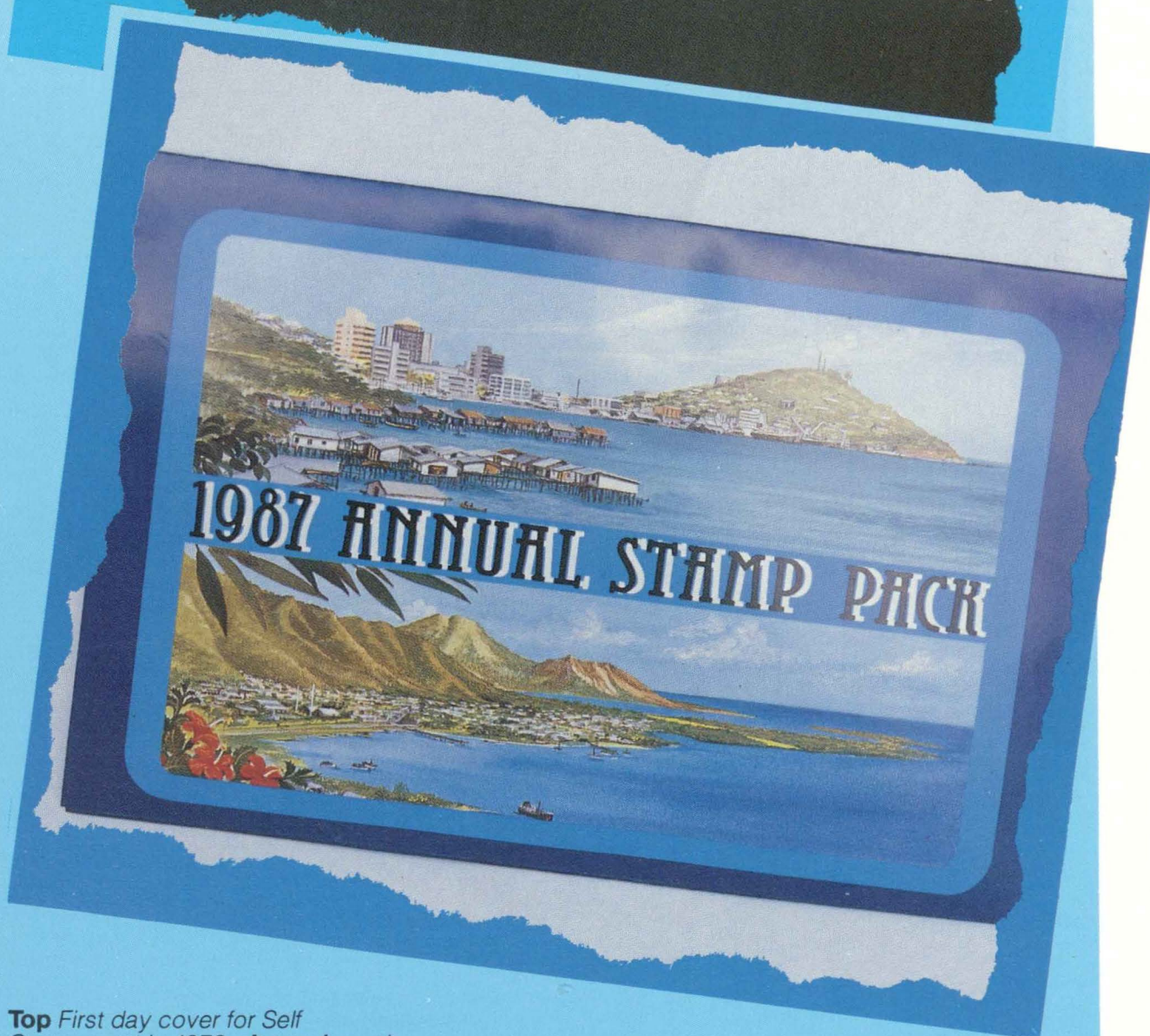
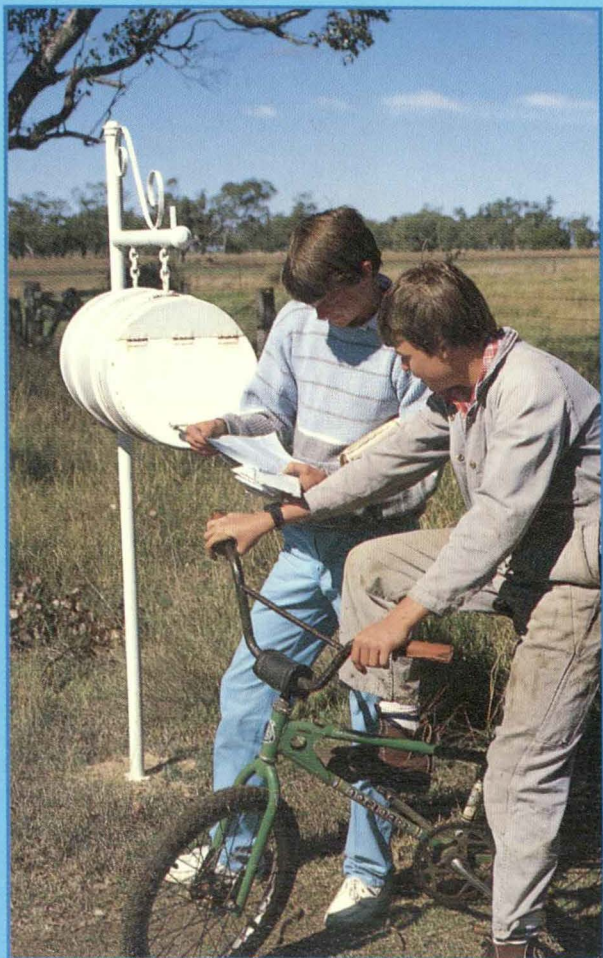
The Swiss firm of Courvoisier prints a large percentage of the PNG stamps. The two favored printing processes used are gravure and litho. Printing by the best firms is expensive but it pays off in high quality stamps with the vibrant colors we all know.

Because they are literally printing money, the printers have to observe tight security. All stamp sheets are carefully checked and the presses are sealed overnight to prevent some enterprising employee running off a few after hours! The printing plates are sealed and carefully guarded; they are



destroyed once the issue is completed. The delivery of stamps from the printers must be by security consignment. As release dates have been publicised, all post offices must have supplies by that date. The logistics of distribution alone are quite a feat. With the stamps are First Day covers, pre-stamped envelopes, presentation stamp packs and stamp folders. Graham has several of these as well as aerograms to his credit, and he has produced Christmas cards for the Post and Telecommunication Corporation.

PNG's world class stamps truly are model ambassadors. They are attractive, do their job well, are highly respected and admired wherever they travel and are eagerly welcomed into the homes of those who meet them. To overseas friends who know PNG, they surely must bring back the scent of frangipani, the song of the birds and the never-to-be-forgotten voices of children singing: "Jungles and rivers, white coral sands, this is my country, this is my land".



**Top** First day cover for Self Government in 1973. **above** Annual stamp pack cover shows Port Moresby (top) and Rabaul. **left** Douglas and Campbell Briggs, at school in Queensland, receive mail from home in PNG.





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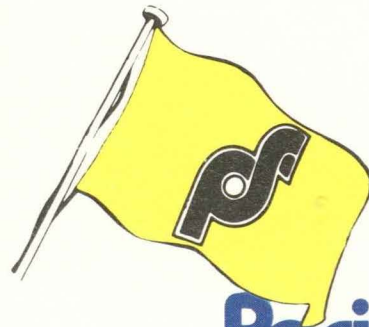
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# Garden in the

**B**eautifully tended gardens are often the first sign of life in Papua New Guinea. Intricate patchworks of carefully organised crops stretch across the valley floors. Terracing systems trace the curves of sheer mountainsides. Tall, stark-white trees, dead from ring-barking, stand out from the greenery of a proposed garden site. The gardens of the Tari Basin, nestled in the Southern Highlands more than 2,000 metres above sea level, are no exception to the rule. From the air, small, circular mounds of soil mixed with ash lie in even rows. They contain young

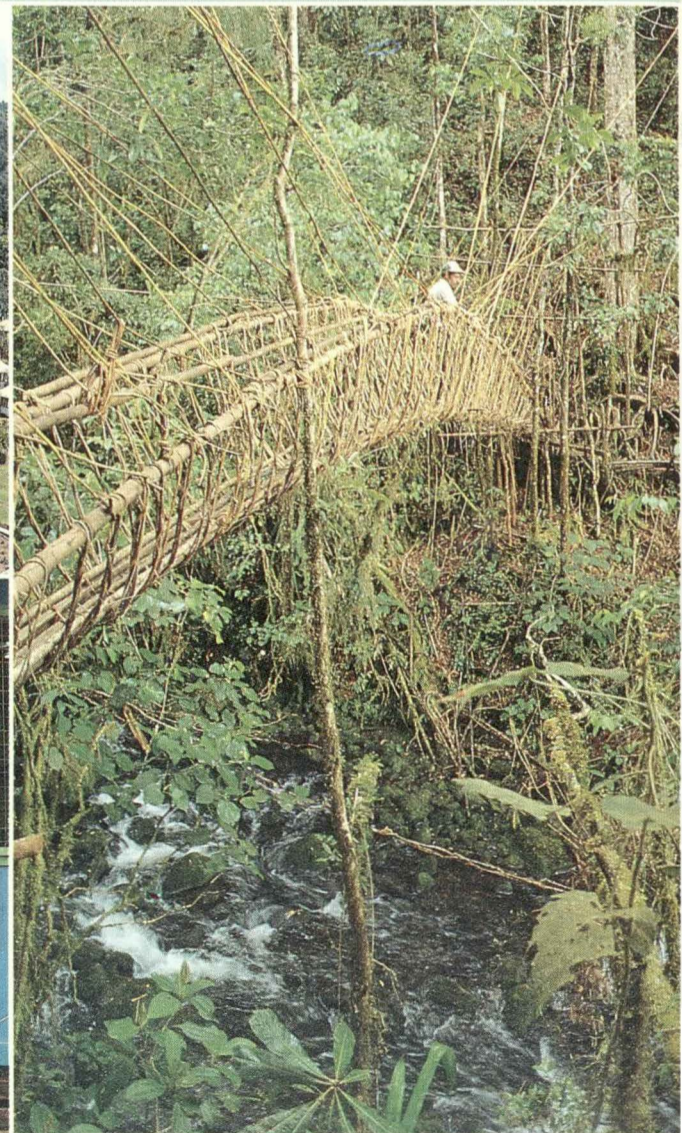
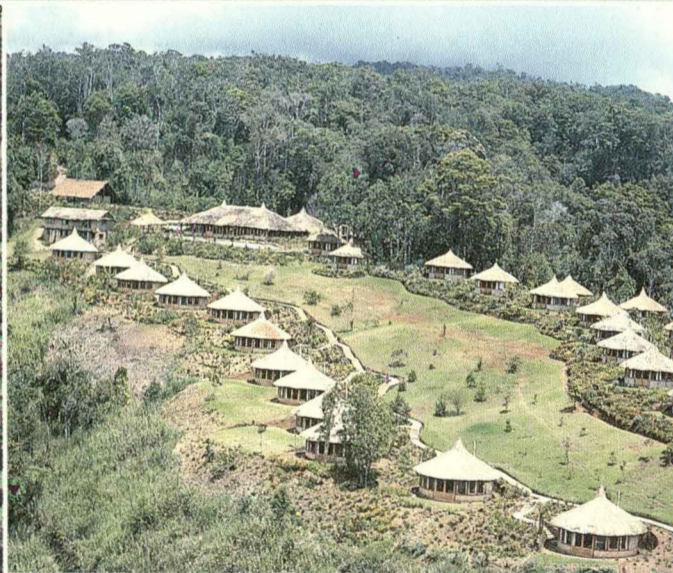
sweet potato plants, the staple food of the Huli, the Tari Basin's inhabitants. Beyond the circles are beds of taro and kaukau. One garden joins another. A fortress-like retaining wall built of mud surrounds them.

Equally attractive are the intricate gardens of flowers surrounding the 40 huts of Ambua Lodge built on a mountainside overlooking the basin, an area shrouded on the south by the Muller and Kanus Ranges and on the north, the Central Range system. Vast windows in each hut overlook a spectacular valley.

To arrive at Tari Airport is to

**Clockwise from far left** Patchwork vegetable gardens; magnificent Ambua Lodge hugs the mountainside; classic bridge; trade store at Tari.

**Story and photographs**



# ms Vist

experience a colorful extravaganza. Local women, their huge, beautiful bilum bags tied across their heads, gather to watch the planes arrive. Howard, one of the lodge's drivers, gives a greeting one might expect on a tour of London or Paris.

"Hello, my name is Howard and I'd like to welcome you to the home of the Huli." We drive off in one of the lodge's four-wheel drive vehicles.

"The Tari Basin is 2,500 square kilometres in area and home of approximately 38,000 Huli," Howard continues, with a profusion of facts and figures. We cross the first of six

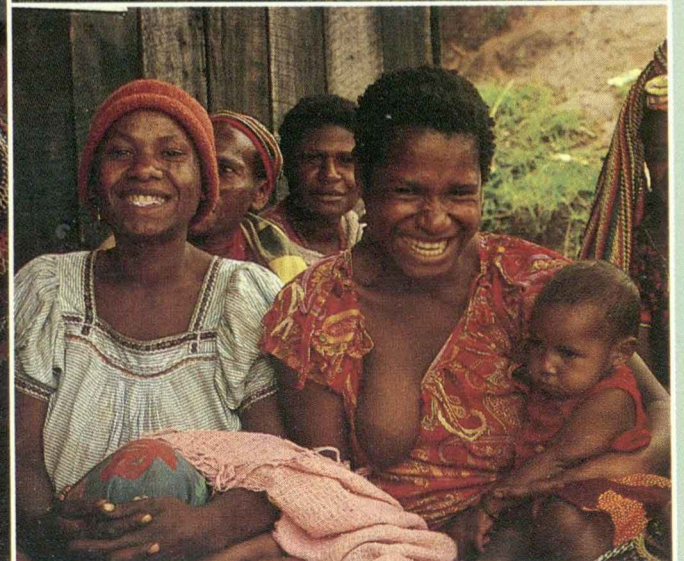
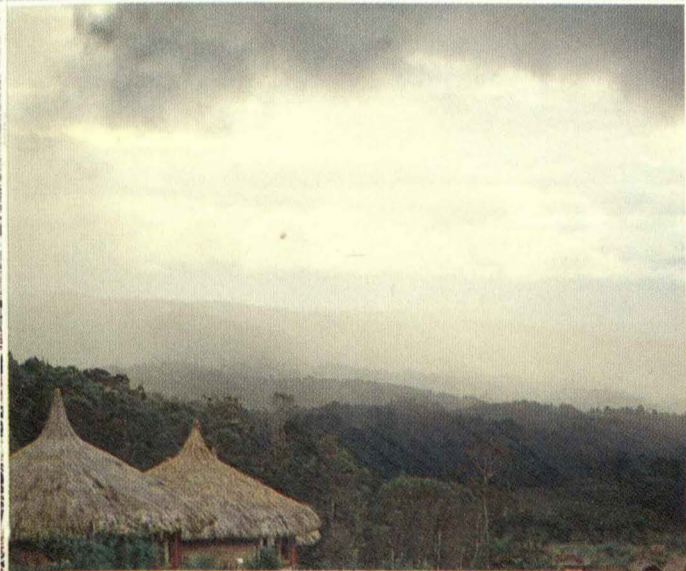
bridges ("built by engineers after World War II") and pass the Tari Women's Kai Haus (open, the sign says, from 10am to 4pm).

A ferociously rugged terrain ensured the Hulis' relative isolation until 1935 but they quickly became one of the best known groups in PNG. Now, little more than 50 years after the first patrol broke through the ranges, the main Highlands Highway connects Tari with the coastal town of Lae, creating one of the main routes for commerce in the country.

Despite much development, settlements remain unchanged.

by Liz Thompson

**Clockwise from below left**  
Ambua lodge overlooks misty valleys; a Huli woman's 'bilum' (bag); morning mist blankets Tari Basin; Huli women at airport; Huli woman at market.



Walls made of packed mud and wooden stakes stand about a metre high around the huts. Men's and women's houses are scattered throughout the gardens, the distance between bearing witness to the general mistrust and suspicion of the female, common to Highland cultures. Separate houses ensure that the men are not 'weakened' by continual contact with the women. Unnecessary contact was thought to provoke sickness and menstruating women were considered dangerous.

Trenches up to five metres deep, dug with wooden

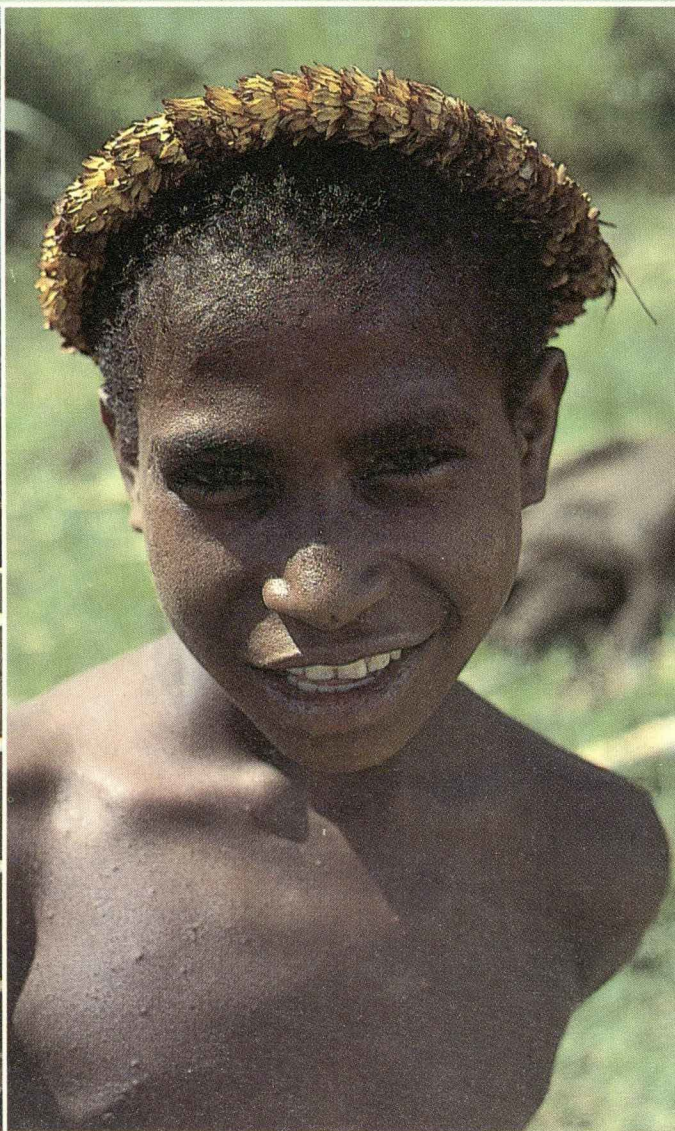
digging sticks, cross the floor of the basin between the huts and gardens. Designed for crossing great distances unobserved, they were often used when battle was more frequent. Coffins were built on mud elevations and surrounded by red and white spikes. Red represented bloodshed and white was the compensation to be paid if death was inflicted through warfare. Powerful payback systems, similar to those in most parts of the country, usually ensured the compensation demands were met. Despite these aggressive characteristics, an air of serenity pervades the

natural environment.

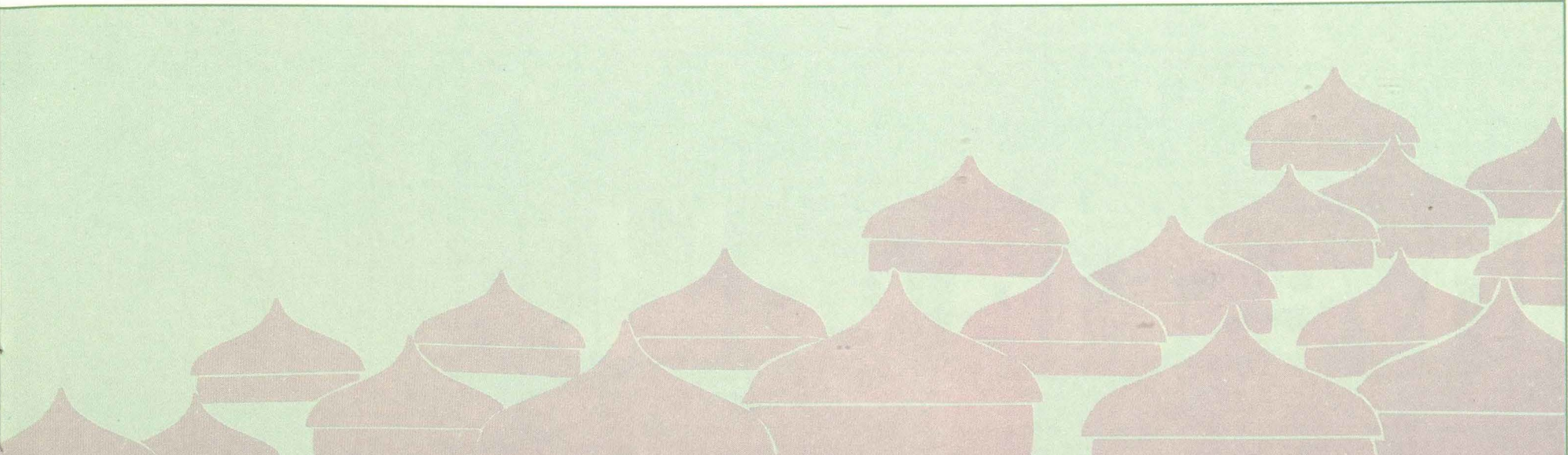
Glancing across the silent, continuous ranges which form a backdrop to the rich green valley, it is easy to imagine what it was like about 100 years ago. It is also easy to understand why so many Highlanders believed that this was the world, that they were the earth's only inhabitants.

Standing stark against a cloudy sky, the upper branches of alpine forest fall into silhouette. Pandanus, pointed and angular, squat like sentinels at their feet. Soft-green moss forest is highlighted by the purple heads of wild orchids. Waterfalls crash end-

**Clockwise from below** Distinctive Huli graves; Huli child; wigmen practise archery skills; abundant vegetable gardens; Huli women.







lessly over clifftops and into ravines. Rivers are crossed using narrow arched bridges of tree branch, bamboo and vine. Long winding pathways mark out numerous walks through places so still and silent the sounds of birds ring in the air.

The growling calls of birds of paradise echo in the trees. Their distinctive call is not altogether different from that of a low-key machine gun. Renowned for their bird life, the forests are full of exotic species. Names such as smoky streaked honeyeaters, Papuan scrub wren, tiger parrots, orange crowned fairy wren

and crested bird of paradise fall from the lips of avid bird lovers in a torrent of uncontained excitement.

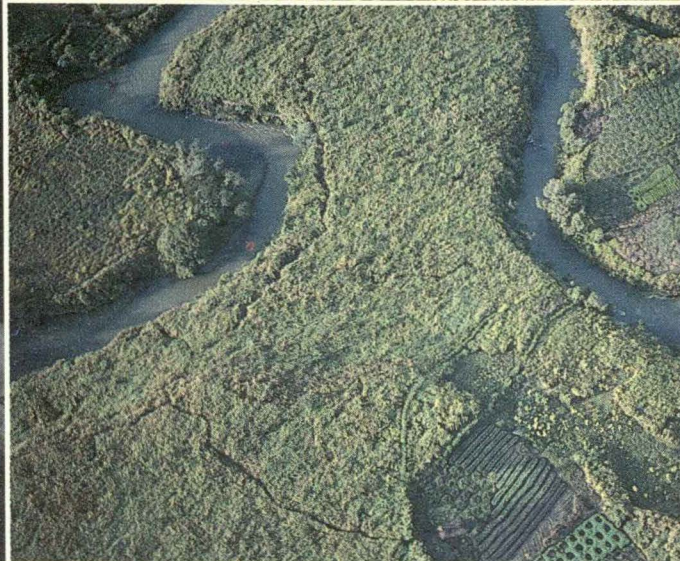
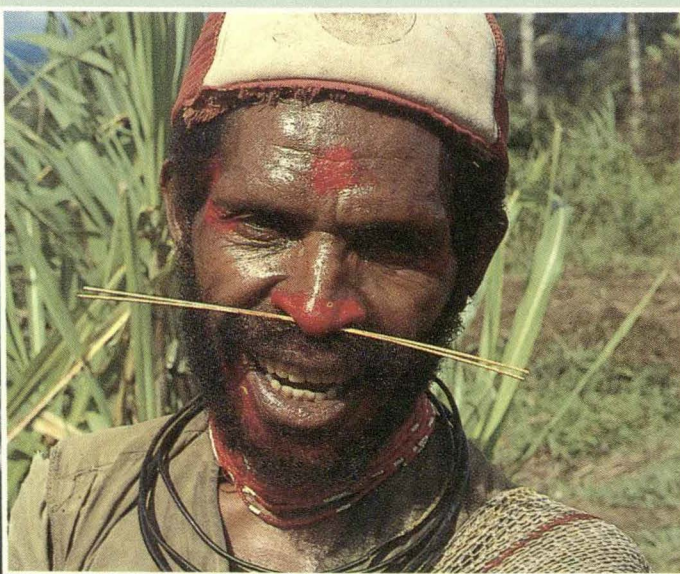
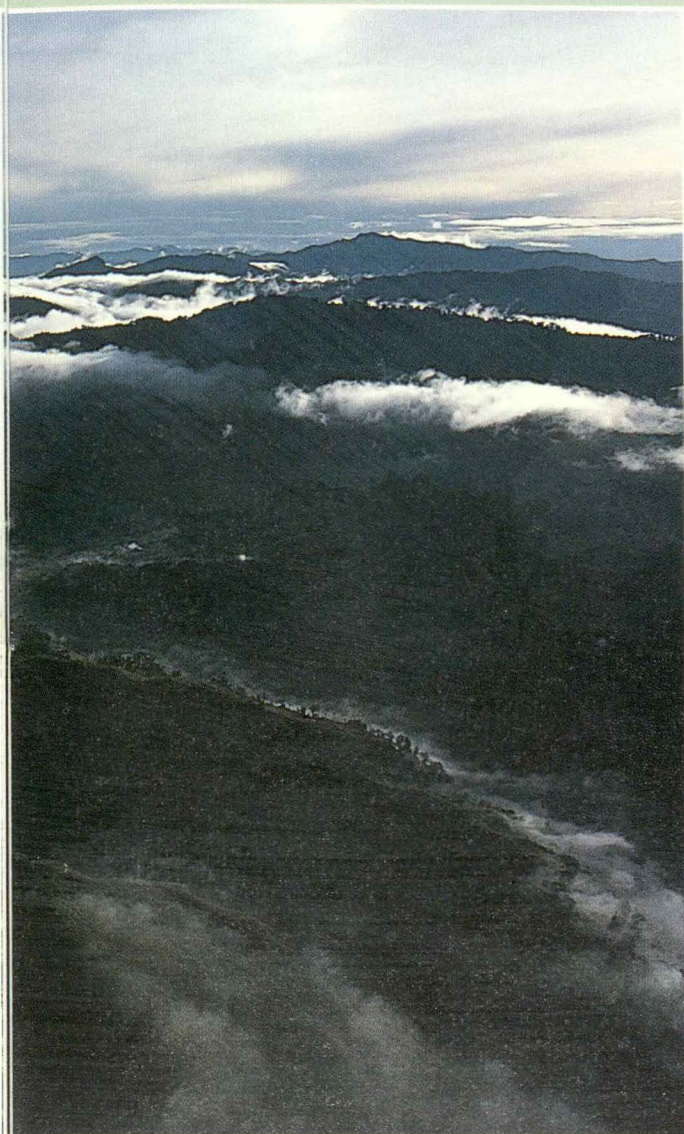
Ambua Lodge and Tari are ideal for those with an interest in PNG's culture and traditions. The Huli are a proud race of people. Those I met were keen to teach visitors their way of life, to introduce them to the bird life and the beautiful paths they have carved in the landscape. The lodge caters for the days of leisure; huge roaring fires at night and a view of receding mountains, becoming progressively darker grey, laced with delicate mists and cloud that are conducive

to rest and contemplation. After the heat of coastal regions, the cool climate, high rainfall and rich, lush forestation are an appealing change. And the Hulis, despite a tradition of warfare, make you more than welcome.

**Air Niugini operates regular services to Tari from Port Moresby and other centres.**



**Clockwise from below** Waterfall at Ambua Lodge; well tended vegetable plots; morning cooking fire smoke blends with the mist; makeup and nose decoration is normal day wear for Huli men.



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Story and photographs by Keith Briggs

# Kundu

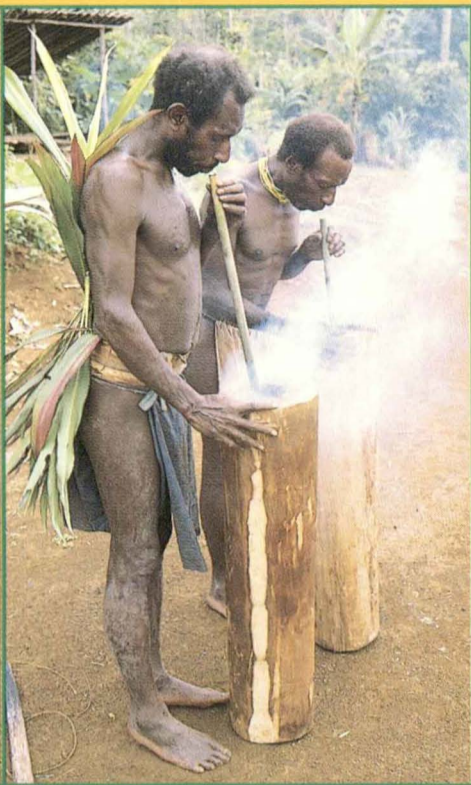
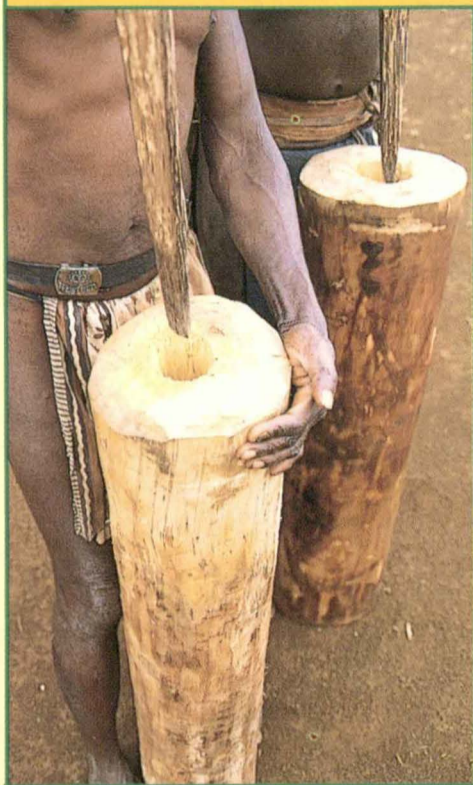


Left & inset Kaluli dancers play and tune their kundu drums.

**A**round the world, certain crafts seem to be concentrated in a given place. The Black Forest area in Germany is known for its clockmakers and the glassblowers of Venice have become world famous. Some villages in Papua New Guinea are known for the dogs they breed, the stone clubs they make or other small distinctions. In the Southern Highlands Province, the men of Wasu Village have achieved fame as the most prolific drum-makers in their language group.

The kundu drum can be found throughout the country and is perhaps the universal musical instrument of PNG. It comes in many shapes and sizes, from short and stumpy specimens to those more than 1.5 metres long, found around the Nomad River in the Western Province.

Whenever I see PNG craftsmanship I wonder how these things were made before the introduction of steel tools. The answer is always a fascinating revelation of ingenuity and the clever use of natural materials.



**Top left & right** Hollowing out drum blanks. **below left** Burning out the centre. **below right** Carving the outer shape.

Only a few trees are suitable for producing the blanks for making kundu drums. Traditionally, sharpened crowbar-like pieces of black palm were used to gouge a depression in the heart wood at the end of the upstanding blank. Glowing charcoal from a hard bark was crumbled into this pocket and then air blown onto it using a bamboo tube until the fire glowed and roared like a miniature furnace. A good supply of tubes was kept on hand as the heat soon consumed them. The drummer carefully guided the glowing mass until the centre was burned out parallel with the outside. The hole was tapered, with the outer ends being wider than the centre. When ash and spent charcoal

blocked the inside working area, the drummer used a black palm bar to pound the debris. The resulting powder was blown out with a bamboo tube. The process was repeated until the hole was half-way through; the blank was then turned over and the operation continued until the holes met in the centre.

Nowadays bush knives with extended black palm handles are used to carve the char out of the tube. A blazing bamboo torch is passed through to burn any splinters and irregularities, then the inside is smoothed with the long knife. The outside of the instrument is finished using a normal bush knife.

As soon as the outer shape is formed, the maker closes the

**Above** Using a blow pipe to purge powdered charcoal and ash.

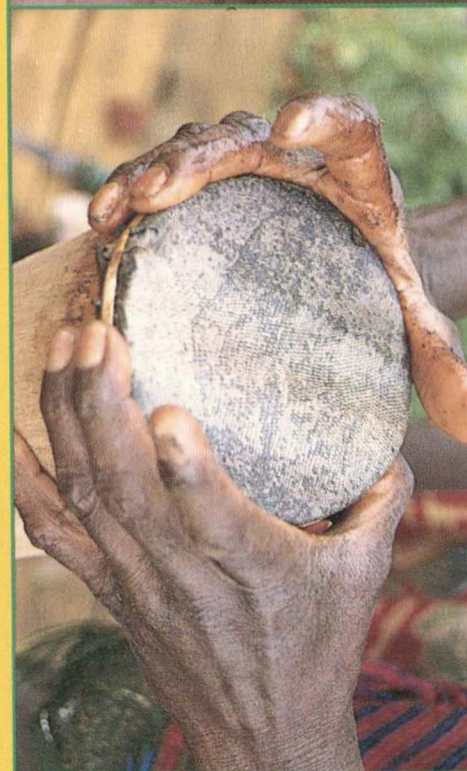
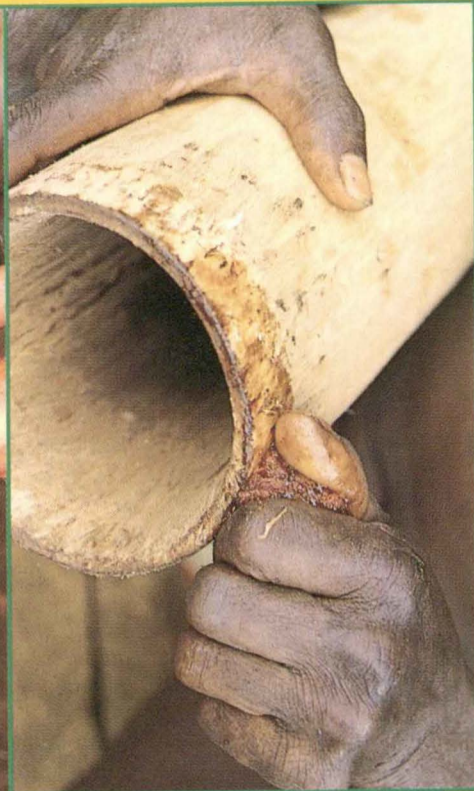


**Above** Lizard skin is removed from storage in ash.

unfinished drum with lizard or snake skin to discover whether it will 'speak' well before he puts any more time or energy into it. Those that will not speak well are discarded and the skin kept for future use.

Lizards are hunted at night when they lie along the top of tree limbs to avoid detection. The skin is carefully removed and resembles a garment with four short sleeves. As the drum head uses the belly area, the skin is slit along the centre back. It is folded and kept in a bamboo tube compacted in ash with the ends sealed, to prevent cockroaches eating holes in it. Removed from the tube the skin is dusted off then soaked in water for softening.

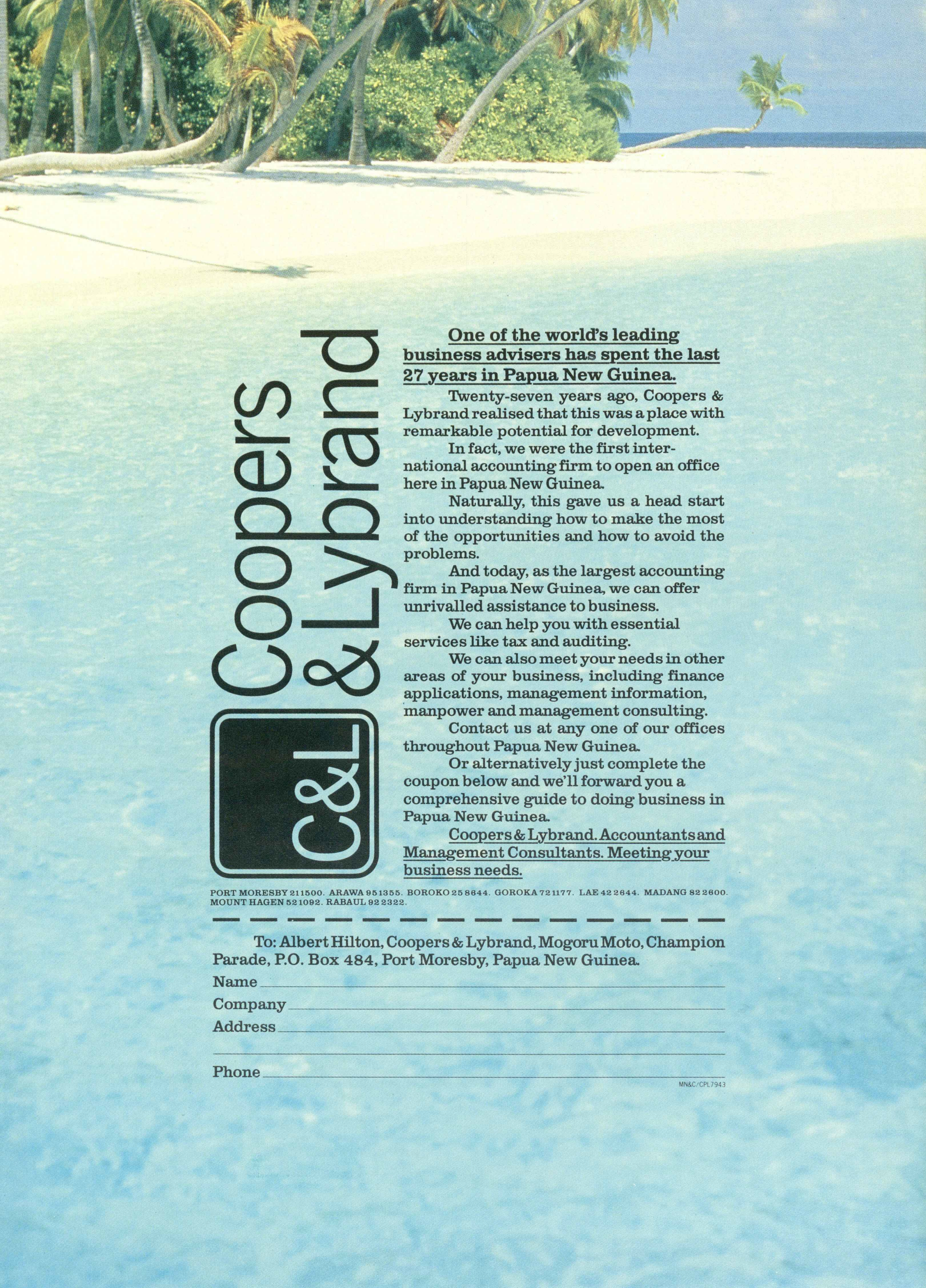
Natural glue is used to attach the skin to the drum,



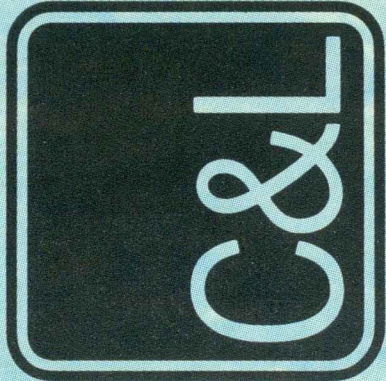
**Top left & right** Preparing and applying natural glue. **bottom left & right** Fitting lizard skin and removing scales.

made when the bark of a thick vine is pared down to the sappy underbark. A wad of this sticky fibrous extract is squeezed and the exuded glue then smeared around the mouth of the drum. The skin is stretched over the mouth and, precisely fitting cane bands are drawn over to hold the skin securely. Any wrinkles are smoothed by pulling at the circumference of the skin while the glue is still elastic. The glue is dried by holding the drum head over a low fire or subjecting it to heat from a bamboo torch.

Once the glue has set, all scales are carefully scraped off with a fingernail to ensure the knobs of beeswax adhere properly. Small pellets of beeswax are rolled and stuck



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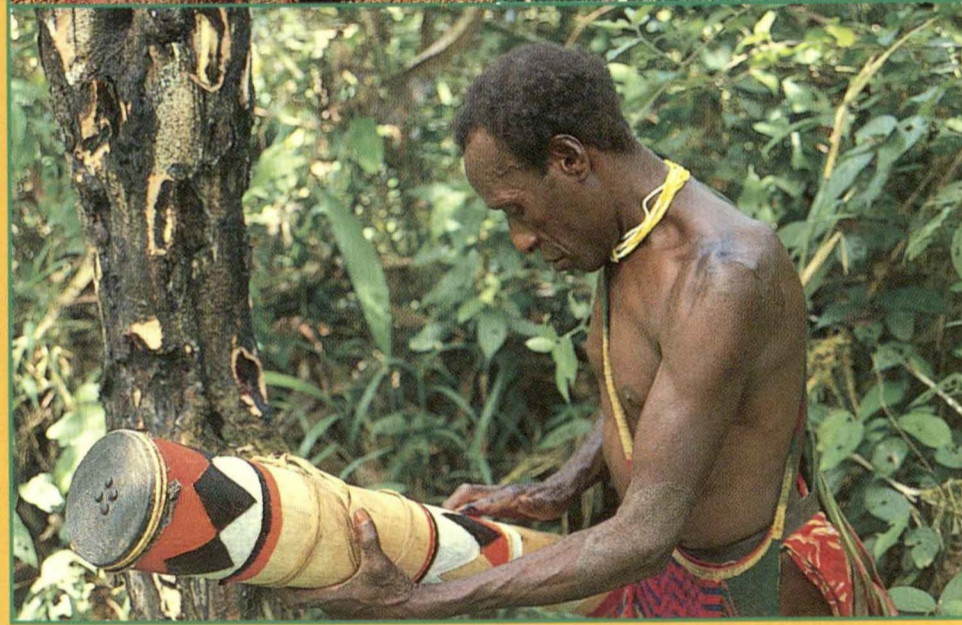
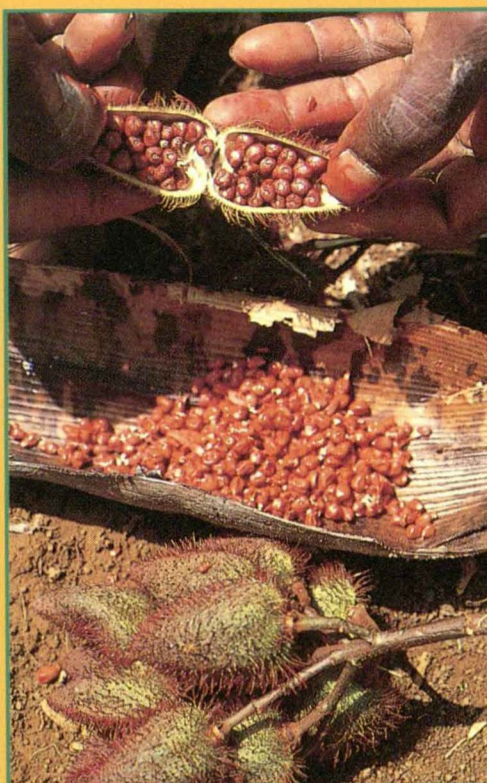
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**Top left** Sticking on beeswax for tuning. **top right** Smoothing with 'sandpaper' leaves. **bottom** Carving designs on finished drum.

onto the skin. The drum is now roughly tuned by changing the shape or position of the beeswax and by huffing on the skin to warm it. If it promises to speak with a clear ringing voice the maker is satisfied and begins to carve the pattern on the outside. Traditionally this was done with a piece of flinty stone split to form a fine sharp edge. It is now achieved with a small steel knife. 'Sandpaper' leaves are used to give the whole job a smooth finish.

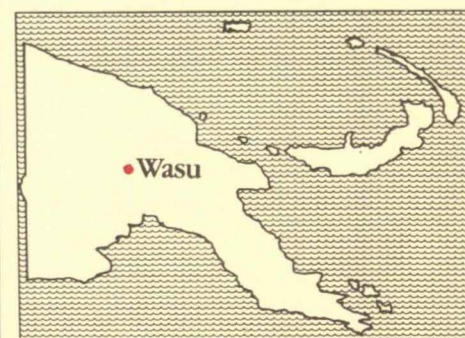
The drum is now decorated with natural dyes. Traditionally, red coloring was prepared by grinding a soft stone and mixing it with water. Today seeds from an introduced tree are preferred because of their convenience and vivid color. The tree pods are split and the seeds mixed with a little water to release the bright red dye which is applied using a brush

made by chewing or pounding the end of a flat sliver of stick.

Light coloring is created from a special clay, which dries to a light blue grey. Black paint is obtained by taking thin slices off the bark of a unique tree, causing the dark sap to ooze from the wounds. This sap causes large painful sores if it touches soft skin. Although applied by a tough calloused finger, the painter washes his hands as soon as the job is done. The sap turns new pink or white wood to a rich brown which, after 20 minutes or so, becomes quite black.

A sling or strap is woven of natural fibre and fitted to enable the drummer to grip the drum tightly. The kundu is then ready to entertain and stir the emotions with its distinctive booming note.

**Top left** Red dye seeds. **top right & bottom** Putting on the finishing touches.



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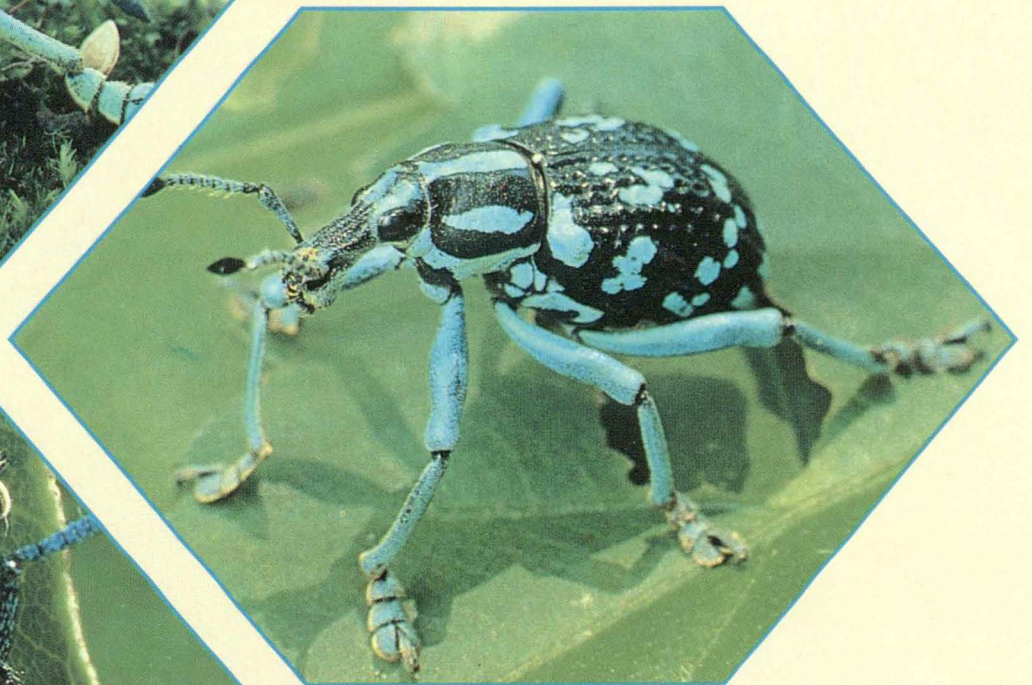
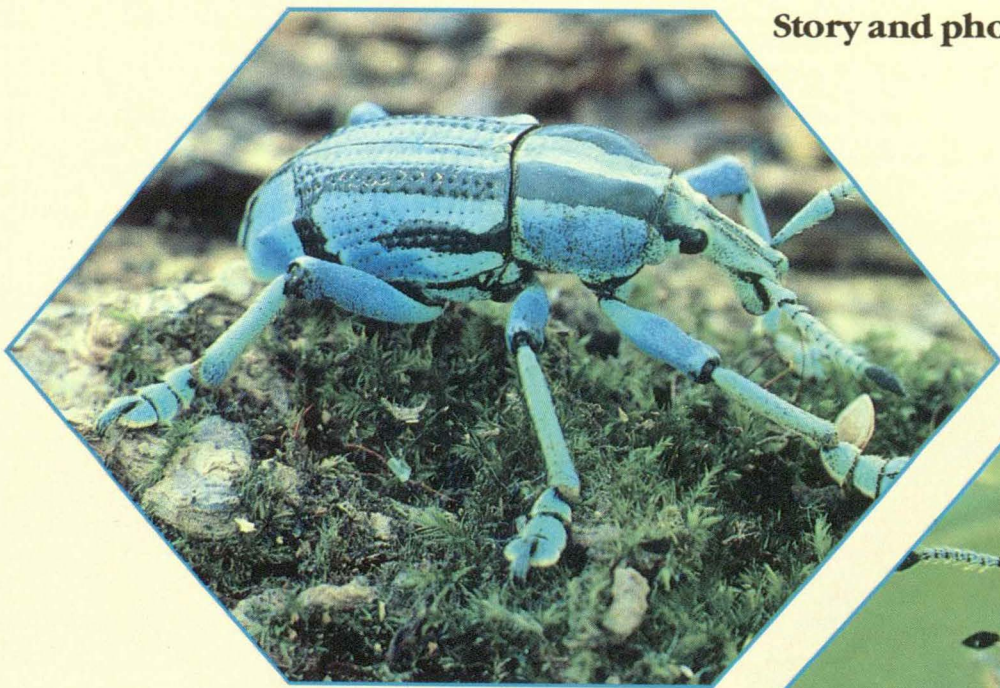


# Shell



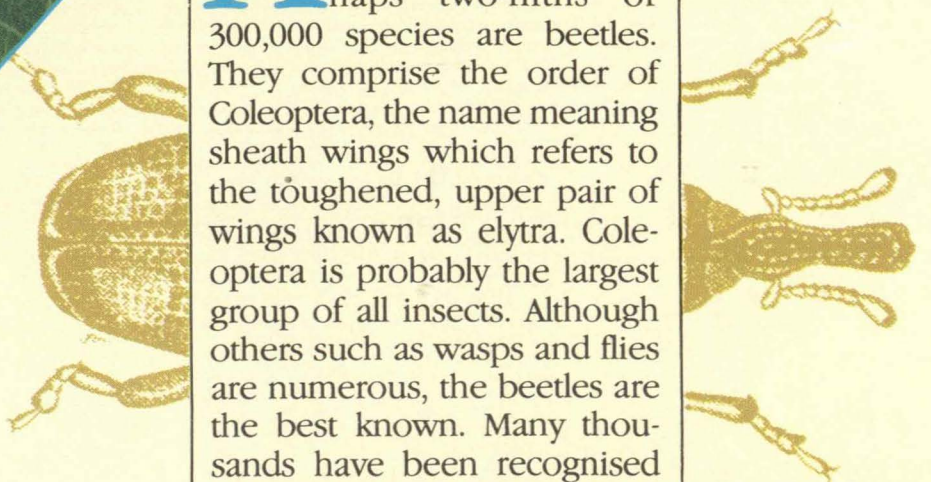
# WONDROUS WEEVILS

Story and photographs by Michael Parsons



Weevil species of varying colors, patterns and locales. **Top.** *E. geoffroyi* from Watut. **right** *E. brassi* from Lelet Plateau, New Ireland. **bottom** Unidentified, from Port Moresby.

**A**bout three quarters of all animals on earth are insects. Of these, perhaps two-fifths or 300,000 species are beetles. They comprise the order of Coleoptera, the name meaning sheath wings which refers to the toughened, upper pair of wings known as elytra. Coleoptera is probably the largest group of all insects. Although others such as wasps and flies are numerous, the beetles are the best known. Many thousands have been recognised by science, several hundreds of species being identified each year.



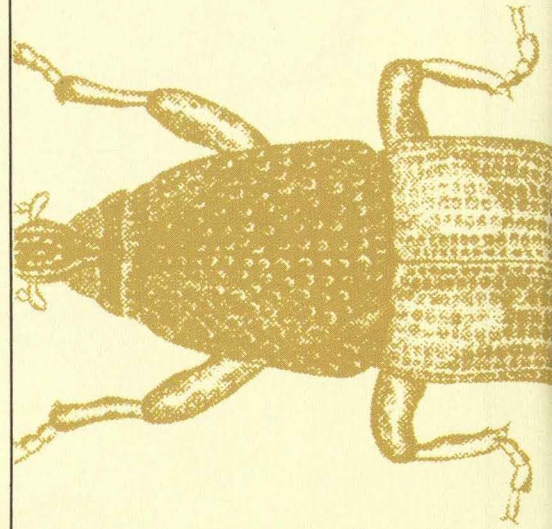
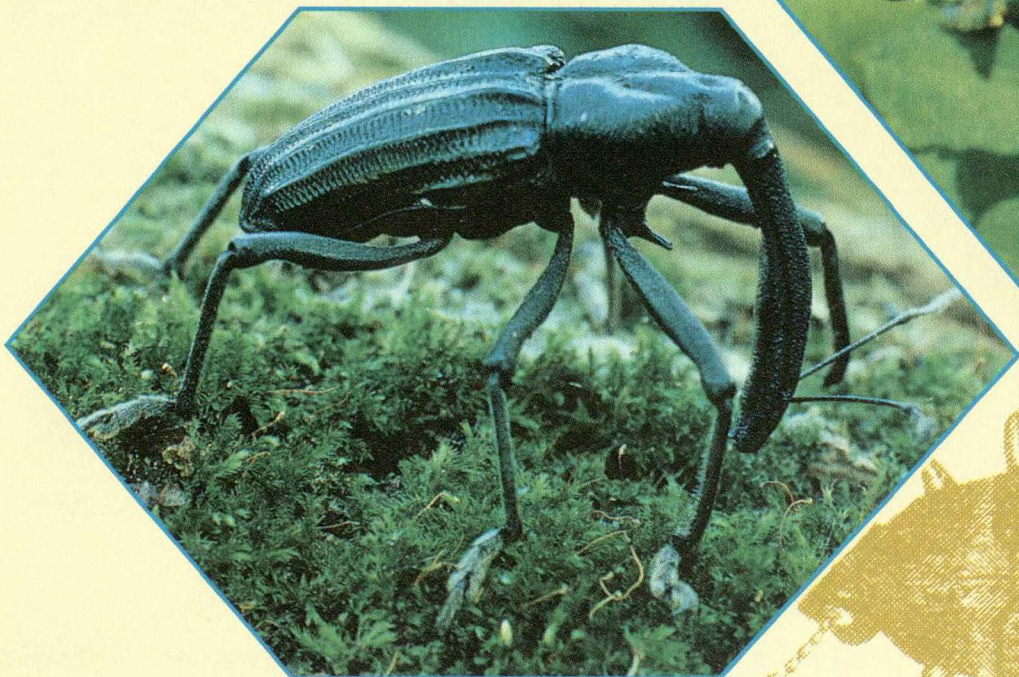
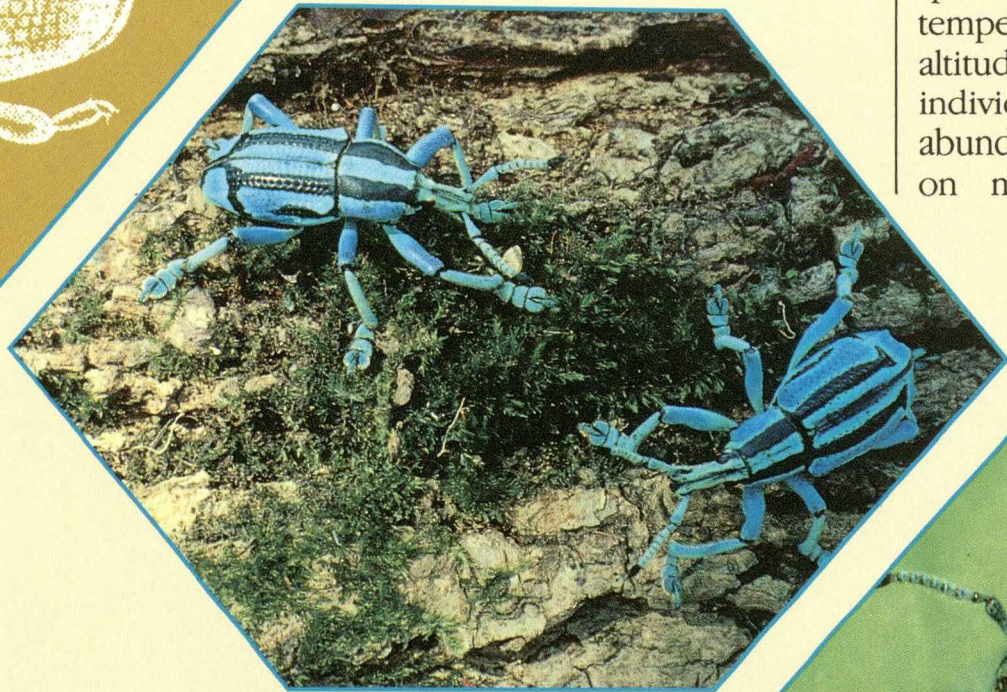
**Top** Two *E. geoffroyi* weevils size each other up at Watut. **right** A New Ireland *E. brassi*. **bottom** Elephant-nosed *V. oberthueri*, destroyer of pines at Bulolo.

Beetles have been classified into more than 100 families, and representatives of most are found in Papua New Guinea. Probably more than 25,000 species exist on the island and its smaller satellite archipelagos. Of all PNG beetles the weevils are perhaps the most popular with coleopterists. A major group belongs to the Curculionidae, one of several families of the superfamily Curculionoidae. The Curculionidae numbers about 40,000 species worldwide, possibly the largest family of animals in the world. Perhaps this is why most PNG weevils are not well-known scientifically - many are difficult to identify and still lack names. They are so numerous that a number of specialists would have to work

for years before all weevils became well-known in PNG.

Weevils vary widely in size and form. Many are long lived, hardy and difficult to kill and have well-armored bodies. All are associated with plants, mostly woody varieties. The various species affect all parts, including seeds, nuts and fruits, and a few are leaf-miners. The anthribids, which have very long antennae and can be confused with longicorns or cerambycids, are wood-borers or live in seeds. The brenthids are long and slender and are also wood-borers. The bark beetles are much smaller, more or less cylindrical, and live under bark or in plant stems.

Many PNG weevil species occur in the lowlands, usually with a few individuals of one species together. In the more temperate climates at higher altitudes, species are fewer but individuals of one kind may be abundant. Some weevils live on mountain peaks 2,500



CIENTE

metres above sea level; large numbers occur widely in the lower altitude areas. The lifecycle for most common lowland weevils is probably two to six months. Some species can complete five or six generations a year.

Coleopterists believe most beetles reached PNG from the Asian mainland and islands to its west; a few came from Australia. These invasions took place over a few million years. During this period, various groups, especially the weevils, evolved genera that are either unique to or characteristic of PNG and nearby areas. Clear relationships exist among PNG beetles and those in New Caledonia and New Zealand.

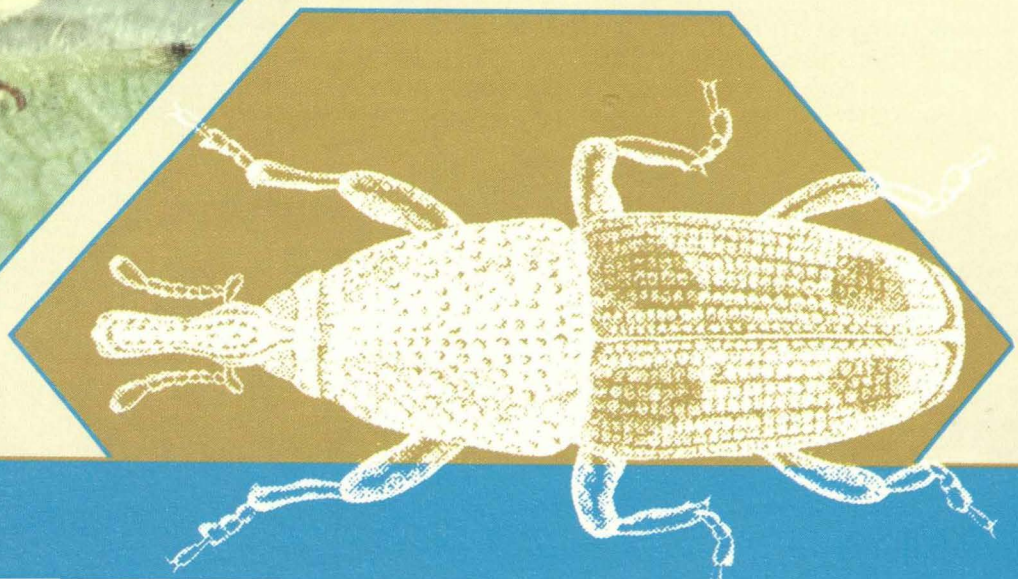
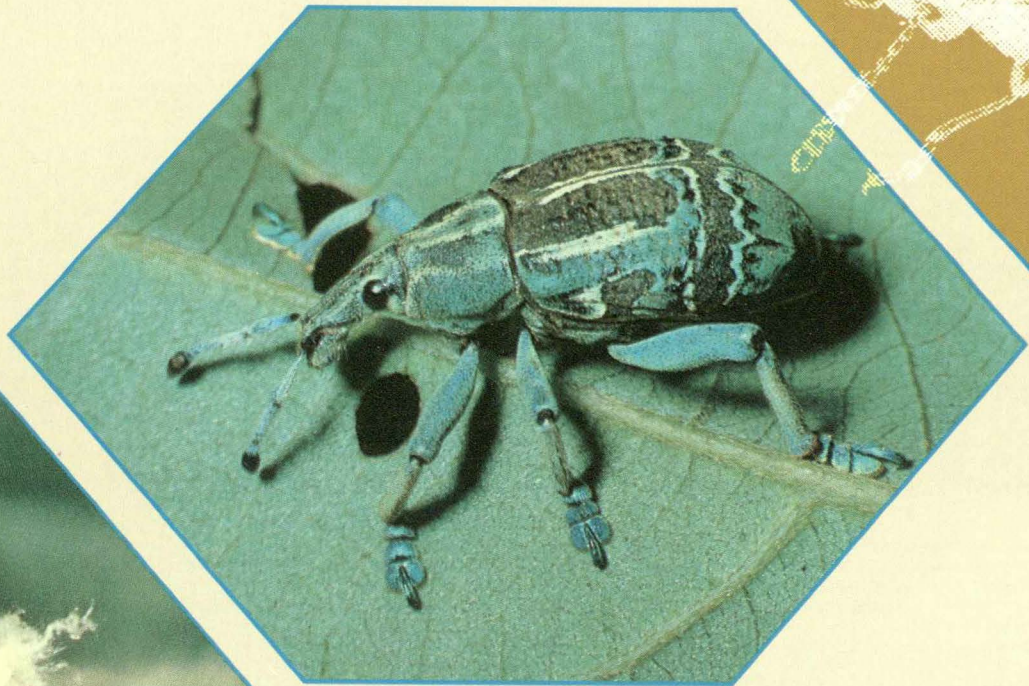
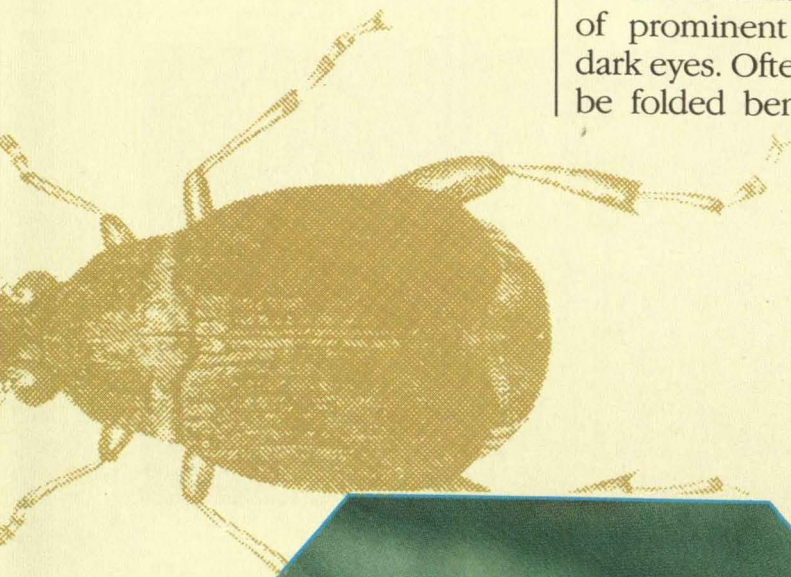
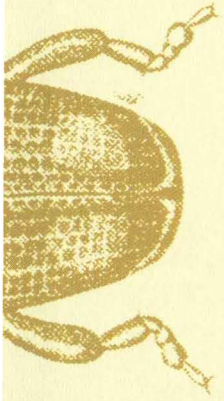
The beetles have evolved to look unappetising to birds. The obvious characteristic of many weevils is their rather endearing long snout, known as a scape or rostrum. This may be as long as their body, the mandibles (jaws) being located at the snout end. This feature is enhanced by a pair of prominent beady-looking dark eyes. Often the scape can be folded beneath the body

when the weevil is resting, fitting into a special groove. The body is usually rounded, but some weevils are elongated and may be adorned with roughened tubercles, nodes, ridges or pits; others may have hair or brightly colored scales. Some weevils have very long legs and are quite active, even flying, while others have shorter legs and are more sluggish. Those in the latter group may drop to the ground and sham death while retracting their scapes and legs to mimic falling seeds. Members of the weevil subfamily Cryptorhynchinae are especially adept at this trick, as their name implies.

Weevil larvae are white with dark brown heads. They are strongly arched, being somewhat C-shaped, so that the head and legs are close to the abdomen. Some are edible and are said to have the flavor and consistency of mild cheese when roasted over an open camp fire.

Economically weevils are of great importance. They often provide essential links in the food chains of various habitats.

**Top** A specimen of *E. geoffroyi* from Brown River near Port Moresby. **left** Unidentified specimen covered in protective white waxy powder near Bulolo.



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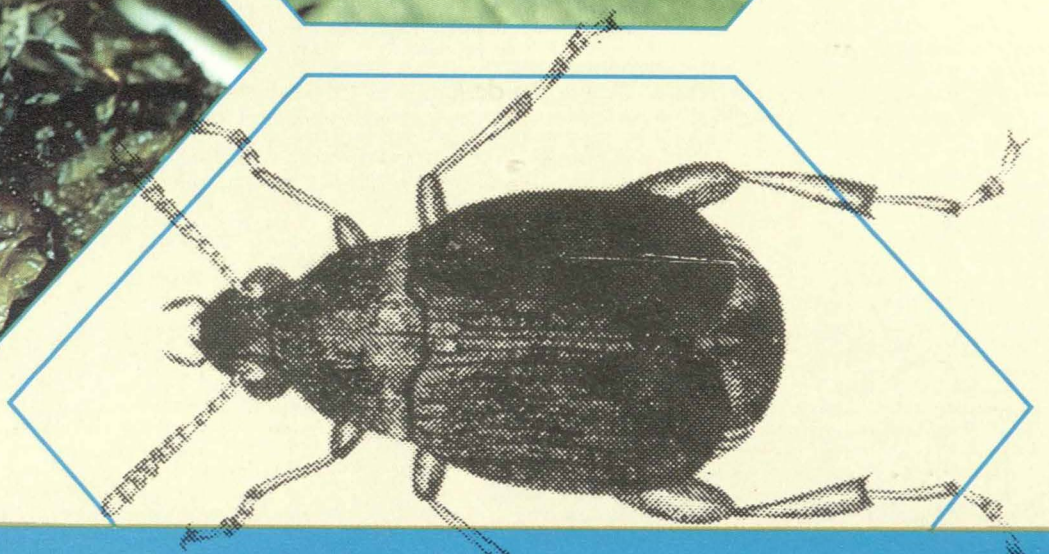
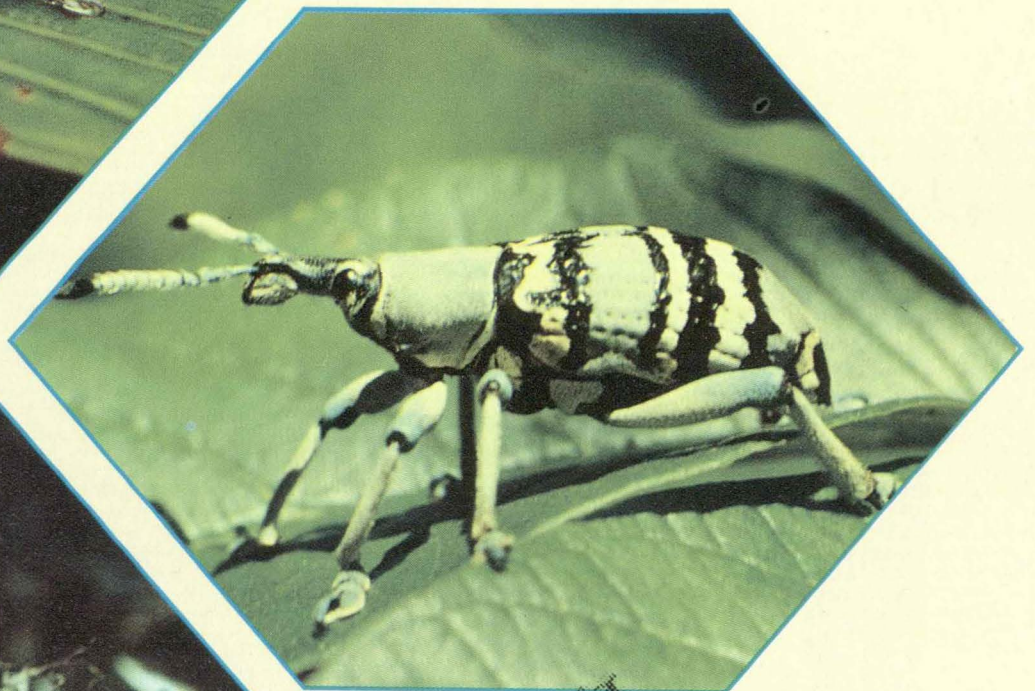
Certain weevil groups are scavengers and break down dead plant materials to form humus and soil. However, many weevils are considered pests. As plant feeders, some weevils can defoliate plants, although their actions are usually less significant than caterpillars. Larvae of many weevils are root-feeders, while the adults also feed on buds, leaves and flowers. Major PNG pests are the Pantorhytes weevils of the subfamily Brachyderinae. Some larvae species attack cacao trees; failure of the cocoa industry in the Popondetta region is largely attributed to these. *Pantorhytes plutus* has become a plague in cocoa plantations in New Britain. Other species attack peanuts and coffee crops. These, like most pests in

PNG, are native species, each usually limited to their own geographical region.

On the positive side, the PNG oil palm industry owes much of its success to a miniscule beetle. Before the introduction of the oil palm weevil from its native Africa, the crop did not flourish and had to be hand-pollinated as few indigenous PNG insects were able to perform the job. After an environmental assessment, the palm weevil's introduction was a great success. In a similar success story, a small black weevil was introduced to PNG in 1982 from Brazil, to control the introduced South American water fern, salvinia, a weed which threatened to choke much of the Sepik River.

Trees may be killed by weevils, especially where a single timber species is planted in huge stands. Trees can be killed by weevils carrying the spores of fungal diseases. The culprits may be

**Top** Member of the *Eupholos* species at Varirata National Park, near Port Moresby. **right** One of the many Bulolo-Wau resident weevils, *E. nickleri*. **bottom** A camouflaged species at 1,800 metres altitude near Wau.



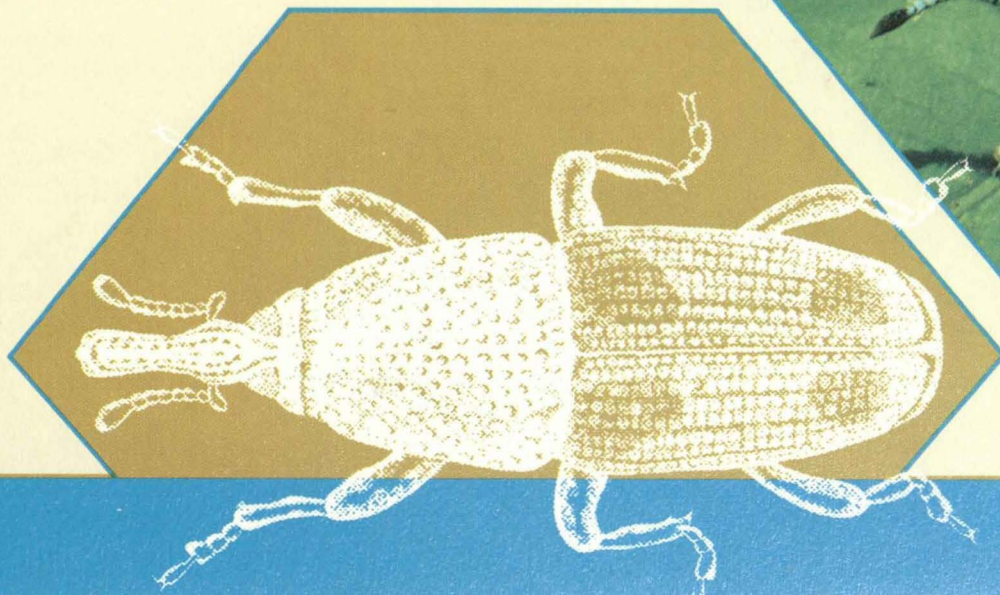
**Top** Another camouflaged species from 1,800 metres altitude near Wau. **left** A neighbor with a firm grip on thorny perch. **bottom** A handsome *E. geoffroyi* at Watut.

as little as 2-8mm long from the subfamily scolytinae or ambrosia beetles. Some bark beetles are serious pests of the huge native *Araucaria* pines.

An unexpected benefit of weevils in PNG is their direct monetary value. Because there are so many spectacular species, they are highly sought after by collectors. The PNG National Government has established a clearing-house, known as the Insect Farming and Trading Agency, which assists PNG nationals in selling beetles and other insects to overseas buyers. The agency commonly markets weevils that are abundant pest species in various PNG plantations, so turning some losses into profits.

The Leptotiinae subfamily includes some of the largest species in PNG, and also some of the most beautiful beetles in the world. The genus *Eupholus* or painted weevils includes some particularly exquisite species which are covered

with brilliant pigmented or metallic scales. Members of *Eupholus* are large, often reaching 18-23mm in length. The largest leptotines belong to the genus *Gymnopholus*, the 600-plus species which occur only above 900 metres altitude in the PNG mainland. Many are large, flightless and extremely long-lived, surviving more than five years. Those that inhabit forest and alpine grasslands above 1,500 metres - usually in the moss forest zone on high ridges and summits at 2,000-3,600 metres - may have plants growing on their backs (algae, fungi, lichens, liverworts and mosses). Minute animals (protozoans, rotifers, nematode worms, plant-feeding mites and spring-tails) also can live among these plants.



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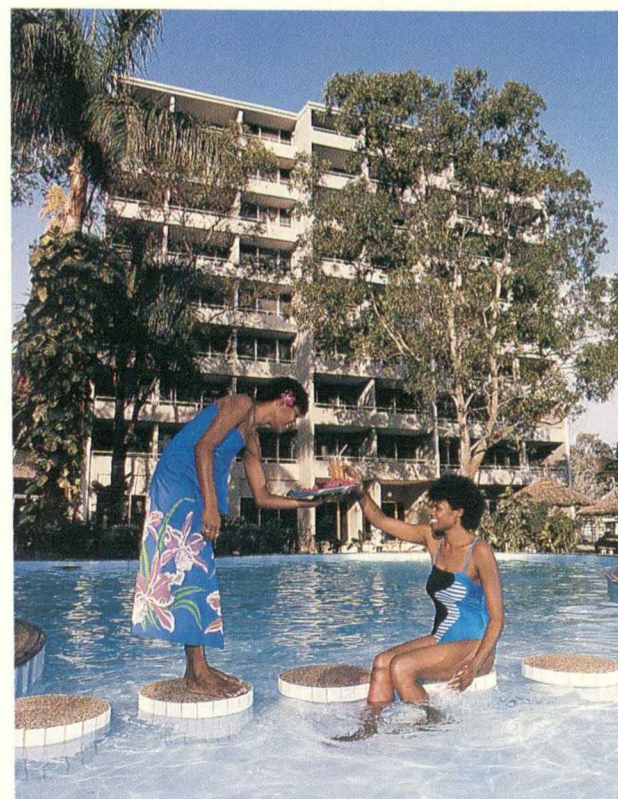
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