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spectacular land
unscathed by the march
of time-an untamed
kaleidoscope of natures handiwork

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No. 31 September 1981

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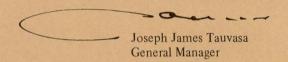
Welcome aboard

Papua New Guinea's long association with de Havilland aircraft will enter a new era when an Air Niugini flight crew takes delivery at Downsview, Ontario, of the first of three Dash 7s. This aircraft, capable of carrying 50 passengers and endowed with superb STOL (short take-off and landing) capability, is ideally suited to flying conditions in Papua New Guinea.

The first Dash 7, scheduled to go into domestic service at the beginning of December, is powered by four Pratt and Whitney engines which, I can assure you, are remarkably quiet.

Back in the fifties and early sixties a common sight in New Guinea skies were de Havilland single-engine Otters. These were succeeded, in the mid-sixties, by Twin Otters which are still providing sterling service for Papua New Guinea's third level commuter services.

More than 20 airlines are now either flying the Dash 7 or awaiting delivery. All three Air Niugini Dash 7s are expected to be in service by mid-1982. We invite you to book a seat on the Dash 7. Its high-wing design makes it a great way to see our magnificent scenery.





5 ANEMONE HARMONY

Most fish fear the sea anemone but some make it their home for life



9 BUBBLE TROUBLE

Before bathing in the hot springs of Manus check to see if it has a guardian spirit



13 PIGGY BANK

A Catholic father writes of the Enga people where pigs are valuable and pampered members of the community



19 KINGDOM OF NOKONDI

In the land of the one-eyed, one-armed, one-legged spirit



24 WINGED BEANS

You can eat the lot - the bean, pod, leaf, stem and root . . . and it's delicious



29 SMILING THROUGH

A look at what Papua New Guinea is doing in the UN International Year for Disabled Persons



35 TUGIHONO

Scientists are still not decided on the identity of a little black snake the people of Rennell call Tugihono

Cover: Tomato anemonefish (Amphiprion biaculeatus) in sea anemone home. Picture by Chris Prior.



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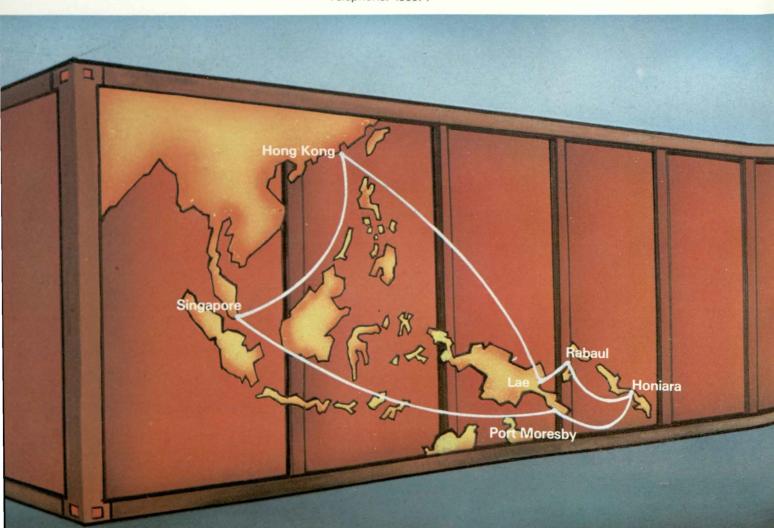
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Anemone Spells danger to almost all fish. But there

The sea anemone spells danger to almost all fish. But there is one fish which, after an initial brief spell of pain, spends the rest of its life darting in and out of an anemone's tentacles.

Story and pictures: Chris Prior

Hovering close to home; inset: tomato anemonefish, the only one which pairs for life

HEY call them anemonefish. Sometimes, because of their bold, strikingly colourful markings, they are also known as clown fish. Scientists describe their lifelong association with sea anemones as 'mutualism', meaning, simply, that both fish and anemone benefit from the relationship.

From my observations, anemonefish benefit more than the anemones. Because anemones are poisonous to fish, with the exception of a few small damsel fish and wrasses, the anemonefish are given great protection. Even the anemonefish is not at first immune to the stings of the anemone. When they are young and first approach the anemone, anemonefish are

stung. They then retreat before repeating the process three or four times. Eventually they gain immunity. Then they can settle down to a life of darting in, out and around their protectors' tentacles.

In aquariums I have seen anemonefish feeding the anemone but this behaviour has not been reported in a natural state. In my fish tank I have seen Amphiprion biaculeatus—the tomato anemonefish—taking food and placing it in the anemone. Popular belief is that it is actually trying to feed its host but I think it is looking for a safe

place to store food. That the anemone eats the food is incidental

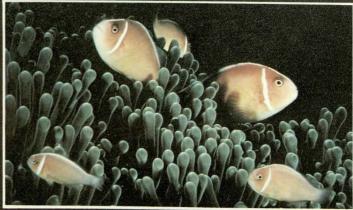
I discovered this habit to my cost after I had collected a new species of coral shrimp from deep water near Rabaul in Papua New Guinea's East New Britain Province.

While waiting to photograph them, I put them in a tank with a tomato clown fish. The shrimps began to disappear. I finally caught the clown fish in the act of dropping the last one into the anemone.

Anemonefish spawn at any time of year. The male clears a space close to its host, removing any algae or other growth in the area. The female then lays between 300 and 700 eggs in a







Left: orange-finned anemonefish; top: tomato anemonefish in hiding; above: half-striped clown fish; right: half-striped anemonefish takes refuge from camera

circular pattern, the male fertilising the eggs at various intervals during the spawning process. Eggs hatch during the night on the sixth or seventh day of incubation. The nocturnal hatching is probably because that is when predators are inactive.

The young fish, after a freeswimming period which lasts about three weeks, then look for an anemone to become their lifelong host.

Papua New Guinea, with its large variety, is probably the original evolutionary site for anemonefish. It is certain to reveal new species as exploration of its reefs continues.

So far, nine, possibly 10, species have been identified. Clarke's anemonefish (A. clarkii) and the black-backed anemonefish (A. melanopus) are perhaps the most common. A. clarkii is usually found in groups of up to

10 in the large anemone Stoichactis giganteum. A. melanopus, on the other hand, lives by itself in the small Radianthus gelum anemone. However these anemones are usually fairly close to each other, thus allowing the fish to carry out their social activities.

Another socially-orientated fish is the orange-barred anemonefish (A. chrysopterus) which sometimes lives in the same type of anemone as A. clarkii but more often is found in the large anemone R. ritteri.

Other anemonefish which live in colonies are the half-banded (A. perideraion), the orange (A. sandaracinos), and the white-capped (A. leucokranus) anemonefish.

The white-capped anemonefish was found quite recently at Madang on Papua New Guinea's north coast by Dr Gerald Allen, curator of fishes at the Western Australian Museum.

A. leucokranus is unusual in that it shares anemones with other anemonefish but the relationship is, at best, an uneasy



one with constant sparring between species. A white-capped anemonefish was observed to move in on an anemone inhabited by a group of white-capped anemonefish. For a year there was constant friction and then A. leucokranus disappeared. Whether it was killed or it found an untenanted anemone nearby is uncertain.

The last of the reef-dwelling communal species is the at-

tractively marked A. percula which prefers to live in Stoich-ractis kenti, one of the few anemones capable of stinging human beings.

This clown fish is the most popular for aquariums because it lives in shallow waters and is easy to collect.

One other communal species found in Papua New Guinea is the white-saddled anemonefish (A. polymnus). However, this

lives on sandy bottoms or slopes well away from reef. A. polymnus is also the most aggressive. As you swim past, it will rush out of its anemone and bite at your flippers, at the same time emitting a loud clicking noise.

The tomato anemonefish (A. biaculeatus) is always found in pairs. The female is often twice the size of the male. — Chris Prior is a research fellow with the biology department of the

University of Papua New Guinea based at the Lowlands Agricultural Experimental Station, Keravat, East New Britain Province.

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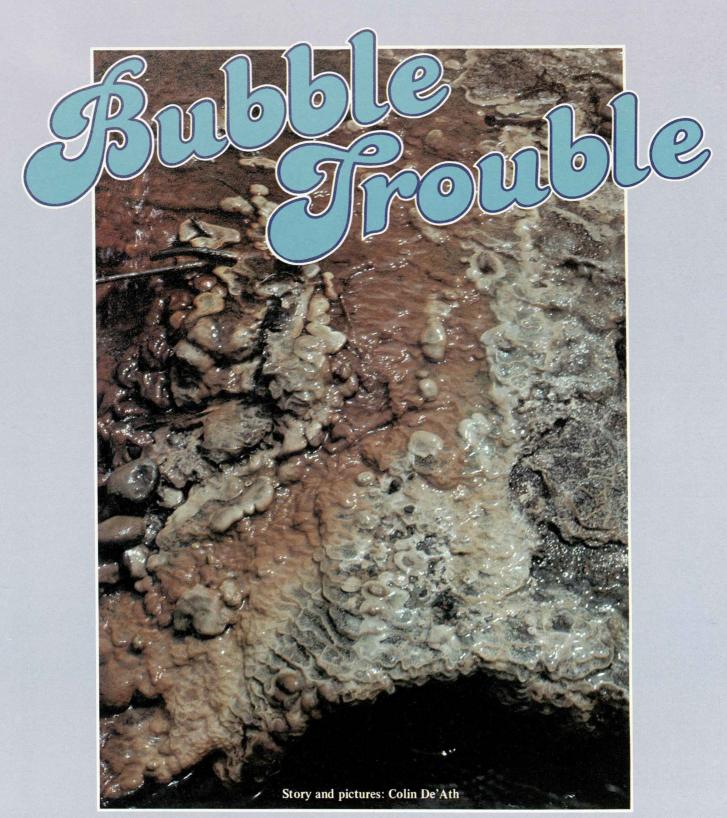
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long-distance driving a pleasure, even with three passengers. Our aim was to create a car with more economy, performance, comfort and value than any other on the market. Judging from the praise they're showering on us, it seems we have succeeded.





SPIRIT guards the hot spring near the sea on the Luguli River in the southeastern corner of Manus Island. The spring is in the centre of a small swampy sago palm lake known as Kawah.

People who cut sago palms there have to be careful not to let them fall into the spring. If one does fall into the bubbling hot water, one of two things might happen: the water will rise quickly over the sago and its cutters; or if the palm is left overnight the spirit — or masalai — will take the shape of an octopus resting on the surface and pull it into the depths of the spring.

To avoid either of these dangers the sago cutters must incant an apology to the spirit when the sago falls.

On a tributary called Lusan, which joins the Lugali, is anoth-

er hot spring guarded by a spirit known as Pu'u which looks like a pig. Pu'u, like the octopus masalai, is very temperamental with people who break its taboos. It will allow no cooking or sexual activity in its presence.

With two fellow members of a provincial planning team, Joachim and Stephen, and three Kambos villagers, Porpas, Watah and Johang, I visited another hot spring on the Lugali River



which lies between the two guarded by the octopus and pig spirits. It is called Mousal.

We had travelled from Lorengau, the Manus Provincial capital, by utility truck. It was a two-and-a-half-hour drive. Then we had another 90 minutes of walking which took us past three hamlets, along a ridge and then down a steepish hill to the river and the spring.

The long trip was well worth the effort. The Lugali River is deliciously clear and edged by verdant forest. Hot water bubbled up for nine metres along one edge and at various places in the river itself.

The river at that spot is warm enough for a very comforting bath. The main gusher comes out from among a thick cover of cassava and tiny wild yellow passionfruit. Although the river changes course frequently, the outlet has built up silicone and iron oxide-tinged terraces.

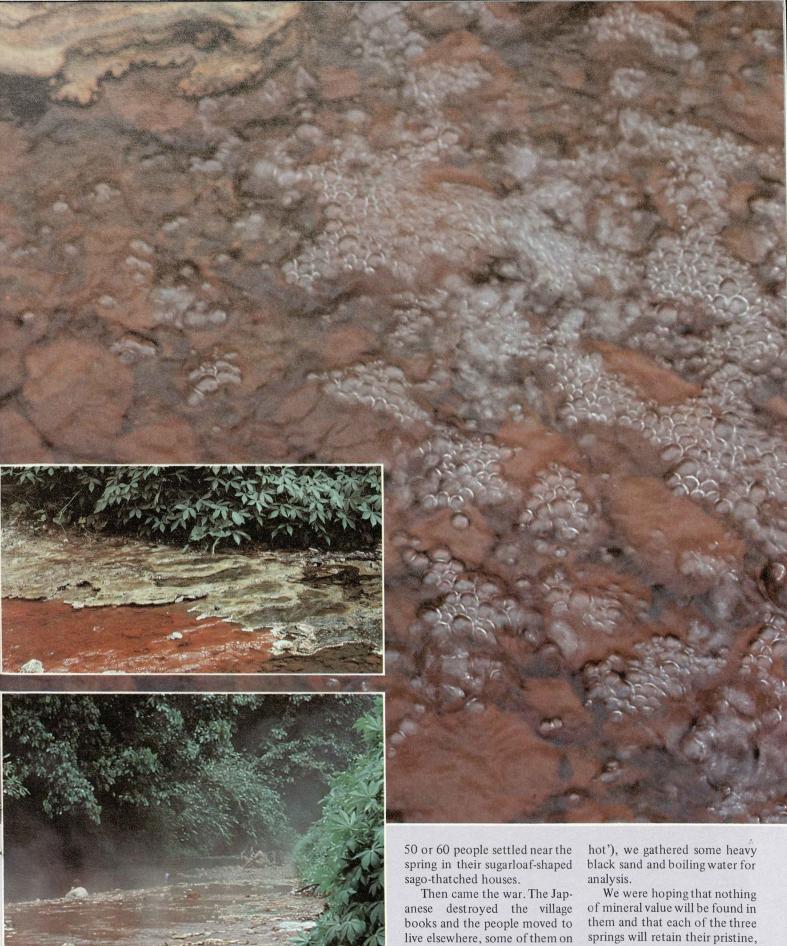
We were surprised there were no taboos for us to observe while we were eating. When we got back to Kambos village an old man, Moruwen, explained why.

It seemed that before the Pacific War, a Japanese man named Tokios, who had worked on one of Burns Philp's Los Negros plantations with some Australians, had visited the Kambos area and had decided that the river flat near the spring

was an ideal place for all of the Nali people from the surrounding 300-metre ridges to settle.

The elders had decided that if this was to happen it would be necessary for the spring's masalai, Kuit, to be eliminated. Among other devices, the villagers blew a fine spray of spittle and ginger from their mouths at Kuit when he was hovering over the steamy spring.

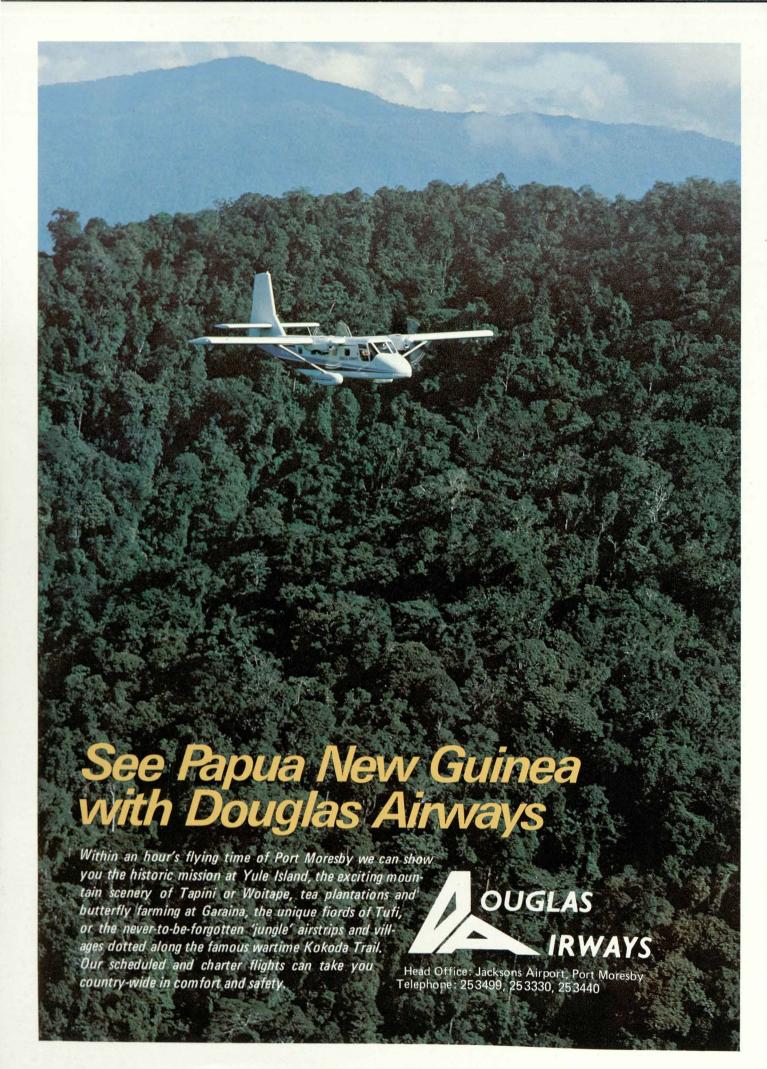
When they were satisfied that Kuit had been driven off,

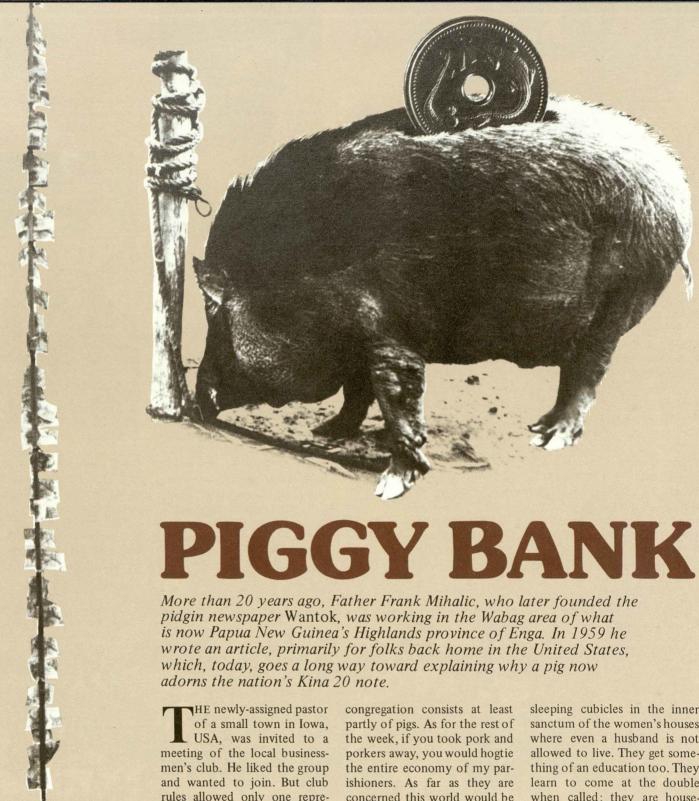


Then came the war. The Japanese destroyed the village books and the people moved to live elsewhere, some of them on the coast. Now they have begun to move back to their original homes on the ridges, the development of the road to Lorengau having encouraged the trend.

While we were at the Mousal ndran ngandran (literally 'water

We were hoping that nothing of mineral value will be found in them and that each of the three springs will retain their pristine, wild, spirited integrity. — Professor Colin De'Ath, a Papua New Guinea citizen, is a volunteer worker with the Manus Provincial Government.





rules allowed only one representative of each profession. And his was filled. The club's officers, however, found they had a vacancy under 'hog caller' so they asked the padre if he would mind coming in under that heading. He thought for a moment and then answered: 'Well, I'm new around here and you old-timers would be better judges of congregations.'

That story fits me to a fair degree. You see, my Sunday

A money pole indicates the size of this man's contribution to the moka

concerned this world would be heaven if it were one gigantic pigsty. Don't get them wrong. They mean no offence. Nor is this the doubtful compliment you might imagine.

Our Highland culture here is built around a structure of ham bones, cold shoulder and pork chops and, frankly, it smells of lard. From its first squeal, the piglet is a privileged member of the human household. It is a pet. It is given a name. It is cuddled, coddled and snuggled by women and girls and is even nursed at the breast.

Hogs have special private

sleeping cubicles in the inner sanctum of the women's houses where even a husband is not allowed to live. They get something of an education too. They learn to come at the double when called; they are housetrained; they heel like an obedient dog; and they're regularly seen in church.

These favoured animals are raised only secondarily as food. Primarily they constitute one's wealth. They are the bullion of the land. Pigs influence many aspects of Wabag life. Take matrimony, for example. I would say that, speaking generally, pork is the most important catalyst in Wabagian wedlock. Without porkers one would hardly be able to buy a bride. If a man or his family has no pigsty, no self-respecting girl would

court him. Yes, she does the courting and she pops the questions. One of the first questions will be: 'How many pigs do you have?'

The lady in turn proves her eligibility by displaying her prowess at hog raising. She will also display her charms – fertility charms – in the form of bracelets made of smoke-cured boars' genitals.

On her wedding day, the bride's entire silhouette will glisten with pig grease. As she shuttles back and forth across the valley accompanying her squealingly-objecting dowry, her skin will either simmer in the sunshine or turn rancid. But she is bringing home the bacon - and that is what counts. I should say it does. One of my teachers took unto himself a bride last December and it cost him 38 swine. In money terms that amounts to around \$US700.

Personally, I am in favour of



my parishioners buying their brides with pigs. This keeps the marriages stable. In fact, here in the Highlands, we do not have so-called civilisation's problem of higher fidelity in music than in matrimony. Pigs are the reason. This is how it all works.

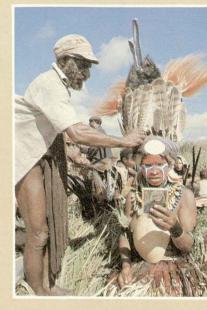
Suppose a young bride finds her two basic chores of tending gardens and swine too much like hard work. She starts to take it easy and sponer or later she in-



All dressed up for the moka; far right: cuddle for a precious possession; below: all lined up for the kill

curs her husband's wrath and a whacking or two.

But don't think for a moment that the young bride has the option of heading off home to mother. If she did, even more fireworks would ensue. Her folks at home would pummel her all the way back to her husband's house. Her return would have embarrassed them 'financially'. If she refused to stay with her husband, they would have to repay all the pigs they had received in payment for her, and this would be impossible, because by then those pigs



would have been farmed out, lent, invested or used as repayment to creditors. Some may have been eaten.

On the other hand, if the husband proves unfaithful, the wife simply reports his behaviour to his clanspeople. Because his per-



formance is likely to forfeit the entire bride price, they are likely to converge on him and beat him to within an inch of his life. When the culprit comes to he has usually returned to his senses. Don't you agree that in Wabag marriages the tie that binds is not a tie but a sty?

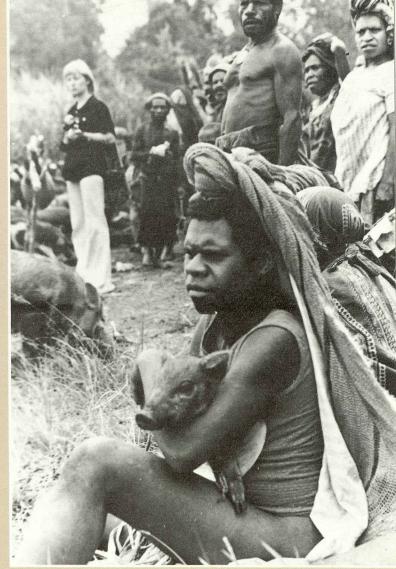
Continuing on the matrimonial theme, monogamy is the general rule but widows would complain that it rhymes with monotony and want no part of it. They argue along these lines: 'We prefer to marry a man who already has three or four wives. Then all of us girls can raise many pigs and we'll always have plenty of pork to eat.' From the pig's viewpoint, this is all quite chivalrous too. If he ends up as a ham sandwich in one of the wive's hands, it can be said of him that he remained a gentleman to the end by giving up his seat to a lady.

Without pork — on the hoof or off — everything would come

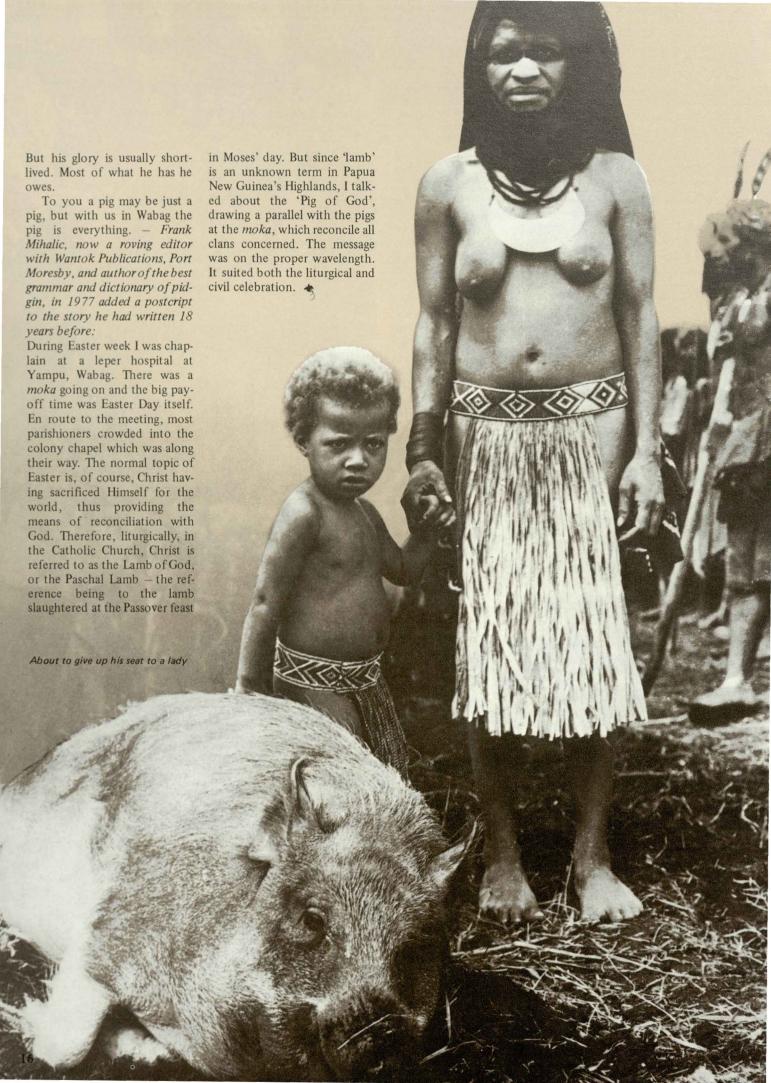
to a standstill in Wabag life. But then again there are also times when, just because of pigs, things come to even more of a standstill. This happens about every seven years when a *moka* is on. Schools close, churches are empty and even the essential government services of law, order and medicine all but cease.

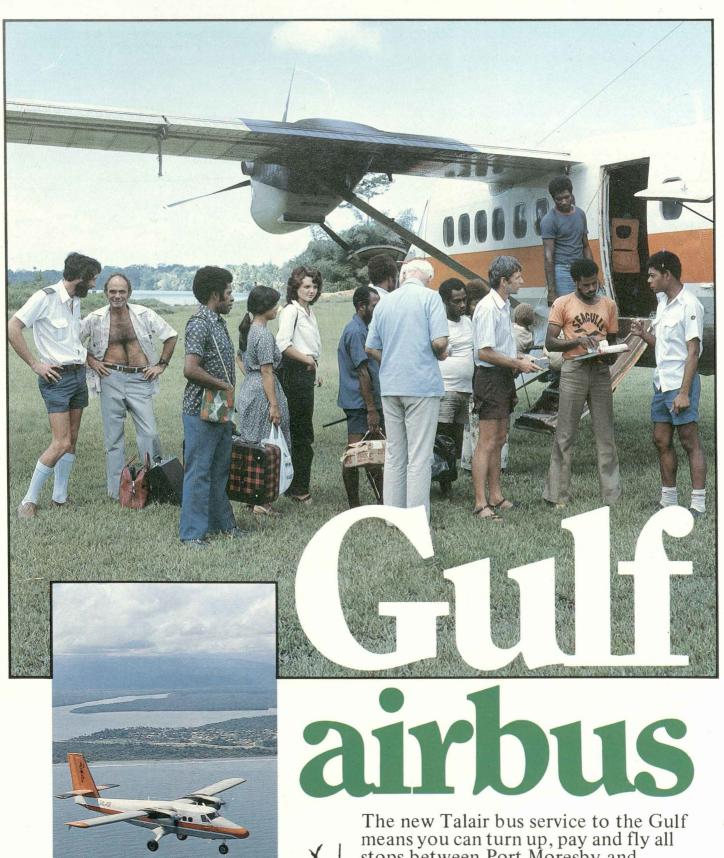
The reason is a blind preoccupation with hog wealth. Everyone returns to his or her clan for a tallying of their individual wealth in pork. At this time, all pigs which have been either loaned or invested at marriages or funerals must return for recording to their original owner. On the day of reckoning, long lines of stakes, one per pig, stand in readiness on the local dancing area.

Then the stockholder, when all assets have been hog-tied, in justifiable pride thumps his breast and boasts aloud that he is not like unto the rest of the men—whose piggeries are puny.







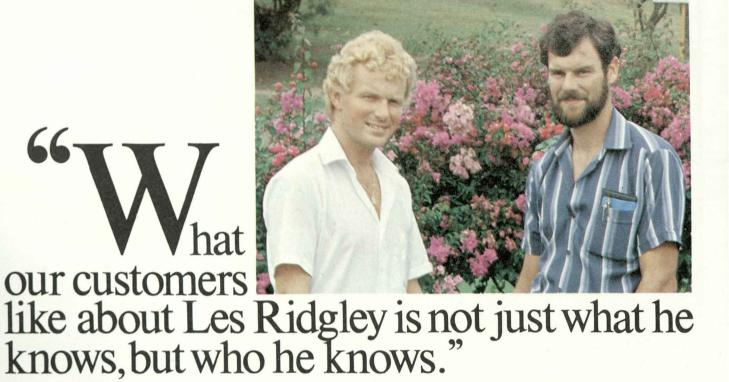




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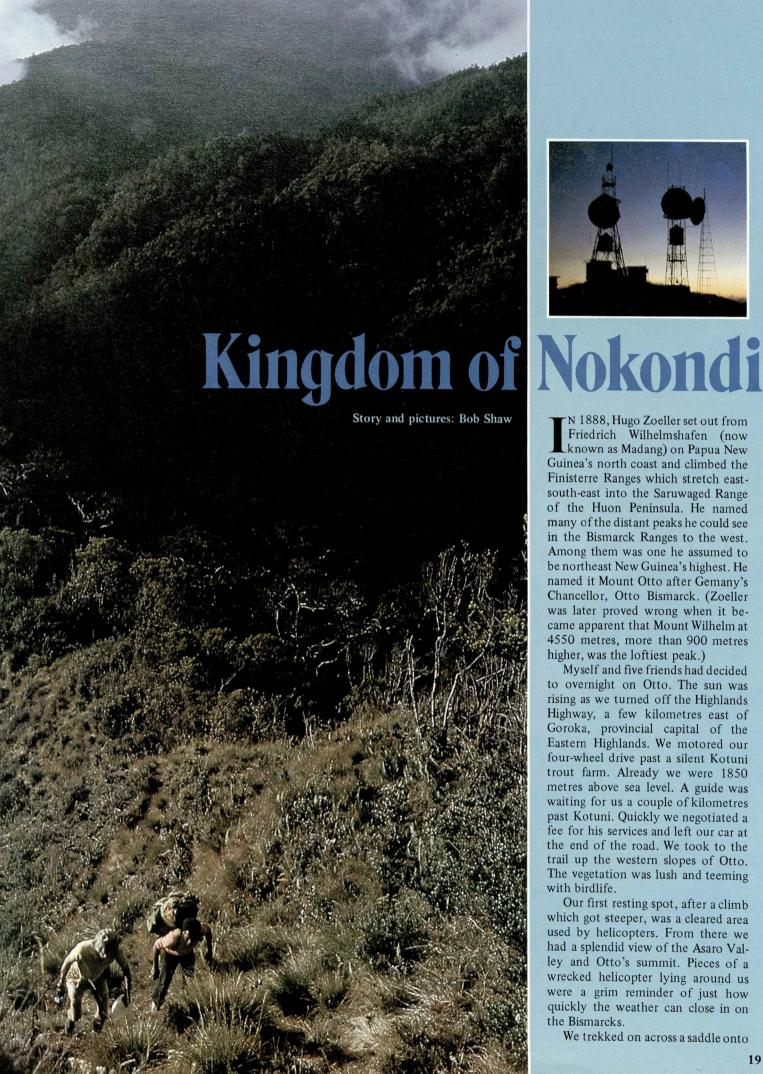
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N 1888, Hugo Zoeller set out from Friedrich Wilhelmshafen (now known as Madang) on Papua New Guinea's north coast and climbed the Finisterre Ranges which stretch eastsouth-east into the Saruwaged Range of the Huon Peninsula. He named many of the distant peaks he could see in the Bismarck Ranges to the west. Among them was one he assumed to be northeast New Guinea's highest. He named it Mount Otto after Gemany's Chancellor, Otto Bismarck. (Zoeller was later proved wrong when it became apparent that Mount Wilhelm at 4550 metres, more than 900 metres higher, was the loftiest peak.)

Myself and five friends had decided to overnight on Otto. The sun was rising as we turned off the Highlands Highway, a few kilometres east of Goroka, provincial capital of the Eastern Highlands. We motored our four-wheel drive past a silent Kotuni trout farm. Already we were 1850 metres above sea level. A guide was waiting for us a couple of kilometres past Kotuni. Quickly we negotiated a fee for his services and left our car at the end of the road. We took to the trail up the western slopes of Otto. The vegetation was lush and teeming with birdlife.

Our first resting spot, after a climb which got steeper, was a cleared area used by helicopters. From there we had a splendid view of the Asaro Valley and Otto's summit. Pieces of a wrecked helicopter lying around us were a grim reminder of just how quickly the weather can close in on the Bismarcks.

We trekked on across a saddle onto



stakes into the face and laid saplings across them, making an elevated walkway.

It is possible to ascend and get back down Otto in a single day from Goroka but as we intended to camp the night we took it easy. By early afternoon we were negotiating steep grassy

3580 metre peak.

An increasing wind added a sense of drama to our venture as we reached the summit. We studied the Posts and Telegraphs Department installation. We could see a tiny Goroka, 2150 metres below us. To the north cloudbanks partly obscurBeechcraft Baron twin light aircraft. It scuttled into the narrow Bena Gap which forms a low lip through the ranges which make the Asaro Valley into a massive

We settled down in the service hut and ate heartily as the now high wind set up a mournventured outside where we found a crystal clear night sky, the kind which can only be witnessed from above low level pollution or tropical haze. Millions of stars - stars which simply cannot be seen when one is surrounded by the light of an urban settlement - flecked the



sky. To the north, a flashing light — the Coastwatcher Lighthouse — pinpointed the location of Madang. Below us a tiny gem — the lights of Goroka — gleamed from a velvet black jewel box.

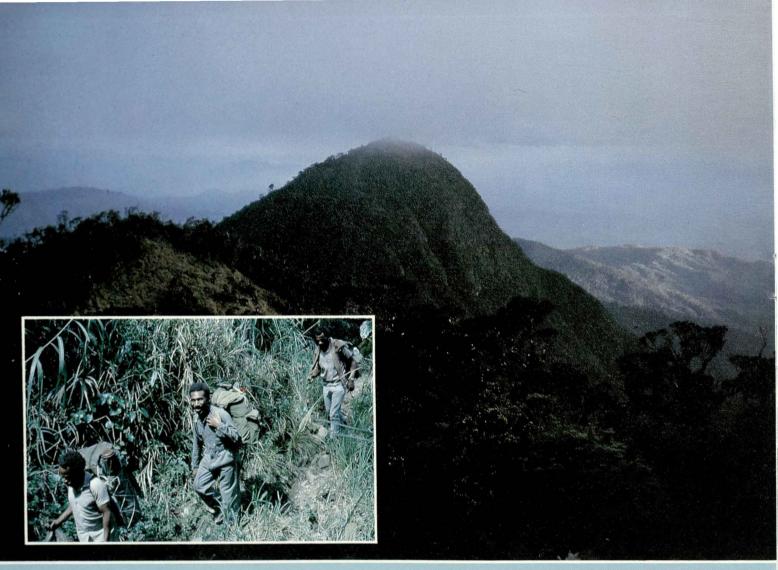
The wind increased alarmingly and began shricking through the station's aerials. We were

soon driven back inside by numbing cold.

Jacob Kokowefu and Sokarno Kotuti were uncomfortable. They told us that this area of the Bismarcks was the Kingdom of Nokondi — the one-eyed, onearmed, one-legged spirit whose ungainly form now graces the official flag of the Eastern Highlands Province. They feared Nokondi was angry at the six people who were trespassing on the apex of his domain.

Maybe Nokondi was giving us a warning but he did us no harm. By morning the wind had gone. It may even have been the deafening silence which awakened us. I stepped out into the

pre-dawn chill. At the horizon from the northeast to southeast was a thin, lurid corona, gold-topped. The hues were starkly cut by a ragged mountain silhouette. The eastern quarter of the cloudless sky was a deep indigo blue. Breathlessly we watched the wonder of another day spread, the only silence





besides our clicking camera shutters being the crackle of iceladen grass beneath our feet.

Bold crimsons and golds faded as delicate pastels fought for their moment of glory. Misty mauves. Soft daffodil. Tinges of apricot. Wisps of lemon, amber and aquamarine. Then the blazing orb topped the horizon.

The Finisterre and Saruwaged ranges, with many peaks topping 4000 metres, were now clear and looking like the rumpled spine of some primordial monster. Below, in misty valleys, we could see the serpentine silver threads of the Markham and Ramu rivers, flowing away from each other, the Markham toward Lae in Morobe Province, the Ramu through Madang Province.

Just before us, thrusting sky-

ward, was Mount Helwig, 2840 metres, the lonely sentinel which guards the northern approaches to the Bena Gap. Reminiscent of a toppling pyramid, Helwig is at the centre of legend and rumours which persist of a disastrous attempt by coastwatchers to establish an outpost on its summit in 1943.

To the west, Mount Wilhelm crowns the horizon, patches of snow still visible in shaded areas. On one side of Wilhelm is Mount Herbert at 4310 metres, and on the other is Mount Keringomna, 3690 metres, on which stands another repeater station.

We watched Otto's shadow creeping down the west wall of the Asaro Valley, the apex tracing a patch across the Daulo Pass, high point of the Highlands Highway — higher than Australia's tallest mountain, Kosciusko.

To the south we could see the rugged, many faceted slopes of Mount Michael, 3680 metres, named after explorer and gold prospector of the twenties and thirties Michael Leahy, who died in 1979. Further south we could just see the lump of Crater Mountain, its shattered multiple summits mute testimony to the violence of prehistoric eruption.

The vistas held us for hours and it was late morning before we fell into single file and headed down the grassy track to Kotuni.

We got back to our Goroka base without incident. Nokondi, apparently, was quite satisfied at the reverence and awe with which we had beheld and savoured the seemingly limitless views and the sublime solitude afforded by Mount Otto. In turn, we hoped we had left behind us no trace of our passage through regions as fresh as the dawn of creation. —Bob Shaw is an Air Niugini engineer.

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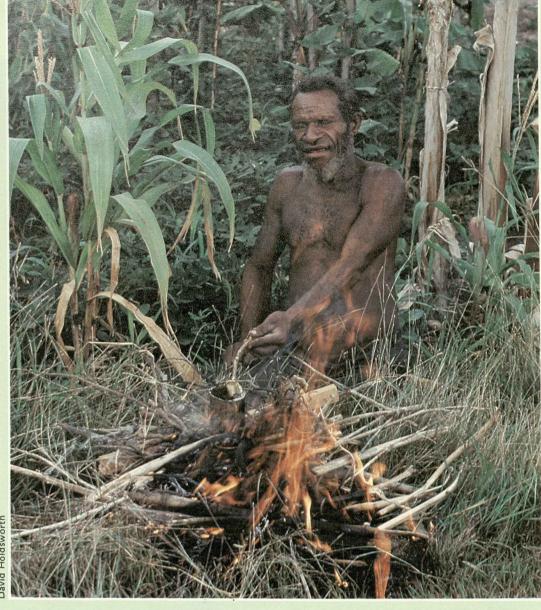
And then, if you have time to spare, fly into the heart of Papua New Guinea to the Wahgi Valley, home of the feathered warriors.

For full details of these adventures in Paradise write to Melanesian Tourist Services.





Left: barbecued winged beans; below: checking blossoms





back in as useful compost.

the pod is mature and stringy. The shoots, leaves, flowers and roots are highly nutritious and the stem makes good cattle feed. Anything that might be left can be dug back in as useful compost.

The winged bean's botanical name is Psophocarpus tetragonolobus which, translated from the Greek, means 'the pod that bursts bearing four lobes'. The

pidgin names are equally descriptive. It is called either asbin (literally 'arse bean' indicating that it has a root) or foakonabin ('with four corners').

Winged beans are not confined to Papua New Guinea. They grow throughout the tropics but Papua New Guinea has the greatest number of varieties and has the greatest number of researchers analysing it.

Wild ancestors of the winged

bean grew in Africa and it is still found there today. It is understood that the plants were spread by traders (probably Arab and Portuguese), first to Sri Lanka and later to Southeast Asia and the Indonesian archipelago before being introduced to Papua New Guinea.

Research suggests winged beans have been growing in the Highlands of Papua New Guinea for the better part of a thousand years; certainly long enough for many distinct varieties to have developed.

In more recent times winged bean cultivation has spread to the lowlands and it was probably introduced to the Trobriand Islands of the Solomon Sea by missionaries. Very recently it has become a fairly common sight in the gardens of Port Moresby, having been introduced by Highlanders who have moved to the capital to live. Highlanders who have migrated to the island of New Britain to

work on the oil palm scheme also have taken the plant with them.

The various parts of the winged bean are prepared in different ways in different countries. In Indonesia and Malaysia the tender shoots, leaves and young pods are served both raw and cooked in salads. In Thailand the flowers are fried and they taste something like mushrooms. In Java there is a tradition of making tempe (fermented curd) with the beans.

In Papua New Guinea people usually make a small fire and roast ripe winged bean seeds in a tin. This is a delicious snack. Winged bean roots cooked mumu-style (earth oven) are delicious. The skin can be peeled off (like a banana) and the flesh is sweet and nutty, something like a cross between an apple and a brazil nut.

In West Java there is a method by which healthy winged bean plants are infected with a disease called 'false rust'. This causes swelling on the stem, leaves and pods. They are then picked and steamed. The result is a crisp highly-prized delicacy.

Nutritionally, the winged bean is good value. The leaves, shoots, flowers and tender pods are good sources of vitamins, minerals and protein. The mature seeds are an excellent source of protein and rival the soya bean which does not grow well in Papua New Guinea. The root has a comparatively high protein content, probably four times as much as kaukau (sweet

One drawback is that winged beans need care. They have to be staked and have their pods picked regularly or they become stringy. But the attention is worthwhile. A handful of winged beans planted in a corner of the garden can make a significant contribution to the family diet. - Clare Claydon is a founder member of Susu Mamas, the PNG breastfeeding association, and Alan Claydon is a scientist at the University of Port Moresby.



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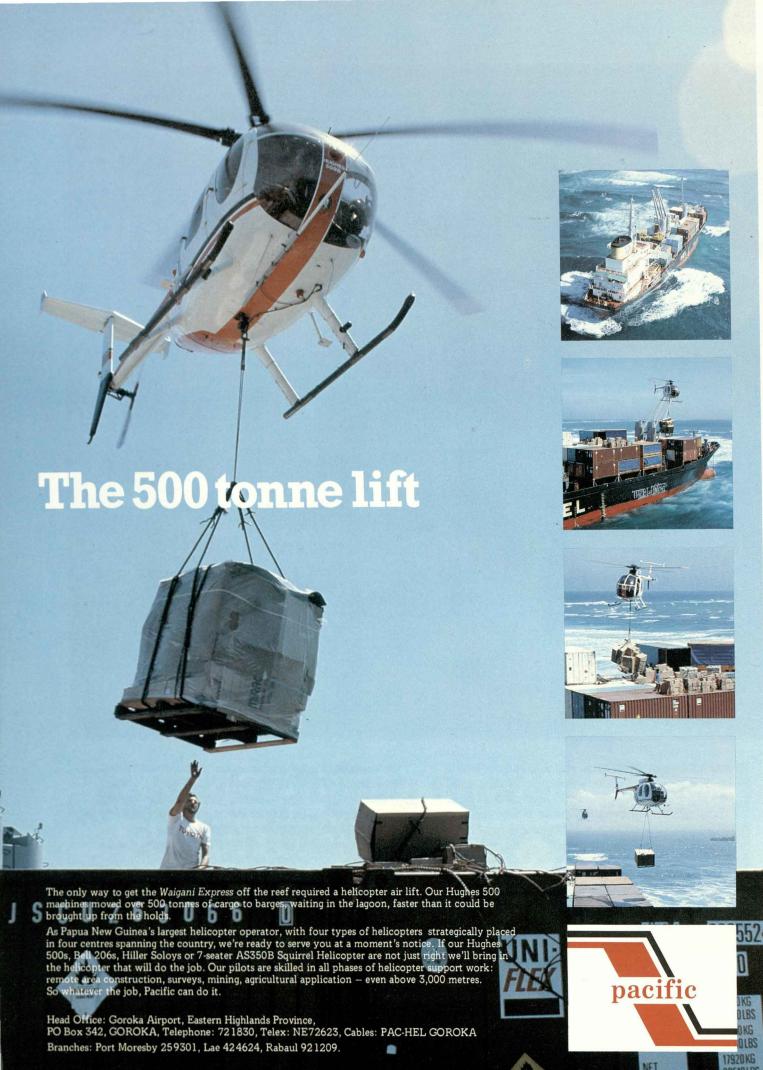
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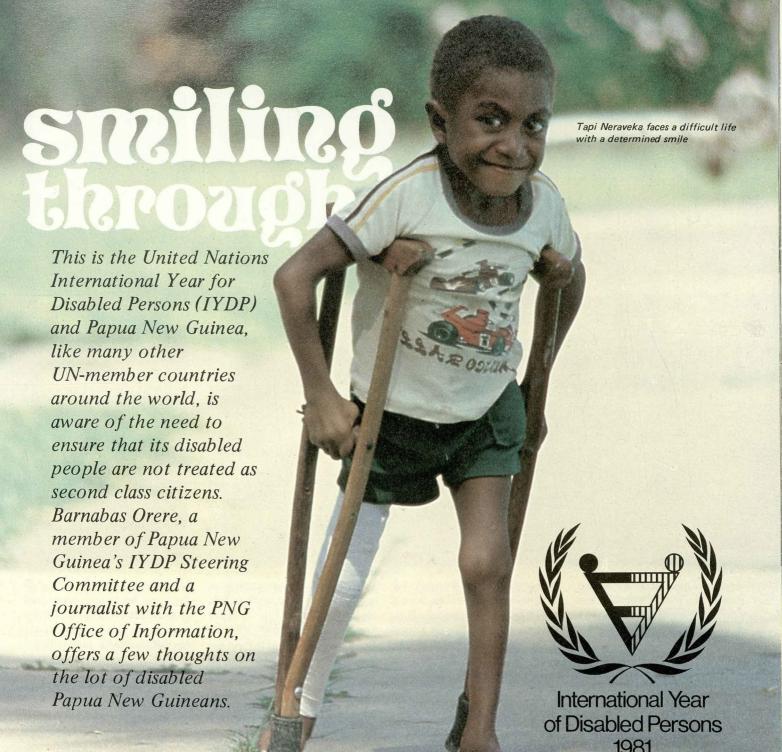
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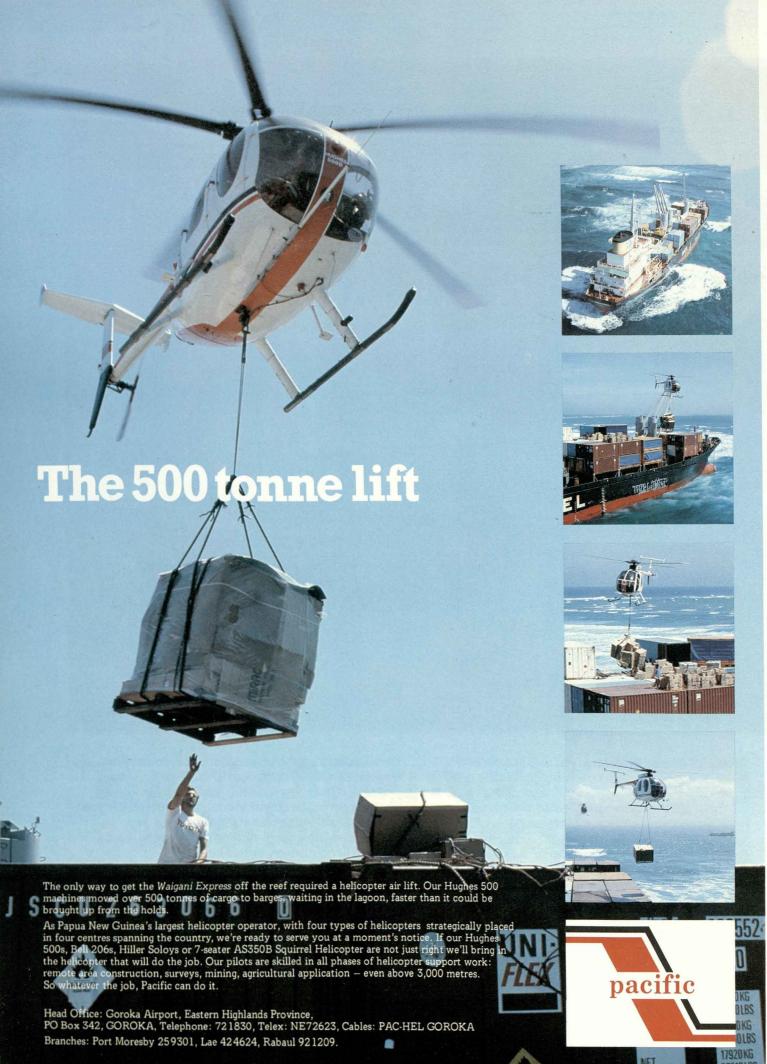
Pictures: John Devereux

APUA New Guinea, like everywhere else, has its share of disabled people. At the village and family level the disabled are automatically cared for. Our major concern should be for the types of disabilities which are caused through work or sport. In these cases we must ask ourselves if it is fair that a person disabled by an accident at work or on the sports field should be cared for only by his family or the people of his home village.

Financial compensation is only part of the answer. All too often, a person who becomes disabled is no longer regarded as a useful member of the community. What we must try to understand is that many disabled persons are quite capable of supporting themselves and of making a valuable contribution to our society.

With technology advancing at an ever-increasing pace it is clear that Papua New Guinea can anticipate an increase in the number of disabled as a result of industrial accidents. At the same time traditional lifestyles also are undergoing change and the traditional acceptance that disabled persons, whether impaired naturally or by accident, are cared for as a matter of course, is disappearing.

In my area of the Oro (Northern) Province, many people have left their villages to settle on the oil palm scheme. Others have established estatetype homes away from their



PX 1065/PH 001



This is the United Nations International Year for Disabled Persons (IYDP) and Papua New Guinea, like many other **UN-member** countries around the world, is aware of the need to ensure that its disabled people are not treated as second class citizens. Barnabas Orere, a member of Papua New Guinea's IYDP Steering Committee and a journalist with the PNG Office of Information, offers a few thoughts on the lot of disabled Papua New Guineans.

Tapi Neraveka faces a difficult life with a determined smile



International Year of Disabled Persons 1981

Pictures: John Devereux

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Clockwise from above: Andrew Au footwrites; Joseph Pirida does his homework; occupational therapy at Port Moresby Hospital; classroom at Cheshire Home, Port Moresby; products from Lae sheltered workshop; Guddie Lou at the workbench; Meddie Saribi weaves a basket; Anton Kipong brushes aside adversity

villages. I am now wondering if, in another decade or so, we will still have the traditional village of two rows of houses with a plaza between them. In this type of society all villagers, healthy or infirm, help each other and share their food.

There are not many serious cases of disability in my village of Eroro but what worries me is whether the traditional communal goodwill can survive the passing of the traditional village. In my village, goodwill is exhi-

bited by a constant exchange of small gifts of food, such as fish, and betelnut. In this situation the personal respect and integrity of the disabled person are never questioned. Nor is there any overt sympathy for the disabled. Now things seem to be different. The population is growing because more babies survive than before. That is good, but it is creating land shortages and food is not as abundant as it was. It is no longer given away as freely as it was.

My people, though slowly so far, are becoming more and more dependent on a cash economy to provide for their needs. If this trend is maintained I cannot see people who become disabled while working in towns and cities being able to return to the care of their villages.

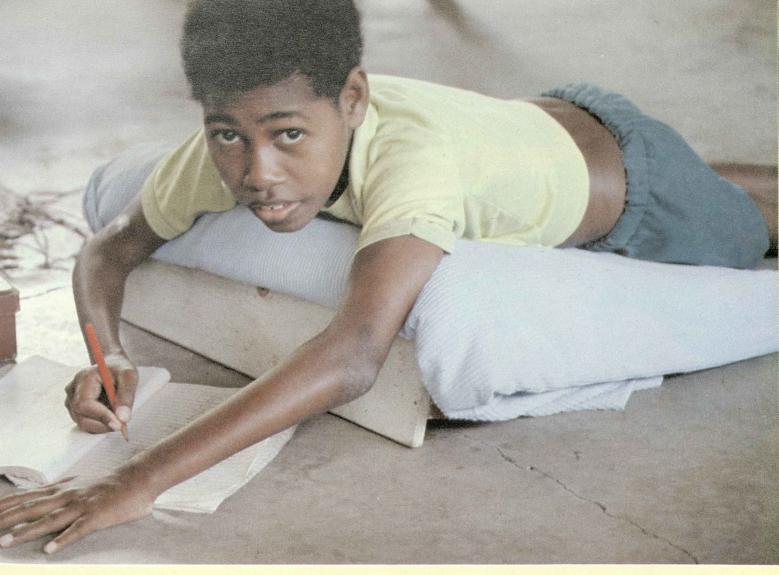
Generally speaking, rural Papua New Guineans have a healthy attitude toward the disabled and we must strive toward reinforcing that attitude. Our culture is the basis of our surviv-











al and though we are undergoing 'Westernisation' in so many ways, we must ensure that we keep those aspects of our traditional ways which will ensure our survival.

For Papua New Guinea, I believe, the IYDP message is to build on what we already have in our villages. We must not fall into the trap of treating our disabled with sympathy. It's something we have never done and now is not the time to start.

What we must do is to make

it possible for our disabled to learn skills which will allow them to contribute to society.

Unfortunately, the disabled who find themselves in the towns and cities tend to be in an alien environment. They are being denied their rights as citizens and they in turn regard this as an injustice.

If the interests of the disabled are to be safeguarded, suitable legislation is necessary. This can be done by modifying existing legislation

to ensure equal participation and opportunity for disabled citizens in all aspects of living. If this is not done the alternative will be to institutionalise uncared for disabled persons. And this will make them second class citizens.

As an example of encouragement to disabled people, we can look to the Port Moresby Sheltered Workshop for Disabled

which is near the Taurama General Hospital. On a recent visit I found a band of happy people working on projects such as book-binding, engraving, silk screen printing, weaving and sewing, to name just a few. Each person — there are 14 full time workers — is paid according to skill and time spent on a job. The highest paid worker is now earning Kina 20 (about \$A26)











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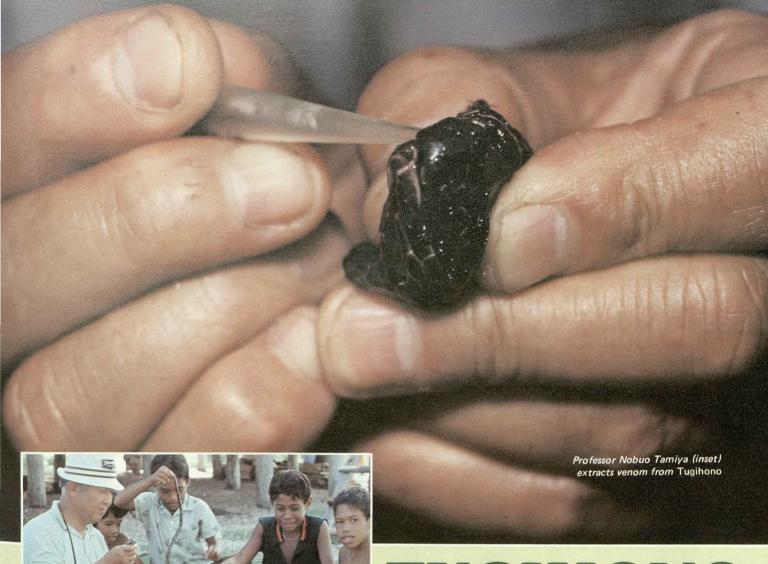
The manager of the workshop is Daro Taba, 28, of Misima Island in the Milne Bay Province. Daro, married with two children aged six and four, was a community school teacher until April 1976 when he fell nearly six metres and injured his spine. Now he is confined to a wheelchair. He became manager of the workshop in July 1979.

He lives with his family in a cubicle in Ward Three at the hospital. His wife works in the hospital laundry and his children attend the Salvation Army kindergarten at nearby Boroko. The kindergarten costs Daro and his wife K12 a week. This is paid out of Daro's Health Department salary for running the workshop.

Daro is keen to get on with the job of living, even if it has to be from a wheelchair. His immediate goal is to get a house 'so that I can live outside and travel to work every day'. What struck me most about the workshop was the atmosphere. There were people from Milne Bay, Manus, Central and Gulf Provinces working there and everyone I spoke to was in good spirits. It is worth remembering that, given the right environment, disabled people will eagerly grasp the opportunity to help themselves.







TUGIHONO

A small black aquatic snake was found by the Templeton Crocker expedition to the island of Rennell in Solomon Islands. A year later it was declared a new species and given the name Laticauda crockeri, after the patron of the expedition. But identification of L. crockeri was not as cut and dried as it at first seemed. Herpetologist Michael McCoy reports in words and pictures.

N the mid-fifties another expedition — English-Danish—visited Lake Te-Nggano at the eastern end of Rennell Island and collected a number of black sea snakes.

This is where the mystery began because these snakes were declared to be a sub-species of L. crockeri and were named Laticauda laticaudata wolfii by the herpetologist Volsøe in 1956. Volsøe's specimens differed from L. crockeri in one important characteristic — the number of rows of scales around the middle of the body. (When assigning a specimen of snake to any particular species the number of mid-body scale rows plays an important role for the

taxonomist.) In the case of L. crockeri, it was found to have 21 rows whereas all $Vols\phi e$'s specimens had 19 rows.

There the matter stood until 1977 when, using funds made available by the Australian Museum in Sydney, I was able to visit Lake Te-Nggano and collect more of these puzzling snakes. Most specimens had 19 scale rows, several had 21 and one individual had 19, 20 and 21 rows in an area around mid-body. This was sufficient evidence to regard L. crockeri and L. laticaudata wolffi as one and the same though to date this has not been formally proposed in scientific literature.

The Rennellese people have

long usurped the prerogative of the scientists. They simply call their black snakes *Tugihono* with splendid disregard for such scientific niceties as scale row

Once again crockeri/laticaudata wolffi disappeared into taxonomic limbo. But not for long. In December 1980, two Japanese biochemists, Professor Nobuo Tamiya and Dr Yuji Ishikawa, arrived in Honiara, capital of Solomons Islands. Using sophisticated technology, these two scientists hoped to solve the problem once and for all. They planned to take venom samples and, by analysis and comparison of chemical constituents with those of related species, obtain a

clearer picture of the taxonomic status of *crockeri/laticaudata* wolfi.

Because of my own work with the Solomon's reptile fauna and my previous trip to Rennell, Tamiya and Ishikawa asked me to accompany them on their trip to the island. I had long wanted to return to Rennell to photograph other reptiles so I readily accepted.

Unfortunately, the two Japanese scientists did not have the necessary research permits enabling them to collect snakes on Rennell and a couple of hectic days passed during which the whole affair was handed over to the Japanese ambassador in Honiara who, in turn, met with



of the lake. The Rennellese have a traditional story about a giant octopus-like beast that once lived in the lake and accounted for many hapless lone canoeists before being finally killed by a band of brave warriors.

In the crevices on these rocky islets we were able to collect quite a lot of *L. colubrina*. In the sea this species generally grows to around a metre in length. On Lake Te-Nggano though they reach a huge size. One individual we found was more than 1.8 metres and eight centimetres around at midbody.

Back on shore the venom



was milked from the snakes. Using a micro-pipette fitted over each fang and pressure applied to the side of the jaw where the venom gland is situated, the clear venom was drawn up by capillary action. This venom was diluted with acetic acid which acts as a preservative. Originally it was intended to extract the venom from the snakes and then release them back into the lake. Tamiya however decided to take the live snakes back to Honiara and ex-

During our brief stay on Rennell we were treated very kindly

cise the venom glands for

further studies.

Clockwise from left: Rennellese are friendly, easy-going people; traditional tattoos are now giving way to more elaborate modern forms; at play in Lake Te-Nggano

by the people. After their initial wariness we were made welcome. We were moved into a private house and presented with fine examples of Rennellese haute cuisine: barbecued tilapia, a fish that has been introduced into the lake in recent years; taro and sweet potato boiled in coconut cream; pawpaws and the inevitable green drinking coconuts. All in all it was an idyllic sojourn on this beautiful island. Ishikawa in particular was very taken with the simple way of life.

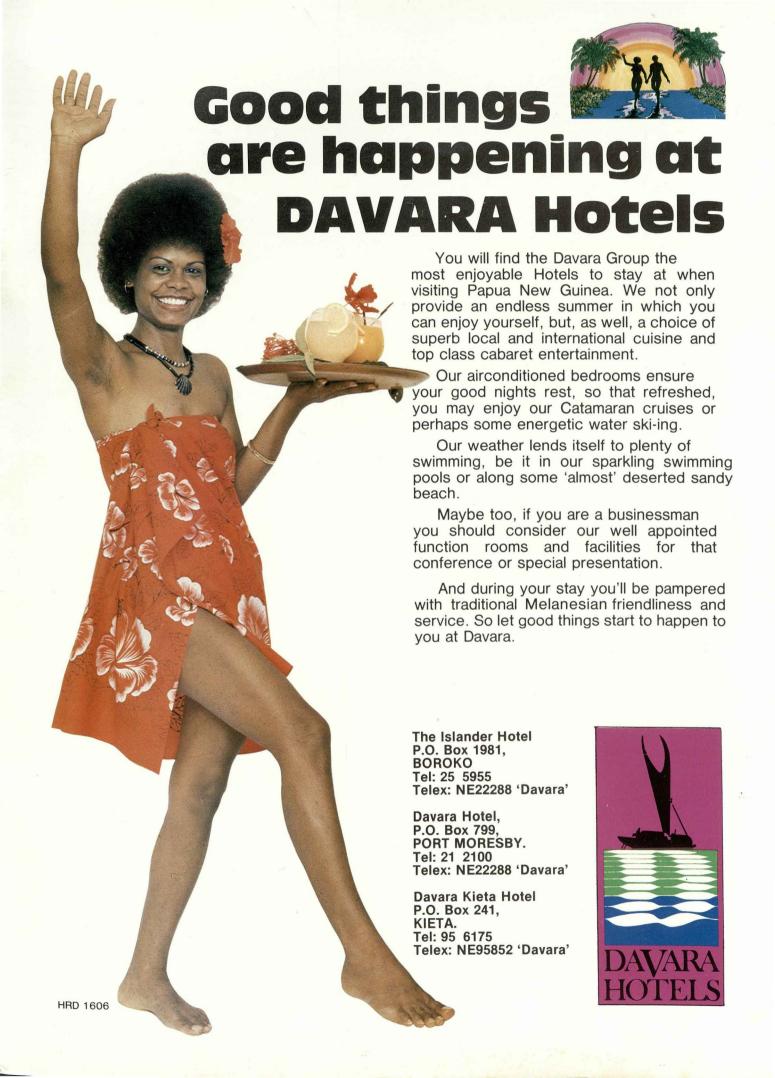
On my previous trip to Rennell I had a figure of a dolphin tattooed on my arm by the very skilful Rennellese tattooists. Ishikawa also wanted a tattoo, not of a dolphin but of *Tugihono*, as a lifelong reminder of this trip. Tamiya, however, ad-

vised against it, saying Ishikawa would be socially disgraced in Japan if he had one done.

The trip back to Honiara, once again by canoe, tractor and aircraft, was uneventful. In their room at the Hotel Mendana, Tamiya and Ishikawa spent most of a day dissecting out the venom glands from the snakes that I had previously killed by injection of nembutal into the heart.

After the glands were taken out, the snakes were preserved in formalin for morphological studies at the Australian Museum. The staff at the Hotel Mendana are still unaware that for a short time one of their bathtubs was full of a writhing mass of live snakes.

As of this time, studies made by Tamiya and Ishikawa on the Laticauda venom are not complete. When the final results become known, the taxonomic status of Tugihono should be clear. — Michael McCoy is a biologist based in Honiara.



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