

Papua New Guinea

September 2023



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Papua New Guinea has an incredible wealth of orchids, perhaps as much or more than any other country, including botanically rich Ecuador and Colombia. It is known for some of the most unusual and bizarre species though few are in cultivation compared to the flora of other orchid-plentiful countries. Many species are undoubtedly yet to be discovered. Because of its remoteness, lack of tourist services, distance and expense in getting there and a reputation as being dangerous, it just isn't a common travel destination, even for the most intrepid travelers and diehard orchid fanatics.

Orchids in the Wild is a program of the Orchid Conservation Alliance, an organization that raises funds and awareness to promote the preservation of orchid habitats around the world, almost all of which are threatened. The program arranges tours for orchid enthusiasts to get out in the areas where orchids are found and participants thereby help financially support the goals of this operation.

The OCA has been to Papua New Guinea before but the experiences were not up to the expectations of the organization. The president of the OCA, Mary Gerritsen, wanted to remedy this by sending an exploratory team to the country to search out ideal places for future trips. She made it clear that this trip had no guarantees and had potential risks and disappointments. Very basic accommodations were the norm. No whining or complaining. That certainly didn't deter the small group that signed up to join her in this amazing opportunity.

What follows is an accounting of the almost three weeks long adventure to both the highlands and the islands to the east. It included lots of cultural experiences and some strenuous hikes and a good amount of orchids in both the wild and in open air collections.

Papua New Guinea (abbreviated PNG), officially the Independent State of Papua New Guinea, is a country in Oceania that comprises the eastern half of the island of New Guinea and its offshore islands in Melanesia (a region of the southwestern Pacific Ocean north of Australia). Its capital, located along its southeastern coast, is Port Moresby. The country is the world's third largest island country, with an area of 178,700 square miles (462,840 square kilometers).

At the national level, after being ruled by three external powers since 1884, including nearly 60 years of Australian administration starting during World War I, Papua New Guinea established its sovereignty in 1975. It became an independent Commonwealth realm in 1975 with Elizabeth II as its queen. It also became a member of the Commonwealth of Nations in its own right.

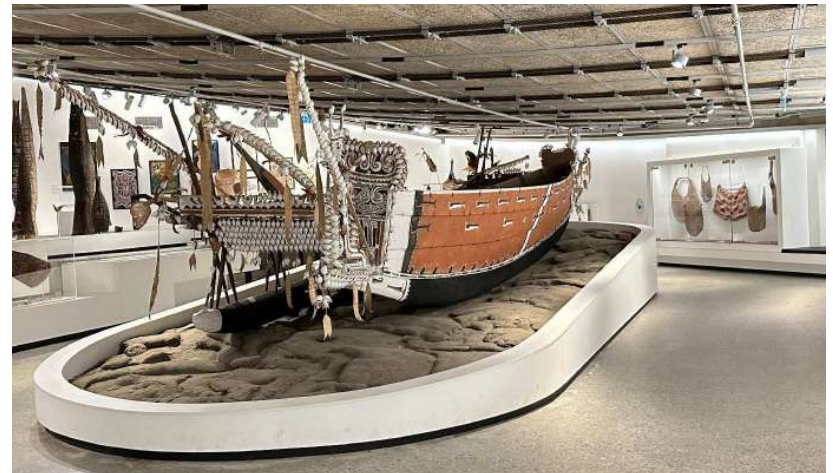
There are 839 known languages of Papua New Guinea, one of the most linguistically diverse countries in the world. It is also one of the most rural countries, with only 13.25% of its population living in urban centers in 2019. Most of its people live in customary communities. Although government estimates report the country's population to be 10.3 million, it was reported in December 2022 that its population was in fact closer to 17 million.

The sovereign state is classified as a developing economy by the International Monetary Fund; nearly 40% of the population are subsistence farmers, living relatively independently of the cash economy. Their traditional social groupings are explicitly acknowledged by the Papua New Guinea Constitution, which expresses the wish for "traditional villages and communities to remain as viable units of Papua New Guinean society" and protects their continuing importance to local and national community life. Papua New Guinea has been an observer state in the Association of Southeast Asian Nations (ASEAN) since 1976, and has filed its application for full membership status. It is a full member of the Commonwealth of Nations, the Pacific Community, and the Pacific Islands Forum.

History

Archaeological evidence indicates that humans first arrived in Papua New Guinea around 42,000 to 45,000 years ago. They were descendants of migrants out of Africa, in one of the early waves of human migration. A 2016 study at the University of Cambridge by Christopher Klein et al. suggests that it was about 50,000 years ago that these peoples reached Sahul (the supercontinent consisting of present-day Australia and New Guinea). The sea levels rose and isolated New Guinea about 10,000 years ago, but Aboriginal Australians and Papuans diverged from each other genetically earlier, about 37,000 years BP. Evolutionary Geneticist Svante Pääbo found that people of New Guinea share 4%–7% of their genome with the Denisovans, indicating that the ancestors of Papuans interbred in Asia with these archaic hominins.

Agriculture was independently developed in the New Guinea highlands around 7000 BC, making it one of the few areas in the world where people independently domesticated plants. A major migration of Austronesian-speaking peoples to coastal regions of New Guinea took place around 500 BC. This has been correlated with the introduction of pottery, pigs, and certain fishing techniques.





In the 18th century, traders brought the sweet potato to New Guinea, where it was adopted and became a staple food. Portuguese traders had obtained it from South America and introduced it to the Moluccas. The far higher crop yields from sweet potato radically transformed traditional agriculture and societies. Sweet potato largely supplanted the previous staple, taro, and resulted in a significant increase in population in the highlands.

Although by the late 20th century headhunting and cannibalism had been practically eradicated, in the past they were practiced in many parts of the country as part of rituals related to warfare and taking in enemy spirits or powers. In 1901, on Goaribari Island in the Gulf of Papua, missionary Harry Dauncey found 10,000 skulls in the island's long houses, a demonstration of past practices. According to Marianna Torgovnick, writing in 1991, "The most fully documented instances of cannibalism as a social institution come from New Guinea, where head-hunting and ritual cannibalism survived, in certain isolated areas, into the fifties, sixties, and seventies, and still leave traces within certain social groups.

Little was known in Europe about the island until the 19th century, although Portuguese and Spanish explorers, such as Dom Jorge de Menezes and Yñigo Ortiz de Retez, had encountered it as early as the 16th century. Traders from Southeast Asia had visited New Guinea beginning 5,000 years ago to collect bird-of-paradise plumes.

The country's dual name results from its complex administrative history before independence. In the nineteenth century, Germany ruled the northern half of the country for some decades, beginning in 1884, as a colony named German New Guinea. In 1914 after the outbreak of World War I, Australian forces captured German New Guinea and occupied it throughout the war. After the war, in which Germany and the Central Powers were defeated, the League of Nations authorized Australia to administer this area as a League of Nations mandate territory that became the Territory of New Guinea.

Also in 1884, the southern part of the country became a British protectorate. In 1888 it was annexed, together with some adjacent islands, by Britain as British New Guinea. In 1902, Papua was effectively transferred to the authority of the new British dominion of Australia. With the passage of the Papua Act 1905, the area was officially renamed the Territory of Papua, and Australian administration became formal in 1906. In contrast to establishing an Australian mandate in former German New Guinea, the League of Nations determined that Papua was an external territory of the Australian Commonwealth; as a matter of law it remained a British possession. The difference in legal status meant that until 1949, Papua and New Guinea had entirely separate administrations, both controlled by Australia. These conditions contributed to the complexity of organizing the country's post-independence legal system.

During World War II, the New Guinea campaign (1942–1945) was one of the major military campaigns and conflicts between Japan and the Allies. Approximately 216,000 Japanese, Australian, and U.S. servicemen died. After World War II and the victory of the Allies, the two territories were combined into the Territory of Papua and New Guinea. This was later referred to as "Papua New Guinea."

The natives of Papua appealed to the United Nations for oversight and independence. The nation established independence from Australia on 16 September 1975, becoming a Commonwealth realm, continuing to share the British monarch as its head of state. It maintains close ties with Australia, which continues to be its largest aid donor. Papua New Guinea was admitted to membership in the United Nations on 10 October 1975.

A secessionist revolt in 1975–76 on Bougainville Island resulted in an eleventh-hour modification of the draft Constitution of Papua New Guinea to allow for Bougainville and the other eighteen districts to have quasi-federal status as provinces. A renewed uprising on Bougainville started in 1988 and claimed 20,000 lives until it was resolved in 1997. Bougainville had been the primary mining region of the country, generating 40% of the national budget. The native peoples felt they were bearing the adverse environmental effects of the mining, which contaminated the land, water and air, without gaining a fair share of the profits.

The government and rebels negotiated a peace agreement that established the Bougainville Autonomous District and Province. The autonomous Bougainville elected Joseph Kabui as president in 2005, who served until his death in 2008. He was succeeded by his deputy John Tabinaman as acting president while an election to fill the unexpired term was organized. James Tanis won that election in December 2008 and served until the inauguration of John Momis, the winner of the 2010 elections. As part of the current peace settlement, a non-binding independence referendum was held, between 23 November and 7 December 2019. The referendum question was a choice between greater autonomy within Papua New Guinea and full independence for Bougainville, and voters voted overwhelmingly (98.31%) for independence. Negotiations between the Bougainville government and national Papua New Guinea on a path to Bougainville independence began after the referendum, and are ongoing.

Politics

Papua New Guinea is a Commonwealth realm with Charles III as King of Papua New Guinea. The constitutional convention, which prepared the draft constitution, and Australia, the outgoing metropolitan power, had thought that Papua New Guinea would not remain a monarchy. The founders, however, considered that imperial honors had a cachet. The monarch is represented by the Governor-General of Papua New Guinea, currently Bob Dadae. Papua New Guinea, and Solomon Islands, are unusual among Commonwealth realms in that governors-general are appointed by the Sovereign, the Head of State, upon nomination by the National Parliament, which nomination the Head of State is not obliged to accept.

The Prime Minister heads the cabinet, which consists of 31 members of Parliament from the ruling coalition, which make up the government. The current prime minister is James Marape. The unicameral National Parliament has 111 seats, of which 22 are occupied by the governors of the 22 provinces and the National Capital District. Candidates for members of parliament are voted upon when the prime minister asks the governor-general to call a national election, a maximum of five years after the previous national election.

Geography and Geology

At 178,704 square miles (462, 840 square kilometers) Papua New Guinea is the world's 54th-largest country and the third-largest island country. Papua New Guinea is part of the Australasian realm, which also includes Australia, New Zealand, eastern Indonesia, and several Pacific island groups, including the Solomon Islands and Vanuatu. Including all its islands, it lies between latitudes 0° and 12°S, and longitudes 140° and 160°E. It has an exclusive economic zone of 927,529 square miles (2,402,288 square kilometers). The mainland of the country is the eastern half of New Guinea island, where the largest towns are also located, including Port Moresby (capital) and Lae; other major islands within Papua New Guinea include New Ireland, New Britain, Manus and Bougainville.

Located north of the Australian mainland, the country's geography is diverse and, in places, extremely rugged. A spine of mountains, the New Guinea Highlands, runs the length of the island of New Guinea, forming a populous highlands region mostly covered with tropical rainforest, and the long Papuan Peninsula, known as the 'Bird's Tail'. Dense rainforests can be found in the lowland and coastal areas as well as very large wetland areas surrounding the Sepik and Fly rivers. This terrain has made it difficult for the country to develop transportation infrastructure. This has made it so that air travel is often the most efficient and reliable means of transportation. The highest peak is Mount Wilhelm at 14,793 feet (4,509 meters)). Papua New Guinea is surrounded by coral reefs which are under close watch, in the interests of preservation. Papua New Guinea's largest rivers are in New Guinea and include Sepik, Ramu, Markham, Musa, Purari, Kikori, Turama, Wawoi and Fly.

Papua New Guinea is also famous for its frequent seismic activity, being on the Ring of Fire. On 17 July 1998, a magnitude 7.0 earthquake struck north of Aitape. It triggered a 50 foot high tsunami, which killed over 2,180 people in one of the worst natural disasters in the country.

In September 2002, a magnitude 7.6 earthquake struck off the coast of Wewak, Sandaun Province, killing six people. From March to April 2018, a chain of earthquakes hit Hela Province, causing widespread landslides and the deaths of 200 people. Various nations from Oceania and Southeast Asia immediately sent aid to the country.

Another severe earthquake occurred on 11 September 2022, killing seven people and causing damaging shaking in some of the country's largest cities, such as Lae and Madang, it was also felt in the capital Port Moresby.

The country is situated on the Pacific Ring of Fire, at the point of collision of several tectonic plates. Geologically, the island of New Guinea is a northern extension of the Indo-Australian tectonic plate, forming part of a single land mass which is Australia-New Guinea (also called Sahul or Meganesia). It is connected to the Australian segment by a shallow continental shelf across the Torres Strait, which in former ages lay exposed as a land bridge, particularly during ice ages when sea levels were lower than at present. As the Indo-Australian Plate (which includes landmasses of India, Australia, and the Indian Ocean floor in between) drifts north, it collides with the Eurasian Plate. The collision of the two plates pushed up the Himalayas, the Indonesian islands, and New Guinea's Central Range. The Central Range is much younger and higher than the mountains of Australia, so high that it is home to rare equatorial glaciers.

There are several active volcanoes, and eruptions are frequent. Earthquakes are relatively common, sometimes accompanied by tsunamis. On 25 February 2018, an earthquake of magnitude 7.5 and depth of 22 miles (35 kilometers) struck the middle of Papua New Guinea. The worst of the damage was centered around the Southern Highlands region. Papua New Guinea is one of the few regions close to the equator that experience snowfall, which occurs in the most elevated parts of the mainland.

The border between Papua New Guinea and Indonesia was confirmed by treaty with Australia before independence in 1974. The land border comprises a segment of the 141° E meridian from the north coast southwards to where it meets the Fly River flowing east, then a short curve of the river's thalweg to where it meets the 141°01'10" E meridian flowing west, then southwards to the south coast. The 141° E meridian formed the entire eastern boundary of Dutch New Guinea according to its 1828 annexation proclamation. By the Treaty of The Hague (1895) the Dutch and British agreed to a territorial exchange, bringing the entire left bank of the Fly River into British New Guinea and moving the southern border east to the Torasi Estuary. The maritime boundary with Australia was confirmed by a treaty in 1978. In the Torres Strait it runs close to the mainland of New Guinea, keeping the adjacent North Western Torres Strait Islands (Dauan, Boigu and Saibai) under Australian sovereignty. Maritime boundaries with the Solomon Islands were confirmed by a 1989 treaty.

Climature

Papua New Guinea has a hot, humid tropical climate which is experienced all year round. The country experiences two distinctive seasons: wet (December – March) and dry (June – September). The average monthly rainfall ranges between 10-14 inches (250 – 350 mm) and average temperature is between 79 °F-82 °F (26 - 28°C). Humidity is relatively high, ranging between 70 – 90%. Papua New Guinea is home to one of the wettest climates of the world and annual rainfall in many areas of the country exceeds 100 inches (2,500 mm), with the heaviest events occurring in the highlands. Temperatures are relatively steady across the country, and mean temperatures in Port Moresby range from 79 °F-82 °F (26°C to 28°C). Climate in this part of the Pacific is governed by a number of factors, including the trade winds and the movement of the South Pacific Convergence Zone (SPCZ), a zone of high pressure rainfall zone that migrates across the Pacific south of the equator. Year to year variability in climate is also strongly influenced by the El Niño conditions in the southeast Pacific, which bring drought conditions to PNG, especially in the drier areas of the country. Areas with a pronounced wet and dry season that receive less than 79 inches (2000 mm) rainfall include: Markham Valley, Bulolo Valley, Maprik—Angoram area, Eastern highlands, and coastal areas near Cape Vogel, Port Moresby, and Daru.

Biodiversity and Conservation.

Many species of birds and mammals found on New Guinea have close genetic links with corresponding species found in Australia. One notable feature in common for the two landmasses is the existence of several species of marsupial mammals, including some kangaroos and possums, which are not found elsewhere. Papua New Guinea is a megadiverse country.

Many of the other islands within PNG territory, including New Britain, New Ireland, Bougainville, the Admiralty Islands, the Trobriand Islands, and the Louisiade Archipelago, were never linked to New Guinea by land bridges. As a consequence, they have their own flora and fauna; in particular, they lack many of the land mammals and flightless birds that are common to New Guinea and Australia.

Australia and New Guinea are portions of the ancient supercontinent of Gondwana, which started to break into smaller continents in the Cretaceous period, 65–130 million years ago. Australia finally broke free from Antarctica about 45 million years ago. All the Australasian lands are home to the Antarctic flora, descended from the flora of southern Gondwana, including the coniferous podocarps and Araucaria pines, and the broad-leaved southern beech (*Nothofagus*). These plant families are still present in Papua New Guinea. New Guinea is part of the humid tropics, and many Indomalayan rainforest plants spread across the narrow straits from Asia, mixing together with the old Australian and Antarctic floras. New Guinea has been identified as the world's most floristically diverse island in the world, with 13,634 known species of vascular plants.

Mangrove swamps stretch along the coast, and in the inland it is inhabited by nipa palm (*Nypa fruticans*), and deeper in the inland the sago palm tree inhabits areas in the valleys of larger rivers. About 75% of New Guinea is covered by tropical rainforest. Trees such as oaks, red cedars, pines, and beeches are becoming predominant in the uplands above 3,300 feet. Extensive areas of grasslands are found in the highlands and in the south-west.

Papua New Guinea possesses a rich variety of reptiles, marsupials (animals that carry their young in pouches), native freshwater fishes, and birds but is almost devoid of large mammals. This has assisted the evolution of some 40 species of birds-of-paradise. The largest animals are the cassowaries (large flightless birds) and crocodiles.

Papua New Guinea's unique biological species have long been sought by collectors throughout the world, but the government has established several conservation and protection measures. The export of birds-of-paradise is banned, and hunters thereof are restricted to the use of traditional weapons. Similarly, the export of many other birds and butterflies and of crocodile skins is strictly regulated. Other policies encourage the controlled expansion of selected exports of “farmed” orchids and crocodiles and of “cultivated” butterflies and other insects. A number of conservation projects, encouraged by foreign environmental groups, provide a small income for a few local landowners.



Orchids

New Guinea harbors a tremendous number of orchids, certainly in excess of 3000 species. They can be found almost anywhere, from the hot mangrove swamps and beach forests to the chilly grasslands above the timberline on the highest mountains. In the altitude range between the upper hill forests to the misty montane moss forests their abundance and diversity can be staggering, in number of species as well as specimens. It is impossible to give an accurate estimate of the number of species occurring in New Guinea. A safe guess would be somewhere between 3000 and 4000 species, or, to put it differently: fifteen to twenty percent of the world's orchids are to be found in New Guinea. Only some areas in the Andes may possibly be richer in orchid species than New Guinea. Currently 134 genera are found in New Guinea. It is the center of distribution for orchids in the genera *Dendrobium* and *Bulbophyllum* with more than 500 species each in both genera.

Agriculture, forestry, and fishing

Agricultural production, most of it from subsistence farming, accounts for about one-third of the country's gross domestic product. In the archipelagoes of the north and northeast, yams, taro, and bananas are grown as staple foods. These were formerly also the staple foods for Highlanders, who now mostly rely on sweet potatoes known as kau kau. Throughout much of the Highlands, carefully tended gardens dominate the landscape; some are arrayed in checkerboard patterns defined by drainage ditches, and others are circular mounds built on compost to warm and enrich the soil.

In the north the intensive cultivation of fertile soils gives way to swidden (slash-and-burn) cultivation of taro and yams in the forests of the foothills. Those thinly populated areas in turn give way to sago swamps along the courses of the great Ramu and Sepik rivers. In the slightly more elevated areas away from the main rivers there are extensive areas of poor grassland with a high water table that are used for swidden cultivation and hunting.

Almost all commercial crops are exported, although the domestic vegetable market is growing rapidly. After 1975 smallholders increasingly took over the bulk of export crop production, replacing foreign-owned plantations. High-quality Arabica coffee is grown throughout the Highlands, mostly by smallholders; Robusta coffee is grown on the north coast and cacao in the islands. In the colonial era copra was the premier crop in lowland areas, but now only small amounts are produced, together with some rubber in the southern region. The production of plantation crops has suffered from declining terms of trade and was mostly stagnant from the 1980s. The major exception has been the cultivation of oil palm in West New Britain (on previously little-used volcanic soils) and on the eastern mainland, boosted by foreign investment.

Forest exploitation, dominated by foreign-owned logging companies, has been extensive, particularly along the north coast, in parts of the southern region, and on New Britain and New Ireland. At times logs have accounted for one-tenth of the value of national exports, but that proportion fell by about half during the Asian economic crisis of the late 1990s and only recovered slowly in the first decade of the 21st century. Forestry was a controversial industry, with logging companies developing connections with the political elite, and it was marked by corrupt practices including improperly issued licenses, mislabeled species, transfer pricing manipulation (the practice of hiding the real value of transactions—e.g., by undervaluing exports—in order to maximize profits), tax avoidance, environmental damage, and lack of reforestation.

Tuna fisheries have great potential and foreign-owned canneries have expanded, but licenses have been sold cheaply and fishing zones monitored poorly.

Culture

It is estimated that more than one thousand cultural groups exist in Papua New Guinea. Because of this diversity, many styles of cultural expression have emerged. Each group has created its own expressive forms in art, dance, weaponry, costumes, singing, music, architecture and much more. Most of these cultural groups have their own language. People typically live in villages that rely on subsistence farming. In some areas people hunt and collect wild plants (such as yam roots and karuka) to supplement their diets. Those who become skilled at hunting, farming and fishing earn a great deal of respect.

Seashells are no longer the currency of Papua New Guinea, as they were in some regions—sea shells were abolished as currency in 1933. This tradition is still present in local customs. In some cultures, to get a bride, a groom must bring a certain number of golden-edged clam shells as a bride price. In other regions, the bride price is paid in lengths of shell money, pigs, cassowaries or cash. Elsewhere, it is brides who traditionally pay a dowry.

People of the highlands engage in colorful local rituals that are called "sing sings." They paint themselves and dress up with feathers, pearls and animal skins to represent birds, trees or mountain spirits. Sometimes an important event, such as a legendary battle, is enacted at such a musical festival.

The country possesses one UNESCO World Heritage Site, the Kuk Early Agricultural Site, which was inscribed in 2008. The country, however, has no elements inscribed yet in the UNESCO Intangible Cultural Heritage Lists, despite having one of the widest array of intangible cultural heritage elements in the world.

Languages

Papua New Guinea has more languages than any other country, with over 820 indigenous languages, representing 12% of the world's total, but most have fewer than 1,000 speakers. With an average of only 7,000 speakers per language, Papua New Guinea has a greater density of languages than any other nation on earth except Vanuatu. The most widely spoken indigenous language is Enga, with about 200,000 speakers, followed by Melpa and Huli. Indigenous languages are classified into two large groups, Austronesian languages and non-Austronesian, or Papuan, languages. There are four languages in Papua New Guinea with some statutory recognition: English, Tok Pisin, Hiri Motu, and, since 2015, sign language (which in practice means Papua New Guinean Sign Language).

English is the language of government and the education system, but it is not spoken widely. The primary lingua franca of the country is Tok Pisin (commonly known in English as New Guinean Pidgin or Melanesian Pidgin), in which much of the debate in Parliament is conducted, many information campaigns and advertisements are presented, and a national weekly newspaper, Wantok, is published. The only area where Tok Pisin is not prevalent is the southern region of Papua, where people often use the third official language, Hiri Motu. Although it lies in the Papua region, Port Moresby has a highly diverse population which primarily uses Tok Pisin, and to a lesser extent English, with Motu spoken as the indigenous language in outlying villages.

Thank you Wikipedia!



Port Moresby, also referred to as Pom City or simply Moresby, is the capital and largest city of Papua New Guinea. It is one of the largest cities in the southwestern Pacific (along with Jayapura) outside of Australia and New Zealand. It is located on the shores of the Gulf of Papua, on the south-western coast of the Papuan Peninsula of the island of New Guinea. The city covers 90 square miles (240 square kilometers) and is at an elevation of 115 feet (35 meters) above sea level.

The city was founded in 1873 and emerged as a trade center in the second half of the 19th century. The first butcher's shop and grocery opened in 1909, electricity was introduced in 1925, and piped water supply was provided in 1941. During World War II, it was a prime objective for conquest by the Imperial Japanese forces during 1942–43 as a staging point and air base to cut off Australia from Southeast Asia and the Americas.

Port Moresby has 410,000 inhabitants. The place where the city was founded has been inhabited by the Motu-Koitabu people for centuries. The first Briton to see it was Royal Navy Captain John Moresby in 1873. It was named in honor of his father, Admiral of the Fleet Sir Fairfax Moresby.

Moresby has a tropical savanna climate with relatively constant temperatures throughout the year. Port Moresby's average yearly rainfall is just over 1,000 millimeters or 39.37 inches, making it the driest place in New Guinea.

The wet season starts in December and ends in May; the dry season covers the remaining six months. This is due to the south easterly trade winds running parallel to the coast, and the city being surrounded by high mountains. The average high temperatures range from 28 to 32 °C (82.4 to 89.6 °F) depending on time of year, while the average low temperature shows very little seasonal variation, hovering around the 23 °C (73.4 °F) mark. It tends to be slightly cooler in the city during the dry season.

Although Port Moresby is surrounded by Central Province, of which it is also the capital, it is not part of that province but forms the National Capital District. The traditional landowners, the Motu and Koitabu people, are represented by the Motu Koita Assembly.

Port Moresby hosted the APEC summit in November 2018. However, there were concerns about security given the capital's reputation for violent crime.

Al Jazeera describes Port Moresby as "one of the most dangerous cities in the world". ABC Australia reports that "many homes have big fences covered in metal sheeting, locked gates and internal steel security doors." Travel by foot is not recommended in and about the city and suburbs due to continuing breakdown in law and order. The UN Global Compact Cities Programme, using a method called Circles of Sustainability, has assessed the urban security of Port Moresby as 'critical'.





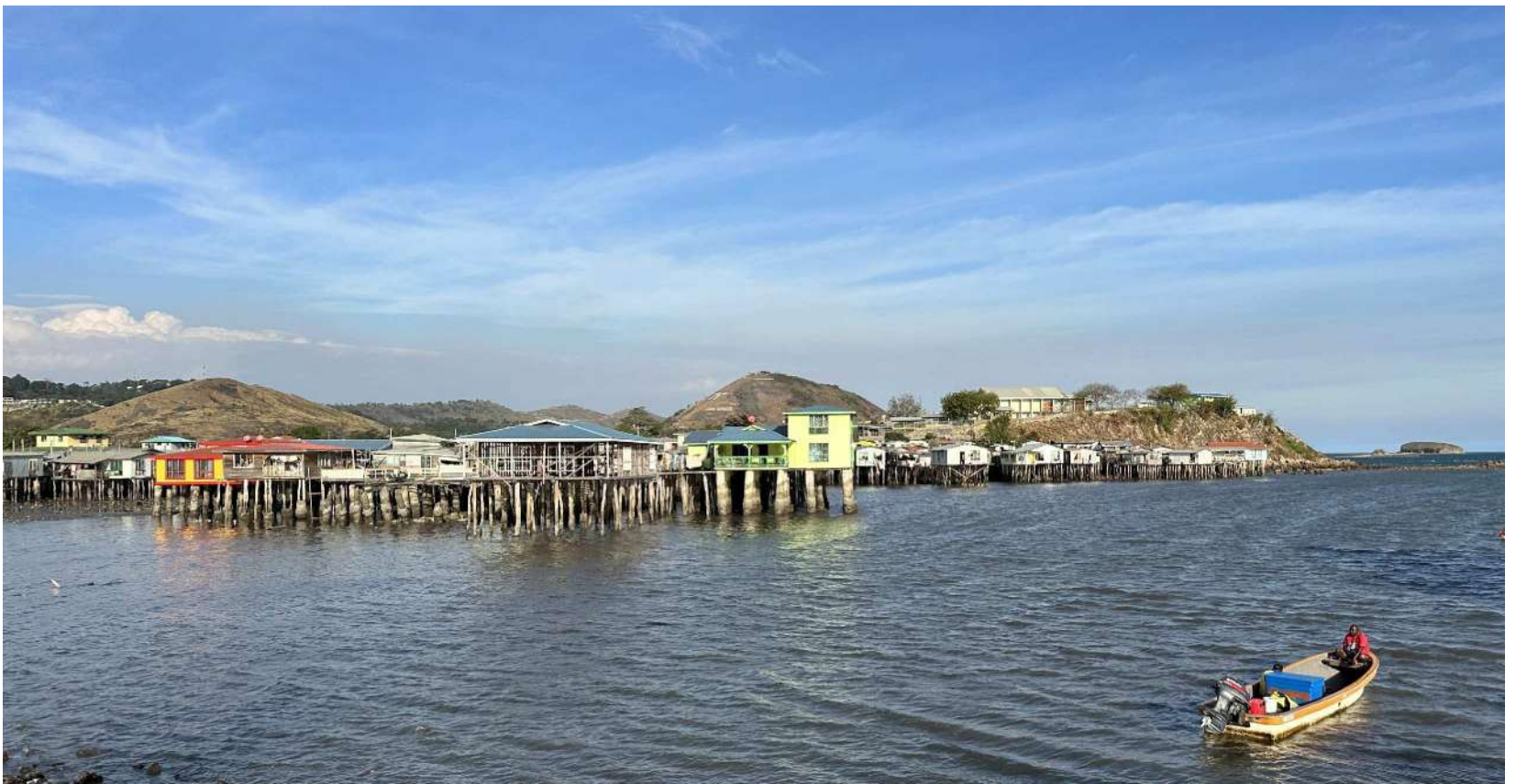
Approaching Port Moresby by air.





Port Moresby International airport; National parliament building; our lodging while in POM; PNG's 48th anniversary of its independence .



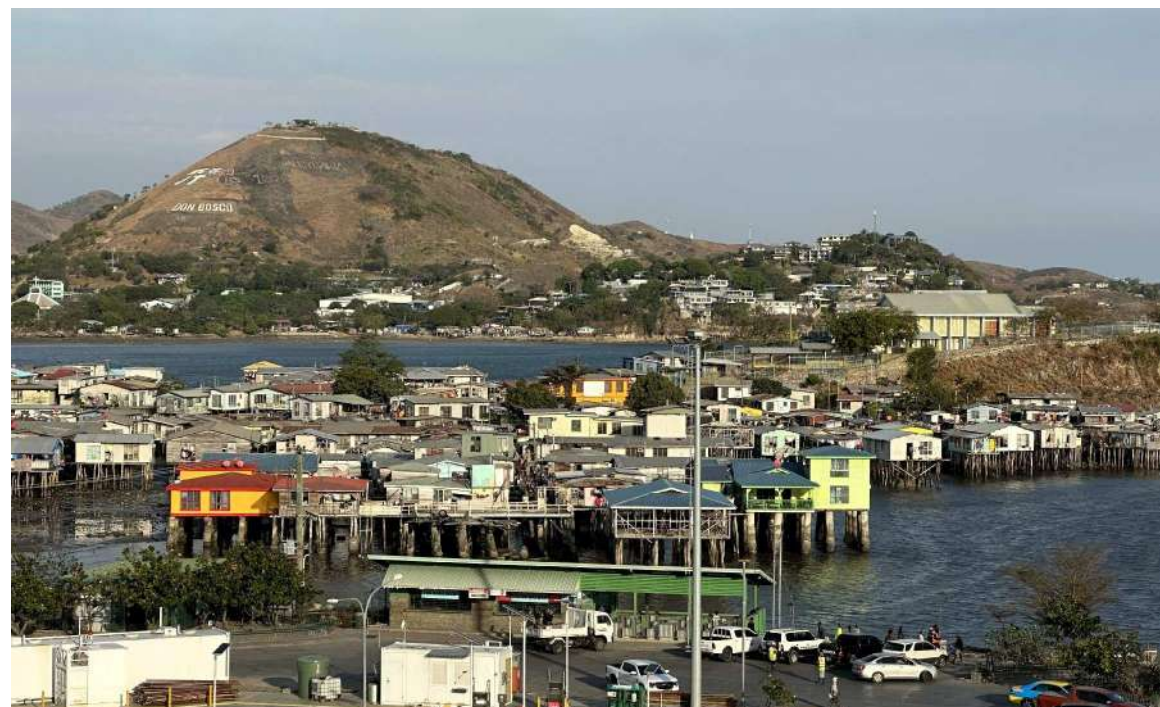


The houses all around the Koki Fish Market are built on pylons. Most of the people here are Motu, the original inhabitants of these southern coastal areas of Papua New Guinea. They believe that building over water keeps them safe from witchcraft and black magic.





The Koki fish market.







Port Moresby Nature Park has 30 acres of forested land with a collection of PNGs unique wildlife, tropical flora and diverse culture. It is home to 350 native animals, many of which are never seen outside of the country. Tree kangaroo (lower left); *Dendrobium smillieae* (upper right) and Macleay's Dorcopsulus (lower right).





Pesquet's parrot (upper left); Raggiana Bird of Paradise (upper right), the national bird of Papua New Guinea; Kookaburra (lower left) a type of kingfisher, also found in Australia; Victoria crowned pigeon (lower right).





Port Moresby's Adventure Park contains a wildlife sanctuary, rides and the national orchid garden. We were given a tour by Kiap Kori (below center) one of the orchid researchers in the park.





The orchid collection contains both native species and hybrids which are unfortunately not labeled. It is said to be the largest orchid collection in the southern hemisphere! *Dendrobium bifalce* (upper right); *Dendrobium bracteosum* (lower left).





Raggiana Bird of paradise (left); Papuan hornbill (above center); female brown sicklebill bird of paradise (upper right) ; female Lawes's or Eastern parotia bird of paradise (lower right).



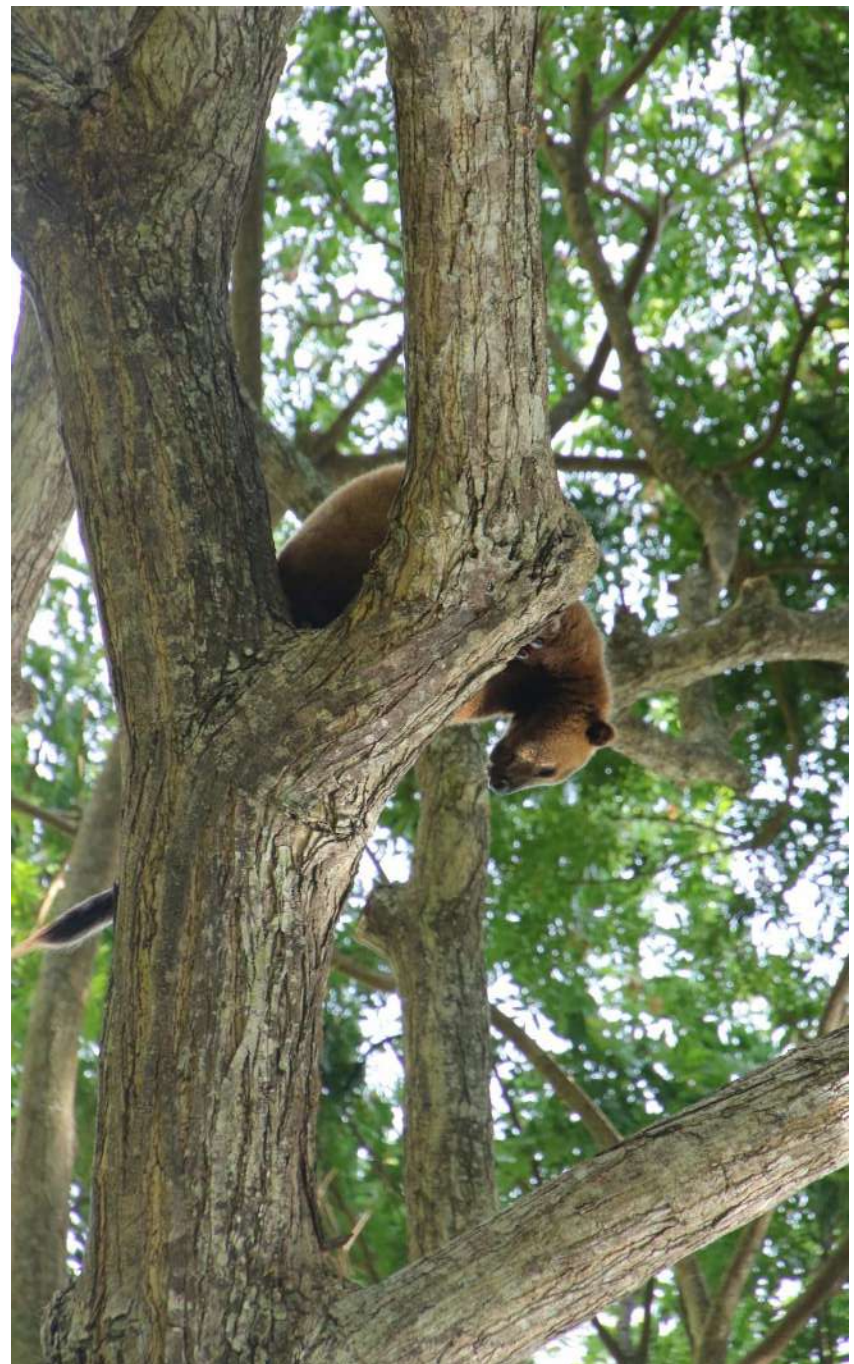


Farape Sare is deaf and mute but communicates with this giant freshwater crocodile and has become a celebrity at the park where he has worked for many years. The New Guinea crocodile can reach a length of 11 feet (3.5 meters) and weigh up to 440 pounds (200 kg).





The Southern cassowary may look comical but they are very aggressive. It is the largest of these flightless birds, reaching almost 6 feet (170 cm) in height and weighing up to 120 pounds (55 kg).



Tree kangaroos and a birdwing butterfly.



The Papua New Guinea National Museum and Art Gallery was constructed starting in 1975, funded in part by the Australian government, and it was opened to the public on 27 June 1977. The museum and gallery house objects and artworks which reflect Papua New Guinea's rich indigenous cultures and societies. It considers itself a Haus Tumbuna or a place for the ancestors of the people.

The collections include objects relating to music, body adornment, ceremony - in particular kundu and garamut drums, navigation - including a richly decorated Milne Bay outrigger, masks and totem poles. There are over 50,000 ethnographic objects in the museum's collection, but despite its size there are regions and cultures that are not strongly represented.

The museum collaborated with researchers in 2019 to investigate the pottery trade in the Gulf of Papua, concluding that trade between Australia and Papua New Guinea was likely in the preceding two millennia. Staff from the museum have also visited and collaborated with the Smithsonian in order share knowledge of song traditions and ecological knowledge.

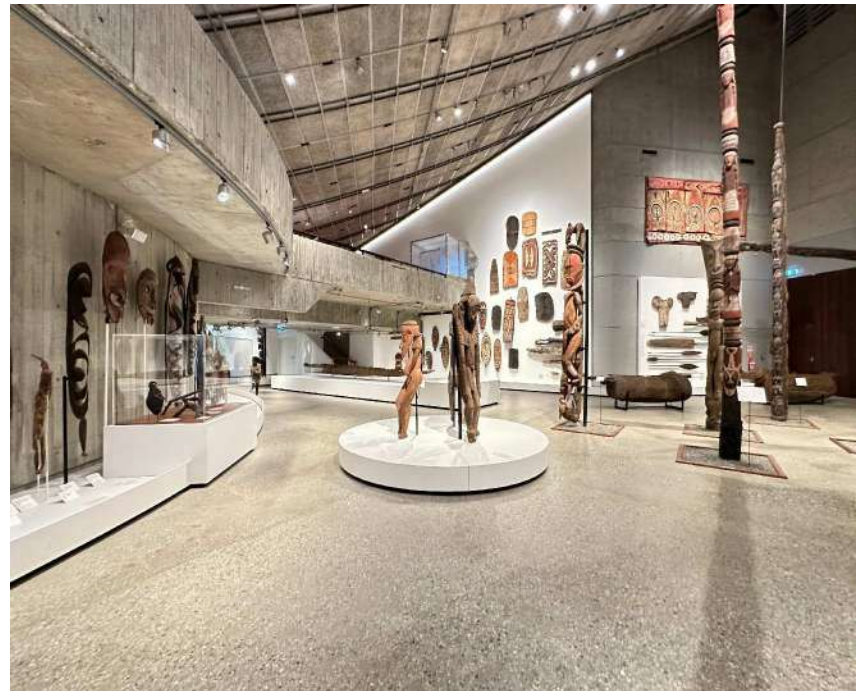


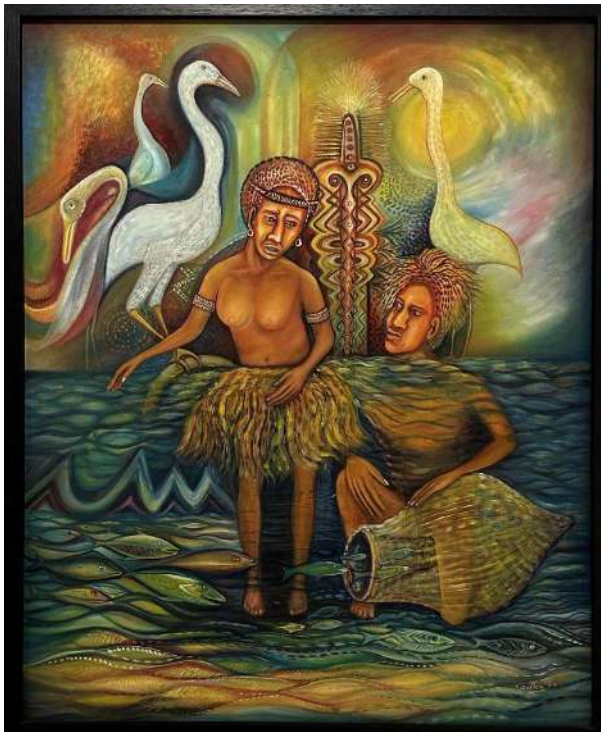


Huli Headdress (everyday), 1980.

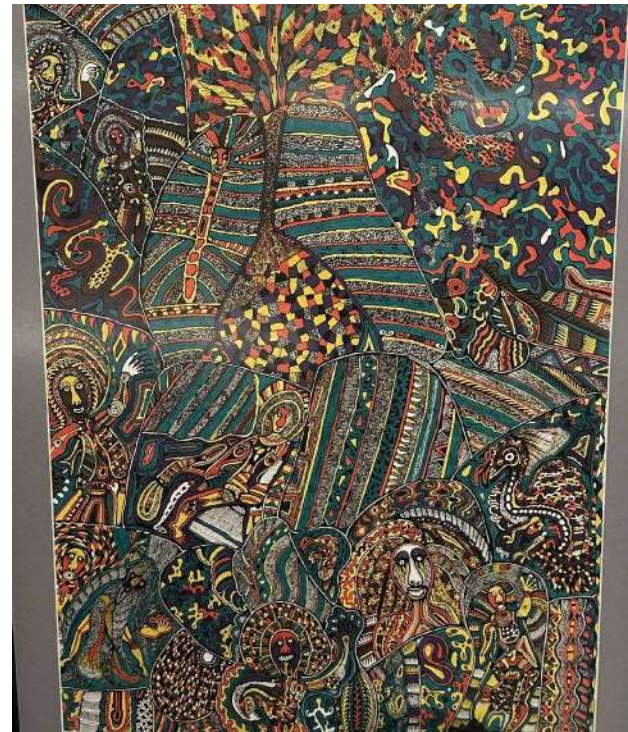


Awan (mask), Iatmul people, Mindimbit Village, East Sepik Province, 1970, clay, cowrie shells bark and cassowary feathers.





Headdress for special occasions, Simbu Province, 2012 (above center);
 Untitled, Taba Silau, 1994 (lower left);
 Untitled, Cecil King Wunge, 1977 (lower right); Naboyo (mask), Siassi Island, Morobe Province, wood, fiber, turtle shell and cassowary feathers (lower center).





"Independence" by Joseph Nalo, 1975 (above); Milne Bay outrigger (below left).







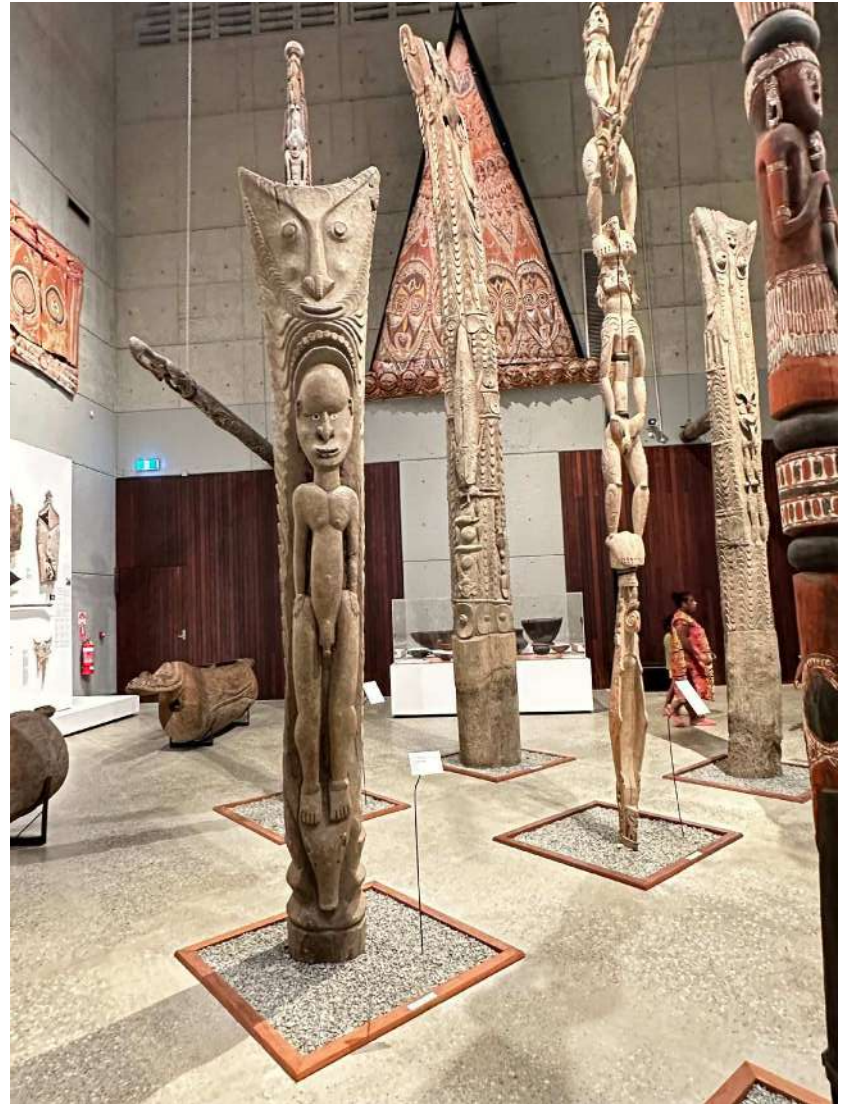
Splashboard (canoe prow boards), Tami Island, Morobe Province, 1975.



Seulolu (grass skirt), Milne Bay Province, 1980 of pandanus and banana leaves.







House posts.



Mt. Hagen is the third largest city in Papua New Guinea, with a population of 46,250. It is the capital of the Western Highlands Province and is located in the large fertile Wahgi Valley in central mainland Papua New Guinea, at an elevation of 5,502 feet (1,677 meters)

The Highlands Highway is the main arterial route to connect Mount Hagen with the coastal cities of Lae and Madang.

The city is named after the old eroded volcano Mount Hagen, located about 24 kilometers (15 mi) to the north-west. The volcano was named after the German colonial officer Curt von Hagen (1859-1897).

It is the retail and commercial hub of the entire Highlands region, as many large stores have moved into the area in the last few years and bringing with them boosted income, more jobs, and more tourists and expats.

Average high temperature is 84 F (29 C) and average low is 54 F (12 C) which is consistent throughout the year. Rainfall is 104 inches (2,638 mm) with the months of September to May with the highest amounts, up to 12 inches per month, yet the number of rainy days per month is equal, about 24, throughout the year. June and July are the least rainy months. Rainfall is usually in the afternoons.

Each year, Mount Hagen hosts the Mount Hagen Cultural Show, one of the largest cultural events in Papua New Guinea. Various regional, provincial, even national tribal dance groups gather to celebrate their cultural heritage in the form of sing-sing. It is also one of the biggest tourist attractions of the country.

Traditional culture and beliefs remain strong in Mount Hagen and its surrounds. In 2009, and again 2013, local women were reportedly burned alive after being accused of sorcery. Recent thinking links the upsurge in such accusations with poor development outcomes in Papua New Guinea and the erosion of social capital through fear and mistrust,





Mt Hagen market is the largest market in the entire country. The highlands are the vegetable and fruits basket of Papua New Guinea and this is the place where the harvest is for sale. The selection is awesome as well – taro roots, sweet potatoes, greens, tons of fresh ginger, tobacco, and much much more. I got a traditional highland hat here (upper right).















A modern grocery store in Mt. Hagen.





We stopped at a roadside produce stand on our way up to our lodge at Magic Mountain. The highland people were so friendly and welcoming.



Bilums are beautiful, traditional, intricately-woven bags, made by women throughout Papua New Guinea. The bilum technique of twisting and looping string in a rhythmical movement has been passed down through the generations. The process could almost be described as stitching, but in Papua New Guinea it is known by all as 'bilum.'

Heritage bilums are made from a variety of foraged fibrous tissues such as those of the Tulip Tree and the Pandanus Palm. The fibers are twisted into string and often dyed by hand. This labor-intensive process is carried out to create bilums for cultural rituals and tribal exchanges. To save time and to increase their rate of production, PNG women have turned to man-made yarn that is available in a myriad of colors, rather than using the tree fibers. This has made a huge impact on their appearance, bringing a distinctly contemporary aesthetic to them.





Sweet potatoes are from the Americas but were introduced by the Polynesians to Asia about 1000 years ago. It is likely that the Portuguese introduced the crop to PNG about 300 years ago. Prior to that people depended on taro as their main food, supplemented by banana and yam (*Dioscorea alata*).

Sweet potato is by far the most important crop in New Guinea. It strongly dominates agricultural production in the highland areas, and this was already the case when Europeans discovered the Central New Guinea highlands during the early 1900s. The dense human population encountered appeared to be heavily dependent on *Ipomea batatas* for food and as fodder for pigs, and the crop played a central role in cultural rituals such as ceremonial exchange systems. Sweet potatoes can grow at higher elevations than taro and don't need to be cooked to feed to pigs. Increasing pig production means wealth to the tribes.









Our accommodations while in the highlands was at Magic Mountain Nature Lodge, about 40 minutes outside of Mt. Hagen town. The ten bungalows and common area are set in a natural and lush surrounding that perfectly blends with the environment. Its architecture is based on typical Highlands architectural design that also exposes the traditional identities of the people of Paiya Village.





The lodge is at the base of Mt. Hagen (3800 meters, 12,467 feet) (lower left) with Magic Mountain (2460 meters, 8000 feet) in the backdrop (lower right).





The dining room with typical meals including lots of fresh fruit such as passion fruit, pineapple, papaya and tree tomatoes (below left). Joshua was our great cook, making many of the meals in town and transporting them in the evening to the lodge.





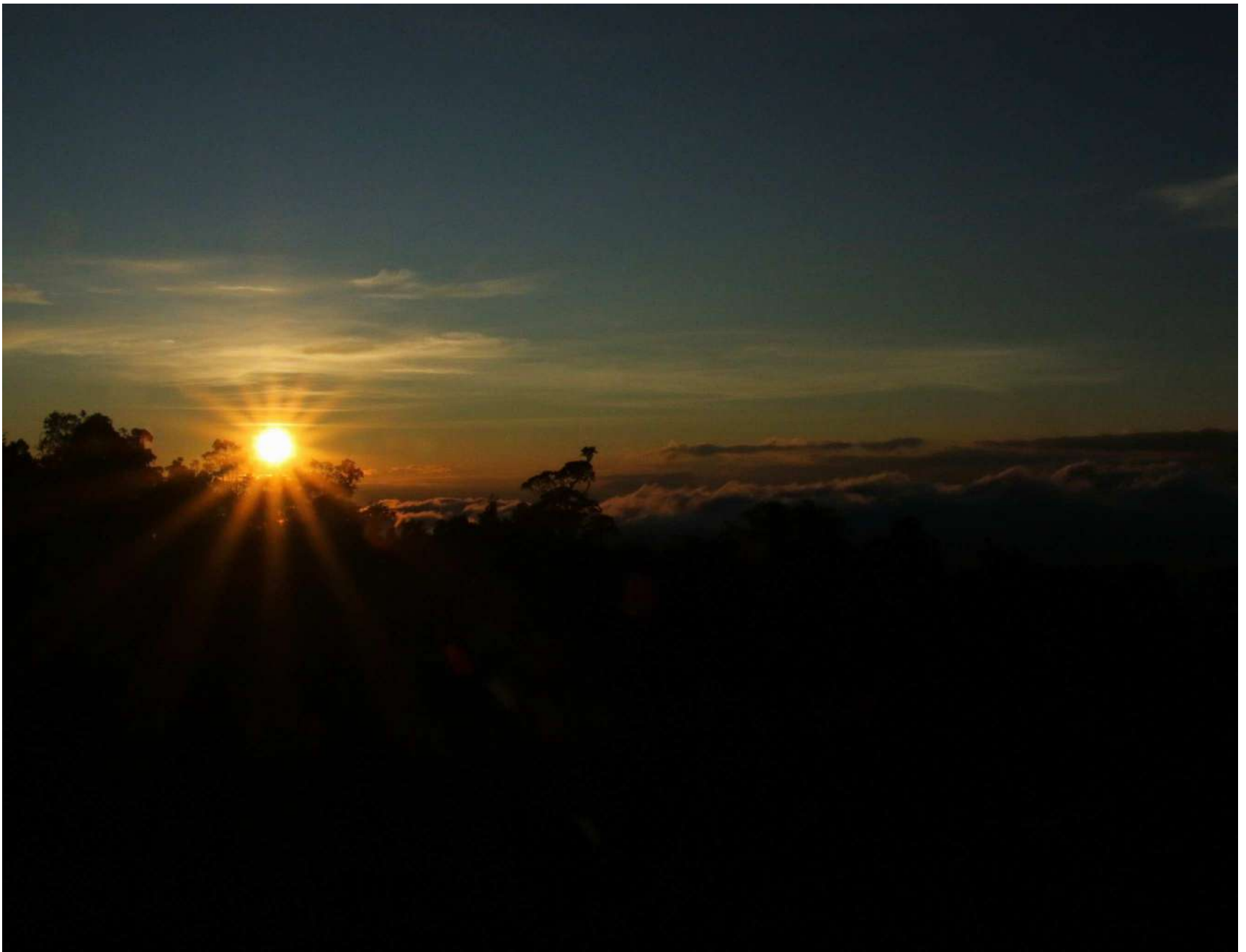
The deck provided a place to gather for breakfast and to play cards or to read and there were beautiful views of the highlands towards Mt. Hagen town. Wildlife feeding stations attract endemic birds allowing for close observation. We sorted small gifts that we gave to the different local villages (above right). Our guide Ken provided hot water for tea and coffee (lower left).





Though it was the "dry" season, it does rain often in the highlands and the view was frequently obscured by fog or rain drops.





Sunrise over the valley below the lodge.



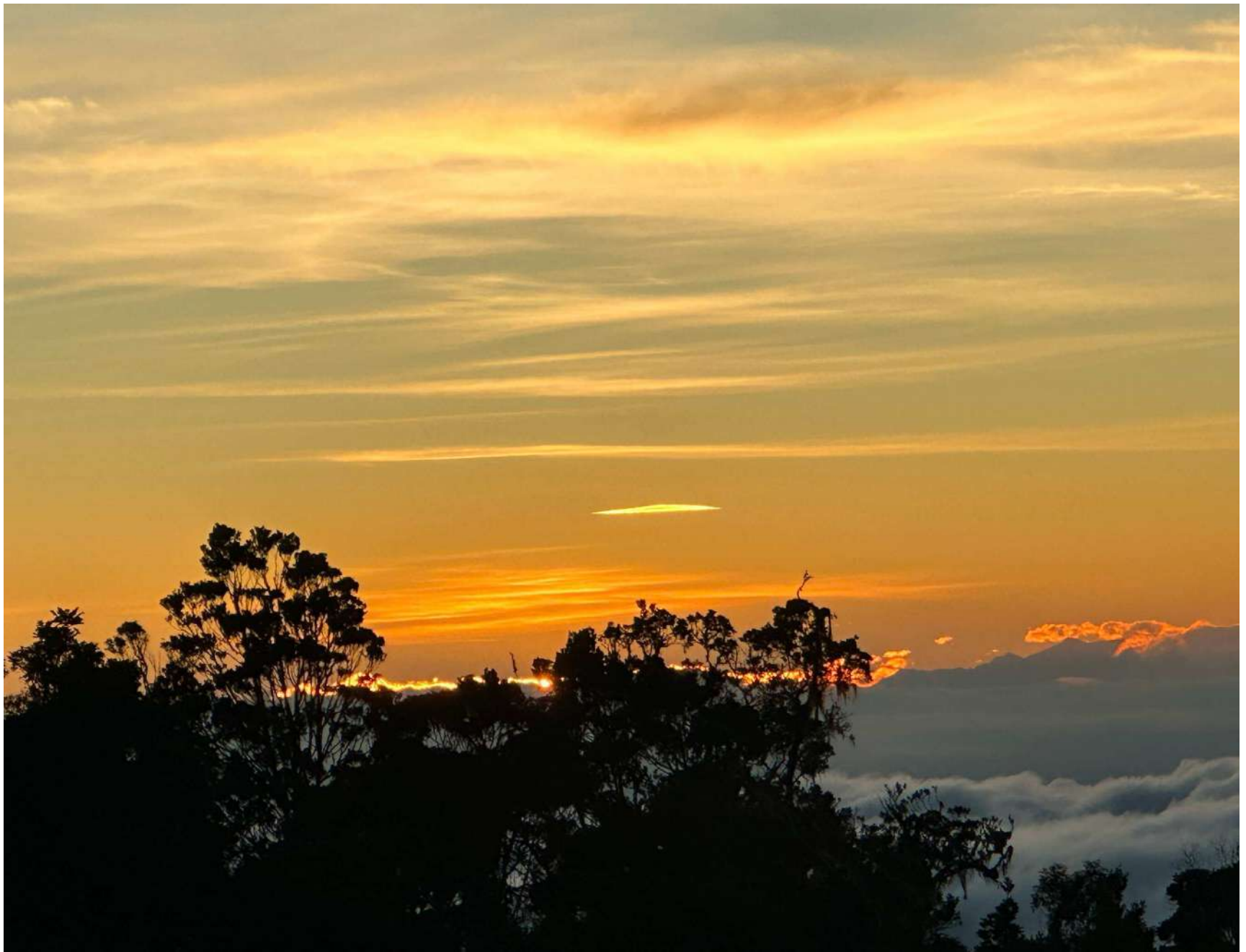
Typical morning views from the lodge deck.













John is a professional illustrator and brought his watercolors with him to capture some of the scenes on the island.



Randon Ridge from Magic Mountain
PNC



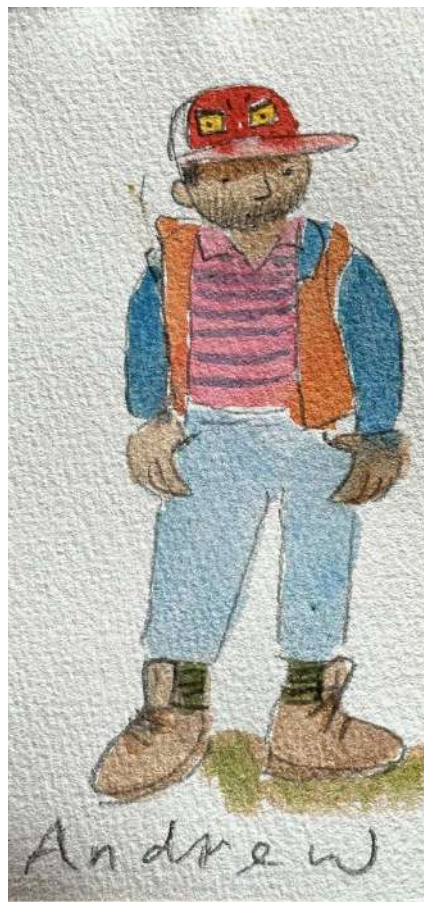
Cultivated and native flora near the lodge.





An assortment of moths attracted to my porch light.





Ken (left) and Luke (on left in second photo) were our guides and security. Simon (on right in second photo) assisted at the lodge. John (third photo) was the lodge caretaker. Andrew (right) was our bus driver .
They are members of the local Kussumb tribe from Paiya village.



The gardens around the lodge have orchids mounted on trees, some of which needed a little TLC. Our group spent a morning teaching the staff about orchid care and improving the garden for future visitors. The plants are ones that had fallen from trees and were found on pathways and rescued.





Mediocalcar decoratum (upper and lower left).
Peristylus pachyneura (right).



Pterostylis papuana (left); *Dendrobium prosthecglossum* (center); *Octarrhena platyrachis* (right).



Liparis wernerii.



Coelogyne fragrans (upper left); *Agrostophyllum uniflorum* (lower left); *Bulbophyllum trachyanthum* (right).



Phreatia cf. *tafana* (upper left); *Dendrobium subclausum* (lower left), sometimes called the candy corn orchid; *Dendrochilum longifolium* (right).





Bulbophyllum tricanaliferum (upper left);
Phreatia sp. nov. from section *Caulescentes* (lower left).



Hiking around Magic Mountain.





Bulbophyllum
tricanaliferum (upper
left); *Cadetia* species
(upper right);
Dendrobium
masarangense (lower
left and right).



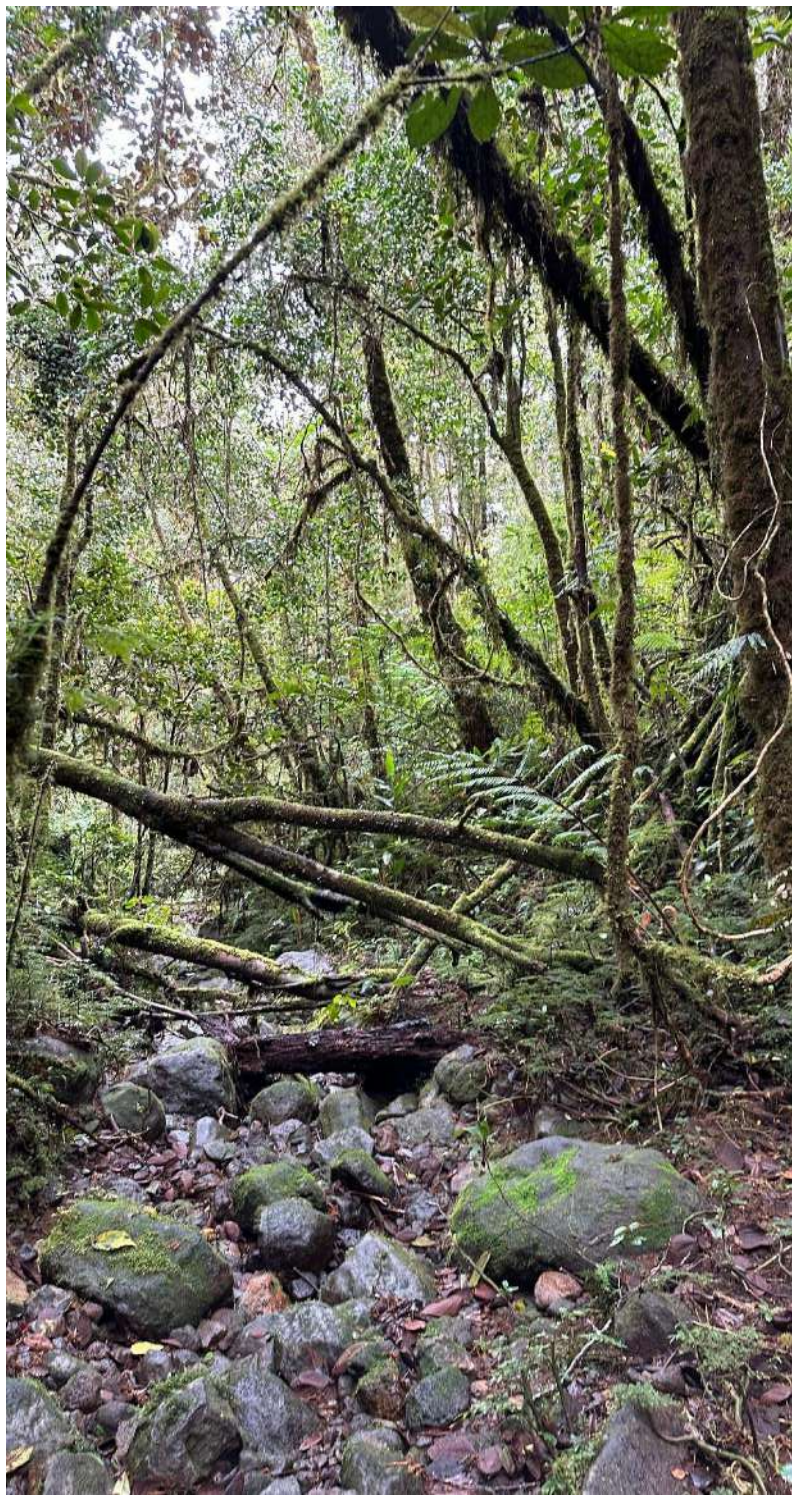


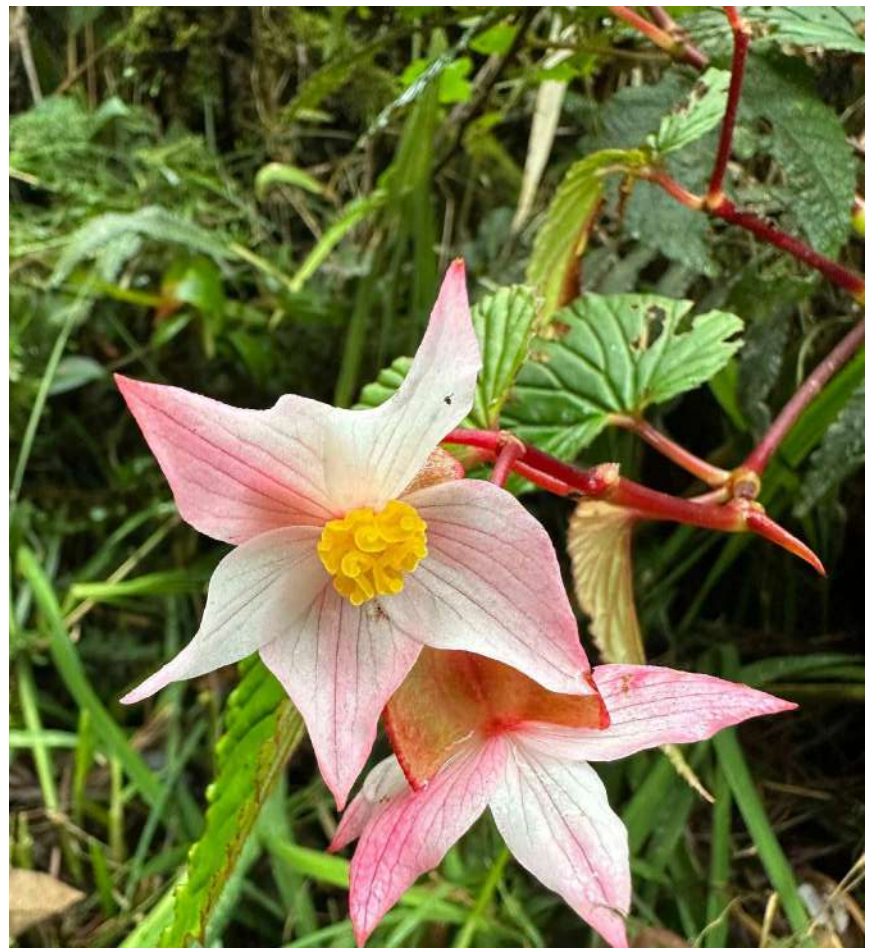
Dendrobium sp. nov. section *Grastidium* , undescribed (upper left);
Glossorhyncha species (lower left);
Dendrobium cuthbertsonii (upper right).





Crepidium megalanthum (right).





Bulbophyllum saccoglossum (upper and lower left);
Begonia species (upper right).





Rhododendron species (left); *Crepidium megalanthum* (above, center); *Spathoglottis parviflora* (upper right).



Another walk from the lodge provided additional habitat for orchids and other cool things.





Ken and Luke needed a little break for bad habits: chewing betel nut and smoking.

Betel nut chewing is a practice in which areca nuts are chewed together with slaked lime and betel leaves for their stimulant and narcotic effects. The practice is widespread in Southeast Asia, Micronesia, Island Melanesia, and South Asia. It stains the teeth red over time. The mixture is not swallowed and the spit is an eyesore. Betel nut chewing is addictive and has been linked with adverse health effects (mainly oral and esophageal cancers).



Bulbophyllum alticola.



A small *Dendrobium* species on a twig (upper left); *Crepidium megalanthum* (lower left); *Bulbophyllum tentaculiferum* (right).



Taeniophyllum robustum, a fascinating leafless orchid.



Bulbophyllum species section *Polymeres* (above); *Bulbophyllum brachypus* (below) showing variation in color and form.





Goodyera viridiflora (left and upper center);
Platylepis zeuxinoides ? (upper right);
Phreatia species (lower center);
Bulbophyllum lepanthiflorum (lower right).



Dendrobium cuthbertsonii in an assortment of color forms.





Unidentified (above left);
Dendrobium species section *Grastidium* (lower right)





Another day of hiking from the lodge up the slopes of Mt. Hagen.
We met some local kids harvesting grasses. A colony of *Liparis* species in the forest (lower right).







Dendrobium caliculimentum (left and lower center and right); *Tainiophyllum podochiloides* (upper right).



Liparis species (left); *Crepidium* species (above, center);
unidentified (upper right);
Dendrobium vexillarius (lower center);
Peristylus triarnus (lower right).



Bulbophyllum masonii,
maybe my favorite of the trip!.





Dendrobium subclausum, high up in a tree and close up (upper and lower left); *Phreatia* species (upper right);
Calanthe arfakana? (lower right).





We visited the garden of local orchid expert Max to see his collection of unusual species. We also hiked in the surrounding forest to see many more plants in their natural environment.





Max's farm is at an elevation of around 8000 feet (2460 meters). He grows lots of passion fruits which he sells locally.





Dendrobium alaticaulinum (left); Unidentified (above center);
Stichorkis brunnescens (upper right);
Dendrobium cuthbertsonii (lower right)





Bulbophyllum brachypus (upper left);
Bulbophyllum tricanaliferum (lower left);
Dendrobium caliculimentum (right).



Ceratostylis species (upper left);
Bulbophyllum species, section *Pedilochilus* (lower left);
Dendrobium geotropum (right).



Dendrobium habbemense (upper left); *Glomera* sp. nov. cf. *fransseniana* (lower left); *Dendrobium* species (right).



Dendrobium nardoides .



Phreatia species (left); *Bulbophyllum calviverter* (above, center);
Bulbophyllum lepanthiflorum (upper right);
 unidentified (lower right).





Bulbophyllum alticola.





Epiblastus montihagenii, (left); *Epiblastus chimbuensis* (right).



From Max's place on the edge of Enga province we headed to a road cut where Max wanted to show us some orchids on a cliff face. Poster in Tok Pisin, the primary lingua franca of the country, promoting polio vaccines (lower left).





Dendrochilum longifolium (lower left and right) on the cliff.
Coelogyne species (upper left).



Spathoglottis parviflora.



Rondon Ridge, at 7100 feet (2200 meters) in elevation, on the fringes of the Kubor range, overlooks the Wahgi Valley and Mount Hagen town in the Western Highlands Province. There is an expensive lodge here where we had lunch and bought a few souvenirs but we found the management to be rather unfriendly. Some local women were offering bilums and some jewelry for sale. The website boasts of 93 orchid species found on the grounds and 203 bird species including 12 Birds of paradise! We visited a couple of areas with orchids in their natural habitats and some places where they mounted fallen orchids.







Cadetia quinqueloba (upper left); *Cadetia* species (upper right); *Dendrobium* species (lower left); *Bulbophyllum erinaceum* (lower right).





Glossorhynca (Glomera) species (upper left); *Ceratostylis* sp. (lower left); *Crepidium* species (right).



Oberonia species (left and upper right). There are at least 87 species in the genus found in PNG.

Bulbophyllum levatii subsp. *mischanthum* (lower right).





Impatiens hawkeri, the New Guinea impatiens.



Bulbophyllum species (upper left); *Dendrobium violaceum* (upper right);
Mediocalcar bifolium (lower left); *Bulbophyllum unicaudatum* (lower right).





Leopard moth.



Bulbophyllum olivinum subsp. *olivinum*.



Coelogyne fragrans?



Bulbophyllum intersitum (left);
Dendrobium hellwigianum (right).



Dendrobium finisterrae (left);
unidentified (right).



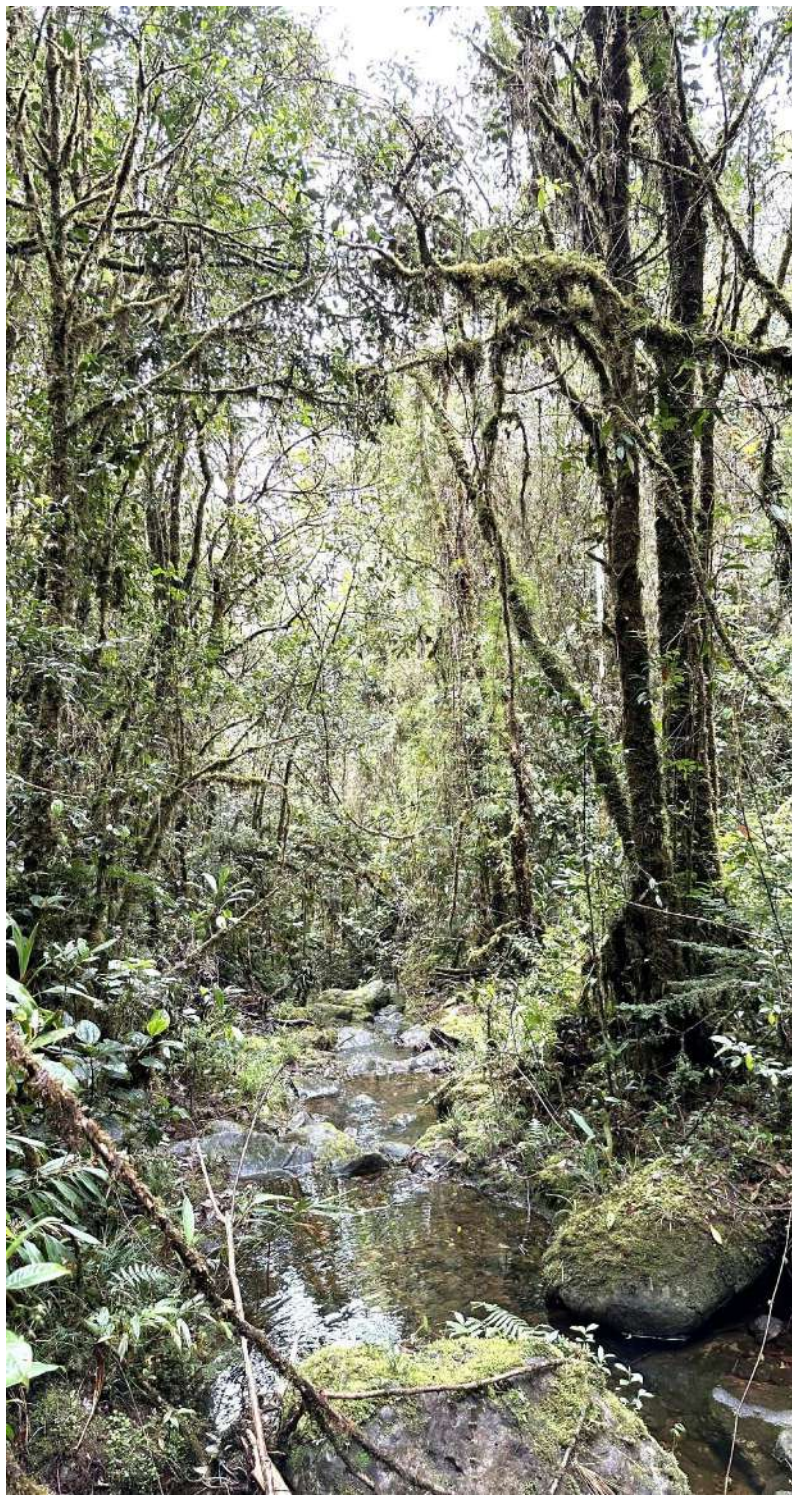




We visited another village where there was some nice forest and an orchid collection. Everyone was happy to see us and joined in our expedition up the hill..







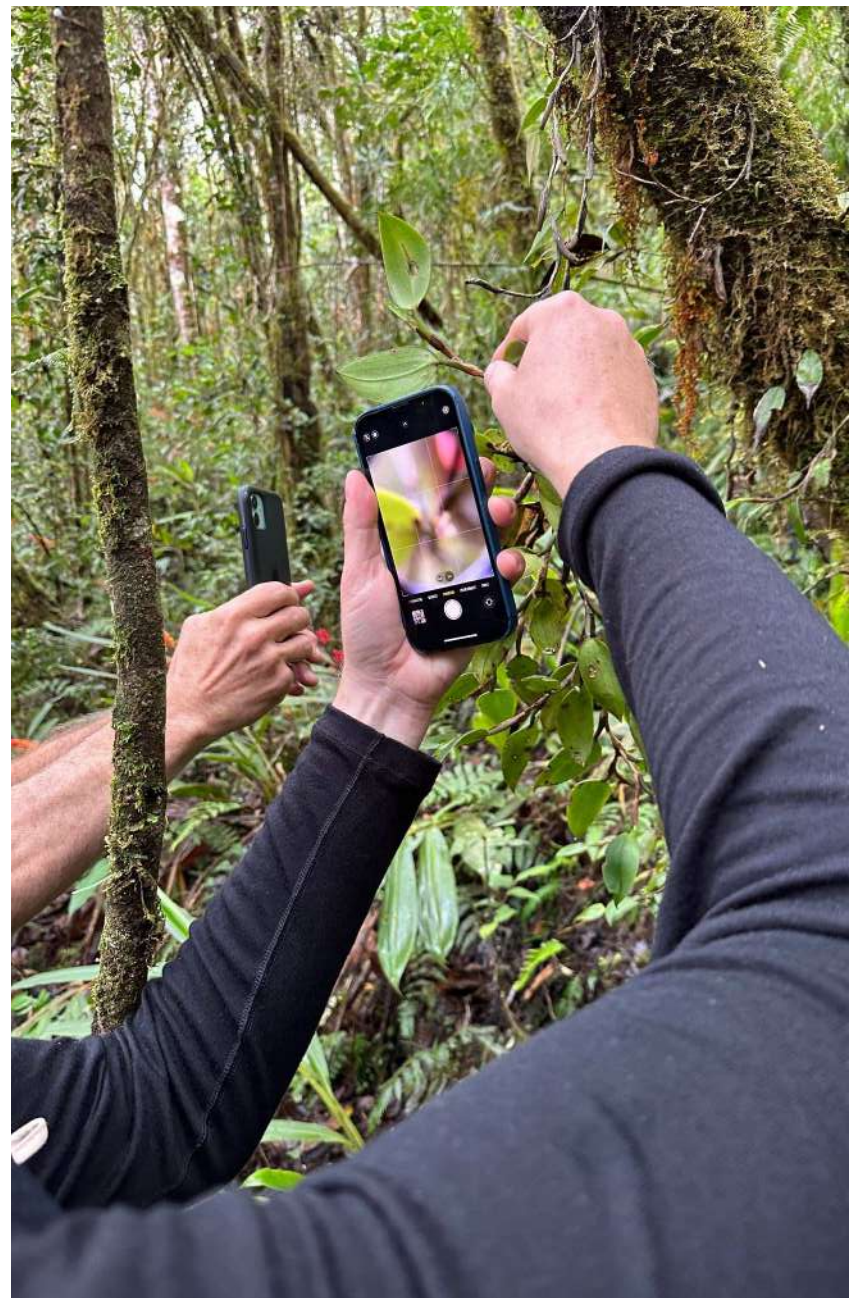






Village ritual grounds (above); Unusual beetle (below).





Epiblastus chimbuensis (upper left);
Phreatia species (lower left).



Bulbophyllum macneiceae.



Bulbophyllum trachyanthum.





Liparis wernerii (left); *Dendrobium* species (right).

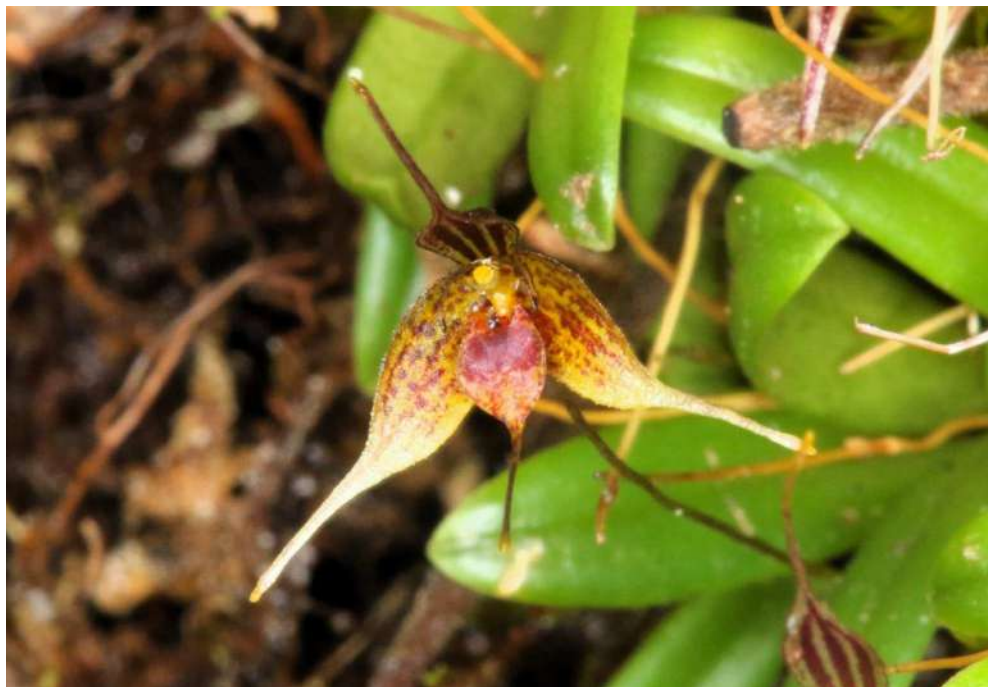


Phreatia species (left); *Dendrobium violaceum* (upper center);
Glomera montana (upper right);
Agrostophyllum species (lower right).





Glomera species (upper left);
Bulbophyllum intersitum (lower left);
Bulbophyllum masonii (right).





Bulbophyllum species section *Polymeres* (upper left);
Crepidium species (lower left and right).











It took a village (and Greg) to pull our bus out of the mud!





Another foray to look for orchids took us through a small village along the Waip River.





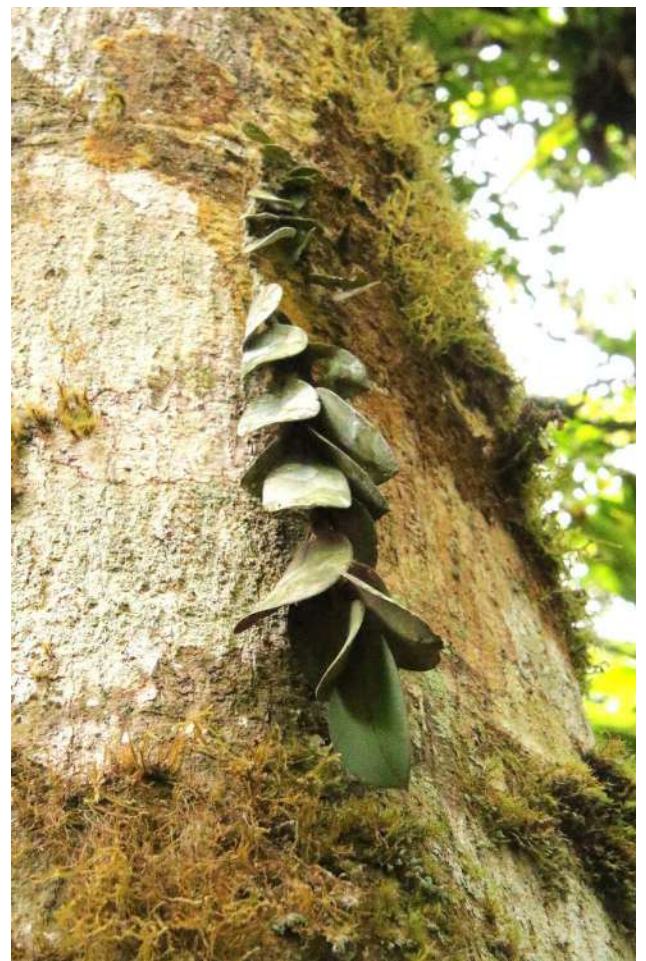




Dendrobium species. section *Grastidium* (lower right).



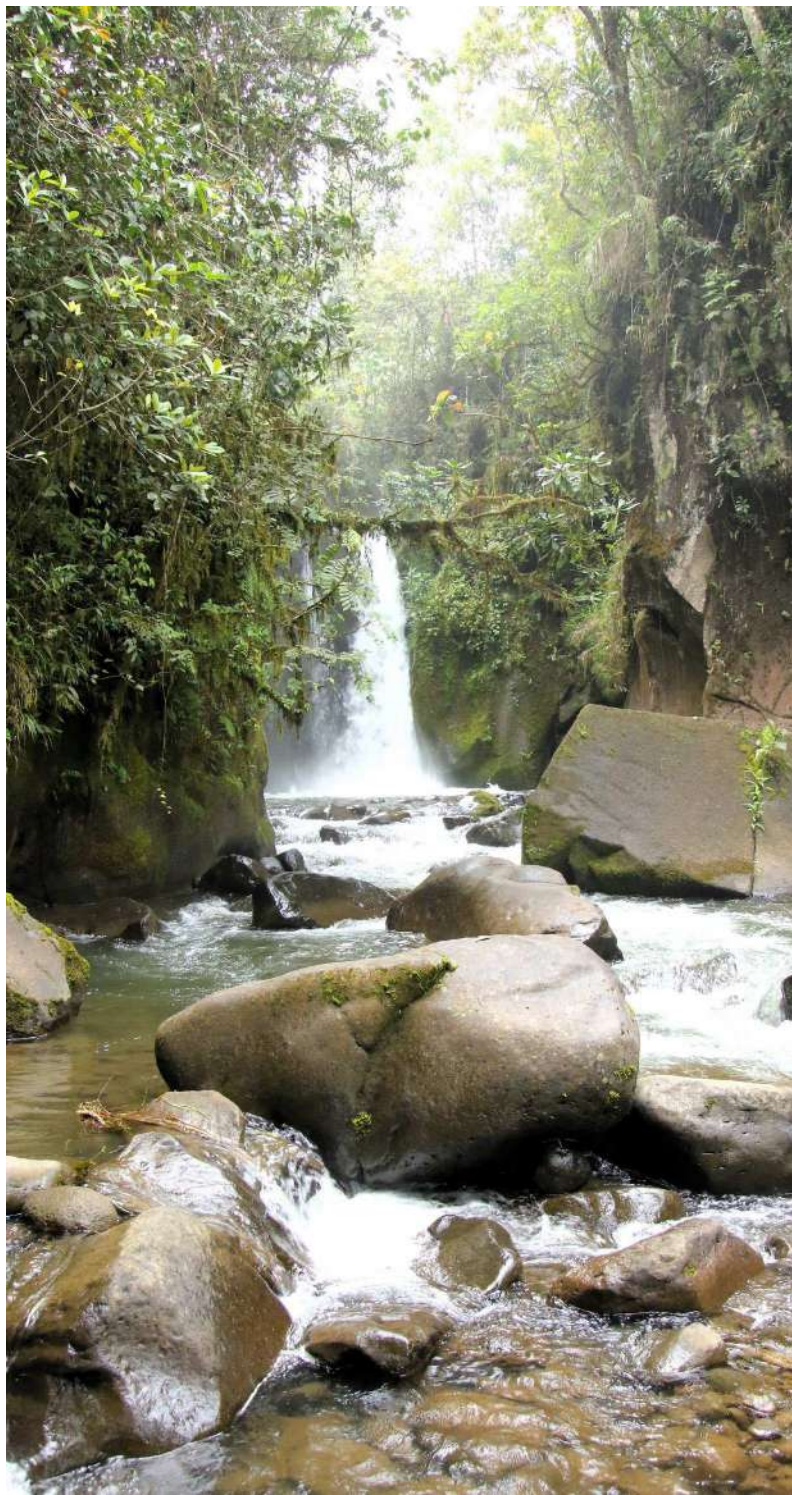
The terrestrial *Goodyera rubicunda* (lower left and center)) *Bulbophyllum* species with an unusual growth habit (upper right).
Common rhinoceros beetle (lower right).

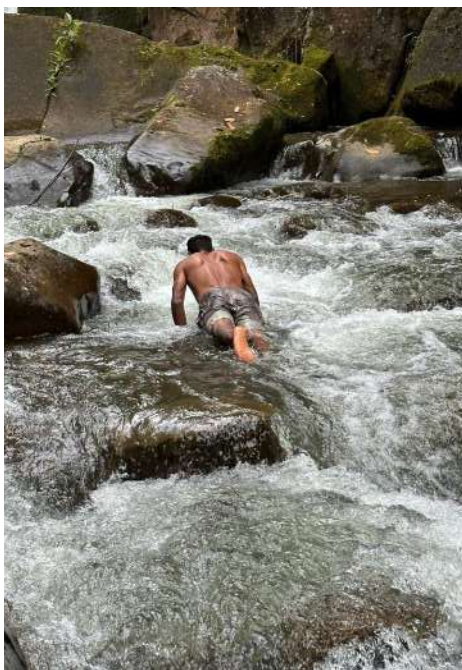
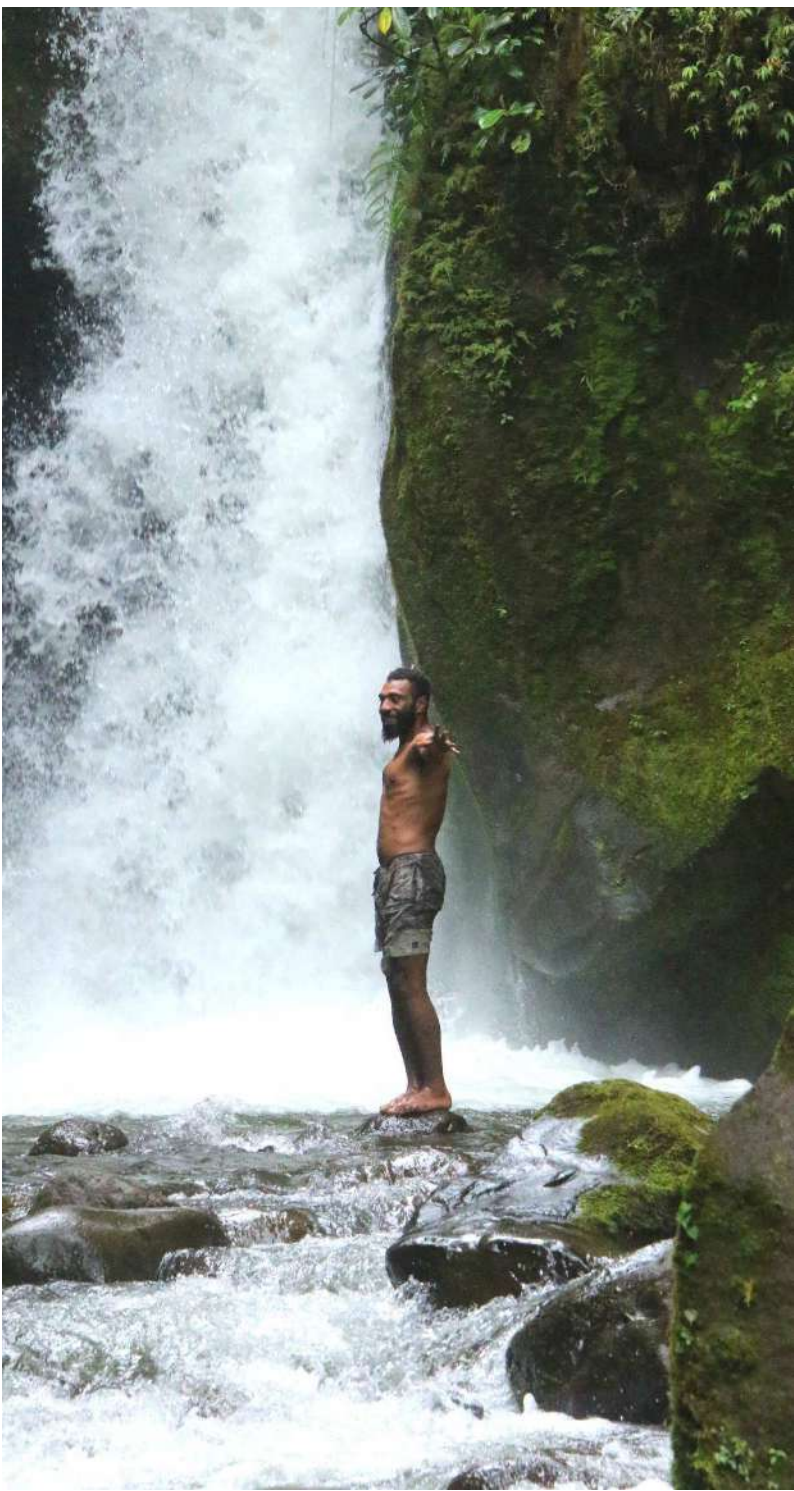






An afternoon scramble down the valley to the Waip River for a short swim.







There are around 900 species of birds on PNG with about 110 being endemic and about 820 species of butterflies with 450 endemics.
Island thrush (upper left); Friendly fantail (upper right).





Red-collared Myzomella, a type of honeyeater (male above, female below).





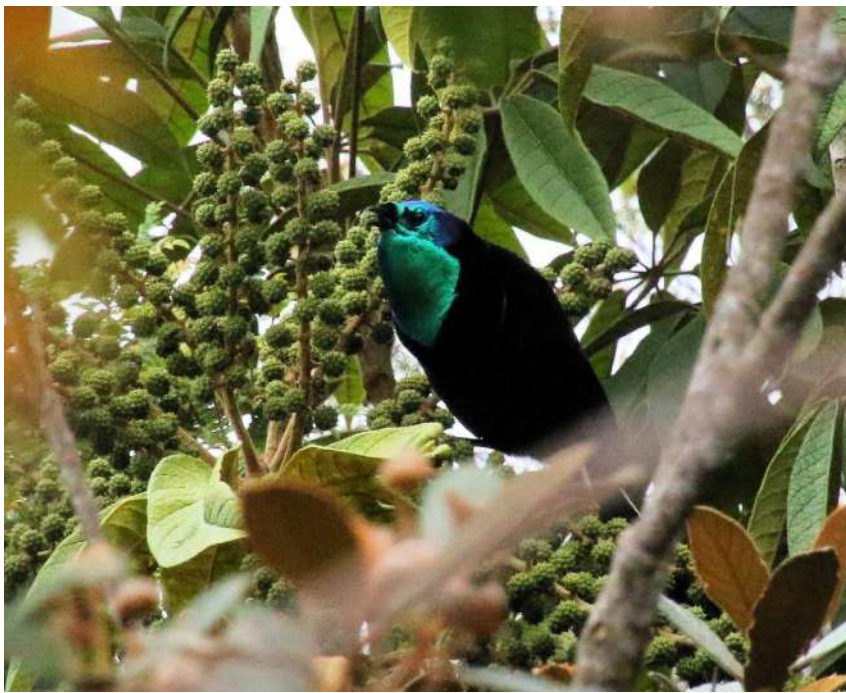
We stopped at Kamul Lodge for some bird watching. It is at 2,861 meters - 8,585 feet in elevation. They list 99 bird species on their grounds.

Brehm's Tiger parrot (upper row);
Western Smoky Honeyeater (bottom row).
The bare eye patches can be yellow or orange.



Belford's Melidectes, or Belford's honeyeater, is a very aggressive and territorial bird that has earned it the name bully bird. It has a loud distinct song that was our alarm clock each day around 6:50 am.





Stephanie's Astrapia, a type of bird of paradise (males) seen at Magic Mountain. Its genus name, *Astrapia*, means "flash of lightning", referring to the brilliant iridescent plumage present in some form on all *Astrapias*. Its specific name honors Princess Stephanie of Belgium, the wife of Crown Prince Rudolf of Austria.





Brown sicklebill, a bird of paradise (male left, female right).





Ribbon-tailed Astrapia, a bird of paradise (female two left photos, male two right photos). The males lose their long white tail feathers for part of the year.



Views of the countryside around Mt. Hagen.





Coffee farms and banana plantations are scattered around the highlands.















Papua New Guinea has about 312 tribes including some uncontacted peoples. Visiting some of these unique groups was a highlight of the trip. Perhaps the performances have become mainly for tourists but the customs are rooted in history.

Our first visit was to a Mud Men village. This group is primarily from the Eastern Highlands and are known as Holosa (ghosts). Mud Men are the least adorned of the tribes. When they appear, smeared neck to toe with white clay, they keep to a single file, walking glacially slow, every tendon of their whippet-like bodies taut as their bowstrings, constantly looking left, right, behind, ready for anything. Some have arrows nocked in their bows while others have spears and clubs. Some wear red-painted bamboo on their fingers, extending for several inches and filed to a razor point, like giant claws. There is no talking; even those watching them are silent.

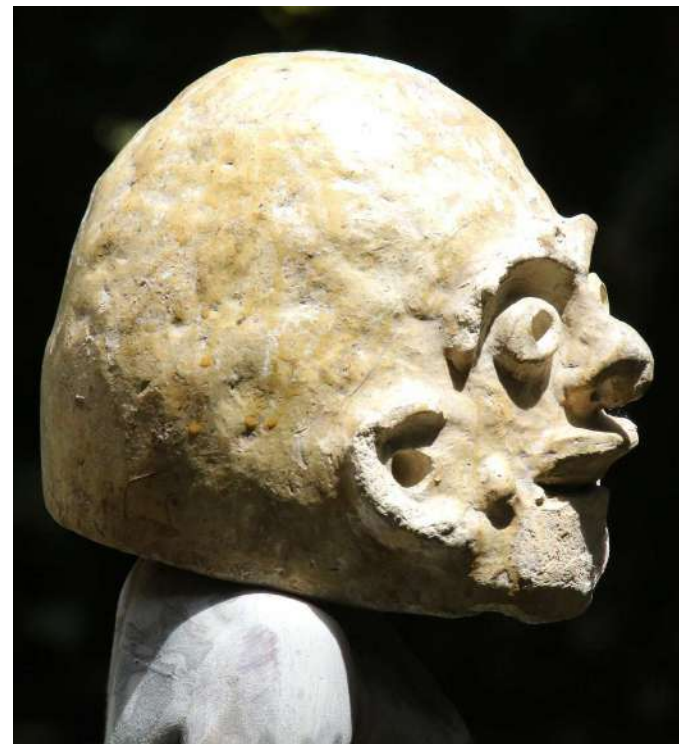
The Mud Men have been highly romanticized in literature, often as the noble savage, but they are quite simply connected to the earth in the most basic way. While many tribal people use smeared mud to go to war, this tribe wears it to avoid battle. Their prowess as warriors has always been inflated, and although literature and legend have ascribed them special martial powers, their only real advantage in a battle is their fiercely scary appearance. If you can generate fear, you do not have to go to war.

No two Papua New Guinea masks are alike: Each springs from the imagination of its maker. They might have horns or tusks, ears or a gigantic nose, be partially painted, or have messages etched inside.

The original intent was always to strike fear into one's opponent. They are sun-dried rather than baked, and the process takes many days. The end result is surprisingly heavy. Weighing upwards of 20-25 pounds and sitting directly on the wearer's collarbone, they take a toll. After a ceremony, the Mud Men are bathed in sweat.





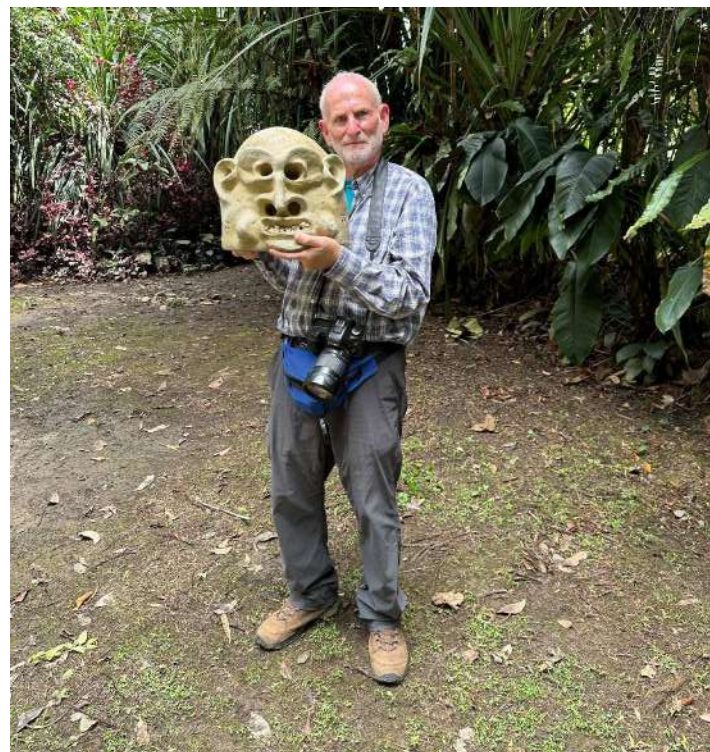




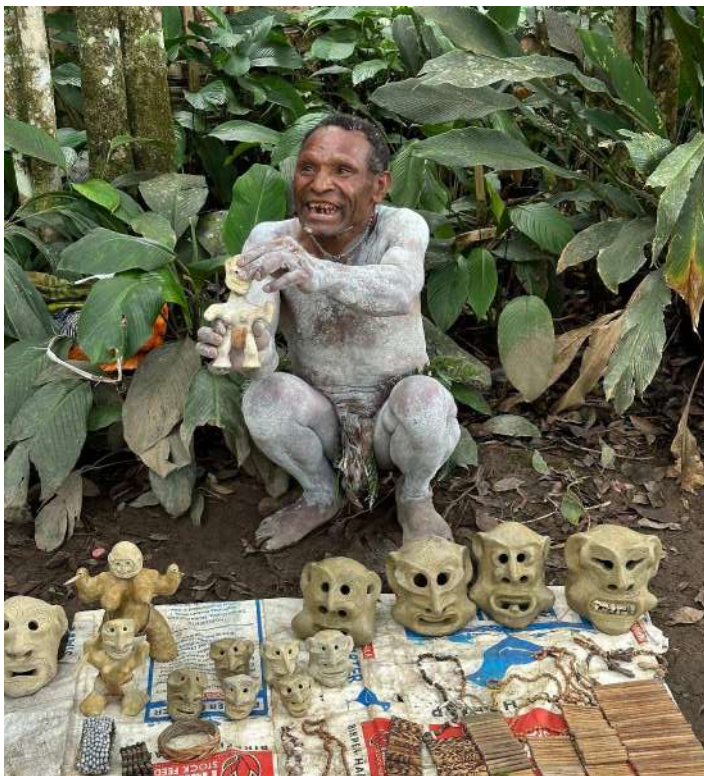
















The Chimbu, an ethnic and linguistic group, live in the Chimbu, Koro and Wahgi valleys in the mountainous central highlands of Papua New Guinea.

According to their folklore, the skeleton based getup was initiated as a way to scare other tribes, with death and ghosts provoking fear across the spectrum of the tribes of Papua New Guinea. Thus the aim was to make enemies think they were supernatural and thus held other worldly powers. The Chimbu used to paint themselves to psychologically intimidate their enemies but now it's celebratory.









John always mesmerized the local folks while he practiced his art.



Torch ginger, *Etlingera elatior*, and honeycomb or beehive ginger, *Zingiber spectabile*, in the garden.

The Huli are an indigenous Melanesian ethnic group and one of the largest cultural groups in Papua New Guinea.

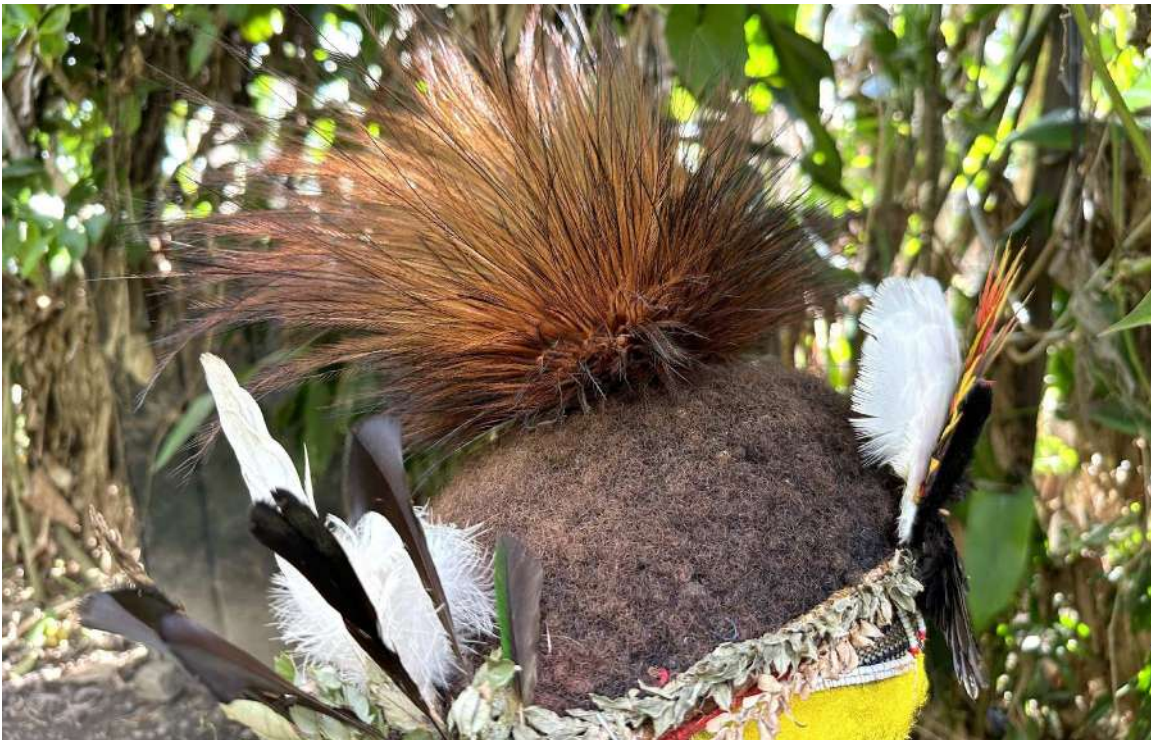
There is every indication the Huli have lived in their region for many thousands of years and recount lengthy oral histories relating to individuals and their clans. They were extensive travellers (predominantly for trade) in both the highlands and lowlands surrounding their homeland, particularly to the south. The Huli were not known to Europeans until November 1934.

This tribe has a unique process for preparing men for adulthood. Boys live with their mothers until they are seven or eight years old, when they go to live with their fathers to learn how to become men. At 14 or 15 years of age, they enter bachelor school—for anywhere from 18 months to three years—to learn about the biological and ritual processes of becoming a man. During this time, they are forbidden from contact with any women, including their mothers. It's believed that a combination of magic and a special diet help the young male transition into a man and help his hair grow extra quickly.

In order for the boy's hair to grow, it must be wet three times a day, with the young man singing as he uses fern leaves to sprinkle his hair with water. He must not eat pig's heart or fat or spicy foods and he must sleep on his back with his head on a brick so he doesn't squish his locks as they grow. As his hair grows, it is gradually shaped, using a circular band of bamboo, into a shape resembling a toreador's hat. After 18 months, it is clipped off close the scalp and woven into a traditional Huli wig by the wig master. Additional adornments, such as parrot feathers or red ocher, are usually added to the wig.







Hornbill beaks and boar tusks,
wig and feather headdress.

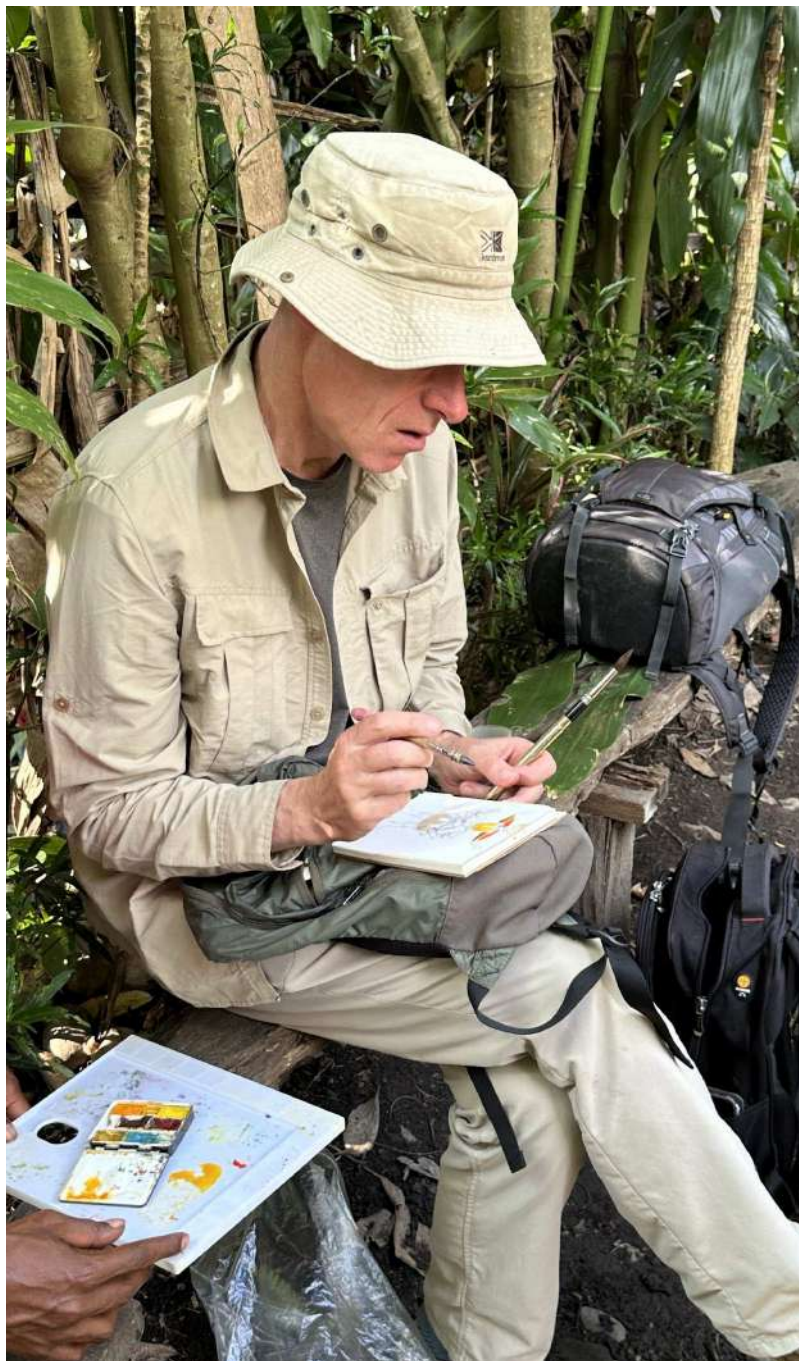














We spent a day in Paiya village, the home of Luke, Ken, Andrew, Pym and our other hosts.
Pholidota carnea (upper left) and *Arundina graminifolia* (lower right), common in gardens.





Items for sale included bead and shell jewelry, kina shell necklaces (above right) and bilums.





Luke took us to the village historical museum to show us some of the tribal artifacts. The spirit hut (upper left) has stone implements unearthed on the land. Luke holds a kina shell (upper right) which was used as currency and for adornment.

Wooden shields were used for fighting (lower left) and dancing (lower right). The traditional hut houses tools and other implements.





The skulls of former tribal leaders, likely up to 100 years old. The practice was discontinued once Christianity was introduced to the tribe.



The village chief (right), his wife (center right), his mother (center left) and his mother in law (left).

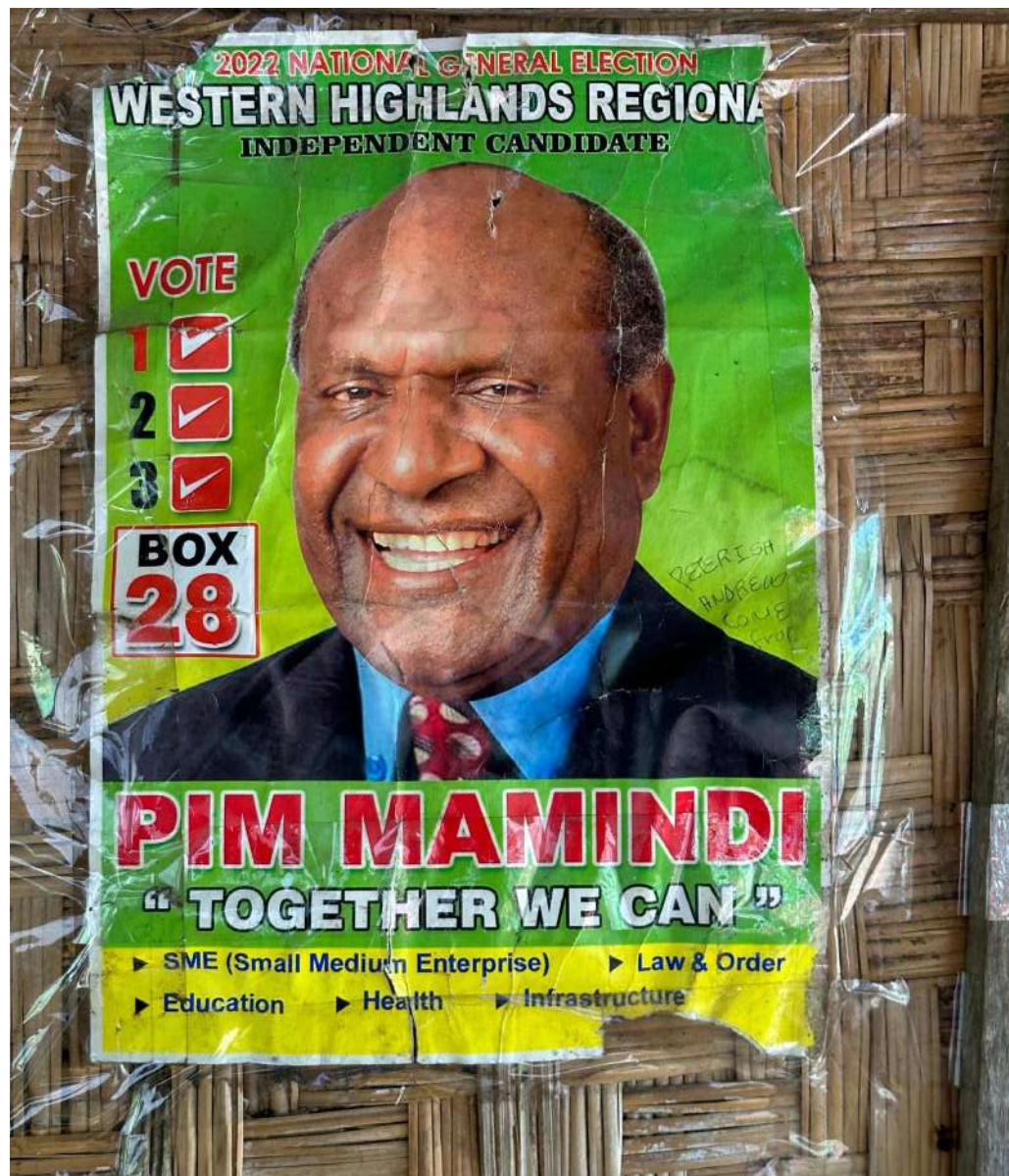




We took a walk around the village through the agricultural fields of taro, corn, sweet potatoes and tobacco.







Pym (or Pim) is the owner of Paiya Tours, Magic Mountain Nature Lodge and Traveler's Hut (in Mt. Hagen). He organized our tour and joined us on some of our excursions. He lives in Paiya Village and is a well known figure in the region. He ran for political office though came in second.









In our honor a special meal was prepared called a mumu, the national dish of Papua New Guinea. Mumu refers to the earthen pit oven and the feast of vegetables and meat (usually a pig) cooked in the ground. The development of the mumu has been traced to roughly three hundred years ago, when pigs large enough to be cooked became common in the country. After the hole is dug, stones are heated in it by burning wood on top of them. Once the fire had burned down, all but a thin layer of the hot stones are carefully removed, and a layer of large leaves is laid on the base layer of stones to steam the food. Then follows a layer of hard vegetables, including yams, corn, pumpkin and other traditional New Guinean vegetables. Over this is a layer of smaller, edible and aromatic leaves such as nasturtium. Then comes another layer of hot stones and then the whole thing is covered completely with earth and it cooks for several hours before the contents is dug up to eat.











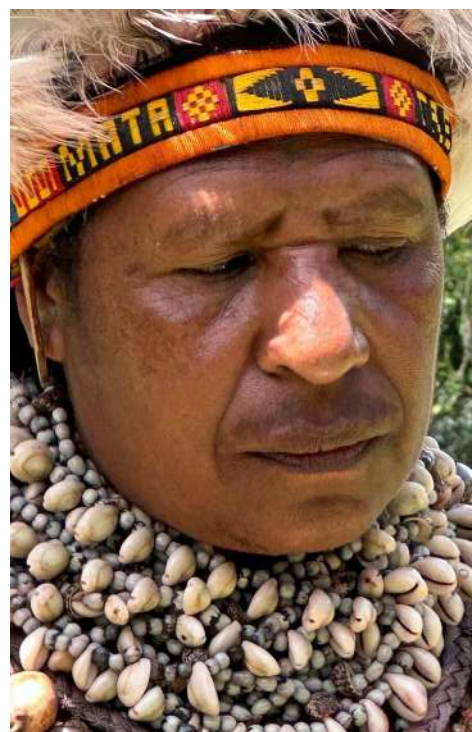
John and Greg partaking in some smoking and betel nut chewing to the amusement of the locals. Not sure they really enjoyed it.

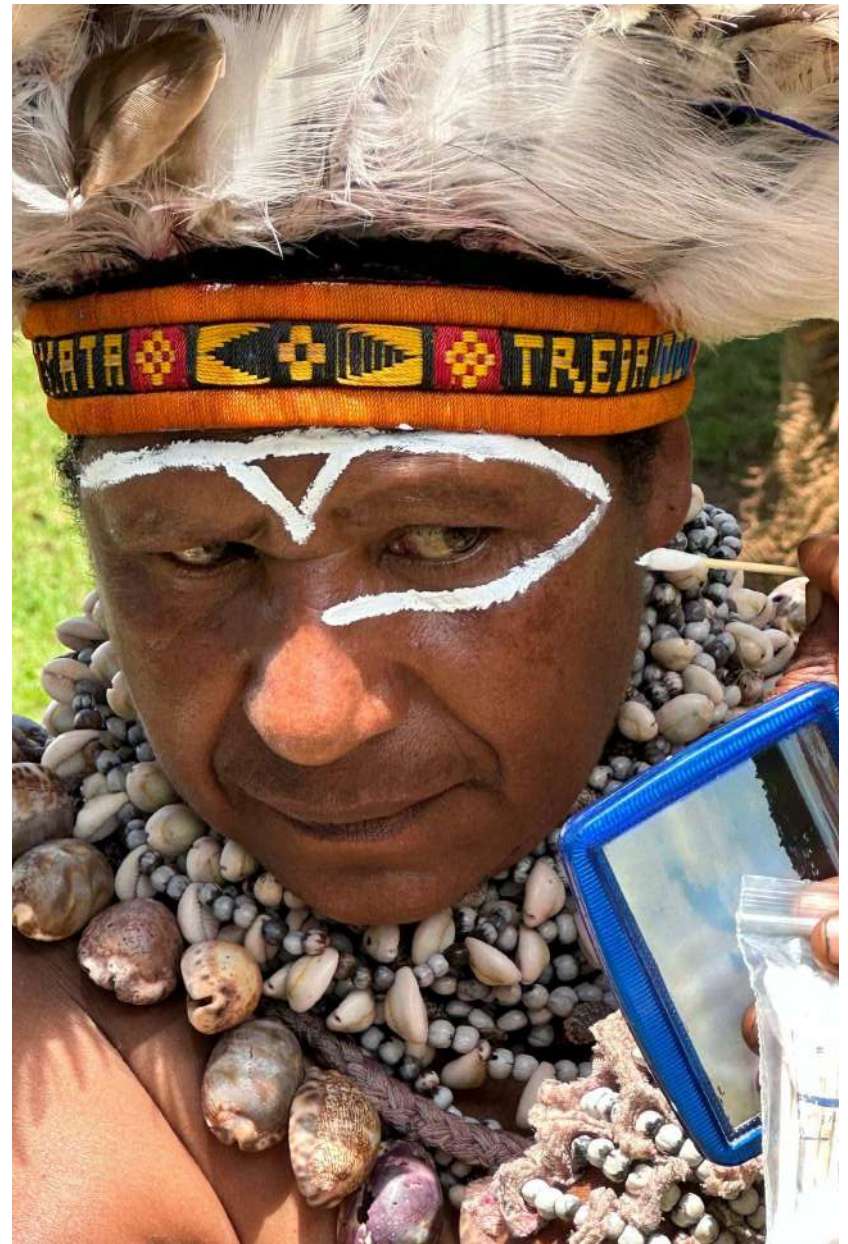




We were treated to a performance by some of the men and women of the Kusumb tribe who took a long time to apply their wigs, headdresses, make-up and jewelry. Small mirrors were used or others helped apply the face paint.











A variety of feathers are used to create the headdresses including birds of paradise, parrots, chickens and peacocks.





Kundu is a pidgin name for an hourglass drum used to accompany formal occasions, religious ceremonies and for celebrations. This drum is emblematic of Papua New Guinea and it appears on the country's coat of arms.

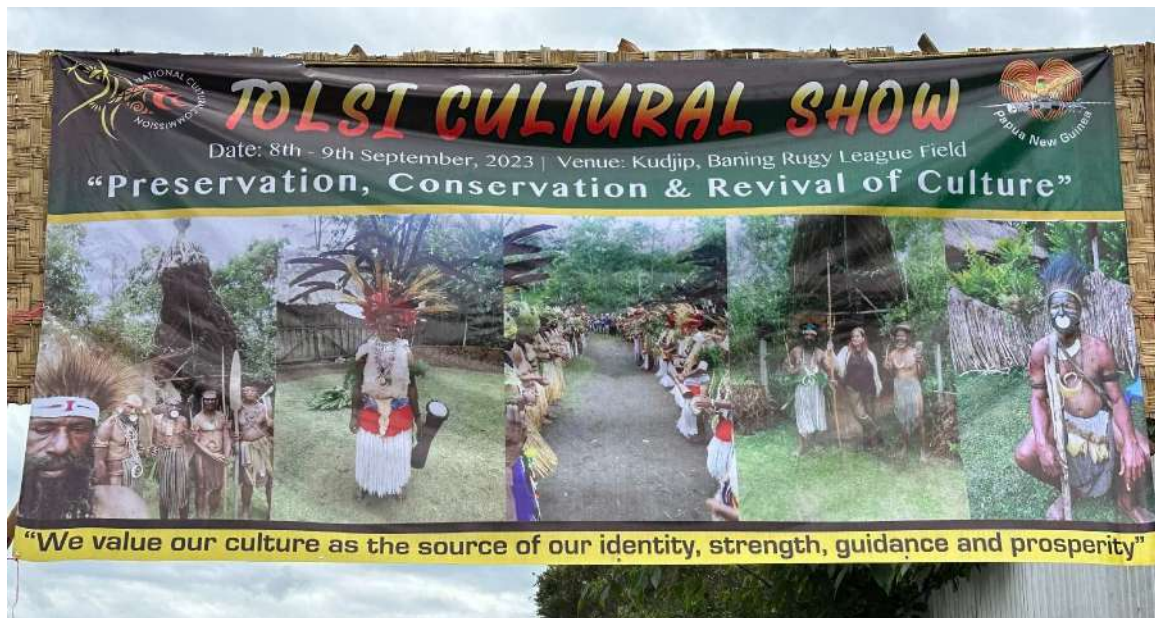






Barbara, Spiro, Greg, Kevin (kneeling), John, Mary, Maddie and Rick.





Large-scale song and dance festivals in Papua New Guinea are known as Sing-Sings. As many as 160 regional, provincial, and national tribal dance groups, each with their own style of body decoration, travel for days on foot or by boat, bus, or truck to gather for these annual traditional events. Sing-Sings are based on traditional large gatherings but these modern festivals were created by the government so that traditional enemies could meet on neutral territory. The first sing-sing was held in the town of Goroka in 1957. Instead of fighting over ancient feuds and cultural differences, the idea was to get together and celebrate diversity and socialize peacefully. More than 50 years later these festivals are major events drawing locals as well as an increasing number of tourists. The most well-known of the sing-sings is the Mount Hagen Culture Show in the Western Highland Province. There are no longer any competitions, not even for dancing or singing. Quite rightly, the organizers feel that one cannot say that one cultural dance is better than another without giving the feeling that the culture itself is being judged.

There are a considerable number of women's groups, wearing more birds in their headdresses than you'd find in a Filipino smuggler's suitcase, their glimmering breasts sporting as many kina shells as they possess in order to display their wealth. Fierce-looking Silimbuli warriors with blackened faces in huge hair-woven berets jump up and down in unison to the rhythm of their kundu drums, dissuading any challenge. Brightly-colored Mount Hagen warriors form a formidable spear line, but chant and whistle cheerily whilst grass-skirted Engan ladies dance and sing as their men beat out a tune on bamboo (and hardware store PVC) pipes with flip-flops. One tribe has giant bird and butterfly frameworks on their backs in a sort of Rio Carnival style, others act out stories about spirits and ancestors in song, shaven headed children with their hair made into beards playing the roles of pygmy ghosts. Hornbill beaks and wild pig tusks are proudly worn, and feathers, grasses, moss and leaves used as dress and decoration in a myriad of ways. Every tribe is stunning, headdresses are frequently an ornithologist's nightmare of feathers and often whole stuffed birds.

Though we weren't in country for one of the bigger shows, we were fortunate to hear about this smaller sing-sing in neighboring Jiwaka province with maybe 25 groups present. We saw only one other small group of tourists at this show.





There was a small elevated covered platform for announcers and we were invited to climb up for a panoramic view of the festival to get an idea of the number of participants. Very cool but getting up close and personal with the many groups was more amazing.





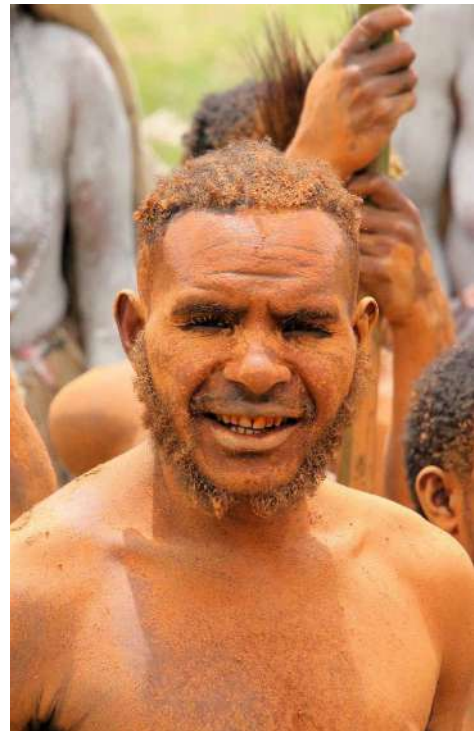














An Engan group with the PVC pipe instruments and flip-flop paddles had a fantastic beat.

























This group were demonstrating starting fires by rubbing sticks together.

















This tribe acts out stories about spirits and ancestors in song with shaven headed children, with their hair made into beards, playing the roles of pygmy ghosts.























A produce stand near the village.



The second part of our trip was to the islands to the east of the main island. We flew from Port Moresby to Alotau. Alotau is the gateway to the Milne Bay Province, which contains some of the most remote island communities in the world. Milne Bay is noted for its coral reef and scuba diving experiences.

Note that extensive oil palm plantations seen from the air (below).



Milne Bay is a large bay in Milne Bay Province, south-eastern Papua New Guinea. More than 35 kilometers (22 miles) long and over 15 kilometers (9 miles) wide, Milne Bay is a sheltered deep-water harbor accessible via Ward Hunt Strait. It is surrounded by the heavily wooded Stirling Range to the north and south, and on the northern shore, a narrow coastal strip, soggy with sago and mangrove swamps.

The bay is named after Sir Alexander Milne.

During World War II, the area was the site of the Battle of Milne Bay in 1942 and by late 1943 it became the major support base, Naval Base Milne Bay, for the New Guinea campaign through the development of Finschhafen as an advanced base after that area was secured in the Huon Peninsula campaign. By January 1944 about 140 vessels were in harbor due to congestion at the facilities. Congestion was relieved by opening of a port at Finschhafen and extensive improvements at Milne Bay. Malaria was a major problem in New Guinea and Milne Bay was particularly hard hit with incidents of the disease hitting at a rate of 4,000 cases per 1,000 troops per year and estimated 12,000 man-days a month lost time.

Milne Bay is a province of Papua New Guinea. Its capital is Alotau. The province covers 14,345 km² of land and 252,990 km² of sea, within the province there are more than 600 islands, about 160 of which are inhabited. The province has about 276,000 inhabitants, speaking about 48 languages, most of which belong to the Eastern Malayo-Polynesian branch of the Austronesian language family. Economically the province is dependent upon tourism, oil palm, and gold mining on Misima Island; in addition to these larger industries there are many small-scale village projects in cocoa and copra cultivation. The World War II Battle of Milne Bay took place in the province.

Culturally the Milne Bay region is sometimes referred to as "the Massim," a term originating from the name of Misima Island. Massim societies are usually characterized by matrilineal descent, elaborate mortuary sequences and complex systems of ritual exchange including the Kula ring. From island group to island group and even between close lying islands, the local culture changes remarkably. What is socially acceptable on one island may not be so on another.

Geography

The coral reef systems of Milne Bay are some of the most biodiverse in the world, and as such attract equal attention from dive operators and conservation groups. The D'Entrecasteaux Islands still have volcanic activity, especially around Dobu and Fergusson Islands.

The waters from the Amphlett group to the Trobriand Islands are poorly charted, and, as a result, are rarely visited by tourists or yachts passing through. On the other hand, the Louisiade Archipelago is a stopover for yachts travelling around the world and ones visiting from Australia,. However, the area sees few general tourists. The gold mine at Misima is no longer operational. Mining ended at Misima in 2001, with stockpile milling continuing into 2004. During its life, Misima has produced over 3.7Moz of gold and 18Moz of silver. Operations now are mainly focused on mine closure requirements and environmental rehabilitation. There is also on-going prospecting in Woodlark Island and Mwatebu, Normanby Island.

Alotau is the capital of Milne Bay Province, in the south-east of Papua New Guinea. It is located on the northern shore of Milne Bay. The town is located within Alotau Urban LLG.

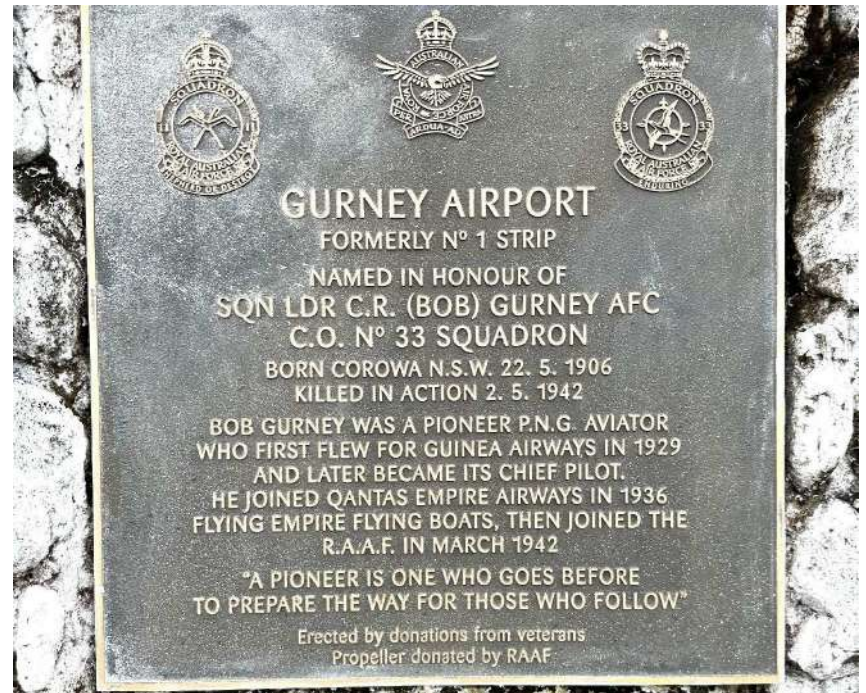
Alotau is also the annual forum for Australian and Papua New Guinean ministers.

Its Cathedral of the Sacred Heart of Jesus is the Episcopal see of the Roman Catholic Diocese of Alotau–Sideia.

The town is located within the area in which the invading Japanese army suffered their first land defeat in the Pacific War in 1942, before the Kokoda Track battle. A memorial park at the old battle site commemorates the event. Alotau became the provincial capital in 1969, when it was shifted from Samarai.

There is a road from Ulumani to Alotau which passes the local Gurney Airport, named after squadron leader Charles Raymond Gurney of the Royal Australian Air Force, who was killed in the area in 1942. The airport is located 12 km from the town.

Alotau has a tropical rainforest climate with heavy rainfall year-round.





Palm oil comes from the fruit of oil palm trees. It is in nearly everything – it's in close to 50% of the packaged products we find in supermarkets, everything from pizza, doughnuts and chocolate, to deodorant, shampoo, toothpaste and lipstick. It's also used in animal feed and as a biofuel in many parts of the world. Forty four countries produce the crop with Indonesia and Malaysia making up 85% of the production. As well as being versatile, compared to other vegetable oils the oil palm is a very efficient crop, able to produce high quantities of oil over small areas of land, almost all year round. This makes it an attractive crop for growers and smallholders, who can rely on the steady income that palm oil provides. Palm oil has been and continues to be a major driver of deforestation of some of the world's most biodiverse forests, destroying the habitat of already endangered species. This forest loss coupled with conversion of carbon rich peat soils are throwing out millions of tonnes of greenhouse gases into the atmosphere and contributing to climate change. But palm oil is an incredibly efficient crop, producing more oil per land area than any other equivalent vegetable oil crop. Globally, palm oil supplies 40% of the world's vegetable oil demand on just under 6% of the land used to produce all vegetable oils. To get the same amount of alternative oils like soybean, coconut, or sunflower oil you would need anything between 4 and 10 times more land, which would just shift the problem to other parts of the world and threaten other habitats, species and communities. So it is important to promote sustainable farming and other practices to limit the spread of the crop. A sticky wicket!.



From Alotau we drove about an hour east to the tip of the main island to East Cape Point where we boarded small boats for our trip to the islands.





Our crew loaded all of our big suitcases into the larger of our two dinghies (upper left) while the locals watched in amusement (upper right). It was a beautiful sunny day but the wind was blowing making for a rather choppy ride once outside of the protection of the bay.





Our first stop was on Normanby Island where we stayed a few nights.

Normanby Island is a volcanic 1,000-square-kilometer (390 square mile), L-shaped and mountainous island, the southernmost island in the D'Entrecasteaux Islands group. It is part of Milne Bay Province. The island has an irregular and elongated shape measuring 73 kilometers in length (northwest-southeast). It is 16 kilometers (10 miles) north-east of East Cape, separated by Goschen Strait, and is separated by the

Dawson Strait (Dobu Passage) from Fergusson Island. It is also separated from Dobu Island, a smaller volcanic island, by a passage approximately 2.5 kilometers wide. The island rises to 1,158 meters (3,799 feet) in the Prevost Range in the southeast. The terrain includes low coastal plains and swamplands, high mountains and steep coastal slopes. Sewa Bay provides shelter on the west coast and Awaiara (Sewataitai) Bay on the east coast. The largest settlement, and the capital of the Esa'ala District, is Esa'ala at the island's northern end, which has a total of approximately 500 homes, residences, and structures.

Once known to produce gold, Normanby now exports copra and some timber. Recent discoveries of gold deposits during the 21st century have begun to be exploited

Normanby Island's population consists of small tribes and communities spread out across the entire island, with some of the tribes having histories going back thousands of years. Most of the individuals living on the island are indigenous peoples whose families have lived there for generations. There are at least 25 settlements on the island with more than 5 houses, with hundreds more small huts and farms scattered around the terrain. The island and its tribes are involved in the Kula exchange, an exchange of goods between islands in the MASSIM archipelago that involves thousands of individuals who travel hundreds of miles by canoe to exchange Kula valuables. Villagers live in small, raised wood huts and in small close-knit communities. The inhabitants of the island speak in Austronesian language as part of the Trans-New Guinea language family. The two main settlements with the largest number of inhabitants on the island are Esa'ala on the northern side of the island followed by Sehulea on the south-eastern side of the island. The majority of the structures in both settlements are wooden huts made from nearby trees around the building. Most of the local population live along the shoreline.



Sibonai guest house in this small village was our home for a couple of nights. We returned later in the week for another night.





Traditional stilted houses.





We were greeted by the local villagers performing a kundu dance sing-sing and they led us to the lodge.

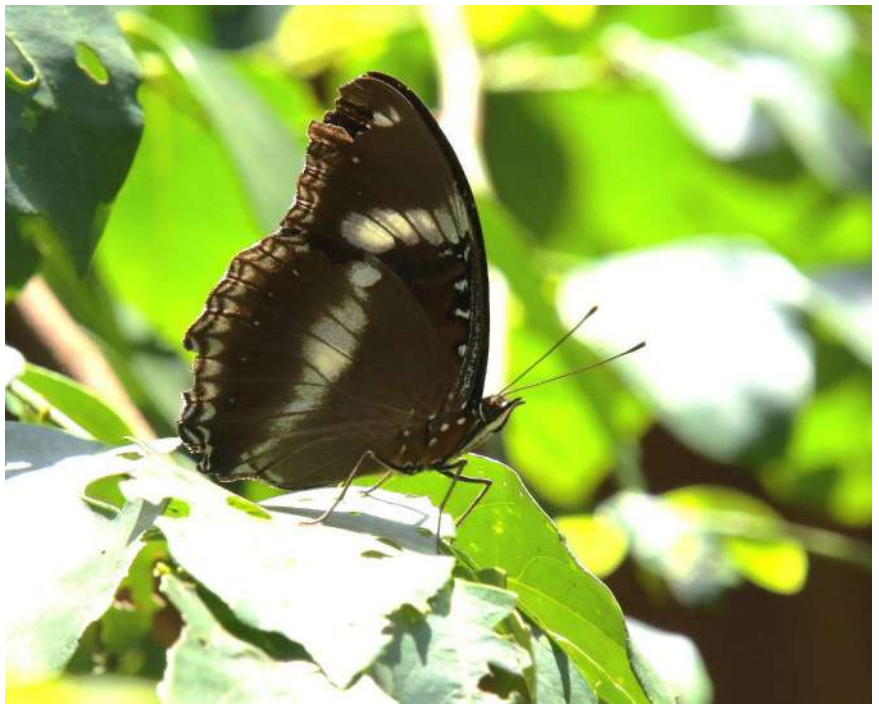












Nature around the lodge.
Olive-backed sunbird (lower center).





New Guinea's mangroves are among the world's largest and most intact wetlands, and are found along extensive lengths of its coastline. They are also the world's richest in mangrove species.

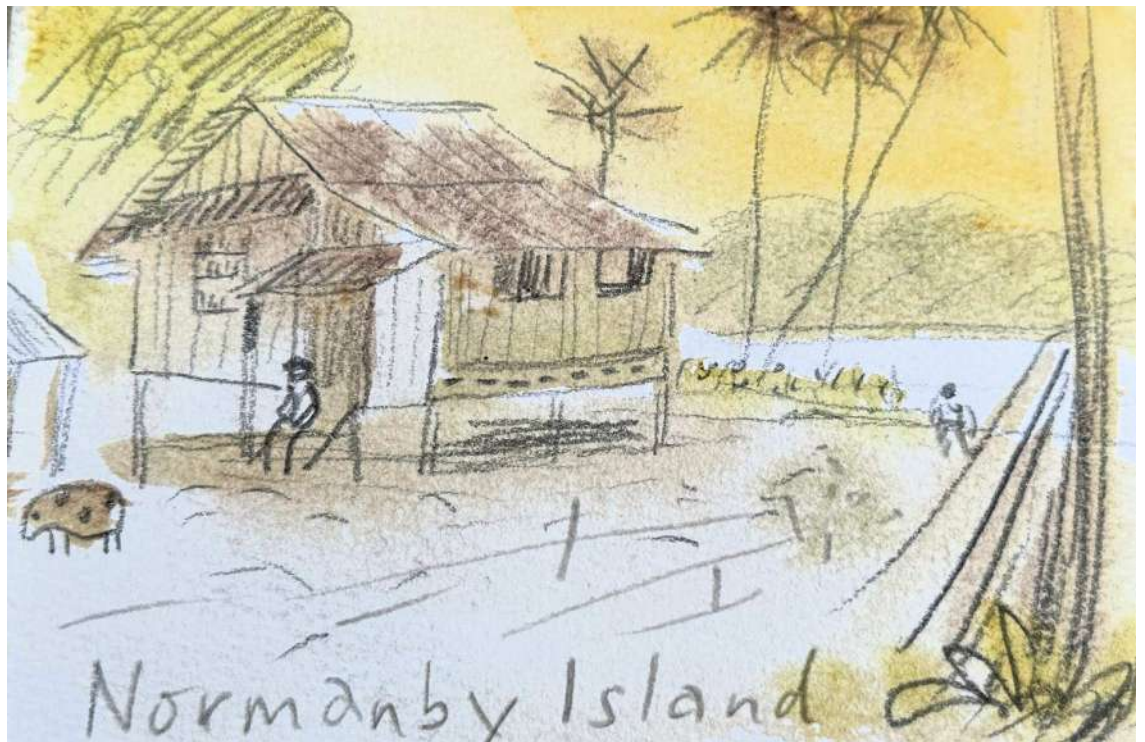
Mangroves are key nurseries and breeding areas for fish and crustaceans, but also support a wealth of bird and reptile species.

New Guinea Mudskipper, *Periophthalmus novaeguineensis* (above); Fiddler crab (below).











Sibonai guest house.





New Guinea eclectus (*Eclectus polychloros*) is a parrot species which is native to New Guinea. The males are green (left) while the females are red with royal blue underbelly. They nest in tree hollows where the female incubates the eggs and the males forage for food. The green coloration of the male provides camouflage while in the canopy. The male also has UV coloration in his feathers, which allows him to appear extra radiant to females, who are able to visualize the UV spectrum, yet remain camouflaged to predators who cannot.



We took a guided walk in the forest and passed a grove of betel nut palms (*Areca catechu*) (lower left and upper right).









Our guide Waiyaki explained the traditions of the seasonal calendar based on plant and animal life in the forest.
Beautiful giant staghorn ferns (*Platycerium*) spotted high in the trees.







We found some beautiful terrestrial orchids. Possibly *Cystorchis*.



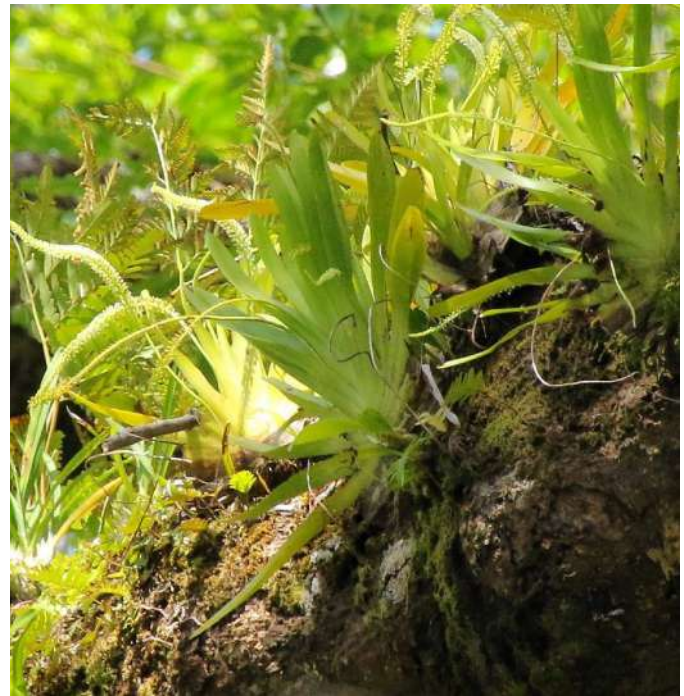


Cystorchis species.



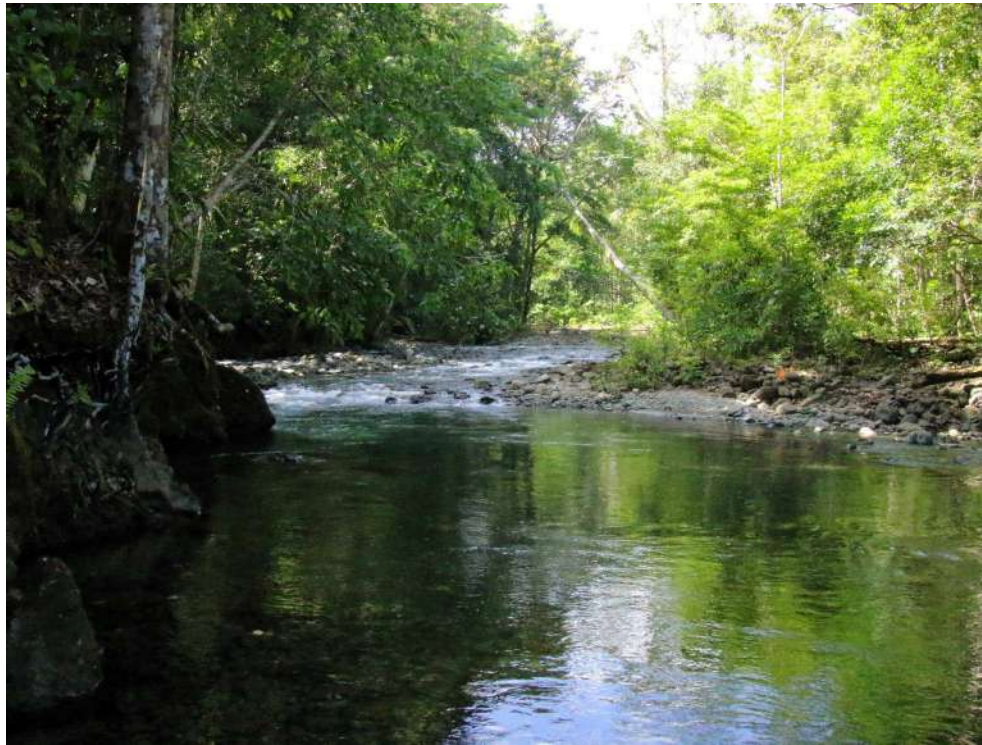
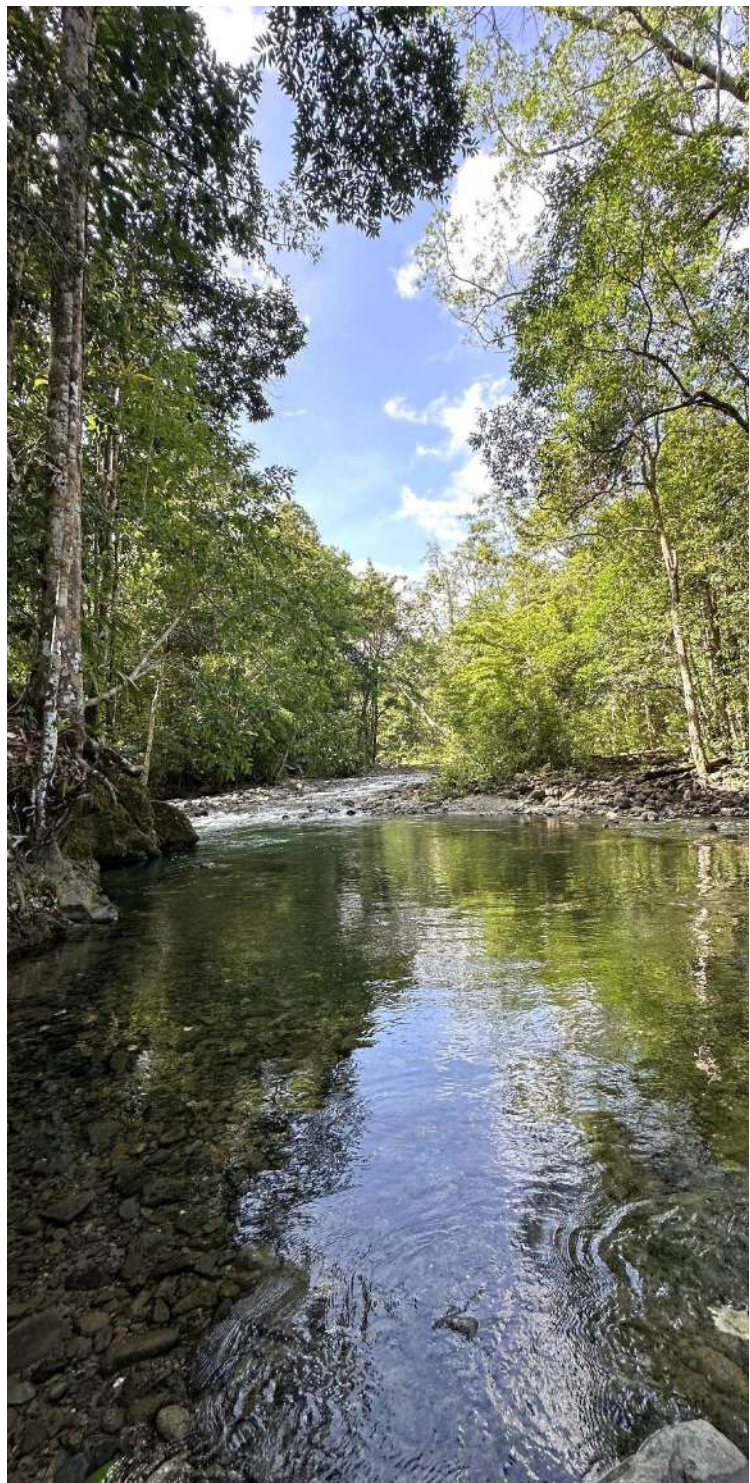
Crepidium lamii (two left photos),
plants on lower left;
Hetaeria oblongifolia (two right photos).





Phreatia species high in the trees (above) and some Vandaceous orchids on a log (lower right).







We headed to Sewa Bay school for the national independence day festival.







A peak inside the local school.













Barbara engaged almost every child at the event with games and stories.





Barbara was like the Pied Piper and got a large group to follow her to the field for a game of baseball.





Sewa Bay from the school. Canoes are the mode of transportation for local families.





Heading back to the lodge we stopped at a calm spot where some had a swim.





An old ship was towed here for repairs but was later abandoned and just rots on the shore.
John's version of the scene but Greg and Kevin must have changed positions in the water!







Back at the village for the night at Sibonai guest house.





We packed up our belongings and said goodbye to the villagers. The rough seas prevented us from the planned voyage to Kirwina Island and then on to Amphlett's Island and Tewala Island. Instead we crossed the Dobu Passage and stopped for the night at Fergusson Island.



Fergusson Island is the largest island of the D'Entrecasteaux Islands. It has an area of 1,437 square kilometers (555 sq mi), and mostly consists of mountainous regions, covered by rain forests. There are three large volcanoes on the island.

Fergusson Island is situated 3 km across the Dawson Strait from Normanby Island and 4 km from Goodenough Island across Moresby Strait. The highest peak at 6,801 feet (2,073 meters) near Wadalei in the north-east of Fergusson Island is an extinct volcano. Seymour Bay is located on the west coast, Sebutuia Bay on the east, and Hughes Bay on the north. The principal settlements, Salamo and Mapamoiwa, are on the southern coast. Gold deposits at Wapolu on the north coast were worked briefly in the mid-1990s.

The island was named by Captain John Moresby after Sir James Fergusson, who was Governor-General of New Zealand from 1873 to 1874. On June 30, 1942, during World War II, a United States Navy PT-Boat base was established on the island. An Alamo Scouts Training Center was established at Kalo Kalo on November 28, 1943.

We stayed in the small village of Deidei in Palagwa in simple surroundings with no running water and sleeping on floors of two buildings called Deidei's guest house. Our outhouse is at the end of the wobbly pier (upper right).







Setting up tents and hanging mosquito netting to accommodate the visitors.



Buying produce for our meal, stoking the fire to cook dinner, our outdoor dining space, grating coconut for one of the dishes.



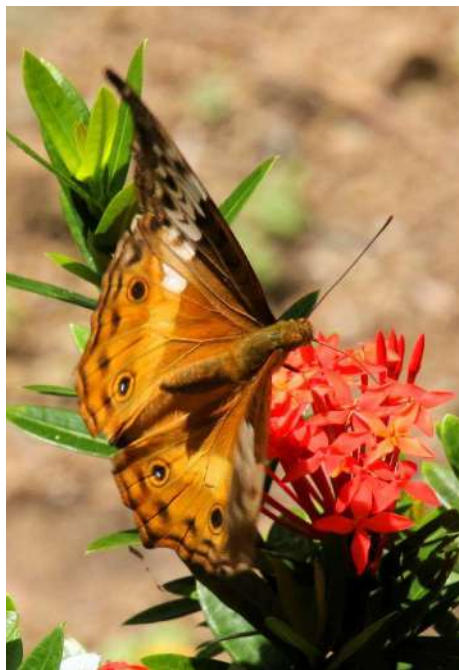


As always, John's painting fascinates the children.





Vanilla orchid vines in a garden.





We visited the nearby village of Assagamwana where we were warmly welcomed by the villagers and met with the chief to learn about the traditional trading.







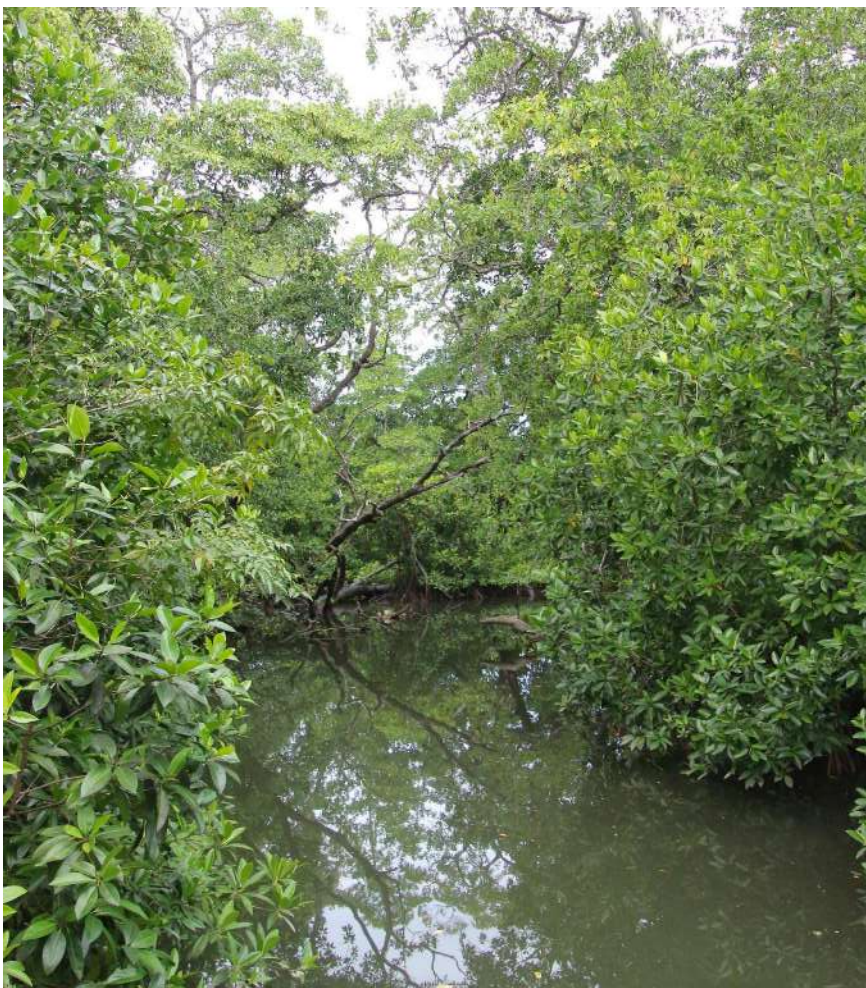


Sailing outrigger canoes, known as sailau or epoi, are still vital for trade, fishing and transportation between islands in Milne Bay Province. Their origins go back countless generations. They have a main hull stabilized by the single outrigger float. The outrigger and hull are connected to each other by a combination of braces and crossbeams. They are always sailed so that the outrigger remains on the windward side. In order to change direction, they are double-ended, and employ the proa 'shunting' method of reversing the rig while lying beam-to-the-wind.



The village chief and other elders attempted to explain the tradition known as kula trade which uses shell necklaces (bagi) and arm bracelets (mwali) to represent wealth with them being used to pay for land, compensations and customary obligations. If they were to sell these items they would cost thousands of dollars. It was a little challenging to fully understand the concept.





From our homestay we took a walk through the Eucalyptus forest, past Pandanus woodland and finally into Melaleuca open forest with the destination being the amazing Deidei hot springs.
Dendrobium bifalce (upper left) in the trees.





Pandanus tectorius is a species of Pandanus that is native to Malesia, Papuaia, eastern Australia, and the Pacific Islands. It grows in the coastal lowlands typically near the edge of the ocean. Common names in English include thatch screwpine, hala tree and pandanus. The fruit is edible when cooked and is sometimes known as hala fruit. Trees reach 4–14 meters (13–46 feet) in height. It is supported by aerial roots (prop roots) that firmly anchors the tree to the ground. *Pandanus tectorius* is dioecious, meaning male and female flowers are borne on separate trees with very different male and female flowers. It is the female flower that looks like a pineapple. The fruit is made up of 38–200 wedge-like phalanges, often referred to as keys or carpels, which have an outer fibrous husk and are 8 inches in length.



One passes steaming sulphurous streams and tropical swamps until the open Malaleuca woods which surrounds the hot springs.

All around are pools of bubbling mud, colorful steaming mineral encrusted vents, misty shallow surfaces, rippled slippery stone slopes and spouting geysers.

You can walk freely between these features and even kick back in a mineral-infused hot pool but a guide will keep you safe as some pools are so hot that they have boiled people to death.

There are no fences or walls. Locals use the pools to wash clothing, bathe and even cook food. Our guide dipped some greens in a vent and in moments we had delicious hot vegetables.





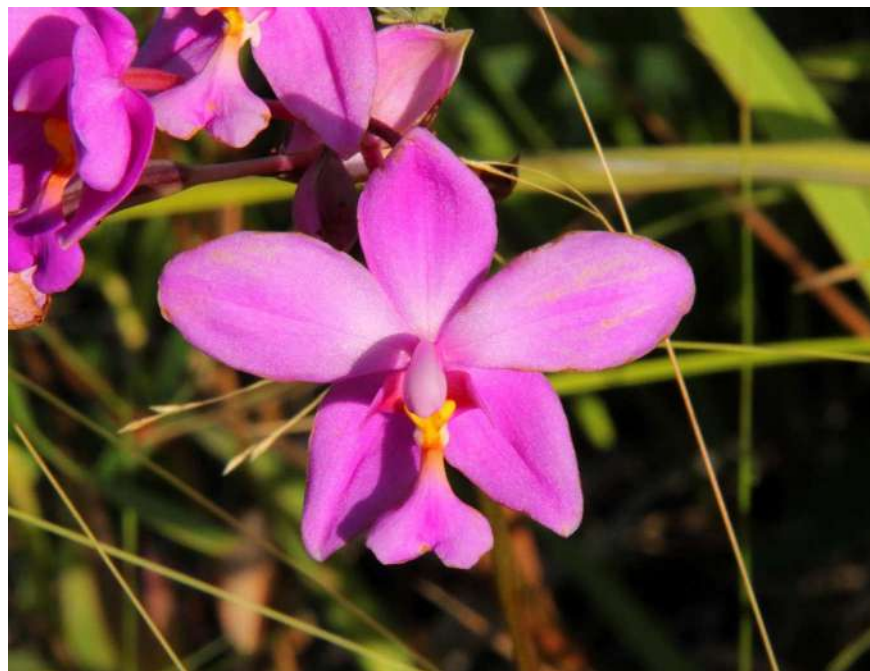
Watching some greens cook in the hot water (upper right).











Spathoglottis papuana (upper right).







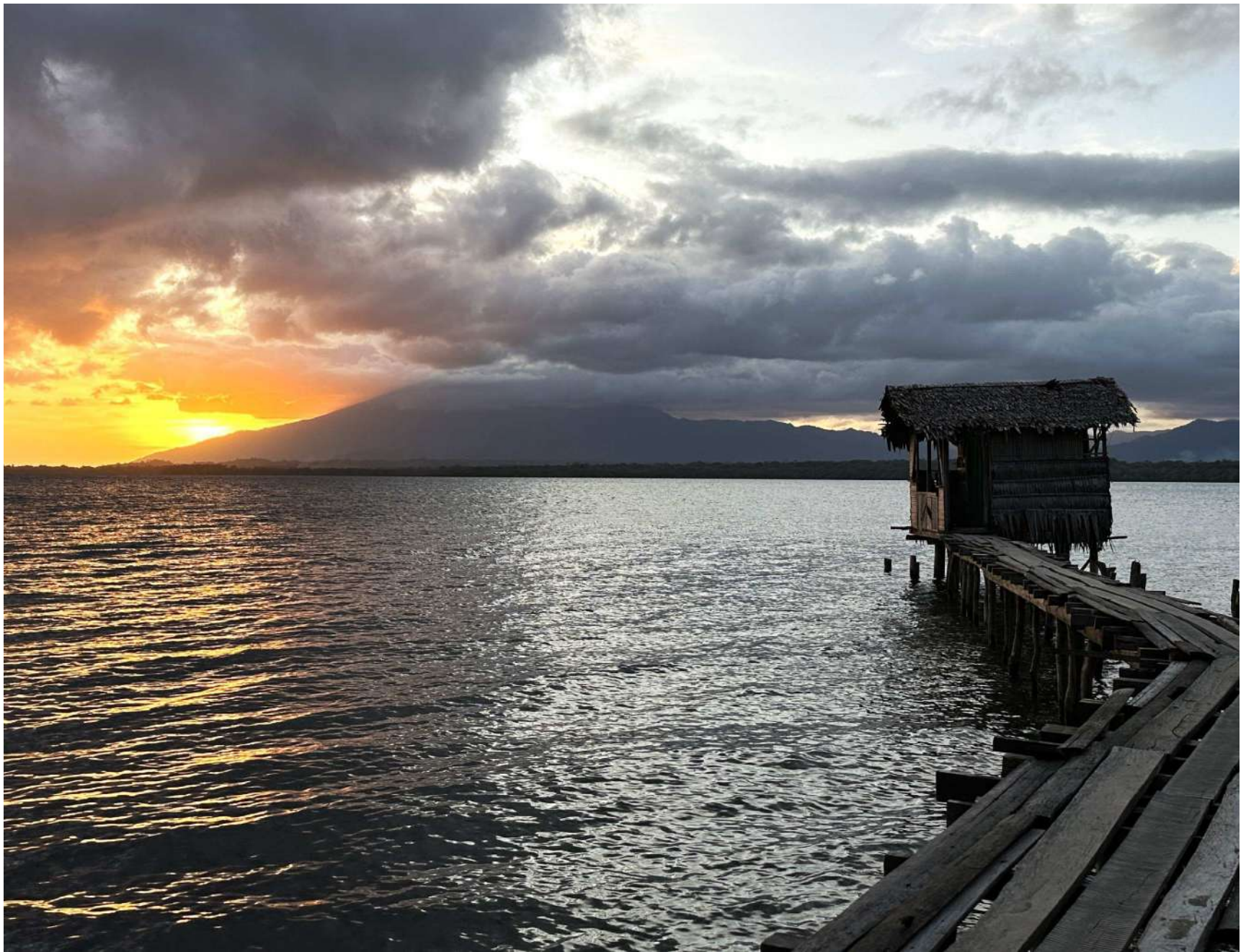














After a very rough trip back toward East Point Cape we stopped at a small island to calm our stomachs, relax a bit and swim if desired.





The great flying fox (*Pteropus neohibernicus*) is a species of megabat found throughout lowland areas of New Guinea.







