

# Plants mo Pipol blong Tafea Provins, Vanuatu

~ PLANTS & PEOPLE OF TAFEA PROVINCE, VANUATU ~

## Trip Report

November 14 to  
December 22, 2016

Prepared by  
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New York Botanical Garden

With contributions by  
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Tafea Kaljoral Senta      University of Hawaii





# Research Team:



Vanuatu Dept.  
of Forestry



Chanel Sam



Philemon Ala



Presley Dovo



Frazer Alo



Thomas Doro



René Theimu



Kimson Perei



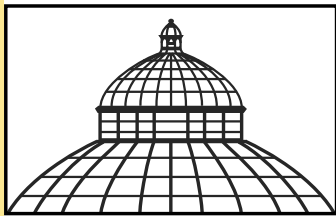
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Dr. Greg Plunkett



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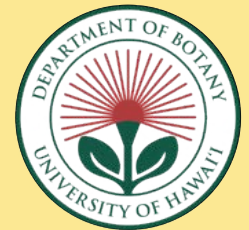
Jean-Pascal Wahe



Samuel Herwaen



Ashley McGuigan



University of  
Hawaii

# Funded by:







## Chief Jacob Kapere

It is with the deepest sorrow that we note the death of **Chief Jacob Kapere** of **Imaki, Tanna**, who passed into eternity on June 1, 2017. Chief Jacob was a towering figure in Vanuatu, an early leader in the effort to help preserve the culture of his people, and a driving force in both the **Vanuatu Cultural Centre (VCC)** and the **Tafea Kaljoral Senta (TKS)**. He was also a great friend of this project, and his support, advice, and friendship will be sorely missed.

*Requiem aeternam dona ei, Domine, et lux perpetua luceat ei. Requiescat in pace.*

## Ms. Catherine Sparks

We would also like to dedicate this report to Ms. **Catherine Sparks**, who is stepping down after completing 10 years of service at **The Christensen Fund (TCF)**. While her official role at TCF was "Program Officer for Melanesia", Catherine has been so much more for our project: a mentor, an advice-giver, and a true friend. We know that she served all of her TCF grantees in Melanesia the same way.

While her leadership at TCF will be sorely missed, we know that Catherine will continue to be engaged in helping to preserve Melanesian culture for many years to come. We express our deep gratitude to her, and wish her the best as she begins a new chapter in her career!







# Trip Details

## Port-Vila

On November 14, Dr. **Greg Plunkett** (**New York Botanical Garden**) departed New York, arriving in Port Vila on Wednesday, November 16. For the first 10 days of the trip, Greg worked closely with members of the **Department of Forestry**, including Mr. **Chanel Sam** and Mr. **Presley Dovo**, along with students **Frazer Alo**, **Thomas Doro**, **Kimson Perei**, and **Stephanie Sali** to organize the plant specimens that were to be shipped from Port Vila to New York. To date, the team had collected a total of 1,238 specimens, mostly in duplicate sets of six, for a total of 5,959 sheets. After removing the complete set that would remain in the **Vanuatu National Herbarium** (PVNH), a total of 4,721 sheets were to be shipped to the **New York Botanical Garden** for distribution to international herbaria. After the specimens were organized into three categories (general collections, collections considered noxious weeds by the USDA, and collections protected under the CITES protocol), the team prepared packing lists for each of 11 large boxes, and obtained the necessary CITES permits from Ms. **Donna Kalfatak** and her staff at the **Vanuatu Department of Environment and Conservation**. The specimens were finally shipped with the assistance of **Fr8 Logistics** in Port Vila on November 24.

During the same time period, Greg worked closely with the team to arrange for local flights to Aneityum and Tanna, to purchase food, supplies, and ethanol (for plant-specimen preservation), and to arrange the shipment of these materials (13 cartons, weighing ~250 kg) to Aneityum and Tanna on a special voyage of the *MV Touaraken-2* chartered by **Care International**.

Greg and Presley were joined by Mr. **Philemon Ala** (Forestry) and Mr. **Jean-Pascal Wahe** (Tafea **Kaljoral Senta**) to represent the project in a special workshop of **The Christensen Fund** organized by Ms. **Catherine Sparks** in the vicinity of Pango, just outside of Port Vila (November 22–23). During the same timeframe, Greg, Jean-Pascal, and Presley gave a presentation of the project's goals and achievements to the general public during a seminar sponsored by the **Vanuatu Environmental Science Society (VESS)**, held at **Chantilly's** in Port Vila, on November 24. That same evening, at a meeting of the **Chiefs from Tanna**, the speakers were invited to a special kava ceremony at the **Lycée Bougainville**.

Greg and the team also worked closely with Mr. **Aaron Prendergast** of **Vanuatu Agricultural Supplies, Ltd.**, to complete the **Critical Ecosystem Partnership Fund (CEPF)**-sponsored project to assist community recovery in Tanna in the wake of Cyclone Pam by sending tools, fencing, and other supplies to help in



cleaning trails and to identify conservation areas.

Meanwhile, Dr. **Mike Balick** (NYBG) left from Philadelphia on November 26, 2016 to join the team already in Vanuatu. Mike met up with Mr. **Sean Thackurdeen** (NYBG) in Los Angeles, where they boarded the flight to Nadi. Upon their arrival in Nadi, Mike and Sean met up with Mr. **Marika Tuiwawa** (**University of the South Pacific**) and Ms. **Ashley McGuigan** (**University of Hawaii**), where they all took the same flight to Vanuatu, arriving in the afternoon of November 28. As usual, the international members of the team made their headquarters at the **Coral Motel**, run by **Beth** and **Tony Tulczyn**. On November 29, a public holiday in Vanuatu (Unity Day), the team prepared to leave for Aneityum, while taking a little time to observe the holiday, which is celebrated as “Port Vila Day” in the national capital.

The team had made arrangements to depart for Aneityum on November 30, on a chartered flight from Belair Airways, but a tropical depression forced the cancellation of the flight due to strong winds and heavy rains, which made the Aneityum landing strip unusable. After returning for one last night in the Coral Motel, the team received the call from Belair at 7:45 am on Thursday, December 1, that the charter flight would leave at 10:30 am, so the group checked out and went to the airport. Despite billing this flight as a nine-passenger plane, the group was 165 kg over the allocated weight (in large part because the airline has no provision to refuel in Aneityum or Tanna, and therefore had to travel with extra fuel). Regrettably, Thomas Doro and Frazer Alo had to stay behind, but arrangements were made for them to take the next available flight.



*The project team (Frazer, Ashley, Sean, Thomas and Stephanie) packs gear and food to be shipped to Aneityum & Tanna.*





By the time the team had arrived in **Aneityum** on December 1, the *MV Touaraken-2* had already dropped off our supplies, and our host, Mr. **Kenneth Keith** of the **Island Breeze Guest House**, greeted us at the landing strip on Mystery Island. After *smol tok-tok* with Area Secretary Mr. **Reuben Neriam**, Mr. **René Theimu** (Forestry field officer for Aneityum), and Kenneth, we began collecting plants along the shoreline. On Friday (December 2), the group walked into the hills in the **Anatwojom** area, about 2.5 km northeast of



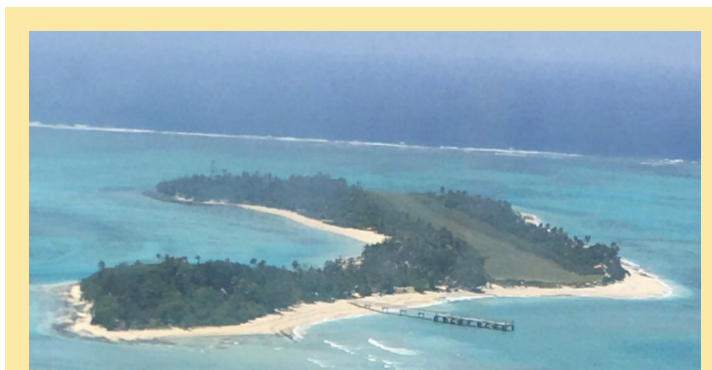
*Mr. Kenneth Kieth, our host in Anelcaubat.*

**Anelcaubat** village, where we collected many plants and returned to base camp for pressing that evening and into the next day. Mike Balick worked closely with our knowledgeable colleague and guide Mr. **Titiya “Kelly” Lalep**, who helped to document the ethnobotanical uses and local plant names. Titiya

provided details on a considerable number of plants now referred to as **“message plants”**, which convey a meaning to people when they see another person walking with a particular plant species in their hand or behind their ear. Another important group of plants documented for this island includes those used in the construction of houses, spears, and fishing implements, as well as for use in agricultural practices, such as planting taro. Pronunciation recordings of indigenous plant names for these collections were also

made by Titiya, and these were later transmitted to our linguist colleague, Dr. **David Harrison** (Swarthmore College) for inclusion in the **“Aneityum Talking Dictionary”**. The team spent the morning of December 3 pressing the balance of the plants from the previous day’s field work, and then walked to **Dick Matenekea’s** village along the coastal area for more collecting. Another collecting area was the village of **Anathawei**, a locality that we had visited in April 19, 2016. The team returns to some areas multiple times because it is important to document plants from the same area during different seasons, maximizing the diversity of the collections in fruit and/or flower, when possible.

On Sunday, December 4, the team awaited the arrival of Thomas Doro and Frazer Alo from Port Vila, but we received word that the Air Vanuatu plane scheduled to bring them to Aneityum was out for repairs and would be delayed. Therefore, all morning, the team pressed plants collected the day before, and continued to gather information on linguistic names and traditional uses. A trip to collect plants on **Inyeug**



*Inyeug or Mystery Island, as seen from above, with the coastline of Aneityum in the background.*





*Mike Balick & Chanel Sam ceremonially present botanist's pruners to the younger members of the team (Sean Thackurdeen, Frazer Alo, and Kimson Perei).*

or “**Mystery**” Island was planned for mid-day, but the group waited until mid-afternoon because of intense heat that day, along with the presence of the cruise ship *Explorer of the Seas*, which had discharged 3,000 passengers onto the small island for a visit. We were not able to carry out our botanical inventory of Inyeug until the ship departed for its next port of call. While there, we were guided by Kenneth Keith on this collection trip, and we noted that the stature of the plants on Mystery Island was smaller than that of the same species when found on the main island, presumably because of the different substrate (mostly sand) and exposure to the wind and sun.

The following day, December 5, most of the team worked to press the plants from the previous day’s collections, while Mike Balick worked with Titiya Lalep on recording all of the plant names collected up to this point, including the spelling and pronunciation on a digital recorder kindly provided by Ashley McGuigan. One plant of great interest shown to us that day by Titiya was *Morinda citrifolia*, known as “*nouras*” in the Aneityum language, and commonly as “*noni*” throughout the Pacific, which is used as an after-shave. Young men take the unripe green fruits, cut them in half and rub the cut sides of the fruits against their skin after shaving, helping to avoid irritation and razor burn.

This is a very different use than those observed elsewhere in the Pacific Islands. In the meantime, Ashley McGuigan was working with Ms. **Wina Nasauman** and Ms. **Rosita** on plants of interest for women’s health (see **Box 1**) — part of Ashley’s doctoral dissertation at the University of Hawaii. Later in the day, the team walked along the lower stretches of the roads leading to Mount Inrero, past the **Anecpancat marsh**, collecting plants in that area.

On Tuesday (December 6), **Frazer Alo** finally arrived to Aneityum, but we learned that **Thomas Doro** was, sadly, unable to join us. Taking his place was **Kimson Perei**, who joined us for the first time on a collection trip (after

his assistance several times at the herbarium). The group took advantage of the returning Air Vanuatu flight to ship several bundles of pressed, ethanol-preserved plants back to Port Vila on this day, where they would be picked up by Presley Dovo and Thomas Doro for processing at the National Herbarium. During the afternoon, the group returned to the Anecpancat marsh to collect wetlands species. Along the road, we were pleased to meet the first Director of the Vanuatu Cultural Center, who had moved back to his home island of Aneityum after retirement. This was also the site where Mike and Chanel presented botanist’s pruners to the younger members of the team.

On December 7, the team left for **Umej**. Chanel Sam, Titiya Lalep, and René Theimu departed at first break of light, on foot, arriving about three hours later, while the rest of the team took a small boat, arriving within 90 minutes. Reuben Neriam’s brother, who is chief of this village, welcomed us and invited us to have a *smol tok-tok* regarding our interest in working in the area, allowing us to explain the project’s goals to the community leaders and seeking permission to collect plants and to stay in the village overnight. The people of Umej were most hospitable and gracious, and allowed the team to sleep in the small schoolhouse, since school was not in session. Soon thereafter, we





*Mike presents trip reports and project pens to the Chief of Umej.*

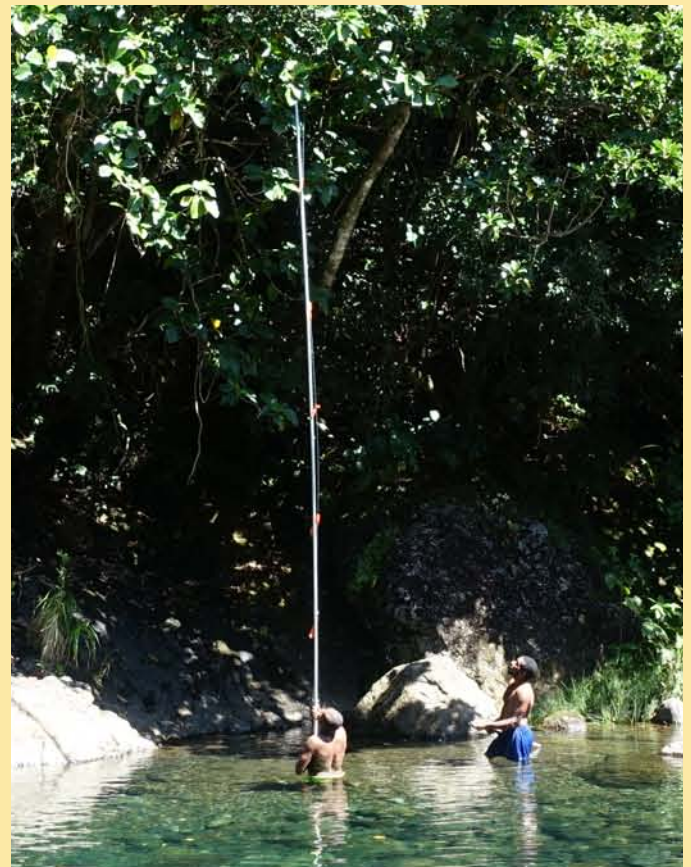


*Kimson Perei sites the transect line.*

set off to collect plants in the **Nemeñjapasga** area, about 1 km north of Umej. In the same vicinity, one **long-term ecological monitoring transect** was established during the afternoon hours, in the foothills of the mountainous area. Following the same format as the eight transects established on earlier trips in Tanna, this transect included eight 100 m<sup>2</sup> plots, in which every tree greater than 5 cm d.b.h. was tagged and measured for diameter, bole and crown heights, and crown radius. In addition, the presence of other species was recorded in five categories (herbaceous ground cover, seedlings, saplings, vines, and epiphytes), along with estimates of percent canopy cover and percent ground cover. By mid-afternoon, Mike Balick departed to return to Anelcauhat, where Ashley MacGuigan had remained to work on her project. The other team members remained in Umej to complete the transect. That evening, they enjoyed a *smol swim* (bath) in the nearby freshwater stream, a *smol kava* with members of the community, and then retired at the school house.

The following day (December 8), the team continued their work in the Umej area, following a trail that hugged closely to the **Inwunmetch River** (also known as the or Ukaleha River). By the end of the day, they had reached the entrance to an enormous caldera

that occupies the greater part of the eastern half of Aneityum, collecting many specimens along the way.



*Frazer Alo & Kimson Perei collect vines with the pole clippers, while wading in the Inwunmetch River.*





*Chanel, Ashley, Greg & Marika sort through the days catch of plants, in preparation to press the plants and conduct interviews.*

The team agreed that this area, which is extensively forested, would be an exceptionally rich region for more intensive work during a future trip. After hiking

back to Umej, the team loaded up six or seven large sacs of unpressed plants onto a small boat and returned to Anelcauhat, to rejoin Mike and Ashley there.



*Marika Tuiwawa explains the process of pressing plants to make scientific specimens to two women from Anelcauhat.*

On December 9, the group spent the entire day pressing the plants that were collected in the Umej area, as well as those collections made along the trail from Anelcauhat to Umej by Sam, Titiya, and René. Ashley added new information from her work with the women, and Titiya continued to record the pronunciation of the names with Mike. Titiya noticed that the plants from Umej differed from the species he knew from the Anelcauhat area, and so he made several calls to **Wopa Nasauman** (who was in Port Vila at the time), to check on the





*Titiya Lalep, our primary guide for this trip to Aneityum, sits among some of the plants for which he provided local names (in the Aneityum language) and traditional uses.*

Frazer, Kimson and Sean to Tanna that morning had engine trouble, and would leave the next morning instead, which was also the scheduled time of departure for the Belair charter flight for the rest of the team. So, the entire group would leave Aneityum the next day. After completing the long work of pressing all the plants from Aneityum and preparing for the departure, the team celebrated with some kava and a special barbecue, prepared with exceptional skill by Chanel and Marika.

On December 12, the team departed

accuracy of the information he was providing.

On December 10, the group returned to the hills of the **Anatwojom** area, past the water tanks that provide drinking water to the village, to an area of dense, lowland rainforest, in order to establish our tenth vegetation transect. The terrain was quite irregular, and went over a dry stream bed, and there was great diversity in the vegetation, and thus the transect work took the entire day. As the sun set, flying foxes came out from their roosts in search of food. This area and others like it on Aneityum maintain beautiful, intact forests that are rich in biological diversity. The entire team noted both the floristic and vegetational differences compared to the forests where we had been working in Tanna. It is a great privilege for the project to study these unique habitats on Aneityum, at the very southern end of the Vanuatu archipelago, and to have the enthusiastic support of the local community.

On Sunday (December 11), the team pressed plants and made preparations to depart Aneityum. The Air Vanuatu flight that was supposed to transport

Aneityum on two flights. The Air Vanuatu flight, departing a day late, took Sean, Frazer and Kimson to Tanna. The Belair flight, scheduled to depart at noon, was delayed by four hours, providing one last chance to forage on Mystery Island to gather some food, such as coconuts and papaya, for lunch, along with some tins and crackers that were left over from Aneityum. The plane made a stop in Tanna to let Greg disembark, while the rest of the passengers continued on to Port Vila. Greg was met at the airport by **Jean-Pascal Wahe** and **Leo Feimaga**, and Jean-Pascal took the opportunity to pass along to Mike a copy of his detailed ethnobotanical field notes from the team's last visit to Tanna in April 2016, allowing this information be entered into the project database. Chanel, Marika, Ashley, René, and Mike arrived in Port Vila near dusk and immediately dropped off the bags of ethanol-preserved specimens at the National Herbarium for processing. On December 13, Mike and Marika pressed plants and placed them in the new dryer that was constructed by the project. Mike and Marika departed Vanuatu the next day, on December 14.





## Box 1: Women's Health & the Plants of Aneityum

During this trip, Ms. **Ashley McGuigan** began to work with some of the women in Aneityum to gain a better understanding of the health issues women sometimes face, particular during pregnancy, and the ways they treat those issues using plants.

Women's knowledge about plants and how they can be used to treat or prevent illnesses associated with women's reproductive health is critically important for plant conservation and for the transmission of associated knowledge in the community. It is also valuable to document this information to assist health professionals in treating patients more effectively. Working with local partners Ms. **Wina Nasauman** and Ms. **Rosita**, Ashley interviewed women in the village about some of the issues women often experience when becoming pregnant, during pregnancy, and after delivery. The women being interviewed then explained why these illnesses can affect women, how the illnesses can be avoided, and plants that can be used in the processes that help a woman and/or her child become healthy again after an illness. The team collected 35 plants, found growing along the coast and up into the interior forests, which are used to help treat illnesses that women commonly experience.

The women in **Anelcauhat** village are heavily involved in tourism, especially tourism generated by the almost daily arrival of cruise ships. Therefore,

these interviews began later in the trip, starting on December 6, when there was a break in ship activity. Unfortunately, due to complications with transporting team members from Efate to Aneityum, Ashley's research assistant was not able to join her on Aneityum. Luckily, Wina graciously offered to help identify knowledgeable women in the community and



*Rosita and Wina preparing a plant specimen collected that day for pressing.*



people who could translate the interviews. The duo of Wina and Ashley recorded 14 health issues on December 6, and collected 12 plant species that were important in treating those specific issues. Some of the plants mentioned could not be found that day, but the next day, Rosita joined the team and helped locate and identify the missing plants. Rosita kindly offered to contribute more of her knowledge about plants used in women's reproductive health, and the three met again the next day to carry out additional interviews and plant collections.

The third day, December 8, the team walked to the village of **Unijcei** for additional interviews. As they walked from house to house collecting the plant materials, Wina and Rosita also identified and described other plants that they saw along the road and their uses for women's and children's health. This

turned into a walk-in-the-woods interview, during which these plants were also collected and pressed to make scientific specimens. Wina's daughters joined us that evening, helping to process the plants and create labels, & learning how to prepare plants for pressing. The next day (December 9), the three decided to help identify the plants that had been collected in **Umej**, and to describe some of the general uses of those plants. Given the large number of plants brought back from Umej, it took the entire day to complete.

Ashley looks forward to visiting Aneityum again in the near future, and to talking with additional women about the ways in which plant-use knowledge for women's health can be documented and passed on to the next generations of people on the island, and how to conserve these plants and perpetuate Aneityum's amazing culture.



*From left to right: Rosita, Wina's first daughter, Wina, and Wina's second daughter. Rosita is pressing a plant specimen while Wina teaches her daughters how to collect DNA samples.*





On December 12, three flights brought team members to Tanna. **Sean Thackurdeen**, **Frazer Alo**, and **Kimson Perei** arrived on a morning flight from Aneityum, while **Presley Dovo** and **Stephanie Sali** arrived in Tanna on a morning flight from Port Vila. **Greg Plunkett** was the last to arrive, on the delayed flight from Aneityum. Together with **Jean-Pascal Wahe**, the entire team for the week in Tanna had

assembled at the **Joe Narua Guest House** by the end of the day, enjoying the hospitality of **Beverline** and **Wilson Narua**.

The initial plan for December 13 was to drive from Lenekel to Yenhup in the southwest, and then to hike from the Mount Tukesmera area, past a waterfall, then on to southeastern Tanna. The roads, however, were too muddy to pass. An alternative plan was



*Joseph Narkahau receives trip reports from Greg (left), while members of the village of Lighthouse look on (right).*



quickly devised to return to the area around **Kwamera** and **Lighthouse** villages, at the extreme southern tip of the island, where the newly improved road would make the trip a bit easier. We arrived in the Lighthouse village about midday, and spent the rest of the day hiking into the foothills that lead to the highlands of South Tanna. We were joined by several members of the community, including **Joseph Narkahau**, **Tanifé Rawi**, **Tarpu Rawi**, **Titus Karpe**, and **Kissel Edmond**, as well as TKS volunteer **Sylvan Nawarau**. That evening, the team pressed plants and collected ethnobotanical information, followed by a very strong kava and a lovely dinner prepared by our hosts.

The following morning (December 14), we expressed our gratitude to the Lighthouse community, distributed trip reports from our last trip, and then drove up the southeastern coast of Tanna to reach **latukwei**, where many old friends welcomed us, including Chief **Alick Ravirus**, **Sam Nauka**, and **Sam Natou**. After dropping off some of our bags and gear, we continued northward to the Port Resolution area, where we met **Naume Naven** and **Kalpapen Naven** at the Imarao nakamal in **Ianapai** village. We worked with Naume and Kalpapen in the forests around their

village, and also in some of the wetland areas adjacent to **Lake Iweia** and **Port Resolution**, and in the thermal-vent areas in the cliffs above the bay.

On December 15, the **Kamanatuan Village Council**, representing the communities of **High Hill**, **Yapkapen**, and **latukwei** hosted a “**Launching, Official Opening and Dedication of the Kamanatuan Water Project**”, to celebrate the opening of the water systems that the project had helped to arrange, through the funding from the **Critical Ecosystem Partnership Fund (CEPF)**. The festivities were held in High Hill, and began with a ceremonial entrance of the participants led by the **John Frum Band**. After *salu-salu* (bestowing of garlands of fresh flowers), there was a benediction by **Père Hermann Tord**, followed by welcoming speeches by representatives of the chiefs, including Paramount Chief **Remo Kanawi**, and then additional speeches by members of the Area Council and Provincial Government, and by prerepresentatives of the project team, including Jean-Pascal Wahe, Presley Dovo, and Greg Plunkett.

At noon of the same day, Chief **Jacob Kapere** made the announcement that members of the **Slow Food Festival** were present to provide lunch for all

those assembled. (As noted in the dedication above, we were shocked and saddened to learn of the passing of Chief Jacob just six months later, on June 1, 2017.) After the demonstration of slow food preparation techniques, the entire group enjoyed the wonderful food prepared in traditional fashion. After lunch, there was the ceremonial launching of the official Kamanatuan Village Council Stamp, the official opening of the water taps, and finally music and singing by the John Frum Band, with dancing by



*Naume Naven & Kalpapen Naven (from Ianapai village) sit on either side of the "abu stone" that gave rise to the coral snakes found in the sea.*



# Scenes from the Kastom Ceremony at Kamanatuan





community members. After the closing ceremonies, the men of the community gathered at the nakamal for a discussion of water issues, along with the sharing of a big kava. For the project team, the ceremony at High Hill represented a high point of our accomplishments, and we shall never forget the warm welcome and wonderful expression of gratitude that the communities of South Tanna provided. We can only hope that our work there contributes in some small way to help these communities preserve their rich biological and cultural heritage.

We spent the night in **latukwei**, where the community provided a delicious supper and a place to sleep. The following day (December 16), we had planned to do some collecting in that part of Tanna, but the weather was very unsettled, with rain and strong winds, and there were reports that a tropical storm or cyclone was heading our way. Given our experience in the past, we decided it was best to get back to the safety of **Lenakel**. By the time we arrived there, the stormy weather had passed, and it seemed that the reports of a tropical storm had been exaggerated — but we all agreed it was best to be safe in such situations. So, we spent the day tending to the plant specimens. The following day (December 17), the community at **Green Hill** asked that we visit them to discuss the CEPF-sponsored water systems, so we took

the day to travel to North Tanna to meet with Chief **Sampson Nakapue** and the other members of that community. That evening, our last in Tanna and Tafea, we had one last kava and meal with Jean Pascal.

The following morning, December 18, Leo Feimaga and Jean Pascal drove us to the Whitegrass Airport, and we flew back to Port Vila. Upon our arrival, we immediately went to the herbarium to remove the plants that had been sitting on the dryers for several days, and to put a fresh batch of ethanol-preserved plants onto the dryers. With that work completed, we finally got to stop for lunch at about 3:30 pm, visiting one of our favorite restaurants for a few well earned slices of pizza. In the evening, Presley and Thomas invited us to their homes for a special Pentecost-style kava and laplap. Over the next several days, the team worked hard to get the plants dried and organized and all the silica gel samples sorted and arranged. Sean departed Vanuatu on December 19. The next day (December 20), Greg presented an educational lecture and practicum on the vegetative morphology of plants, and departed Vanuatu on December 21, reaching New York late on December 22. Over the next two weeks, the team members in Port Vila worked hard to get all the specimens dried, and Chanel Sam and Frazer Alo carefully examined our recent collections and provided determinations for all of the specimens.



*Greg Plunkett addresses Chief Sampson Nakapue and other community members at Green Hill (left), and the team then goes to inspect the installation of the solar panels powering the water delivery system at Green Hill and Nusemetu (right).*





## Box 2: Man Tanna Studies in Fiji

Thank to generous support from **The Christensen Fund**, project team member Mr. **Jean Pascal Wahe** (of the **Tafea Kaljoral Senta**) was able to participate in an extensive and highly beneficial three-month training program in Fiji, organized by Mr. **Marika Tuiwawa**, curator of the **South Pacific Regional Herbarium** at the **University of the South Pacific (USP)**, and his colleagues at the **Fiji Museum**. During this time, Jean Pascal gained training and experience in tropical botany and ecology, archaeology, anthropology, and human culture.

The training began in February 12, 2017, as Jean Pascal departed Port Vila and arrived in the Fiji Islands on Sunday afternoon, where he was met at the Nausori Airport near Suva by Marika Tuiwawa, who greeted Jean Pascal and welcomed him into his home to spend the night with Marika's family. The next day, Jean Pascal checked into his temporary home at the South Sea Motel, just a few minutes' walk from the Fiji Museum, and which would serve as the central point from which Jean Pascal would search for longer-term housing in Suva. As he and Marika cruised around central Suva, Jean Pascal remarked "what a very big city ... much larger than Port Vila!" There were so many people and buildings and shops, the likes of which he had never seen before. After an orientation around Suva, they went to USP's **Laucala Campus** and the nearby **Lower Campus**, where the South Pacific Regional Herbarium is located.

On February 16, Jean Pascal was introduced to the staff of the Fiji Museum earlier in the day, and

later attended a meeting with the Herbarium staff at USP. At the Museum, the Director and staff were waiting to greet Jean Pascal and Marika when they arrived. Once the meeting got started, Marika presented a small description of the goals of Jean Pascal's attachment at the Museum, an overview of how the "**People and Plants of Tafea**" project has a strong partnership with the **Vanuatu Cultural Center**, and the need to strengthen training in some of the cultural aspects of the project, as well as the significant connection between plants and culture. The Director provided a warm welcoming talk and introduced the heads of the Museum's sections and their staff. He presented Jean Pascal with his work plan while studying at the Fiji Museum. After the meeting, the staff offered a nice refreshment, and during the conversations, Jean Pascal caught up with two old friends, **Elia** and **Zac** of the Museum's archaeology unit, whom he had met two years ago at the Lapita Conference organized by Vanuatu Cultural Center in 2015. He also met two volunteers from New Caledonia who had been working at the museum for the past two years.

Afterwards, Marika, Jean Pascal, and Elia departed for the Herbarium, where there was a meeting to plan a major field expedition to Viti Levu's Sovi Basin, which would start the following week. Marika chaired the meeting, and presented an outline of the main goals of the field trip, along with logistics for travel, food, materials, and tasks to be completed. At the meeting, there were representatives from the Herbarium (USP), Fiji



National Trust, the Fiji Forestry Department, Conservation International, the Fiji Museum, and the traditional land owners of the Sovi Basin area. The meeting finished just before lunch-time, and was followed by a delicious lunch for all. After that, Marika arranged for Jean Pascal to meet with some of his *wantoks*, who were ni-Vanuatu students at USP, including some from his home island of Tanna. They discussed and then agreed that Jean Pascal could rent a room in their lodging while he lived in Suva.

The following day, Jean Pascal met two herbarium assistants, **Iliesa** and **Jone**, and together they cleaned many large blue waterproof “dry bags” and tents, and packed the field work equipment and camping gear in preparation for the Sovi Basin trip.

On Monday, February 20, Jean Pascal went to the Lower Campus to meet Marika, and was excited to see one of his friends and collaborators from the *Plants and People of Tafea* project, **Ashley McGuigan** from the University of Hawaii, who was completing a Fulbright Fellowship in Fiji. Jean Pascal and Ashley were joined by Ashley’s Fijian-born husband for an enjoyable lunch. The following day, the real hard work would begin!

Early in the morning of February 21, Jean Pascal took his big bag and walked to USP to the pick-up point where he and his colleagues were to assemble with their gear to wait for the lorry that would deliver them to the Sovi Basin. Overall, there were about 30 people from several different institutions ready to go. But just after they loaded up the lorry, Jean Pascal received a call from the Fiji Immigration office that he had to sort out some

issues in his travel visa, which was due to expire on February 26. So, he had to leave the team to complete and submit the documents needed to renew and extend his visa. After spending a frustrating day on February 22 at the Immigration office, **Elize** from **SPC** (the Secretariat of the Pacific Community) and Marika came to the rescue and helped him navigate the complex paperwork.

Finally, on February 23, Marika and **Tokasaya** (one of the herbarium staff) picked up Jean Pascal at home drove a distance of about three hours, reaching Nadakuni Village. A local guide was waiting there to bring them to the Sovi Basin, where they would meet the other colleagues who had left on Tuesday. The walk to the first camp took all day, crossing the big river 15 times — the likes of which Jean Pascal had never seen or crossed before! The crossings were scary and the water flowed very quickly and with great force, and the level of the water reached almost to the top of his head. When at last they reached the first camping site, they rested their tired legs and slept off their exhaustion, ready for another half-day walk the next morning to reach the main base-camp. That evening, they shared kava to relax and also make a “*tamafa*” for the sun, since it had been raining without stop every day to that point.

On February 24, it was a sunny day! The team left the first camp after a quick breakfast, and the porters and guides helped them carry the bags and equipment. For five more hours, they walked, crossing the forested mountains (called the Tree Mountains), rivers and streams, and more forests. The trail was slippery, following old pig tracks, but they finally reached the main base-camp. Once there, it was amazing to see the Sovi Basin, covered with untouched forests, clean rivers, and abundant birds — it is one the biggest conservation areas in the interior of Viti Levu and is protected by the government and conservation authority of Fiji.

The following morning, Saturday, February 25, the expedition team arose early, had the standard Fijian breakfast (breakfast crackers and milk), and then split up into three groups, representing different fields of study. Some groups focused on biology, including specialists in plants, birds, and



*The team gears up for the long trek in to the Sovi Basin.*



insects, while another was focused on archaeology. Jean Pascal joined Team 1, the archeology group, whose task was to search and identify earlier transects, re-measure the plots, and identify the remains of old villages that had been abandoned long ago. There were four transects, each with 20 plots of 100 square meters. Jean Pascal's old friend **Greg Plunkett** had been part of the Sovi team in 2003 that had originally established those transects. During the current trip, the team was to re-monitor the vegetation along these transects, 14 years after the original surveys. The first transect was identified



*Typical accommodations at base-camp.*



*Evidence of an ancient village, in the form of stone piles.*

quickly, because it was close to the main base-camp. While the team re-measured the plots with raffia cord, Jean Pascal and Elia discovered an old village that had never been recorded before. Its remains consisted of piles of stone. They documented the site with pictures, while **Seck** recorded the location using a GPS unit. Meanwhile, Team 2 identified the plants along the plots, attached new tags on the trees, measured the diameter (dbh) of each tree, painted some of them to be more visible in future trips, and collected herbarium specimens, which included branches with leaves, flowers, and fruits. Team 3 included bird specialists, who recorded bird calls, and entomologists, who studied the insects found inside the plots. After completing the first

transect, the three teams moved to the second transect, on a slope about 200 meters away, and began to repeat the same process there, until daylight gave out.

On Sunday, February 26, the team gathered together in the morning for a short church service for those who worship on Sunday, and the team leader recalled and summarized what they have accomplished so far during the past two days. Following that, Team 1 crossed the river to work on plot 3, while other teams returned to plot 2 to complete the work that was left unfinished the day before. As Team 1 completed their work on plot 3, they returned to the base camp, and Teams 2 and 3 moved to plots 3. Back at the camp, the guides hunted and caught a huge fresh water eel, which was



*A freshly caught eel provides some extra protein for supper!*





*A bilibili (Fijian bamboo raft), built to bring supplies and people back to the village.*

added to the menu for the evening meal.

February 27 was the final day in Sovi, and it was a rainy day. Early in the morning, the team packed up all the survey materials and their personal belongings, placing them into plastic bags to keep them dry. They then went to plot 4 to finish the survey there, while the guides and porters stayed back in camp to build “bilibili” or bamboo rafts used for river travel. When all of the work was completed, everyone got on the bilibili with their luggage and floated slowly downstream to Nadakuni Village. The trek in had taken two days, but the ride back out on the bilibili took only about five hours to reach the main village!

Upon entering the village, the land owners of the Sovi area greeted the researchers with warm welcomes, followed by small “toktok” by the chief, and an invitation to share some food together. The research team leader did the same and the whole team thanked the porters and guides from the village for their great help

people — and it is much appreciated! That was a big adventure that I will never, ever forget!”

After resting for a few days, Jean Pascal caught a very bad cold or flu with a strong fever, and had to visit a private doctor for medication. The doctor instructed him to take a few additional days of rest in order to fully recover.



*Jean Pascal at the Fiji Museum.*

during the trip. The team departed the village at 5 pm and were dropped off at USP at 8 pm. Marika then thanked the entire team for the great job and allowed everyone to take three days of rest and recovery. That evening, they shared kava together, to end the day. For Jean Pascal, it was an amazing opportunity that he had never experienced before, in an environment very different from his own country. He learned many valuable things from several different fields of research. He remarked, “Nice environment, nice river and nice

On March 14, Jean Pascal reported for his first day in the four-week program at the Fiji Museum. This program involved working in eight different sections of the Museum (Library/Archives, Photography/Website, Archaeology, Exhibitions, Education & Awareness, Gift Shop/Admissions, Conservation, and Events). He started his work with the Exhibition team, under the leadership of **Vika Koro**, from March 14 to 20. With the help of Vika and the Museum’s handy man, **William**, they completed an exhibition called





*Jean Pascal working in the Museum.*

and **Jothame**, and assisting Jothame in carrying out some of his duties. There, they removed the entire contents of a box shipped from England that was to be used for the next exhibition. This section of the Museum has very specific protocols for caring and protecting artifacts. There, Jean Pascal learned the process of fumigation and the very strict rules associated with the movement and transfer of cultural artifacts. This afforded him the opportunity to visit the Museum's storage room, where there were many objects representing different countries of the Pacific Islands. From Vanuatu, he noticed artifacts from Malakula Island and the Banks group.

Some other highlights of Jean Pascal's work in the Fiji Museum include April 1, which was Open Day at the Museum. All the staff were busy coordinating different activities, and many people from the general public came to visit the Museum at this time. Jean Pascal participated by joining the staff that counted and monitored the number of people visiting. In total, there were more than 400 people that visited the museum on that one day. On other days, he joined **Ratu John** and Jothame to see how they treated the "tabua" or whale's tooth. They cleaned, took pictures, and labeled them to ready these items for display. He learned how highly valued and important the *tabua* are in the culture and history of Fiji, where they are usually given or traded during special custom

"iTaukei Women's Tattoos", which attracted many visitors to the Museum in the following weeks. As part of the work, they displayed different objects of traditional tattooing, clothing, handicrafts and a gallery of photographs from a recent exhibition of the Fiji Museum in England that was inaugurated by Her Majesty, Queen Elizabeth II. During this experience, Jean Pascal learned how to display an exhibition, to identify the best location for such a display, and how to exhibit the most valuable objects and materials for these displays.

From April 21–27, Jean Pascal joined the Conservation team, working alongside Vika



*Part of the many collections of Pacific artifacts at the Fiji Museum.*





*Jean Pascal with some of the Vanuatu collections at the Museum.*

ceremonies, including funerals, as bride-prices, and for important chiefly ceremonies. Jean Pascal also joined Jothame and Vika Sela from **iTaukei Trust**, interviewing people around in Suva and discussing the importance of the use of the *tabua* in Fiji. iTaukei Trust invited Jean Pascal to discuss with them how the Tafae Kaljoral Senta in Vanuatu recruited and trained fieldworkers in Tanna, and how they completed their research with only limited resources. They were very surprised to hear that our fieldworkers have no salary. With the help of **Evelyne Bulegih** (of the Vanuatu Cultural Centre), who sent along some documents on fieldworkers in Vanuatu, Jean Pascal was able to inform his Fijian colleagues about the situation in Vanuatu. Finally, Jean Pascal worked closely with members of the Archaeology section, including **Elia, Zak, Niko,** and an elderly man **Matta**, who were all very helpful people and have special knowledge in the field of Pacific archaeology. With them, he learned how to identify the types of archaeological

sites, the history of early settlements in Fiji, and how to write a trip report. In the field, they showed him how to speak with land owners, how to discover new archaeological sites, and how such new information is registered and entered into a database.

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*One of the Fiji Museum's many educational displays, this one focusing on plants!*





# Conclusion

This was an important, interesting, and productive trip, perhaps the most productive to date. During the November-December 2016 trip, the team made a total of 379 collections (mostly in duplicate sets of 6, for a total of 1,977 new specimens), including 325 collections from Aneityum and 54 collections from Tanna. With the completion of this trip, the project has collected a grand total of 1,616 individual collection numbers, in sets of six whenever possible (for a total of over 7,936 herbarium specimens). Of these, 41% have plant-use data that is considered “generalist” in nature (i.e., having no information considered confidential or property of a single individual or family), and 43% of the total collections have names in one of the indigenous

languages spoken in Tafea Province. All specimens were digitally photographed in the field and these images have been databased in Adobe Lightroom. All of nearly 8,000 specimens were dried and processed at the National Herbarium of Vanuatu (PVNH) and a complete set of duplicates deposited at that institution; other sets have been sent to NYBG for deposition there and distribution to other international herbaria with important collections from the region. The team also completed two new long-term ecological monitoring transects — the first ever made on Aneityum — added to the eight transects established on Tanna before Cyclone Pam and resurveyed eight months later (November 2015).



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base-line data collection, while we also focus on biocultural and conservation goals supported by TCF and CEPF.

As always, we thank our home institutions (the **New York Botanical Garden**, the **University of the South Pacific**, the **University of Hawai'i**, and **Swarthmore College**). Without their support and encouragement, this program would not be possible.

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Lastly, but most importantly, we thank the **communities of Tafea Province**. The welcome we have received has been truly remarkable, and with each new trip, we feel a stronger tie to our friends and extended family in this amazing corner of the world. We eagerly look forward to our future trips back to **Aneityum** and **Tanna**, as well as beginning our work in **Erromango**, **Futuna** and **Aniwa**. The people of Tafea have much to teach the world, with a generosity of spirit to match. So, to all our friends in Tafea, we offer *wan bigfela tankyu tumas long ol pipol blong Tafea!*

