

Pritchardia

June 2021 Newsletter

Issue #31



President's Message



We're BACK!

It has been a long trial to make it through the pandemic, but case numbers are way down (as long as you are not in jail) and vaccinations are rising every day. We anticipate that restriction on outdoor gatherings will be lifted soon. We are ready with a fantastic slate of events for you to enjoy while reconnecting with old and new friends.

This fall will be especially rewarding because most of the gardens we will be touring are first time visits for HIPS. The fact that there are this many great new palm gardens on the island owes a lot to long time members who have generously shared their knowledge, growing tips, seedlings, and infectious enthusiasm with new folks. There are probably few places around the world that have the lucky combination of ideal climate, specialty nurseries offering rare palms, and a friendly community of palm nuts full of aloha ready to help people new to palms.

Many palm nuts quickly find themselves with vastly more seedlings than they could possibly plant in their garden or give away to neighbors. You can find new loving homes for these babies at our members' plant sale this fall under the pavilion at Leilani Estates, probably in combination with an ice cream social. You still have a couple of months to get your plants in top condition, so take a look at your shade house and decide what is ready for a new home. This is not a fundraiser for HIPS. Sellers keep 100% of the money from sales. All types of plants are welcome, not just palms. We also hope all of our members reserve a couple of unusual palm seedlings to donate to the February barbecue and auction. All the palms you see in the live and silent auctions are provided by local commercial growers AND hobbyists who are growing some great species. We always need more plants, so please consider making a donation. Look at the December newsletter for more information. If you are not germinating seeds, but would like to try, we can probably hook you up with a wide variety of seeds to experiment with.

A major goal of HIPS is to promote palm conservations through education for our members and the public. Lectures by visiting experts are a central part of this mission. Now that pandemic travel restrictions are being relaxed, we hope to resume these talks later in the fall.

I have not heard of any member being seriously impacted by the pandemic, but I certainly may have missed something. Because the pandemic will continue outside the US for possibly another year or two and new, more infectious mutants are arising all the time, I

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urge anyone reluctant to get vaccinated to do so now. Local cases will need to be near zero by the end of the year if we hope to return to our traditional indoor barbecue and auction in February. Long before that, we will be using shuttle vans to move people between satellite parking and gardens without street parking this fall. Everyone needs to be vaccinated to ride the van, even if the trip is only a few minutes. Even now, roughly 2000 people a week are still dying of covid across the country and many more are hospitalized. With very rare exceptions, all of these people declined to be vaccinated. We want you here for the next live auction. Protect yourself!

Rick Kelley

2021 Garden Tours and Events!

Saturday, August 28 Garden of Robert Welsch and David Davenport



© David Davenport
A lovely arch, created by a Beccariophoenix nobilis on the left side and a Tahina spectabilis on the right, provides a glimpse of a striking silver Bismarckia nobilis.

David Davenport and Robert Welsch purchased their 11.25 acre Kalapana property in 2005, then started selectively clearing and planting in 2007. Robert was working as a landscape designer back in New York. He would come to Hawaii each winter to continue the design and planting work until finally, in 2014, David and Robert built their home among the many new plantings. The planting never ends and the gardens continue to grow especially now that David and Robert are both retired and live full time in Hawaii.

Their Indonesian-inspired home is nestled in an ancient Hawaiian Ohi'a and Uluhe forest with extensive ornamental palm, bamboo, orchid, bromeliad, citrus and tropical gardens.

Over the years, the palm collection has been enhanced with purchases from the Lundkvist garden; Jeff Marcus at Floribunda; Jan Anderson; Bill Austin, Jerry Hunter at Rancho Soledad, and more. In 2017, David and Robert purchased most of the palm collection of former Palm Society member Joseph Tucker which added substantially to the depth and breadth of the palm collection.



*Left: Double rainbow gracing the courtyard between the main house and ohana. Hedge planting includes *Dypsis pembana*, *Dypsis laneofola*, *Caryota gigas*, *Roystonea oleracea*, and *Kerriodoxa elegans*, among others. Right: Incredible scale of a *Caryota gigas* leaf.*

We will plan morning (10-noon) and afternoon (1-3) tours, betting on restrictions for group sizes to be lifted and setting a maximum capacity of around 40 people each session. HIPS will provide cold drinks. Members will be informed via email when online registration opens two weeks prior to the event.

As this will be our first in person meeting of 2021, we will be confirming the slate of officers of the board at the beginning of each tour session. Confirmation is usually done at the annual dinner in February, however due to the pandemic that event was cancelled. The slate of officers include: President - Rick Kelley, Vice President - Sara Wagner, Secretary - Mike Arends, and Treasurer - Chris Friesen. Learn more about the candidates and other board members [here](#).

More To Look Forward To:

Saturday, July 10 From 9:30am – 12:00 pm: Panaewa Zoo Work Day

We are eager to resume our zoo work days and will send out notification via email. The zoo is scheduled to reopen on Monday, July 19 after extensive renovations. We are having a work day the week before to clean up the cycad gardens and fertilize the foxtail palms along the entry road. The gate should be opened to HIPS volunteers to park in the main parking lot. If you can help, please RSVP your Subway sandwich preference [Bread, meat, cheese, mustard/mayo, veggies] to rickkelley@att.net We will also provide cold drinks and chips.

September Legacy Garden Tour

We are currently working out an arrangement to tour one of Hawaii Island's great legacy gardens, all will be revealed soon. An email will be sent out when details become available.

October Plant Sale/Ice Cream Social/Open Gardens in Leilani Estates

Member plant sale and ice cream social at the pavilion in Leilani Estates. Both Kim Cyr and Bo Lundkvist invite members to walk over for an informal visit to their nearby gardens. Details will be emailed and posted on our website as they evolve.

Late October Hilo Garden Tour Double Header: Jason Dunn and Karl Mendonca

These two exceptional “urban” gardens in Hilo are relatively new and inspiring. Karl’s garden backs into the Wailuku River and both are on narrow neighborhood streets so parking will be remote and HIPS will provide shuttle service to/from the gardens. Details will be emailed and posted on our website.

November 17 (tentative) In the Field with the National Tropical Botanic Garden: Collection and Propagation of rare Pritchardia Species by Mike DeMota Curator of Living Collections, NTBG

HIPS is proud to present a slide show and lecture by Mike DeMota who has been instrumental to the discovery and collection of native Hawaiian plant species, including difficult to reach cliff dwelling Pritchardia species. More complete details will follow.

Keep up to date with the full calendar of events on our website, [here](#).

2021 HIPS T-Shirt Pre-Sale



Back in June 2020 we announced the winner of our first ever membership poll for T-shirt design. We put the t-shirt production on hold due to the cancellation of all events in 2020. We are happy to congratulate Bill Atkins once again for submitting the award winning design. We hope to offer Bill his prize of 2 free dinners at the annual meeting in February ~~2021~~ 2022 and 2 t-shirts sporting his design. We will be sending out an email link to pre-order t-shirts after we finalize the t-shirt colors. T-shirts will be available for pick up at the Davenport and Welsch Garden Tour, Saturday August 28th. Additional shirts will be available at the event, though we encourage you to place your pre-order to ensure size and color availability. You will be able to securely pay online or at the event. Keep an eye on your email for our announcement.

How Bob Carrere and Andy Pesce Became the Stewards of the Former *Lundkvist Garden*

Many HIPS members may recognize Andy and Bob, they are long time society members. They have been coming to Hawaii island since 1998, each year renting a house from their friend Davis Dalbok (HIPS toured the fabulous Dalbok garden in 2019). In 2005 they bought their own six acre property on Pohoiki Road and over the next 13 years designed and built their home and tropical garden on three of the acres. The other three acres were hala forest, a piece of the former Great Hala Forest of Puna.

Bob and Andy remember adding Pinangas and Keriodoxa to their garden after falling in love with the ones they saw at the HIPS tour of the Lundkvist garden hosted by Karolyn in 2009 and lead by then palm society president Tim Brian.

Their palm garden had grown to 143 palms comprising 43 species when in May, 2018, fissures opened up in Leilani Estates and Pele took their home and garden in a river of lava.

That same eruption was also threatening the Lundkvist garden. Palm enthusiasts around the world were filled with dread as fissures 10, 11, and 12 opened up surrounding the vast collection many had known either as welcomed guests to the garden or from the many photos in the palm descriptions on Palmpedia or forums on Palm talk.



After fissure 8 had stopped erupting and the river of lava frozen, Bob and his neighbor hired a helicopter in August 2018 to survey the devastation. Andy stayed in San Francisco not ready to witness the sight. A tiny patch of their property was not covered with lava and held a small house pad built by a previous owner, the helicopter landed. It was only when his feet touched the ground that Bob felt the magnitude of his loss. The palm community was mourning the loss of the Messenheimer garden HIPS had toured only the previous year, and the famous collection started by Pauline Sullivan was gone. Though ravaged by acid rain, Pele's hair, and heat the Lundkvist garden was yet standing. Karolyn Lundkvist had put the property up for sale before the 2018 eruption, but it had not sold.

“We had not intended to replant ourselves in Puna, but rather had revisited the island so Andy could see the devastation first hand”

In August of 2019 Bob returned to Hawaii with Andy to visit friends and they learned that Karolyn had still not sold her place. In a pique of curiosity they went to see the property, remembering the garden as it was in 2009. They had received a settlement for their home on Pohoiki Rd but had not set out with the intent to return to Puna. But as fate would have it, once they saw the property they could not resist the garden's plea for help.

“We had wanted to see the house more out of curiosity”

How often do those words lead down unexpected paths? After initially making trips back and forth to start restoration, Bob and Andy, proving equally as resilient as the garden they now steward, moved back to Hawaii after retiring in March 2021 to embark on a new adventure - as the new owners of one of Hawaii's best known legacy gardens. On Pohoiki road, they said they could walk the garden with their eyes closed, having planted every plant and built every path. Their new garden feels less and less like someone else's the more time they spend caring for it. For Andy, he is being healed by walking in surrounded by the lush tropical greenery. With the

support of friends like Jan Andersen and her husband Greg, and more recently Bo-Goran they are more than equal to the task of both reclaiming what once was and envisioning what will be. Already the garden is responding exuberantly to their attentions.

“One sweet achievement of that effort was to see birds return to the garden including Kalij pheasants!”

Andy and Bob are eager to be more active in the palm society now they are full time residents.

Welcome home Andy and Bob!

Are Fungi the Key to the Evolution of *Howea forsteriana* and *Howea belmoreana*?

There was something very pleasing about listening to the description of long threads of fungi pushing their way between soil particles, roots, and rocks, while hacking at roots and lifting shovelfuls of dirt out of the great hole I was digging to uncover old irrigation lines. I was listening to Merlin Sheldrake’s book, *Entangled Life - How Fungi Make Our Worlds, Change Our Minds, and Shape Our Futures*. (I highly recommend it.) I had to stop mid shovelful when I heard him start telling a story about two species of palm on Lord Howe Island.

The idea that species could diverge within the same area without any geologic barrier like a mountain range that could isolate populations was merely theoretical until scientists found what is now a text book example of sympatric speciation. *Howea forsteriana* and *Howea belmoreana* are sister species, diverging from a common ancestor on Lord Howe Island after the island was formed off the east coast of Australia. While the distributions of *H. forsteriana* and *H. belmoreana* are not separated by any geological barrier on the miniscule island, the species are genetically isolated because they do not flower at the same time and they prefer very different soil compositions. *H. forsteriana* is found on both alkaline calcareous soil as well as the more acidic volcanic soils. In contrast, *H. belmoreana* is restricted only to the volcanic soils. But it is the story of how these differences came to be where things get freaky: mycorrhizal fungi may be playing god and pulling the evolutionary strings.

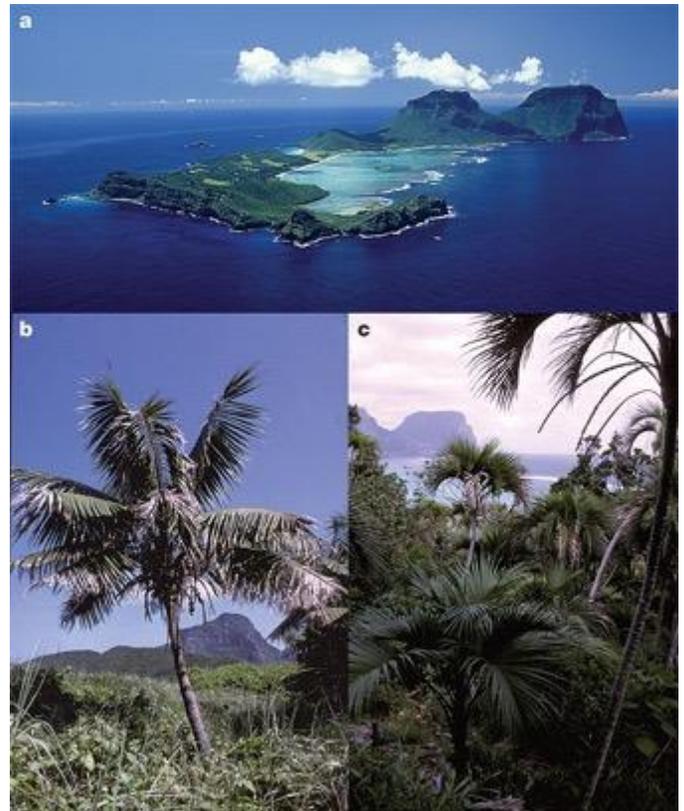


Photo by Dr. William Baker via Researchgate.net. a) Lord Howe Island b) *Howea forsteriana* c) *Howea belmoreana*

The mutual relationship between plants and fungi is ancient, the two have coevolved for the past 400 million years. This relationship provided the ability for aquatic plants and aquatic fungi to adapt to land - the symbiotic fungi providing inorganic nutrients and water and the plants returning carbohydrates.

This mutualism is found in 85-90% of all plants living today, and it goes far beyond nutrient exchange at the roots. Once colonized, the plants are known to activate system-wide reprogramming of major regulatory networks to allow factors, either fungal or plant, to create metabolic change that can affect the physiology of the whole plant. Experiments have shown changes in plant stature, seed size, defense against pathogens, and flowering time as a result of mycorrhizal mutualism.

Some mycorrhizal fungi called ectomycorrhiza coat the surface of plant roots. The fungi implicated in the speciation of *Howea*, arbuscular mycorrhizal fungi (AMF), penetrate the root and set up shop between and inside plant cells. They don't come uninvited, the plant calls out to them and even builds them guest rooms. There are plant genes that when expressed will exude chemicals from their roots to attract AMF, once symbiosis is initiated, a complete structural rearrangement of cells within the plant is triggered creating pockets for the fungi to grow nodes (arbuscules). This is illustrated in the figure on the right, from an excellent article in 2010 explaining the mechanisms behind plant-fungus interactions in [Nature Communications](#).

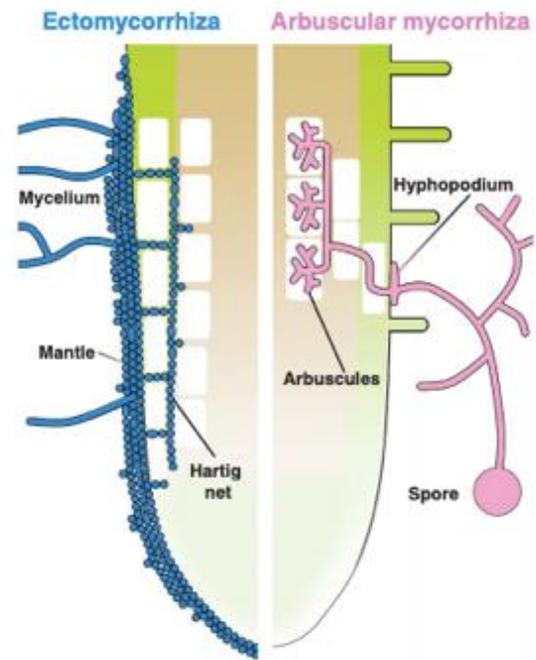


Figure 1 | Illustration of root colonization structures in ectomycorrhizal (blue) and arbuscular mycorrhizal (pink) interactions. The ectomycorrhizal fungus surrounds the root tip with a thick mantle of closely appressed hyphae, whereas the Hartig net develops around epidermal cells (green). In the case of arbuscular mycorrhizas, the root tip is usually not colonized. Hyphae develop from a spore and produce a hyphopodium on the root epidermis. Intraradical colonization proceeds both intra and intercellularly and culminates with the formation of arbuscules, little fungal trees, inside inner cortical cells (brown).

The story of how two sister species of *Howea* coexist and evolved on a tiny island is laid out in a 2017 [article in New Phytologist](#). The authors present evidence that *H. forsteriana* and *H. belmoreana* may have diverged in response to adaptations needed to expand into calcareous soil, the ancestor of *H. forsteriana* forming an optimized relationship with AMF in that environment. When *H. forsteriana* moved back to acidic volcanic soil, it could survive, but it wasn't as fit as *H. belmoreana* whose ancestor never left volcanic soil, thus it hasn't displaced its sister species. The main barrier to interbreeding is the shift in flowering time between *H. forsteriana* and *H. belmoreana*, it is probable that the AMF relationship forged in calcareous soil played a role in the shift in flowering time of *H. forsteriana* – and in this case, providing the genetic barrier needed to create a new species.

Taste Testing Palm Heart From Archontophoenix alexandrae

Contrary to a previous [newsletter article on edible palms](#) that much maligned the taste of palm heart from Archontophoenix alexandrae, Chris Friesen our HIPS Treasurer has found them delicious.

“I shared some palm heart with the HIPS board (not Rick, though, who considers it cannibalism) after the meeting. This has been the 4th one I've eaten, of all different sizes, and I have not run across anything I would describe as bitter... I am now convinced that the alexander palm hearts are edible and just a tiny step below coconut palm heart -- though it has been a long time since I had one of those. An online hint, about harvesting palm heart in general, suggested putting the heart into a brine solution to prevent browning. I did this, and found it very effective. After a bunch of us nibbled on the palm heart bits, Sara took a big chunk home and I had most of the rest as a salad tonight. It really is much tastier with a tiny bit of salad dressing.”

Have you eaten heart of palm from an alexander palm? Let us know what you thought, email hawaiiislandpalmsociety@gmail.com

Note from the editor:

This newsletter goes out quarterly (more or less), the next newsletter will go out September 30th. If you have any questions, comments, or would like to contribute to the production of the newsletter, contact Mary Lock at marylock@sbcglobal.net.