



Harold L. Lyon Arboretum
University of Hawai'i

The Kukui Leaf

Volume XLII No. 2 Summer 2018

From the Director's Desk

Dear all,

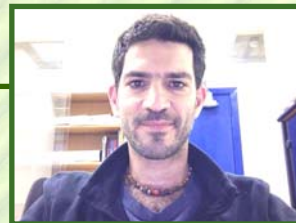
The months are fast rolling by as we prepare for the core activities of our Centennial celebrations! There are two major events coming up soon that I would like to remind you about - both are open to the general public. The first is our official Ho'olaule'a or open house celebration that will be held at Lyon Arboretum on August 4th from 9AM-4PM. This promises to be a singularly memorable event, and is designed to be a fun activity for the entire family. There will be arts and crafts booths, live music and dance, food trucks, and a variety of games and activities for people of all ages – but especially for keiki! The celebration is free and open to all interested, so please mark this on your calendar and plan on bringing the whole family. More specific information and guidelines to the event will be listed on our website and social media accounts as the event draws near, so stay tuned for updates! The second public activity is a two-day symposium that will be held at the East-West center on UH Mānoa campus on 13 and 14 September. Again, this event is free and open to all those interested in participating. We have more than 40 guest speakers who will be joining us for the two-day event to talk about a range of themes tied to the history and cultural significance of Lyon and its collections, as well as a full day of research presentations to give attendees a sampling of the range of scientific work that has been done here. Again, more details will be forthcoming as the event approaches, so please stay tuned to our website and social media accounts.

Aside from these planned activities we have also had a few additional unanticipated events that really served to highlight what all we do here at Lyon and the resources that we can showcase! I'll briefly mention two as both have full articles in this edition of the Kukui newsletter! On June 6th, Lyon hosted a big UH Foundation organized event for retired UH faculty and employees to visit and get to know a particular research unit of the University. This activity is held once every two years and the focus this time around was the new Micropropagation lab! In all, we had more than 70 participants, and all were very happy with the visit and deemed it a big success. The very next day we were honored to receive a special visit from Prince and Princess Akishino of Japan, who took time out of their busy schedule in Oahu to commemorate the arrival of the first Japanese immigrants to Hawaii to visit Lyon Arboretum for a tour! The royal couple spent more than an hour walking the arboretum grounds and very much enjoyed their stay. Amazingly the (highly) unpredictable weather in upper Mānoa valley held up for BOTH events. Centennial goodwill perhaps!

I hope to see many of you at our upcoming festivities in August and September. Please join us and thank you as always for your support!

Regards,

Zak



Prince Akishino and Princess Kiko of Japan Visit to Lyon

Mānoa has long been the abode of the gods and ali'i of Hawai'i. It is only fitting then that Lyon Arboretum, straddling the traditional land divisions, or 'ili, of Haukulu and 'Aihualama, receive royal visitors from afar. On June 16, 2018, Lyon Arboretum had the honor of welcoming the Prince and Princess Akishino of Japan's Imperial Family. The royal couple was in Honolulu for their first time to commemorate the 150th anniversary of Japanese immigration to Hawai'i. It was serendipitous that the visit occurred during our own Centennial year.



Lyon was selected as the visitation site after considering all other O'ahu botanical gardens. They requested a private tour without fanfare as a getaway from their extremely busy whirlwind schedule. Originally planned to be a one hour visit, the Prince and Princess were so impressed by the collections and grounds that they stayed an extra forty minutes!

Following a brief greeting outside the Visitors Center by Lyon staff, the couple was chanted into the building by Clancy Ako and Kim Zane. There they were given an introduction by Lyon Arboretum Director Dr. Rakan Zahawi, and bestowed with traditional 'Ōhi'a lehua lei by Lyon Education Manager Raedelle Van Fossen and myself. The lei were truly magnificent, made by Marion Leong and the members of Lyon's Hui Hana Hawai'i with lehua blossoms picked from our grounds. After days of rain (perhaps because of the picking of the lehua!) the sky had cleared, and we set off on our hiking tour.

The route took us through the Native Hawaiian Garden, the Hawaiian Ethnobotanical Garden, the Helber Palm Walk, Fern

Valley (the Prince remarked that it reminded him of the Amazon rainforest), the Bromeliad Garden, and Inspiration Point. It was a great opportunity to point out the accomplishments and legacies of Harold Lyon, Ray Baker, Beatrice Krauss, Bob Hirano, and all of the others, past and present, who have helped to make Lyon so special.

Both the Prince and Princess were genuinely humble and caring, with a gentle sense of humor. The Prince was very interested in Kalo (*Colocasia esculenta*), known as *Satoimo* in Japan, and asked many specific botanical questions, taking notes during the whole hike. *Cyrtosperma*, *Alocasia*, *Xanthosoma*, and *Colocasia* were genera in the Araceae family that he had many questions about, identifying the different plants as we walked. His English is very fluent, having studied at Oxford, and luckily the interpreter's services were not needed.

Along the way, several traditional mo'olelo were related to the royal couple, connecting Hawaiian culture and history to our site. Within these stories are embedded kaona, or poetic meanings, and lessons. These stories included the story of Hāloanakalaukapalili, the first kalo plant, and his younger brother Hāloa, the first Hawaiian man, fitting in that Prince Akishino is the younger brother, but the responsibility of the future throne will lie with him, his son, and progeny.

In 2019 Emperor Akihito will step down from the throne's responsibilities, and his eldest son, Naruhito, will become Emperor. The younger son, Prince Akishino, will become Crown Prince Fumihito of Japan, next in line to the Imperial throne. His son will then carry the patrilineal line as future Emperor of Japan.

Continued →

The story of 'Aka'aka and Nālehua'aka'aka, who reside on the high peak of 'Aka'aka ("Mt. Olympus", whose hillsides would appear red from the abundant lehua blossoms) was told. Their offspring Kahaukani (Mānoa wind) and Kauatuahine (Mānoa mist), begat-Kahalaopuna, the rainbow princess of the valley. This mo'olelo highlights the importance of 'ōhi'a lehua and the balance of nature that sustains a healthy ecosystem.

The current efforts by Dr. Marian Chau in the HRPP Seed Conservation Lab with the OhiaLove campaign to combat Rapid 'Ōhi'a Death, and the rare Hawaiian plant rescue efforts led by Nellie Sugii and the HRPP staff were discussed. Princess Kiko remarked that she had been impressed by the sight of the test tubes in the new HRPP lab's windows, and both expressed deep concern for the plight of Hawai'i's endangered species.

As the Patron of the Agricultural Society of Japan, Japan Forestry Association, and the Japan Association of Botanical Gardens, the Prince is committed to the preservation of nature. Imbued in the Japanese Shinto religion is the understanding that all things have a divine spirit, including trees, rocks, and forests. This divine connection with nature is evinced by his curious, inquisitive, and scientific mind. Prince Akishino researched and wrote his dissertation on the domestication of the Red Jungle fowl, and Pacific Red Jungle fowl *Gallus gallus sub. Sp. bankiva*. He was happy that he was able to see many wild chickens on his drive up to our garden.

Prior to their visit, arrangements had been made to plant a 'Ōhi'a lehua (*Metrosideros polymorpha*) at Inspiration Point. The 'Ōhi'a lehua that was planted in their honor was very well received (thanks to Liz Huppman for the tree and Liloa Dunn and the Grounds Department for planting it). Princess Kiko was especially pleased, as the royal couple, with hands clasped together in Shinto prayer, bowed to the tree and wished it a good life. Princess Kiko then happily proffered that they would return to Lyon Arboretum to visit their 'Ōhi'a tree. Let's hope that they do!



- Richard Sears

University of Hawaii Foundation Former Faculty Mahalo Celebration



PC—S. Nishi

The Lyon Arboretum and its newly completed Hawaiian Rare Plant Program Micropropagation Facility was featured at the University of Hawai'i Foundation Former Faculty Event, held on June 6, 2018. Eighty guests attended this experiential event at Lyon, which presented an opportunity for Lyon's Director Dr. Rakan Zahawi and Nellie Sugii, Hawaiian Rare Plant Program Manager, to showcase the just completed Micropropagation Facility and describe its role in Hawai'i's ongoing plant conservation efforts. Our guests were also treated to a tour through the native Hawaiian and the Beatrice Krauss Ethnobotanical Gardens, led by Liloa

Dunn, Grounds Manager and Elizabeth Huppman, Horticulturist.

The UHF Former Faculty Event is held once every two years, and features the positive developments, projects or programs that are considered to play a critical role in the continuing growth of the University of Hawai'i. This event also presents a learning venue for our UH Former Faculty to stay engaged through fellowship opportunities.

- Nellie Sugii



PC—S. Nishi

Updates from the Lyon Education Department

This summer, the Lyon Education Department welcomed Jenna Watling, our Environmental Education Intern sponsored by the Friends of Lyon Arboretum. She was immediately thrown into the whirlwind schedule of the Summer Nature Camp where she helped lead activities and guided summer camp junior leaders in planning and conducting their own activities for the camp participants. Jenna comes to the Education Department with much experience under her belt. She previously worked with children at the Bishop Museum and as a part-time teacher at Aliamanu Elementary School. She also was an intern at the 'Iolani Palace and was an associate naturalist at Grand Teton National Park in Wyoming. We are very lucky to have found Jenna. She is currently working on developing field trip activities focusing on the conservation efforts at the Micropropagation Lab.



The Education Department recently concluded another successful nature camp. This summer, two weeks instead of one week of camp were offered due to the popularity of the Spring Nature Camp. The theme of the Summer Camp was Science and Art. Campers did a variety of activities ranging from creating a mini aquaponics system by upcycling large plastic water bottles and creating beautiful pastel drawings for a plant study. The camp also hosted two guest instructors. Alyssa Moreau taught the children how to make healthy snacks for our culinary arts lesson. Longtime Education Volunteer, Uncle Wes Sen again shared his knowledge about kapa making but this time taught the children how to make a traditional Sāmoan Siapo designs on kapa that they made themselves. Camp participants also made their own clinometers to help them estimate the height of trees. The children were able to use their clinometers to measure some of the very tall trees found on the Great Lawn. During this Nature Camp, the teenage Junior Leader volunteers were given a little more responsibility by being tasked with designing and leading an activity for the campers. They created two activities – a scavenger hunt

utilizing our newly installed Children's Garden Signage and a creative leaf rubbing activity. It was a great opportunity for the Junior Leaders to take the lead and practice leadership skills. Credit for another successful camp is due to the hard working Education Staff (Richard Sears and Rebecca Beralas), Summer Intern (Jenna Watling) and Junior Leaders (Caden Chew, Kyle Heim, Gaia Hittle, Katrina Kuo, Ginger Link, and Kaya Sears).

Lastly, the Education Department is sad to announce that Rebecca Beralas will be leaving Lyon for a position with the Koolau Mountain Watershed Partnership (KMWP). Rebecca has contributed much to the Education Department as well as to the Arboretum as a whole. Rebecca was an integral part in organizing and running the school tours program, both as a school tour leader and behind the scenes as the point of contact for the teachers. She created materials for and attended many outreach events promoting the Arboretum and updated and modernized our website and social media account. She was always there to help with the plant sales, was on several committees like the Safety Committee, and helped to plan annual events like the Volunteer Party. The Education Department will miss her dearly but wishes her well. KMWP is very lucky to have her!



Upcoming Classes

Our fall class schedule will be available soon, and will ONLY be sent by email or via our website. If you would like the most current class schedule, please go to our website <https://manoa.hawaii.edu/lyonarboretum> and sign up to be on our email list. Look under the "get involved" section, and go to "subscribe to our email list". Fill in the fields, and you're done!

Volunteer at Lyon!!

Interested in volunteering at Lyon? Check out our web site at:
<https://manoa.hawaii.edu/lyonarboretum>

Once there, look under the "**get involved**" section, and go to "**Become a Volunteer**". There are many volunteer opportunities listed and you can fill out an application.

Wish List

- Mangos for Jams & Jellies
- (4) Standing Fans for Education Classrooms

Mahalo for your support!

Napua Wong—Rain ponchos for Children's School Tour Program

Tuline Nonomura—Snacks for Arboretum staff and volunteers and Umbrellas

Leilani Maguire—Donation (\$50)

Garden Club of Honolulu—Funding for supplies for signage machine

Uncle Wes Sen and Alyssa Moreau—Help with the Summer Nature Camp. The activities were fun and interesting and the children enjoyed their time immensely.

Debby Sato—Donation of tools and supplies for School Tour Program Activities

UPCOMING EVENTS

Lyon Centennial Hoolaulea—Saturday, August 4th

Lyon Centennial Symposium—Thursday, September 13th & Friday, September 14th

Arbor Day Tree Giveaway—Saturday, November 3rd

Winter 2018 Plant Sale—Saturday, November 17th

Please send donations to: Lyon Arboretum / UHF

3860 Mānoa Rd, Honolulu, HI 96822

You can also donate online: www.uhf.hawaii.edu/LyonArboretum

Name: _____ Phone: () _____ — _____

Address: _____ City: _____ Zip: _____ Email: _____

Payment method: _____ check (payable to Lyon Arboretum/UHF, Attn account #12043404)

Or Credit Card: _____ (Visa) _____ (Master Card)

Account #: _____ — _____ — _____ — _____ Exp date: _____ / _____ Security code: _____

Signature: _____



Friends of Lyon Arboretum

Supporting the programs of the Harold L. Lyon Arboretum

September 2018

Annual Meeting Notice

When: Saturday, September 29, 2018 at 9:00am

Where: Lyon Arboretum, 3860 Manoa Rd, upstairs classroom at the Visitor Center

Program includes: 1) Presentation of Reports 2) Election of Board Members

Paid memberships as of September 29, 2018 are eligible to vote. Voting will be in person.

Light refreshments will be served.



A Special Mahalo to these Generous Donors

Koa

(\$500 and Above)

David P. McCauley

Whole Kids Foundation

*Gloria Kosasa Gainsley Fund
of the Hawaii Community Foundation*

*Anderson—Beck Fund
of the Hawaii Community Foundation*

Ilima

(up to \$250)

Mary Ann Bell

Marian Chau

Randi & Rob Creamer

Ann Kadowaki

Ethel Aiko Oda

Eric Salassa

David M. Taylor

Laurita Turner

FRIENDS OF LYON ARBORETUM MEMBERSHIP APPLICATION

Member Level (Circle 1)

1 Year

2 Years

Student/Senior (65+)/Military

\$20

\$35

Individual

\$40

\$75

Family

\$55

\$100

Charitable Tax Deductible Donation

Koa

\$500 and above

'Ōhi'a lehua

\$250 to \$500

'Ilima

Up to \$250

E-mail address _____

Indicate how you want to pay:

___ Check payable to Friends of Lyon Arboretum

___ Please charge my ___ Visa ___ M/C

Account # _____ - _____ - _____ - _____

Expiration Date ____/____ Security Code: _____

Signature _____

Name _____

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Phone no. _____

Mail to Friends of Lyon Arboretum, 3860 Mānoa Road, Honolulu, HI 96822

Lyon Arboretum Centennial—Celebrating 100 years

Our History

The Harold L. Lyon Arboretum is located in a zone of tropical rainforest with an annual rainfall average of 13 feet (4 meters). The site lies in the ili (land division) of Haukulu and `Aihualama, in Mānoa valley, on the island of O`ahu. Several man-made features, including stone platforms, lo`i and the occurrence of many Polynesian-introduced plants attest to the importance of the site. Alteration of the forest by early Hawaiian farmers was followed by post-contact agriculture, and free-ranging cattle that grazed their way up the valley. By the early 1900's native forest had been heavily impacted in Mānoa and in other watersheds throughout the Hawaiian Islands. Without healthy forest cover, rainwater flowed to the ocean rather than recharging the ground water table, Hawaii's primary source of potable water. This loss was of special concern to the Hawaiian Sugar Planters' Association (HSPA) because sugar required great quantities of water. Dr. Harold Lyon, a plant pathologist hired by HSPA, concluded that healthy forests should be preserved, that heavily damaged native forests could not recover on their own, and that damaged watersheds could be restored with introduced plants.

1900-1960

In 1918, the HSPA came to a verbal agreement with landowner Fred Harrison on the purchase of 124 acres of land in upper Mānoa – to serve as a test site to evaluate trees that could be used for reforestation throughout the islands, and to test sugarcane seedlings. Clearing and out-planting of sugarcane began that year, and the deed was officially signed in 1919. The test site became the basis of the Manoa Arboretum. Full scale planting began in 1920, and was essentially completed by 1945. In the late 1940's HSPA had achieved their reforestation research objectives and no longer needed the site. Dr. Lyon strongly believed that Hawai'i needed a botanical garden and saw this as an opportunity for the state of Hawai'i. In 1953 the Board of Regents of the University of Hawai'i accepted the land from HSPA for fee of \$1.00. The deed stipulated that the University "...use, maintain and preserve the granted premises as an arboretum and botanical garden only." Lyon used his own money to fund Arboretum operations. When Dr. Lyon died in 1957, he left part of his estate in trust, to help fund the Arboretum in perpetuity. Seven days later, the University of Hawai'i Board of Regents renamed the Manoa Arboretum the Harold L. Lyon Arboretum. A plaque located along the main trail commemorates the many contributions of Dr. Lyon.

1960-1990

In the 1960's collections were assembled, trees inventoried, and the main greenhouse was built. Until 1972 the Arboretum served as a research station, and was closed to the public. In 1972 the idea for a community support/fundraising group arose, resulting in the formation of the Lyon Arboretum Association (aka Friends of Lyon Arboretum). Lyon Arboretum staff and volunteers established education and outreach programs, which were later expanded to include adult education, children's education, internships and a guides program. These programs have been a major factor in bringing the public to the Arboretum. Plant sales added to revenues, and events brought more people to enjoy the Arboretum. Groups of volunteers helped maintain the grounds, made crafts, lei, jams and jellies, and helped in the book and gift shop. Various theme gardens were established: including the Beatrice Krauss Hawaiian Ethnobotany Garden, the Herb Garden, Economic Section, Palm Section, and the Hawaiian Garden.

Researchers from around the world have taken advantage of the large living collections, particularly palms, heliconias, gingers, ethnobotanical and native Hawaiian plants. Other researchers have studied stream life, birds, insects, climate, soils and hydrology. Horticulturists at Lyon have developed new varieties of rhododendron, gingers, calathea, hibiscus, and alocasia. The Arboretum has evaluated and released over 180 plant introductions to nurseries and the public.

1990-Today

In the early 1990's the horticulture aspect was expanded to include micropropagation of rare & endangered Hawaiian plants, and native forest restoration began. This tremendously important Hawai'i Rare Plant Program has greatly expanded and is leader in the field of plant conservation. Several University of Hawai'i departments utilize the garden for research or instruction. High school and college groups, Community service groups, corporate groups, and others have participated in large service projects that help maintain the Arboretum while providing opportunities for learning and community service. In recent years an annual average of 1,500 adults attend the Arboretum's adult classes; and over 10,000 schoolchildren and teachers visit on field trips using STEM curriculum developed specifically for the Arboretum. Lyon Arboretum's trained docents guide an annual average of 1,500 visitors on garden tours. Recently several ancient Hawaiian lo`i (taro growing field) were reopened, and in 2011 a new Hale Halawai (traditional Hawaiian meeting house) was built. Wood harvested from the grounds have been used to create traditional canoes, tools and other educational and cultural resources and many classes that perpetuate cultural knowledge are offered.

Throughout its history Lyon Arboretum has worked to bring beauty, knowledge and an appreciation of and respect for nature to its many audiences. The Arboretum is a gem, an important resource for both the University of Hawai'i and the community at large. Harold Lyon's 1956 words from his "Honolulu Can Have a Botanical Garden" article still ring true: "Here then is a golden opportunity to build in upper Mānoa Valley, a vast botanical garden of native and introduced plants and at the same time carry through a project in water conservation that would prove of immense value to Honolulu."

- from the Lyon Arboretum website: visit <https://manoa.hawaii.edu/lyonarboretum> for more information



**University of Hawai'i-Mānoa
Harold L. Lyon Arboretum**

3860 Mānoa Rd.
Honolulu, HI 96822
Phone: 808-988-0456
manoa.hawaii.edu/lyonarboretum

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Arboretum Hours:

**Monday-Friday, 8am-4pm
Saturday, 9am-3pm
Closed on Sundays & Holidays**

**\$10 Docent led tours
available at 10am, Monday-
Saturday. Please call
988-0461 for reservations.**

Arboretum Staff

Director: Dr. Rakan Zahawi

Administration:
Destin Shigano, Derek Higashi

Education & Volunteer Programs:
Raedelle Van Fossen, Richard Sears,

Plant Collections & Grounds:
Liloa Dunn, Nathan Kamaka,
Robert Santiago, Pia Ruisi-Besares,
Isaiah Kalahiki, Jesse Adams

Micropropagation Lab:
Nellie Sugii, Cindy Yamamoto,
Doug Okamoto, Sam Champine-Tocher,
Libby Dingeldein, Leland Werden

Seed Lab: Marian Chau, Tim Kroessig

Horticulture: Liz Huppmann, David Shepard

Botanist: Karen Shigematsu

Facilities / Maintenance:
Clancy Ako, Kim Zane

**Lyon Arboretum's Centennial
Ho'olaule'a**

**Saturday, August 4th
9am - 4pm**

Music	Food	Games
Arts	Crafts	Plants
		Hula

FREE and Open to the Public

Lyon Arboretum | 3860 Manoa Road | 808-988-0456

web: manoa.hawaii.edu/lyonarboretum/

LYON  **100**
ARBORETUM **YEARS**
University of Hawai'i

The Kukui Leaf is published three times a year by the Lyon Arboretum, 3860 Mānoa Road, Honolulu, Hawai'i 96822. This newsletter is available in an alternate format upon request. *Editor:* Derek Higashi