

POND TOUR AMERICA: Tulsa, Oklahoma

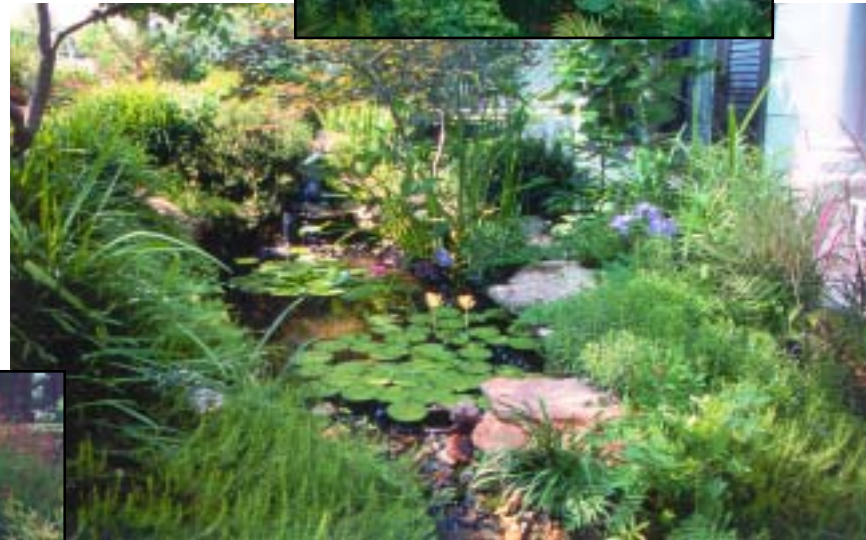
by Joe Van Hook
and the Green Country Water Garden Society

Hardscape Materials



While many people visit Hardscape Materials for stone and pond supplies, others enjoy visiting for the pond-scaping ideas — native wildflowers and stonework combined with captivating garden decor.

Alf & Sally Zellmer



Lucky people who stay at the Zellmers' bed and breakfast must cross a bridge to enter the home and can sit on the spacious front porch and enjoy the water garden before them. The reinforced concrete pond is 50 feet long and varies from one to four feet in width; a 1.25 HP pump recycles the water.

Ed & Martha Van Schaik



Just off their back patio and nestled up against their home, Ed and Martha have created a small water garden and stream, complete with a railed bridge.

Bill & Anne Stanley



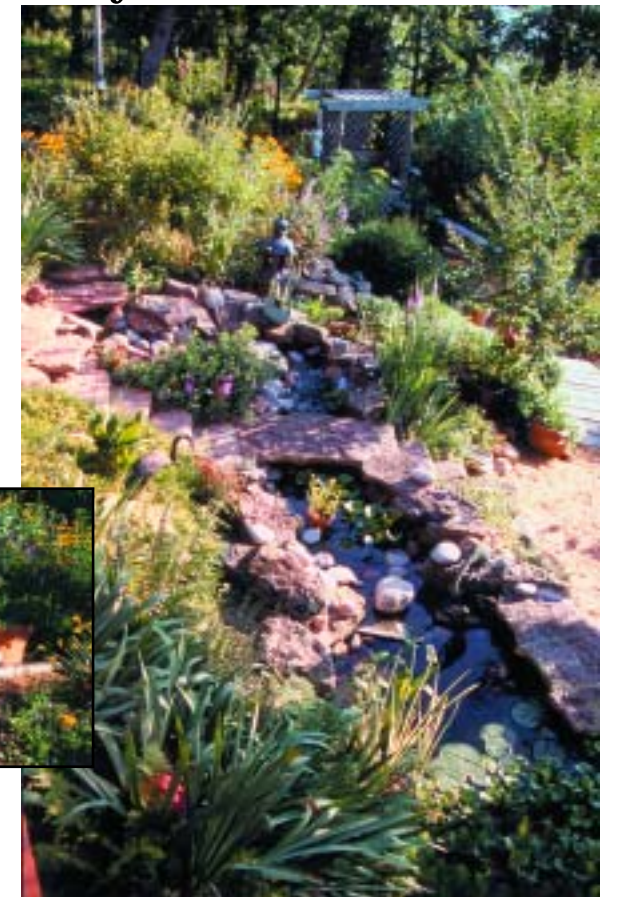
Island planting beds are part of the Stanleys' landscaping design. Including a pond within one of their 'beds' adds another dimension to their private haven.

Carl & Claudia Bullick



Having a swimming pool just wasn't enough water for the Bullicks. Taking advantage of a strip of land between the pool and the privacy fence, they created a water garden with the delightful sound of a waterfall, too!

Jerry & Almeta Robertson



The Robertsons' four ponds and connecting streams are tucked away on a steep hillside that only five years ago was a tangle of wild honeysuckle, sumac, and vinca. Adorned with winding paths, statuary, birdhouses, gazing balls, and arbors, the garden has been certified as a wildlife habitat.

Alan & Karen Jarvis

When Alan & Karen were looking for a lot on which to build their new home, they made their selection for its steep hillside that offered landscaping challenges among the native oak trees.



The Jarvisses' 'youngest child' has made friends with the pond's goldfish.
Photo by Karen Jarvis



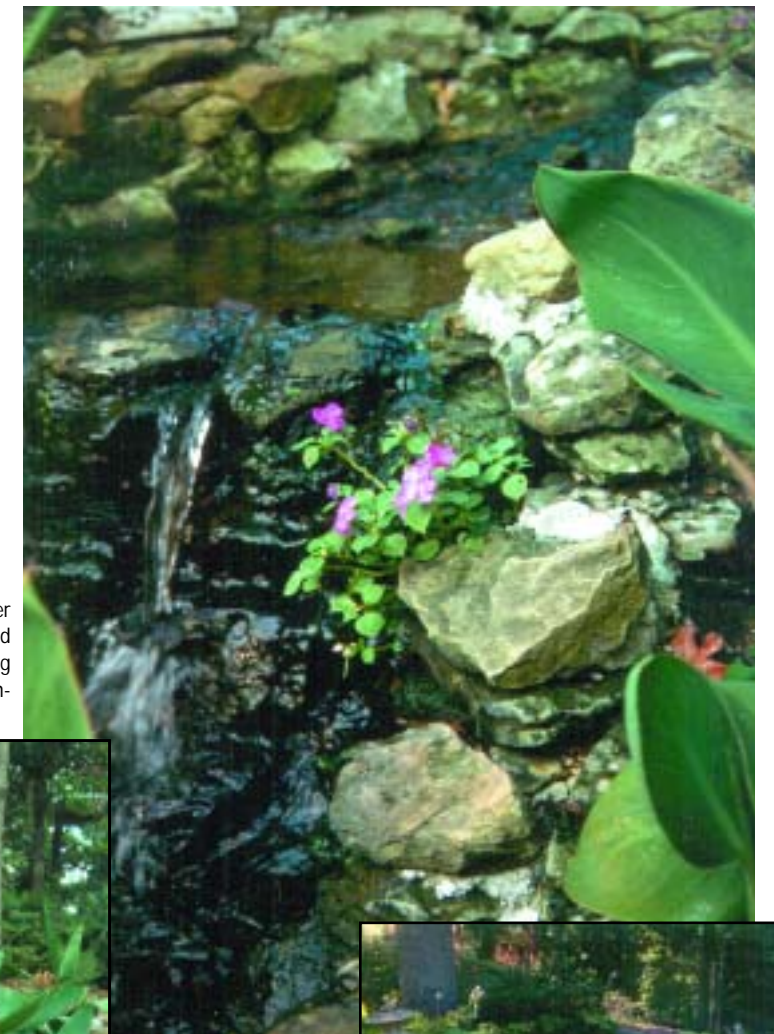
Blooming in spite of the predominant shade over the pond, is the tropical night blooming water lily, *N. 'Texas Shell Pink'* (Rolf Nelson, 1979). *Photo by Karen Jarvis*



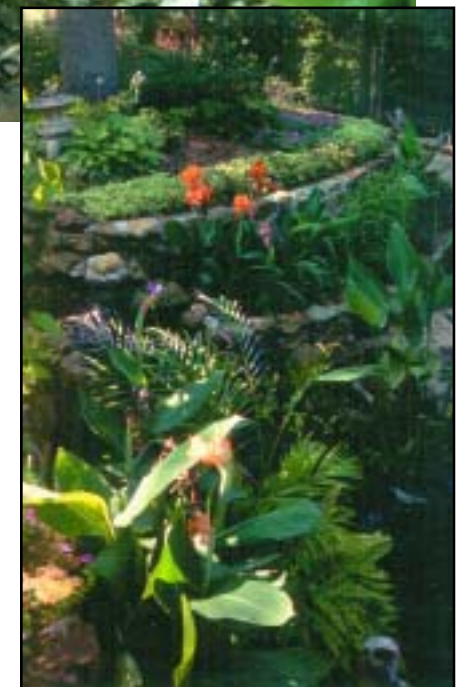
A waterfall next to the side of the house becomes a short stream and then a pond that appears to be crossed by a bridge. The bridge actually conceals the separation of the pond from the top of a stream/waterfall into a lower pond down the side of the hill! *Photo by Karen Jarvis*



Alan and Karen Jarvis sit alongside the hillside stream and waterfalls that empty into their koi pond below.



After they had built the water feature, the Jarvisses tucked shade-loving plants, including impatiens into nooks and crannies of the stream rocks.



The terraced beds created on each side of the stream demonstrate why Alan and Karen looked for a hillside lot.

Chuck & Shirley Rush

It didn't take long for Chuck Junior's parents to get the pond bug after being introduced to water gardening with a very small preform pond!



Before Chuck built his pond, the lawnmower was nearly a bodily appendage. Photo by Shirley Rush



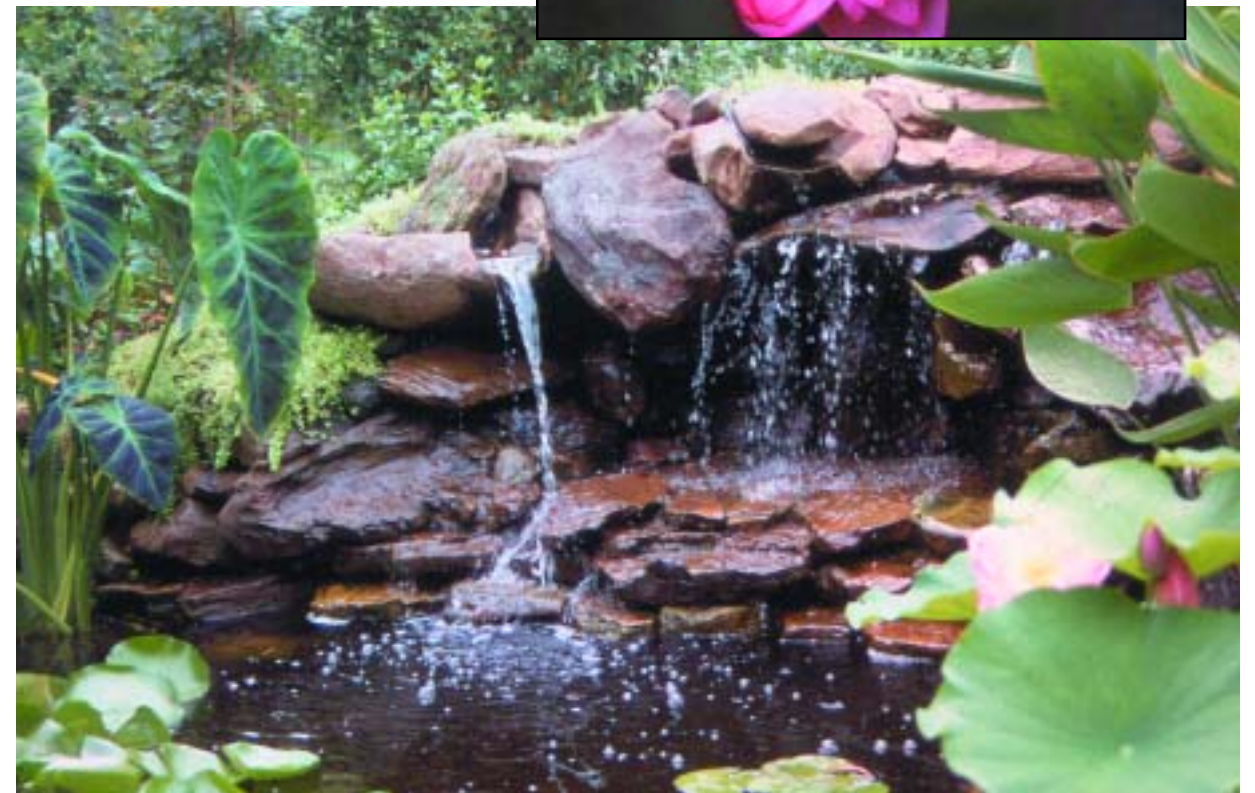
(above) With an 11 x 15' pond to landscape, Shirley kept Chuck busy, too, building gazebos and pathways into their transformed backyard. This is the early morning setting of their breakfast coffee!

(inset) An eye for detail is displayed by Shirley's use of interesting pieces of driftwood and sedum groundcover among the rocks Chuck had collected from nearby hills. Note the size of her *Thalia dealbata*!



(above) Growing in shallow water at the edge of the pond is the dwarf lotus, *Nelumbo* 'Momo Botan.' Photo by Shirley Rush

(right) A red *Penisetum* and bright *Gaillardia* blend the garden's edge into the pond. Photo by Shirley Rush



Chuck calls the scooped half-rock he found in the hills above Tulsa his 'smiley rock.' A teed PVC pipe in the back of the waterfall allows him to control the flow of water through three areas of the waterfall. Photo by Shirley Rush

Hawaii Tropical Botanical Garden

by Scott A. Lucas

All photos courtesy of Hawaii
Tropical Botanical Garden.

Hawaii is special.
A visit to the Hawaii Tropical
Botanical Garden in Onomea
is Paradise.

It was actually a parcel of overgrown land in secluded Onomea, a Hawai'ian word that aptly describes the place and translates to "good feeling." Dan Lutkenhouse then spent the next six years and \$1 million of his own money bringing order to what nature, and man's neglect, had wrought.

Dan's hard work and single-mindedness have created a thriving botanical garden that attracts tourists and professional botanists alike. This Garden is like no other garden in the world, serving as sanctuary to more than 2,000 species of flowering plants and containing some of the most stunning vistas to be had in Hawaii.

Mr. Lutkenhouse made his fortune in the trucking business in San Francisco. Vacationing in 1977 on the Big Island with his wife, Pauline, he discovered Onomea. "It was so beautiful, we just bought it," Dan recalls. "We didn't really know what we would do with it at the time." He quickly abandoned early notions for a commercial venture in the valley, deciding it was "too lovely" for such exploitation. Instead, he settled on a plan for a non-profit foundation to see



The Hawaii Tropical Botanical Garden's coastline along Onomea Bay. Photo by Greg Vaughn



Pathways through the Garden were carved out by hand to preserve and protect the natural environment. Photo by Mark J. Rauzon

that the valley would be preserved in perpetuity.

Carrying his lunch in a brown paper bag, Dan vanished every day into the nearly impenetrable jungle by the sea. Every night he came home weary and caked in dirt; but he felt wonderful because he was achieving his dream of creating a botanical garden to showcase the beauty of the Onomea Valley. Working with hand tools in order not to damage the natural environment, he patiently cleared trails in the hard lava rock. The rain forest was so thick that it took years before he discovered Onomea Falls and its lacy cascades.

Lutkenhouse carefully chose the location for every flower and tree he planted, many of which were brought to the Garden from around the tropical world: Africa, Australia,

Indonesia, Madagascar.

A Hawaiian fishing village once flourished here. The mango, coconut and guava trees the villagers planted back in the 1800's now tower overhead as giants. In their shelter, the botanical collections flourish. The garden is a celebration in layers of green, peppered with the bright colors of a wide variety of gingers, heliconia, bromeliads and orchids; and the whole is laced with the sparkle of cascading waterfalls.

After opening the first 17 acres to the public in 1984, Dan purchased the adjoining 20-acre parcel, its shoreline comprising the northern half of Onomea Bay. This property was donated to the Garden so that the entire Valley and Bay are ensured protection. This additional property has not yet been tamed from the wild jungle; but, herein lies a small part of the enor-



Only after enough paths had been cleared did Dan Lutkenhouse discover Onomea Falls. Photo by Greg Vaughn

mous potential the future holds for this young institution.

Part of what makes this Garden so unique is its climate; a more sublime one would be nearly impossible to find anywhere on earth. It is protected from wind not only by the walls of the cradling valley, but also by the towering mountain, Mauna Kea, that rises nearly 14,000 feet behind Onomea. Due to its dominating position, this mountain diverts the constant trade winds to the north and south, away from the Onomea coastline and the Garden. Capped with snow down to the 9,000 foot elevation during winter, the Hawai'ian word Mauna Kea means "white mountain." The air is always warm and quite humid. Rain falls mainly during the night and early morning hours; and the yearly average total of about 130 inches is equally distributed year round. Blessed with fertile volcanic soil, tropical rain forest plants grow here with great vigor.

Since a framework of very large old trees

was provided by the Garden's predecessors, new trees have been introduced only into fairly open areas. Most of the plants that comprise the botanical collections consist of "fillers" in the middle and lower forest strata. Collections development focuses on palms, aroids, bromeliads, gingers, heliconias, Marantaceae (Prayer Plants), cycads, orchids and vireya rhododendrons. Alexander Palms (*Archontophoenix alexandrae*) provide much of the framework canopy and their trunks provide valuable support for climbing aroids such as *Philodendron* spp.

The Garden can be considered a "simulated" tropical rain forest based on introduced species. There are some remnants of the original Hawai'ian forest, including ohia (*Metrosideros polymorpha*), hala (*Pandanus tectorius*), neleau (*Rhus sandwicensis*) and naupaka (*Scaevola sericea*). The original forest was removed by the Hawai'ians more than 150 years ago as they needed the land for growing taro, sweet pota-



The Twin Rocks, known as the lovers of Kahalii, stand guard at the head of Onomea Bay.



A Cattleya hybrid is part of the Garden's orchid collection.

toes, breadfruit, bananas, and other crops to eat with the fish they caught from the sea.

Onomea Valley has a rich cultural heritage, dating from the Hawai'ians who originally inhabited the valley to the foreign immigrants (Japanese, Chinese, Portuguese, Puerto Ricans and Filipinos) who arrived with the sugar plantations. Many Hawai'ian legends are associated with the Valley. The village of Kahali'i was located on a large point of land that extends into Onomea Bay. Though the village is gone, the descendants of Kahali'i residents still remember one story that tells of the origin of two rock formations at the head of Onomea Bay that are said to be a young man and a young woman, known as the lovers of Kahali'i.

As legends tell: During the late 1800's the community living here was very prosperous as they had everything to subsist on. When warring groups would come to pass by Onomea, they would ground their canoes and make their way up through the community of Kahali'i. They would take the young men away with them, leaving behind only elder men and women, young ladies and children. The elders got together and decided this must not happen, as it was dwindling the community. They prayed for help and received answers and visions. Among the elders was one grandfather who had a very handsome son, and one grandfather who had an exceptionally lovely daughter. The grandfathers did not know that their children had already met and fallen in love. The children did not know how to tell their grandparents, as the objection would be that their bloodlines were too close to allow marriage. The grandfathers had a vision, that if these two young people would come together as husband and wife, they would be able to save their community. So, the word went out that on a certain night, beginning at dusk, animals needed to be muzzled. There could be no noise, no story-

telling throughout the night. All must go to bed early and if they heard people walking or talking, they were not to make any noise or arise from bed. During the darkest hour of the night, footsteps could be heard traveling throughout the village; then silence prevailed until morning. In the light of the new day, the people came out of their homes expecting to see something. They walked down to the shoreline. The two lovers were gone. What they saw were two large rock formations with many other smaller rocks strewn about out in the Bay. Forever more it was believed that these twin rocks were the two lovers, placed there, hands together, to guard the valley. The twin rocks create a whirlpool right at the head of the Bay, so that sea-going canoes could not come into the valley as they would be smashed against the twin rocks. The valley was protected from intruders. This is their legend: "The Lovers of Kahali'i."

A visit to the Garden begins with the new visitor center that features educational exhibits on tropical flora, their uses and value to man, and the factors causing their destruction. There is a fine gift shop with arts and crafts of local artisans for sale; and at the rear of the gift shop is a museum with rotating exhibits. After registering at the visitor center, a walk across the street leads you through the wrought iron gate to enter the Garden. The new entrance features a spectacular 500 foot long elevated boardwalk that traverses the jungle-shrouded ravine of the old Kahali'i Stream that has run dry since 1949 when a violent rain storm caused a huge landslide that diverted all its waters into the adjacent Onomea Stream. The entrance boardwalk terminates in the marvelous jungle rain forest of the Garden proper on the Palm Vista Trail.

Visitors come from all over the world to view the Garden's extraordinary collection of palms. Recently, members of the Royal Palm Society of London excitedly inspected the rare



The Onomea lava tube is one of the Garden's many natural wonders.

Peruvian palm *Euterpe precatoria* here. The Garden is home to more than 200 species of palms. Along the Palm Vista Trail, the visitor views more than 50 species of plants and trees, including the giant Jakfruit tree with its enormous, prickly, sweet-fleshed fruit, sometime more than two feet long!

The Palm Vista Trail terminates at the Palm Jungle Trail, which leads you into the very soul of the Garden. Here, a forest of towering Alexander palms (*Archontophoenix alexandrae*) creates the feeling of a cathedral, and visitors often fall silent as they enter. Originally from Australia, Alexander palms grow profusely in valleys along the Hamakua Coast of the Big Island. They have long, creamy flower clusters that drape below the crown of leaves. The flowers produce huge clusters of seeds that turn from green to a beautiful red. The seeds fall and carpet the jungle floor to pro-

duce hundreds of tiny new palm seedlings.

After wending your way through the Palm Jungle, you find Onomea Stream descending from the mountains through this cool glade of palms on its way to the sea. Onomea Stream has created the crown jewel of the Garden: Onomea Falls. This spectacular three-tiered waterfall is often claimed to be the most beautiful in Hawaii. It was discovered far back in the jungle by Dan Lutkenhouse years after work on the lower Garden began. One day he decided to hack his way through the jungle along the stream, and much to his delight he found the magnificent waterfall.

Onomea Falls is set amidst the natural forest of palms and ferns. Mosses, dripping with water drops, grow in luxuriance on the surrounding trees and rocks. Small fish and prawns thrive in the clear, cool water. Gazing at Onomea Falls from the viewing bridge, visitors are treated to



Heliconia pendula

an experience of unmatched natural beauty. There is a feeling of deep peace and serenity here, as well as sense of power and abundance of nature.

After leaving the Palm Jungle, visitors wander along the spectacular Heliconia Trail where more than 80 different species are on display. The Garden has one of the finest collections of heliconias in the United States and they grow magnificently in the Onomea climate. In this protected environment, heliconias grow more beautifully than in their native rain forest jungle. Colorful, striking flower heads in a multitude of bizarre shapes and sizes arise from clumps of large, oval leaves. The plants range from 2 to more than 20 feet high. Once classified with

bananas, heliconias are now considered a separate family: Heliconiaceae. The dramatic, colorful parts of the plant are not the flowers themselves, but the large and flamboyant bracts that subtend and enclose the small true flowers. Also along this trail, one finds a vast variety of gingers and rare palms before reaching Bromeliad Hill and the Orchid Garden.

Bromeliad Hill is a small rise that is covered with a vast variety of bromeliads. These plants are true tropicals, relatives of the pineapple that made Hawaii famous. There are more than 2,100 recognized species of bromeliads and all except one are native to the New World tropics. More than 80 varieties and species are represented in the Garden. Adjacent to Bromeliad



Heliconia 'Golden Torch' Photo by Greg Vaughn

Hill is the Orchid Garden.

The Big Island of Hawaii is also known as the "Orchid Isle," and indeed, commercial orchid growing is a very important aspect of the local economy. The Garden has always maintained a small orchid garden; but in 1995 this took on new significance as the Garden launched its Southeast Asian and Malasian Orchid Conservation Project. Headed by the Garden's research associate, Dr. Yoneo Sagawa, Professor of Horticulture, University of Hawaii, this long-term conservation project aims to con-

serve orchid species that otherwise will be lost to extinction as the forests of the region are destroyed through continuing slash and burn agricultural methods that left huge portions of Borneo and Sumatra charred during the great fires of the summer and fall of 1997. Orchid genera that are particularly well represented in the region include: *Phalaenopsis*, *Dendrobium*, *Paphiopedilum* and *Vanda*. The Garden's orchid collection has grown to more than 5,000 plants and plans have already been laid for the construction of three new research greenhouses over the course of the coming year. The Orchid Garden blazes with color year-round as plants in flower are constantly rotated from the greenhouse into the Garden.

Nearby, nestled in the jungle, a small pond is home to a family of pink Lessor Flamingos and Mandarin Ducks. The Lessor Flamingos are native to Lake Manyara in Tanzania, and they sport a more delicate shade of pink than their more familiar relatives often seen in zoos. Near the Flamingo Pond are an abundance of food plants, such as the thousand-fingered banana and rare red bananas. The cocoa tree (*Theobroma cacao*) is frequently festooned with pods of chocolate beans.

Beyond the Orchid Garden, the Lily Lake Trail weaves through the jungle, passing the Bird Aviaries. More often than not, when you begin your approach to the Lily Lake, the air is filled with the hearty vocalizing of macaws. With their brilliant plumage, these South American birds enhance the Garden's tropical atmosphere. They include a pair of scarlet macaws, a pair of blue and gold macaws, and a pair of hybrid red and green rainbow-colored macaws.

Along the trail are several unique red sealing wax palms, so named by the British in Singapore because their trunks are the color of the brilliant red wax then used to seal impor-



A Scarlet Macaw is one of many exotic birds in this island paradise.

tant documents. Many other palms are seen reveling in the humid jungle atmosphere until you come upon Lily Lake.

If, as Henry David Thoreau said, "the lake is the eye of the land," then Lily Lake is the guardian of Onomea Valley. Located at the center of the Garden, the lake looks as though nature placed it there. In fact, it was dug by hand by Dan Lutkenhouse and three helpers, and the bottom was lined with hand-mixed concrete three inches thick to contain the water.

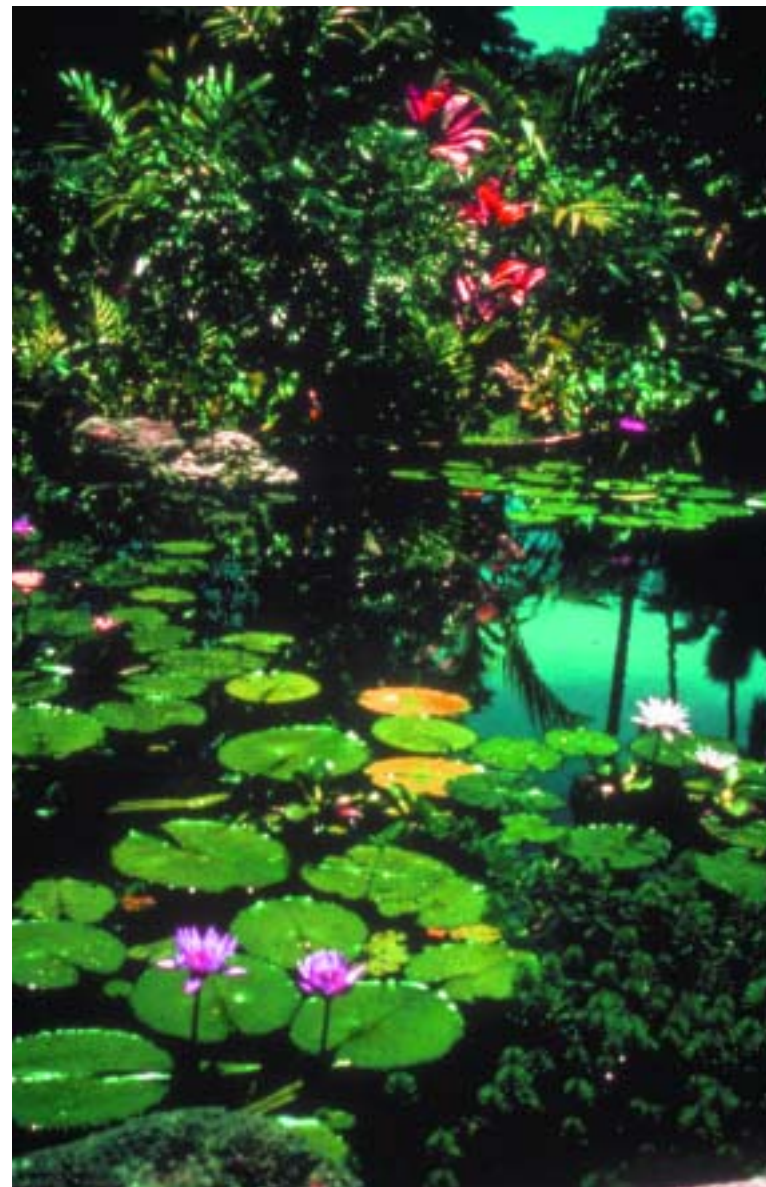
Over 110 species of tropical plants can be seen from the Lily Lake Vista. Among them are giant Victoria Lilies from waters of the Amazon in Brazil, an exotic wi apple tree, believed to be the largest wi tree in the State of Hawaii, and a multitude of palm species, bamboo and trees

draped with a vine bearing one of the largest flowers in the world: the giant Dutchman's pipe (*Aristolochia grandiflora* var. *sturtevantii*) whose three foot long flowers are astounding, if not foul smelling! Purple lotus and papyrus fringe the border of the lake. Nowhere else in the world, be it jungle or botanical garden, is this vast variety of plants displayed in an area of this size. Lily Lake is also home to a large school of beautiful koi fish, some as long as 30 inches.

Beyond Lily Lake lies the Ocean Front Trail. Majestic breadfruit trees are plentiful here; these provided a staple food for the Hawai'ians and early settlers, and chewing gum was made from its white, milky sap. Lauhala trees, whose long leaves were used by Hawai'ians to make mats, hats and fabrics, join ironwood trees lining the short cliff overlooking Onomea Bay. The atmosphere is timeless, with the rolling breakers inspiring peaceful meditation. Below, in the base of the cliff, is the lava tube of Onomea Bay.

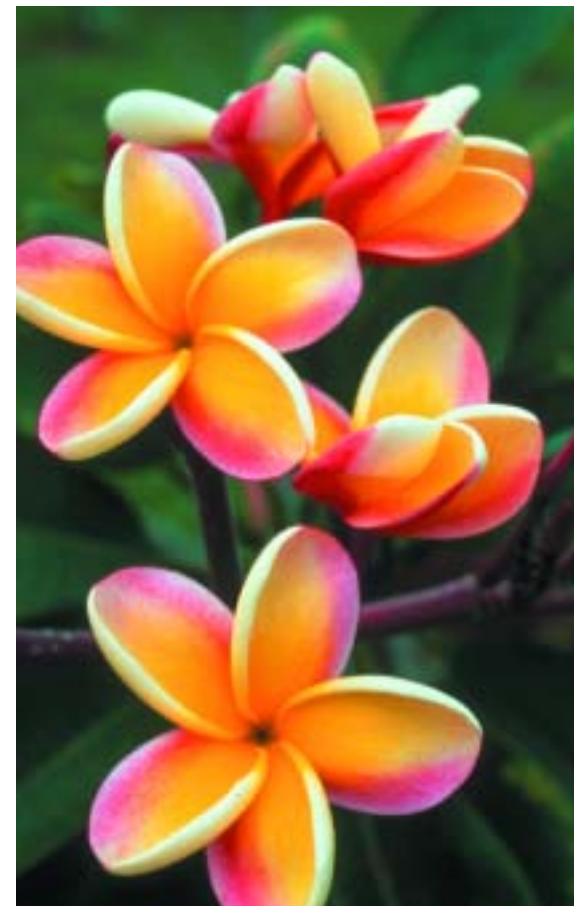
Lava tubes are formed by hot lava flowing from vents into the sea. The outer layer of lava cools into rock, insulating the still molten interior through which the lava pours on its way to the sea. Today, the tube is filled with sea water and beaten by breaking waves. No one knows how far the tube runs into the valley. This is one of the interesting and beautiful features of the rugged shoreline of the Garden.

The Cook Pine Trail takes visitors up along



Lily Lake features a collection of tropical water lilies.

the boulder strewn Alakahi Stream. In this part of the Garden, one can truly appreciate the beauty of members of the Marantaceae (Prayer Plant Family). The collection that lines portions of this trail grow with great exuberance and with a health and vigor not seen elsewhere. Even the very difficult to grow species, *Calathea musaica*, luxuriates here. Further along the trail is a collection of endemic Hawai'ian plants, including the rare fan palm, *Pritchardia schattauerii*, and various



Plumeria rubra cultivar. Photo by Mark J. Rauzon

native hibiscus species. The trail features a towering Cook Pine, named after the famous English navigator Captain James Cook. The Cook Pine emerges from the forest canopy like a rocket to the moon. It is estimated to be 160 feet tall, making it the largest specimen in Hawaii. At its base grows the largest aroid in the world: *Amorphophallus titanum*. The Garden's plant was collected by Dr. Gilbert Hetterscheid and Sir David Attenborough from plants growing in the wild in Sumatra. When mature, which takes some ten years from seed, the single



Cook Pine towers over the Garden's rain forest canopy.



Heliconia rostrata. Photo by Bark J. Rauzon

leaf borne by this plant appears as a giant umbrella, ten to twelve feet high and as wide. The flower, or more accurately the inflorescence, is the largest in the world of any flowering plant. The spathe is deep red and measures four feet in width and height. Meanwhile, the spadix that emerges from the center can grow as tall as ten feet! The Garden's Titan should flower in about five or six years.

A description of this tamed jungle with its natural paths that weave past streams, waterfalls, and an extraordinarily serene lily pond to lead down to the pounding sea and the remains of Onomea Arch, defies mere words. But, seeing is believing. If tropical jungles fascinate you, the Hawaii Tropical Botanical Garden is a must see. ❀

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