



THRUM'S HAWAIIAN ALMANAC / VOLUME 90

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This is the only surviving image in Hawaii from a temple of human sacrifice. It was carved from the trunk of an *obia lehua* tree.

—Bishop Museum Photo.



Summer time is co-ed time in Hawaii, with beachboys teaching the girls how to surf.

ALL ABOUT

HAWAII

*The Recognized Book of
Authentic Information on Hawaii*

Combined with

**THRUM'S HAWAIIAN ALMANAC
AND STANDARD GUIDE**

*Compiled and Edited by
Charles E. Frankel*

90th EDITION

1968

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combined with
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Foreword

This is the 90th volume of Thrum's Hawaiian Almanac—All About Hawaii. This truly is a remarkable achievement in the publishing world, where annuals and almanacs sprout and die with amazing rapidity. No other state has a comparable almanac of this longevity. There have been more volumes of Thrum's than the World Almanac; the World Almanac appeared first in 1868, while Thrum's did not make its debut until 1875; but the World Almanac was discontinued from 1876 until 1886.

When George Thrum published his first almanac in 1875, he wrote:

"The Hawaiian Annual and Almanac, in making its first appearance, offers no apology for its intrusion. It trusts that the large amount of statistical and other information contained herein . . . will meet with public approval through its taking up and filling a want acknowledged to be seriously felt, more especially among transient visitors . . ."

It is hoped that this 90th volume will prove of value and interest to the resident and to the visitor, to the student and to the scholar.

We are especially proud to present a new section on the Hawaiian language and pidgin, and a history of Hawaii architecture, from grass shack to skyscraper.

Thrum's has gone through various changes of name, and this year we are reverting to "Thrum's Hawaiian Almanac—All About Hawaii," substituting the word "almanac" for "annual."

The editor wishes to acknowledge the help and cooperation of Robert C. Schmitt, State statistician; Agnes Conrad, State archivist; Janet E. Bell of the University of Hawaii library; Dee Prather of the Hawaii Visitors Bureau; Fred Bennion of the Tax Foundation of Hawaii, and my colleagues on the Honolulu Star-Bulletin.

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Charles E. Frankel
Editor



Gwen N. Nishizawa, the 1967 Cherry Blossom Queen.

Hawaiian Music

Many of the Hawaiian songs you hear are penned by non-Hawaiians.

"Don't demean the hapa haole (part-white) song," said Tony Todaro, a non-Hawaiian who is the co-composer of "Keep Your Eyes on the Hands."

"It was the hapa haole song that first communicated with the rest of the world and enticed them to come to Hawaii, and it is still part of a worldwide image of Hawaii that lures hundreds of thousands of tourists every year.

"There were the chants, the missionary hymns, and then the authentic popular melodies of Hawaii by Charles King and other Hawaiians. The hapa haole song is just as important a part of Hawaiian music because we are living in a hapa haole society."

His "Keep Your Eyes on the Hands"—spoofing the tourists in Hawaii—entered his head while he was driving through Waikiki one day on business. It was written and commercially recorded within one week after it was commissioned. He said the inspiration was provided by Sterling Mossman, Hawaiian entertainer and retired policeman, who instructs tourists in his audience to "watch the hands" while the hula dancers wiggle their hips.

The music was written by Todaro's long-time collaborator, Mary Johnston.

It was featured in the movie, "The Revolt of Mamie Stover," as sung by Jane Russell, and has been recorded more than 30 times, and has sold about 2 million records.

Todaro also has written the words for "There's No Place Like Hawaii" (music by Eddie Brandt), "Pleeze No Peencha da Hula Girls" (music by Mary Johnston), and "Hawaii, Pearls of the Sea" (music by Hoagy Carmichael.)

Hawaii's best known current composer is R. Alexander Anderson, a World War I combat flier and businessman. As a flier, he was shot down over France; he was imprisoned by the Germans, and escaped to Holland. As a prominent Hawaii businessman, he was president of Von Hamm-Young (now the Hawaii Corporation) and then chairman of the board.

But Anderson also had time to dash off popular songs.

Anderson, born in Honolulu in 1894 and a graduate of Punahou School and Cornell University, wrote "Lovely Hula Hands," "The

Cockeyed Mayor of Kaunakakai," and "Mele Kalikimaka."

It was in 1939 that Anderson saw those lovely hands and immortalized them in words and music. He recalls, "I was standing on the edge of a big circle of people watching a hula dancer at a private party in Waikiki. Her hands were particularly graceful. Of course, that's the mark of a real good hula dancer. A man remarked to me, 'Aren't her hands lovely?' Right away, the title occurred to me. Then the rhythm of the first phrase—'lovely hula hands'—started an idea for a melody."

The next two lines of lyrics, after the opening phrase, came to him soon afterward as he was aboard a ship enroute to New Zealand. He was sitting in the stern, watching the seagulls pursue the ship, where there appeared:

... Graceful as the birds in motion

"Gliding like the gull o'er the ocean."

Anderson completed "Lovely Hula Hands" about three months after conceiving the title. It has sold about 10 million records, with each record bringing Anderson two-thirds of one cent.

Anderson wrote "The Cockeyed Mayor of Kaunakakai" in 1934 at the suggestion of the late Paul Fagan, who owned a ranch on Molokai. Fagan said he was having actor Warner Baxter at the ranch and would entertain him. "I've got a big celebration planned," Fagan told Anderson. "There'll be a parade of horses down the main street. We'll have a ceremony, give him a big wooden key, and call him the mayor. Why don't you come over and write a song for the occasion?"

Anderson said, "Kaunakakai went over and over in my mind. The whole idea was there—a parade of broken down horses, making him mayor. Pretty soon the word 'cockeyed' appeared. It was just for fun, alliteration for Kaunakakai. I wrote it for the occasion, never thinking it would be a popular song. But it was different and it caught on."

(There is no mayor of Kaunakakai, Molokai's principal village. Molokai is part of the tri-island County of Maui, and there are no separate mayors for the various cities and villages in the county.)

Anderson has written more than 100 songs, including "Mele Kalikimaka," written in 1949 after colleagues in his office complained there was no Hawaiian Christmas song; "Haole Hula," written in 1927 and "as far as I know, it was the first hula song in English"; "White Ginger Blossoms," inspired by Mary Pickford in 1939; "Ma-

lihini Mele," "Soft Green Seas," "On a Coconut Island," "Red Opu," "Blue Lei," "Two Shadows on the Sand," and "Lei of Stars."

Another popular writer of Hawaiian songs is Harry Owens. His "Sweet Leilani," has sold 15 million copies in records and sheet music since 1934.

"I wrote the song as a lullaby for Leilani, my first born, when she was a day old, completed both words and music in an hour, and never changed a word or a note," Owens said.

Bing Crosby heard it at the Royal Hawaiian Hotel, where Harry Owens and His Royal Hawaiians were playing, and Crosby insisted that it be included in his 1937 movie, "Waikiki Wedding." It won the Academy Award as the best movie song of the year.

Owens also is responsible for "Linger Awhile," "To You Sweetheart, Aloha," "Princess Poo-poo-ly Has Plenty Papaya," "Hawaiian Paradise," "Dancing Under the Stars," "Coconut Grove," "Hawaii Calls," "A Syncopated Hula Love Song," and others.

"Sweet Leilani" was the song that revived the record industry in the depression," said I. B. (Buddy) Peterson, president of the Musicians' Association of Honolulu and a former bass player with Owens' orchestra.

"Every radio station, every juke box in the country played it constantly."

Another popular song, "Little Grass Shack," started as a joke and a parody in 1930 when William O. Cogswell and his brother were in Waikiki. Cogswell said, "We were at the aquarium and he saw the name 'humuhumunukunukuapuaa.' He said, 'My gosh—the name of that fish would make a whole chorus for a Hawaiian song!'"

Fascinated by that big name for that little fish, Bill Cogswell took up the challenge and found "it was fun trying to get him into the song."

The result was a parody of a song of that day called "My Little Black Shack in Hackensack, New Jersey."

"Little Black Shack" died, but the parody continues to be an Island favorite.

Hawaiians still are contributing to Island music.

One Hawaiian composer is Mrs. Alice K. Namakelua. A good singer in her youth, she sang for Queen Liliuokalani on various occasions. Auntie Alice has written words and music to about 130 songs, most of them in the Hawaiian language, in which she is

fluent. Her first song was "Ka Nani O Maui," written in 1937 when she was 45 years old.

"I stick to the old Hawaiian way of composing," she says.

"The way they are composing now, they pick up Hawaiian words they don't know anything about. Then they write a song and it doesn't make sense at all.

"When Hawaiians write a song it's a complete story, either of a place or a person or of praise. When the Hawaiians want to praise you, they put it in a song and sing it to you.

"Most of my songs come to me by inspiration. I always have my ukulele with me and whenever there is an inspiration, I pick up my pencil and paper. Sometimes I have to stop my car to write down the song.

"The words come, then the music, then I strum the ukulele and put the two together.

"Believe it or not, some of the ideas come when I'm sleeping.

"When I'm asleep I hear voices. I listen to them and get up and put down what I dream.

"Sometimes I wake up my family because I sing in the night.

"I used to sing for Queen Liliuokalani when I was a young teen-ager.

"She would often visit Abraham and Minerva Fernandez, the parents of E. K. Fernandez. My family was related to Mrs. Fernandez.

"I would go there to prepare food for Queen Liliuokalani. I would fix the fish, kukui nuts, and limu.

"While she ate, I would stand by and wave the kahili.

"When she was through eating, that's when I would sing and accompany myself on the ukulele.

"Some of her favorite songs that I used to sing were 'Hiilawe,' 'Ka Makani Kaili Aloha' and 'Waipio.'"

Auntie Alice worked for the City for 24 years, teaching hula and Hawaiian music, directing playgrounds and pageants, and translating Hawaiian songs. She directed such courses at the City playgrounds from 1935 to 1958.

She still teaches hula, Hawaiian language and singing, ukulele, and "slack key guitar" (the Hawaiian way) to private pupils. She is choral director for the Makiki Ward of the Latter-Day Saints Church.

Auntie Alice won first prize in the City's Hawaiian song contest six times, including four consecutive years, 1964-1967.

Hawaii Calls

"Hawaii Calls" has been calling tourists to Hawaii for more than 30 years.

Webley Edwards, the producer-narrator, started the radio program in 1935. The Salt Lake City Mormon Tabernacle Choir broadcast is the only radio show older than "Hawaii Calls," Edwards said.

The broadcasts, staged in Waikiki hotels, draw a large number of tourists familiar with the program in their homes.

"At least 450 stations carry the weekly show," Edwards said. A television version of the show is syndicated, too.

The "Hawaii Calls" repertoire of songs is about 3,000, many of which were written especially for the show.

Edwards said that writing a song to fit the show's need doesn't detract from its authenticity.

"Real Hawaiian music is simply music about the Islands played and sung by real Hawaiians," he said. "It can be 100 years old or as new as yesterday."

"Sweet Leilani," which won an Academy Award after Bing Crosby sang it in the motion picture, "Waikiki Wedding," made its debut on Edwards' show. "Beyond the Reef," by Jack Pitman, and "Lovely Hula Hands," by R. Alex Anderson, got similar starts.

Some listeners may think the show is taped on the sand, with waves rolling right to the microphone, under gentle breezes and brilliant sunshine. But shows at the Hilton Hawaiian Village and the Reef Hotel are indoors "because the heat from the sun alters the tune of the instruments," Edwards said. "Visitors don't like sitting in the hot sun either.

"Our microphones have to be where the winds don't blow, because they are so sensitive that they pick up mere breezes as rumbling sounds."

The shows at the Moana Hotel are outdoors in the Banyan Court, which is protected from sun and winds by the trees.

Edwards, who records a number of Hawaiian music albums, also is a long-time Republican member of the State Legislature.

Hawaiian Culture

By JEAN CHARLOT

Aloha Week stresses what costumes and customs make our State unique among States.

For a week, the King and Queen will don feather cloaks, whale-tooth necklaces, a helmet and a head lei.

They will stand on the bridge of a double canoe to be paddled to shore by quasi-naked paddlers, there to face the gauntlet of gawking tourists and exploding flashbulbs.

Come parade time, they'll ride on a float—a truck smothered in orchids—while *pa'u* riders prance about them, one of the most genuinely graceful events.

Downtown, businessmen will feel free to don aloha shirts instead of the white collar, honorable carcan of their call.

Behind their ivy walls, professors will, for a week, amble sleeveless, shirt tails outside their pants, heady with the knowledge that principal and president will also strip.

This gay annual fracas breeds unavoidable grumblings. There is something un-American, according to some, in this all-Hawaiian display. They fear what they call the mu'umu'u complex. Far better that every citizen, from birth to death, with an eye glued to Wall Street, should buy and sell, sell and buy.

Even though ruthlessly trimmed to please Kodachrome and Polaroid buffs, Aloha Week is a genuine expression of Hawaiian culture.

Captain Cook's fateful visit did make a difference, but Hawaiians had discovered themselves eons of ages before that.

Their culture goes back over a millennium and its roots tap true prehistory.

Some of Cook's gifts and those of later explorers were fateful ones. The imported cattle trampled the exposed roots of indigenous trees. The trees perished. The birds that depended on them vanished.

As regards the visual arts, things hardly went smoother. The English imported suave mezzotints. Next the Americans, proud of their knowhow, brought daguerreotypes and the machines that produced them.

Unable to compete with such realistic imports, native esthetic took to cover. Sculptures sought asylum in the damp darkness of burial caves. Petroglyphs, scratched on lava rocks, somehow survived, baked by the sun or washed over by the sea.

The performing arts—music and the dance—have awed Hawaii's visitors ever since the 18th century.

The visual arts, somehow, were bypassed.

The English sailors who stacked *ki'i la'au*, wooden god images, to be used as firewood, were no art connoisseurs. Yet they acted no differently than would have a genuine art connoisseur of the time, nurtured on an appreciation of the genteel art of a Gainsborough or of a Reynolds.

Petroglyphs were even less appreciated than sculpture. Perhaps because they were trodden underfoot. Perhaps because they showed not a hint of a knowledge of anatomy.

The English gentleman, fresh returned from a tour of Greece and Italy, brought back marble fragments, preferably of the nude, or busts of Roman emperors that matched daintily the neo-classical paintings they owned, painted by John Flaxman or Benjamin West.

In the eyes of these sophisticates, petroglyphs were mere childish daubs. At best, some suggested men or dogs. Even worse, some represented nothing at all, being a mere mumbo-jumbo of lines!

To express their contempt, the 18th century explorer, the 19th century visitor, literally had no words. Only in our century was a word coined: *abstraction*.

But then taste had changed and understanding had been born with the new word.

It was given to our century to realize to the full the beauty of petroglyphs. Authentic contemporary masters, Dubuffet among them, worked hard to achieve a pithy simplicity somewhat akin to that of the Hawaiian rock-scratchers.

Come Aloha Week, a visit to the Bishop Museum is a must. Its unique collection of Hawaiian sculptures has been reorganized for display.

Designed by Gerald Ober, the new presentation sets the deep patinas of the much-eroded sacred logs against backgrounds of fresh color that reinstate life in the ancient statues.



Petroglyph, an ancient Hawaiian rock drawing.

To appreciate these works because of their obvious affinity with modern sculpture is only a beginning. Their makers aimed at pleasing other beings than men.

More important than sheer esthetic, these logs darkly mirror the relation in depth that ancient Hawaiians had with nature.

As stated in the Kumulipo, they knew of mysterious links between the fish and plants of the sea and their appointed guardians, the beasts and plants of the earth.

And they believed in a vertiginous ladder set in space, that ascended all the way from the *lewa manu*, accessible to birds, to the *lewa lani*, accessible only to gods.

The appreciation of Hawaiian art spreads far. In London, the British Museum is proud of its collection of Hawaiian sculptures, most of them gathered by explorers in the 18th century including the head of an ancient marionette, used in the *bula ki'i*.

The body is shaped so as to be held in the hand of the animator. The limbs are non-descript, being once hid under a chiefly cloak.

There is something undoubtedly majestic in the stylized features topped by the heroically scaled helmet.

This all-Hawaiian version of a warrior doubtless comes closer to the idea that Kamehameha the Great had of himself than does the pudgy bronze patterned after neoclassical statues that our legislators—when and if it is recast—are intent on inflicting on Washington.

Museums are like cities of refuge where art objects for a while somehow defy death. It is even more rewarding, however, to connect Hawaiian art in its natural habitat.

To hunt for petroglyphs is a cultural safari infinitely more rewarding than to hunt for big game. As a non-academic course in Hawaii's ancient esthetic, I suggest a trip to the Kona Coast.

One could begin by getting "the feel of it" running in the sun along the antique King's Road, laid in the days of Kamehameha the First.

Straight as an arrow, it crosses for miles through a desert of unrelieved a'a lava fields. Brutally pitted, still hot from Pele's fires.

From time to time, the rough a'a gives way to plateaus of smooth *pahoehoe*. Rest a while there, as you must. So did the ancient Ha-

waiians, each leaving his signature in the form of a petroglyph cut into the stone with stone tools.

Even better than museums, Hawaiian nature instructs us as regards Hawaiian art. The artist searched for *mana*, spiritual potency, and found it in caves where one has to crawl in darkness, in deserts of lava that cut feet to shreds, along rocks that each day, come high tide, are washed under by the tide.

Come Aloha Week, those who fear the so-called mu'umu'u complex have, after all, good reason to fear.

In many ways, there is a potential head clash between what the ancient Hawaiians held of importance and what most cultural carpetbaggers have to offer.

The following ditty, written by a young kama'aina, even though it makes use of Biblical imagery, applies most aptly to the field of esthetics:

"Little does the missionary in all his glory know
That those 'savages' live closer to the lily than he."



Surfing

By RON HAWORTH

Star-Bulletin Surfing Columnist

Practically any place in Hawaii you find a wave, you find surfers. Like the beckoning swish of a grass skirt and lullaby of the ukulele, surfing has become Hawaii's gift to the world.

But surfing was nurtured not born in Hawaii. It journeyed north from Bora Bora with those stout-hearted people who were to settle and propagate these islands nearly a thousand years before Columbus.

The surfing skill these Polynesian seafarers brought here was crude, perhaps more of a child's pastime than an adult pursuit. But it was along Hawaii's virgin beaches and scoured lava coastline that it grew in popularity, finally achieving a high degree of development which is still in a stage of refinement.

In those early days surfing was interwoven into Hawaiian culture, and along with other popular sports of the day, played an important role in the annual October to January celebration known as "Makahiki," a festive thanks for bountiful crops.

Renowned surfers spent weeks shaping and polishing boards hewn from the majestic koa tree in preparation for these early surf contests. The stakes were high, costly, and at times ever-lasting.

Cannes, crops, indenturing oneself to another, even a man's wife or his own life were often the spoils or chaff of wave riding.

The surfboards were gigantic and basically of two types. The "olo" was reserved for the ruling class and weighed in the neighborhood of 150 pounds and its 18-foot length assisted greatly in floating the usually huge surfer.

The "alaia," shorter, lighter, and more maneuverable, was the property of all classes. Exhibits of these original boards can be viewed at the Bishop Museum in Honolulu.

Perhaps because the Hawaiian was a dare-devil by nature, or perhaps due to the strength of his koa board, the Kona Coast was then a popular surf site. Today Kona is left to the bill fisherman.

In 1779, a Lieutenant King serving under Captain Cook, wrote in his log "I have often seen, with great horror, the narrow board dashed to pieces at the very moment the Islander quitted it." So much for Kona's aloof lava coast.



Surfing near the shore.

Between 1800 and 1900 the haoles settled in the Sandwich Islands. Indirectly, surfing was to suffer. These black-frocked gentlemen arrived in a strange environment wearing New England taboos and long underwear, took one shocked look at the bikiniless girls surfing off Lahaina, and vetoed coeducational surfing.

During this transition period from heathen to Christian the sport lost its followers by the villageful and when the turn of the century dawned, surfing was all but forgotten or never known by most Islanders.

This apathy was to go on unchecked until 1908 when Alexander Hume Ford leased a section of Waikiki Beach from Queen Liliuokalani and founded the Outrigger Canoe Club. His goal was to maintain a spot where surfing enthusiasts could gather and preserve the royal sport.

Ford's dedication was done independently of another young fellow who frequented the same stretch of sand. This strapping Hawaiian was to become the greatest surfer and swimmer of his era and later a beloved symbol of Hawaii's aloha. Duke Paoa Kahana-moku was 16 when the Outrigger was a grass shack and an outdoor shower; he became its most famous and beloved member.

It was a stumbling rebirth and surfing was slow to journey away from the gentle rollers of Waikiki described by Jack London in his works, and it was not until the thirties it reached Makaha with a few hardcore veterans who were seeking a bigger wave and challenge.

Wally Froiseth and George Downing were the earliest pioneers at Makaha, later to be joined by others, but it took the founding of the Waikiki Surf Club in 1947 to put Makaha on the surfing map. World recognition wasn't to be denied.

Surf photographer Bud Browne helped by filming "Trek To Makaha" and showing it to the goggle-eyed in California. Browne's film started the great wave rush of the '50's; Makaha was king.

Soon Buzzy Trent, a surf-struck lifeguard from Santa Monica, was taming Makaha's giant point surf and making old-timers remember Duke and his fabled youth.

Surfing had been revived. And what was to come next would make some rich.

In 1953 the Waikiki Surf Club held the first International Surfing Championships at Makaha Beach, and began an international phenomenon that's still cresting. Triple winner George Downing heads a distinguished list of winners. Close on his heels are Joey Cabell

and Fred Hemmings, Jr. with two victories apiece. Froiseth, Rabbit Kekai, and Conrad Canha have also bested the heavy fields.

In 1965 a second big-time contest appeared on the local front, but whereas the Makaha meet is open to all comers, the Duke Kahanamoku Surfing Invitational Championships is a select gathering of 24 of the world's top surfers. Created out of a story written by Fred Van Dyke and the will and vision of Kimo Wilder McVay, the Duke meet has quickly risen to the top and become the "Kentucky Derby" of the sport.

To be invited to "Duke" is a surfer's dream, and to win... well, why not wish upon a star?

Perhaps the Duke contest is more on a par with those "no holds barred" titles of so long ago. It brings together the champions from around the globe, and singularly with their pintailed fiberglass steeds and tanned backs, they paint roostertails of glory across sun-washed tubes of blue.

Staged wherever the surf is biggest along Oahu's feared North Shore, the Duke contestants are pitted against the biggest surf to explode across coral reefs. Each man takes away with him a Golden Duke award and the quiet self-satisfaction that he's a little nearer in spirit to Duke himself.

As to the future? We have come from Bora Bora to an age of surfing associations, professionals, and possible Olympic involvement.

"Surf's up!" And wherever the wind and sea combine to produce a wave, somebody will eye it today and surf it tomorrow.

Golf

Golf in Hawaii dominated the TV sets in thousands of homes across the nation in November, 1967, when the third annual Hawaiian Open—a \$100,000 PGA event—was televised live in color from Waialae Country Club.

Viewers in snow-bound areas were warmed by the sight of sparkling ocean and lush green of the mountains bordering the course.

It was the first event to be seen live on the Mainland from Hawaii. The 1968 Hawaiian Open promises an equally outstanding field of big-name professional golfers and a wider TV audience.

A Professional Golfers Association tournament since 1965, the Hawaiian Open is projected as a \$200,000 classic by 1972.

Gay Brewer captured the inaugural Open in 1965 in a playoff with Gob Goalby after both carded 281 during the four-day, 72-hole competition.

Hawaiian pro Ted Makalena blistered the long Waialae links with a 271 in 1966 and a three-stroke victory over a classy field.

The 1967 championship also was settled by a playoff, with Dudley Wysong beating Bily Casper. They were tied at 284 in regulation play.

Two new 18-hole courses are scheduled for completion in 1968, bringing the total to 37 in the State.

They are the Olomana on the Waimanalo side of Oahu and Keauhou on the Big Island of Hawaii.

The Big Island's Mauna Kea course was the scene of a Wonderful World of Golf match in March among Al Geiberger, Dan Sikes and England's Peter Alliss.

About 85 per cent of the estimated 25,000 golfers in the Islands are concentrated on Oahu's 21 courses, of which three are operated by the City and County of Honolulu, eight are military controlled and the remainder either private or semi-private.

The Big Island has six links, Maui 3, Kauai 3, Molokai one and Lanai one.

Waialae Country Club, Mauna Kea and the Royal Kaanapali on Maui are world-famous courses.

The 1964 International Golf Championships and Canada Cup matches involving 34 countries were played at the Royal Kaanapali.

Mauna Kea Beach Hotel provided the picturesque course for the second half of the Big Three Golf television series among Arnold Palmer, Jack Nicklaus and Gary Player in 1964.

The Royal Kaanapali and Mauna Kea Beach Hotel courses were designed and built by Robert Trent Jones, the famed golf course architect.

Here is the breakdown—by Islands—of the State's private, military, and municipal golf courses:

OAHU

- Ala Wai Municipal (18 holes).
- Barber's Point (military, 18 holes).
- Bay View Golf Center (18 holes, par-3).
- Port Shafter (military, 9 holes).
- Francis H Brown (18 holes).

Hawaii Country Club (18 holes).
 Hawaii Kai (18 holes, par-3)
 Hickam (military, 18 holes).
 Kahuku Municipal (9 holes).
 Kalakaua (military, 18 holes).
 Kaneohe Klipper (military, 18 holes).
 Leilehua (military, 18 holes).
 Makaha Valley Country Club (18 holes).
 Mid-Pacific Country Club (18 holes).
 Mililani (18 holes).
 Moanalua (9 holes).
 Navy-Marine (military, 18 holes).
 Oahu Country Club (18 holes).
 Pali Municipal (18 holes).
 Pearl Harbor (military, 9 holes, par-3).
 Waialae Country Club (18 holes).

HAWAII

Hilo Country Club (9 holes).
 Hilo Municipal (18 holes).
 Honokaa (9 holes).
 Mauna Kea Beach Hotel (18 holes).
 Pacific Empress (9 holes).
 Volcano House (18 holes).

MAUI

Maui Country Club (9 holes).
 Royal Kaanapali (18 holes).
 Waiehu Municipal (18 holes).

KAUAI

Kauai Surf Hotel (18 holes).
 McBryde Plantation (9 holes).
 Wailua Municipal (18 holes).

MOLOKAI

Libby Plantation (9 holes).

LANAI

Dole Plantation (9 holes).

Cockfighting

Cockfighting is illegal in Hawaii but that doesn't halt its popularity. Cockfights are held on all major Islands, and while many Filipino plantation laborers are addicts, the crowds are a mixture of all ethnic groups.

It is against the law in all counties in the State to engage in cockfighting, and on Oahu it is against the law to be present at such a fight. Police periodically raid the fights, and on occasion will arrest several hundred fight fans. Opponents of cockfights point to the cruelty of animals in this blood sport, while proponents say it is a pleasant pastime. And, the proponents say, police don't raid the card games of the rich in their private clubs, but do raid the fights of the poor.

Many of the cockfights have an atmosphere reminiscent of a Filipino village carnival, with Filipino foods and village games. While present day cockfighting has Filipino overtones the sport is one of the older diversions in Hawaii.

Cockfighting was a popular sport long before the arrival of the Filipinos on the sugar plantation, or even the advent of the missionaries, according to Russell A. Apple, superintendent of the City of Refuge National Historical Park at Honaunau and a student of Hawaiian history.

And the old Hawaiians, alii and commoner alike, gambled heavily on cockfighting as well as a number of other games and sports, he added.

Apple cites passages from "Hawaiian Antiquities" by David Malo, one of the earliest written accounts of Island history and customs, to prove it.

Malo, born in Keauhou, Kona, about 1793, was one of the first Hawaiians to become a teacher—at Lahainaluna, Maui—and an ordained minister.

He wrote "Antiquities" about 1840, but it was not translated for some years and was first published in English in 1903.

In a short chapter on cockfighting, hoo-haka-moa in Hawaiian, he said it was "a very fashionable sport with the alii."

And he described the somewhat bizarre training methods for the moa, or native cocks, in this manner:

"A person who was a good judge of fowls would secure one which he thought to be a good fighter.



Cockfighting, a favorite pastime of the alii of old, and the commoner of today.

"A roost was then made, on which to place the cock, and every night a small fire started under him to make him lively.

"Each game-keeper trained his fighting cock in the same manner, until they were paired for a fight."

It was speculated by the translator, Dr. Nathaniel B. Emerson, that smoke and heat from the fire caused the bird to thrust his neck from side to side, "just the exercises needed to fit him for his duties as a fighter."

Malo said "multitudes of people" assembled to witness and bet on the actual matches.

"When the experts had studied the two cocks and had made up their minds which would fight to the death, they made their bets, betting all their own property as well as all they could borrow," he wrote.

After the betting, the operator of the contest, or luna hoomalu, outlined the pit with a rope to keep the crowd out.

Anyone crossing the rope was put to death, Malo wrote.

And when the contest was over "the winners always reviled those who lost with insulting and offensive language, saying 'you'll have to eat chicken dung after this,' saying it over and over."

Malo listed more than a score of games and contests popular in the old days, most of them objects of heavy betting.

These included such athletic contests as footracing, boxing, wrestling, canoe racing even surfing and holua, tobogganing down a hillside course on a sled with a wooden runner.

Malo reports that bettors, even chiefs, were "beggared" in these games, and women sometimes wagered their own bodies into bondage.

Ellis said he saw men and women bet everything they owned on a contest, then tear their hair in rage when they lost.

Modern cockfight fans may not react quite so dramatically as that.

But thousands of dollars regularly ride on the gaffs of a favorite bird nowadays.

Training methods are a little more sophisticated, including special exercise pens and sparring matches between cocks wearing padded gloves.

And there is no death penalty for a spectator entering the arena.

But police vice squads will attest that hoo-haka-moa is still a very popular sport in the Islands, and not only among the alii.

The Bishop Museum

The Bernice Pauahi Bishop Museum in Honolulu was founded in 1889 as a memorial to a Hawaiian princess whose name it bears. Bernice Pauahi was descended from a long line of chiefs and rulers, the most noted of whom was her great-grandfather, Kamehameha I. At 18, she married a New Englander, Charles Reed Bishop, who became a naturalized citizen of the kingdom and held many posts of responsibility in the government and business world. In 1883 Mrs. Bishop inherited the lands and treasures of the Kamehameha family and laid plans to establish the Kamehameha Schools for the education of Hawaiian children. The Schools are the sole beneficiary of her estate.

She died in 1884 and her husband inherited her personal property including her Hawaiian collection. The Dowager Queen Emma, who died in the same year, left her collection to Mr. Bishop with the understanding that it would be added to that of his wife and that a museum be established to preserve for Hawaii's people the invaluable accumulation of tapa, mats, ornaments, featherwork, and historical relics inherited from their royal ancestors.

In 1889 Mr. Bishop founded the Museum as a memorial to his wife for the purpose of housing, studying, and exhibiting objects of importance to Hawaii and the natural history of the Pacific area. In 1893 the Hawaiian Government Museum contents were transferred to Bishop Museum and a few years later the future of the museum was ensured by Bishop through the drawing up of a deed of trust. This trust, dating from 1896, is administered by seven trustees. Five of the members of this board also serve as trustees of the Bernice P. Bishop Estate, the governing body for the Kamehameha Schools. The two institutions are fiscally separate.

Six years after Mrs. Bishop's death the first museum building was opened. The present main lobby, two small rooms at the sides of it, and a second-floor picture gallery were completed. They were built of hand-hewn basaltic lava and the interiors were finished with carved native *koa* wood. In 1899 the three-floor Hawaiian Hall was added. Further additions were added in subsequent years, and three laboratory research buildings and the Planetarium were constructed on the grounds.

The earliest entry in the museum guestbook is the signature of Queen Liliuokalani on June 22, 1891. The museum was open for



The original thrones and only remaining escutcheon from Iolani Palace are a featured exhibit in the Bishop Museum's Monarchy Room.

half a day a week to persons holding a letter from Mr. Bishop or one of the trustees; however, it was closed on boat day. Currently the museum is open every day, except for four major holidays. In 1967 approximately 135,000 visitors went through the exhibit halls or attended a planetarium show. Of these, about 30,500 were school children.

The museum is devoted to the objects of "Polynesian and kindred antiquities, ethnology, and natural history." The specimen collections include materials chiefly from Polynesia and other Pacific islands and number in the millions. Only a very small percentage of these are on exhibit; the others are arranged systematically in study collections available to scientists and students.

EXHIBIT AREAS

Kabli Room: Plumes and Prestige. A rare collection based on man's use of feathers in the construction of a variety of objects and items of clothing intended mainly for adornment or use by the elite—the chiefs and rulers of Pacific Island peoples.

Pacific Room: Origin of the Islands and their People. The geological formation of the islands and the migration theory concerning the origins of island peoples are highlighted here and serve as an introduction to the exhibits in other areas.

Hawaiian Hall: Ancient Hawaii. Main floor exhibits tell the story of early Hawaiian life. The production of tools, weapons, food, and clothing; religious images; a model of a *heiau*; a full-size grass house with its familiar objects; fishhooks of bone, shell, and wood; and a display of bark cloth (*kapa*) are shown. *Gallery of Island Life.* Exhibits on this second-floor gallery explain the concept of ecology—how man has exploited his natural environment, the sea and the land, and their animal, vegetable, and mineral products. It also features exhibits on the discovery of Hawaii by Captain Cook, the Kamehameha Dynasty, whaling, and the maritime and business history of Hawaii. *Heritage Gallery.* This third-floor gallery displays furnishings, costumes, jewelry, and artifacts which serve to define the elements of Hawaii's heritage deriving from both the Occident and the Orient. This gallery leads into the Monarchy Room.

Monarchy Room: Royal thrones and crowns, and the artifacts, costumes, and personal memorabilia of royalty unfold the story of the Monarchy period in Hawaiian History.

Hall of Pacific Life: Man in the Pacific—South Sea Art. The up-

per gallery of this hall displays objects of stone, bone, wood, shell, feathers, and fibers, a small part of the museum's extensive ethnographic collections from more than two dozen island areas in Polynesia, Melanesia, and Micronesia. On the lower level, a series of exhibits relates to the natural history of the Pacific.

Hawaiian Court: In a courtyard of plants, most of which were important in the daily life of ancient Hawaii, some of the larger stone artifacts and other objects are exhibited.

Planetarium and Observatory: By emphasizing astronomy as a part of natural history and by providing educational as well as entertaining lectures in the theater of the sky, the museum has provided thousands of individuals with new insights into this exciting area of study. The planetarium-observatory complex consists of a theater which will seat 100 persons, an exhibition foyer, and an observatory dome in which a 12½-inch telescope is mounted. In the theater, a Spitz projector reproduces the skies for any instant of any year for centuries past or to come, and at either pole or at any latitude. Regularly scheduled daily programs are changed each six weeks throughout the year. Special programs and demonstrations are arranged and conducted for school groups in cooperation with the State Department of Education.

Proposed Exhibits: The most ambitious project for new exhibit areas is the development of an outdoor History and Technology museum designed to preserve significant phases in the effects of technology and commerce on the economy of the State. Several pieces of railroad rolling stock have been positioned on the museum grounds as the nucleus for this major installation. Other exhibits in the planning stage include one pertaining to the Aerospace History of the Islands and one pertaining to Public Health.

RESEARCH

In 1967 the trustees of the museum announced the establishment of the Pacific Science Resource Center. This Center will incorporate and coordinate the scientific activities of the research departments in the fields of Anthropology, Botany, Entomology, Geology, History, and Zoology. It will include such ancillary scientific functions as the Library, one of the largest collections in the world relating to the Pacific region; the Pacific Scientific Information Center, a clearing house for the collection, compilation, and dissemination of data relating to the natural and social sciences in the oceanic Pacific area;

ALL ABOUT HAWAII

and the Museum Press, an organization which for more than three-quarters of a century has published for the academic and scientific worlds the results of the museum's field expeditions and research activities.

The Research Center will be responsible for various institutes and programs. The first of these, the Community Research Institute has already been in operation for several years as the Hawaiian Community Research Project at Nanakuli. Sponsored by the National Institute of Mental Health, this project will soon complete its data-gathering phase and then launch into the study, analysis, and publication of the results. Similar projects will be carried out by the Institute in the future. A Samoan Studies Program is in the planning stage, and programs relating to other ethnic enclaves in Hawaii have been proposed.

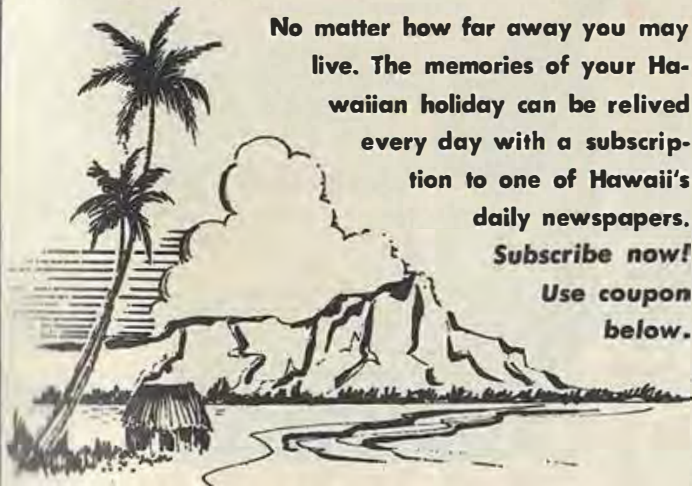
In the natural sciences area, the museum is expanding the activities of its Botany and Zoology Departments. Work in vertebrate zoology, invertebrate zoology, and ichthyology is being stressed under the direction of qualified scientists. Extensive studies of land mollusca are continuing under a National Science Foundation grant. Important projects in the field of entomology relate to the problems of insect dispersal and evolution in the Pacific area, and emphasis in the area of public health is being given to a determination of reservoirs and vectors of disease.

In the field of anthropology, work currently in progress in the southern Marquesas will conclude a three-year search for clues to the origins of Hawaii's first settlers. This work, carried on under a National Science Foundation grant, will be subjected for some years to careful study and analysis prior to publication. It will serve to illuminate and bring into focus the half-century of museum study which has gone into the problem of the origins and movements of prehistoric peoples in the Pacific and the study of the cultural currents and cross-currents descriptive of the inhabitants of the thousands of islands in Polynesia, Melanesia, and Micronesia.

INTERNATIONAL COOPERATION

In March, 1967, the museum was host to a planning conference of scientists engaged in the International Biological Program which has begun a world-wide study of organic production, natural resources, and human adaptability to changing conditions. Bishop Museum has a major role in studying endemic and invading biotas of Hawaii.

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In October, 1967, the Asia-Pacific Museum Training Program of Bishop Museum and the Honolulu Academy of Arts started its operation. This in-service training program for grantees from all over the world is offered through the Institute for Technical Interchange, East-West Center, and will continue for some years. It is supported by UNESCO and the John D. Rockefeller III Fund. The museum is also engaged in training participants in the internship program of the National Endowment for the Humanities.

Following a resolution made at the Eleventh Pacific Science Congress held in Japan in 1966, the museum is collecting data toward the formation of an Asian-Pacific Museums Association in order better to coordinate the research work being done throughout the entire Pacific Region. Coincidentally, a Hawaiian Museums Association has also been projected.

Bishop Museum houses the international headquarters of the Pacific Science Association, an international body which sponsors the Pacific Science Congresses.

COMMUNITY SERVICE

Although some museum activities are directed almost entirely to the international community of scientists and scholars, other equally important activities are directed to the local community and the non-scientific public. Staff members coordinate their work with departments of the State Government, the University of Hawaii, civic organizations, and institutions sponsored privately or by the business community.

Bishop Museum Association

Founded in 1953, the Association assists in the dissemination of information about the museum through its quarterly magazine *The Conch Shell*, raises funds for special projects (important acquisitions, refurbishing exhibits), and provides a corps of volunteers who render valuable assistance in various phases of museum activity.

Committee for the Preservation and Study of Hawaiian Language, Art, and Culture

Cooperating closely with the University of Hawaii, under which the Committee was established, the museum provides office facilities and space for a recording laboratory which preserves on tape the

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ethnological, linguistic, and historical material of ancient Hawaii. Audio-visual materials are prepared for distribution.

School Service

Under a cooperative arrangement with the State Department of Education, a liaison teacher conducts special classes to explain museum exhibits and facets of old Hawaiian life to visiting teachers and their pupils. Informative materials are distributed to schools throughout the State.

Hawaiian Academy of Science

Museum staff members participate in the Inter-Society Science Education Council (ISSEC) of the Academy, which is operated by scientists of the State who donate their services. The Academy has its office at Bishop Museum.

Museum Shop

Located on the main floor of Hawaiian Hall, the shop offers an excellent selection of books on the Pacific, books for children, books on natural history and the arts, and recordings of Hawaiian music. It is also a good place for the visitor to relax for awhile and examine the many distinctive gift items, other than books, which are available.

Ulu Mau Village

A cool, shady, and authentic sliver of Old Hawaii has been charming hundreds of thousands of visitors and local people for nearly a decade.

Ulu Mau Village, a tasteful and accurate re-creation of a Hawaiian chief's seaside village of centuries ago, has established itself as a focal point for the display and preservation of the ways of the ancient Hawaiians.

Although much is known about these people, much remains to be learned. For this reason Ulu Mau has been carrying on a productive program of research into the mainstream of the original Hawaiian culture.

The Village occupies a site of about an acre and a half at Ala Moana Beach Park, just a coconut's throw from Waikiki Beach. Ulu Mau's hushed, leafy pathways offer a soothing contrast to the heat, crowds, and hustle and bustle of the nearby beach. A tiny lagoon threads its way through one section of Ulu Mau, and there are stands of sugar cane, palms, growing pineapple, and other typically Hawaiian plants and trees.

An enormous banyan tree stands at the center of the Village; its dense network of branches and leaves shut out the hot tropical sun, providing visitors with a cooling and refreshing shade—a sort of natural air-conditioner.

Surrounding the giant banyan is the Village itself: over a half-dozen, life-sized thatched dwellings and other structures typical of an ancient seaside community. These include the *noa* (family house), *paipa* (storehouse), *halau waa* (canoe house), and *mua* (men's house). Each is thatched with pili grass, hala, or coconut fronds.

Amiable Hawaiian or part-Hawaiian "villagers" are on hand to greet visitors and to conduct them about the Village.

Visitors see how the old Hawaiians beat taro into their favorite staple, *poi*, and at the same time get a chance to taste this typical island food themselves. The poi-pounding demonstration, repeated (as are all demonstrations) throughout the day, is conducted by a happy-go-lucky Hawaiian *tutu* who gladly poses for pictures as she explains the technique of beating taro to a viscous pulp. During this demonstration, visitors are shown a growing taro patch.

Other demonstrations include Hawaiian quilt making, lauhala



An Ulu Mau "villager" demonstrates the technique of Hawaiian quilting.—Photo by Paul Seaman.

weaving from the leaves of the pandanus plant, and lei-making. There's a display of a now-rare Hawaiian outrigger fishing canoe made of koa wood. Several large, forbidding *akuas* of carved wood—god-figures—stand guard in the Village and make fine camera fare. Visitors who want to get the kinks out can take a turn at 'ulumaika, the ancient Island version of lawn bowling.

In front of the big banyan is the *paepae*, or outdoor grass stage. Here youthful Ulu Mau Villagers perform the ancient Hawaiian hula as it was done centuries ago. Chants accompany the dances, whose pace and hand and hip motions at times vary radically from the modern, flashy versions of the hula seen in Waikiki night clubs.

The authenticity of these dances and of the many displays, artifacts, demonstrations, and implements of Old Hawaii are responsible for much of Ulu Mau's special appeal for both visitor and kamaaina alike.

The founders of Ulu Mau, Herman and Malia Solomon (he's a former Mainlander; she's part-Hawaiian, warm, gracious, outgoing), felt Hawaii needed an imaginative display of its unique culture when they acquired the present site from Aloha Week, Inc. in 1960. (Aloha Week had been using the site on a once-a-year basis.) The Solomons rebuilt and expanded the Village, brought in staff, and added new exhibits and demonstrations with each passing year. It's now a leading 50th State attraction.

Malia Solomon is curator and research director and has been responsible for a wide-ranging research program aimed at exploring the many little-understood byways of the Hawaiian culture. She has delved into the intricacies of tapa-making, an art form which has fallen into limbo in Hawaii. Malia has roamed the South Pacific islands where, unlike Hawaii, active tapa-making has continued into the present. Her studies have led to a number of important deductions on the lost techniques of the Hawaiian tapa—which, in its heyday centuries ago, has been judged as among the finest in the world.

"It's terribly important for the Hawaiian people themselves to know, and take pride in, their own customs and beliefs," Malia says. "Many of our own Hawaiian people simply don't grasp their unique heritages—and this is tragic. We of Ulu Mau Village are doing what we can to illuminate and make accessible these fine traditions, and, at the same time, to entertain and educate our visitor friends from the Mainland."

Polynesian Cultural Center

The Polynesian Cultural Center, an hour's drive from Honolulu at Laie, is a living museum—talking, smiling, working, dancing, singing—of the gentle peoples and fascinating cultures of the Pacific.

It's a capsule recreation of old Polynesia, an untouched world where people still make everything from building materials to cooking utensils and dinner itself from the coconut trees.

The 15-acre Polynesian Cultural Center complex, open daily except Sunday at 11 a.m., offers a variety of exciting ways to discover Polynesia. Most visitors begin with a tour of the six island villages. There's still another island jaunt to take, however—a gourmet tour to the Dining Lanai where a lavish buffet is served in a Polynesian atmosphere. Finally, visitors can witness the exotic dances and song of Polynesia with the spectacular evening show.

The villages, authentic representations of Samoa, Fiji, Tonga, Tahiti, Hawaii and Maori New Zealand, are clustered in independent units along a meandering fresh-water lagoon. They move to a happy tempo all their own. Outside, on the spacious landscaped mall connecting theater, shops, snack and dining areas, the Shops Polynesia provide ample opportunity to browse among and buy crafts and curios.

An unusual open-air amphitheater, complete with a natural island stage and water curtain, sets the scene for a lavish Polynesian revue, featuring ancient and contemporary songs and dances of the islands. The exciting production, hailed by everyone from *Variety Magazine* to Honolulu's Bishop Museum, is held four nights weekly during winter and six nights weekly during the summer season.

The Polynesian Show is a well-timed, expertly performed production—combining the sounds of skindrums, guitars, ukuleles, 5-gallon oil cans, gourds, and conch shells with slap dances, storytelling, hulas, and chilling fire dances—that manages to catch the excitement of Polynesia after dark.

A stroll through the Polynesian villages is as full of windfalls as a ripe, laden coco-palm during a heavy breeze. In the Samoan village, you'll see the beautifully crafted *Matoa Tofa*, or chief's sleeping hour, a huge dome-roof structure built completely without nails and richly decorated with hand-designed tapa cloth. You'll



New Zealand Maoris carved an elaborate canoe from a single kauri tree. It is at the Polynesian Cultural Center.

also discuss recipes with the Samoan ladies who cook an evening's meal of pork and rich "palusami" daily in their "umu" or underground oven. In the Maori village you'll see the impressive House of Learning, encrusted with story-telling carvings that tell the tale of Maori geneology and watch these Polynesians who speak with a British accent dance in their swinging "piu piu" skirts.

From there it's a short hop to Fiji where a grass skirted Fijian warrior beats a giant hollowed log for a resounding announcement of your arrival. You might want to play a tune on the melodious bamboo instruments or admire the once-ferocious spears and clubs of war.

Tahiti, your next stop, is a gay, lighthearted place where white Tahitian hula skirts are as fluid as a rivulet of coconut milk is done at the drop of a coconut hat and young Tahitian girls are ready to give lessons.

In Hawaii, an ancient chief will show off his taro patch, give you a taste of poi, and show you the crazy coconut tree that grows back and forth across the lagoon.

And in Tonga, you witness the fascinating tapa-making process, view the charming exact replica of late Queen Salote's country house.

The Polynesian Cultural Center is people—some sweet and graceful, some energetic and playful, some alternating fierceness with warm friendliness. They're all part of the Center, which is sponsored by the Church of Jesus Christ of the Latter-day Saints and exists for the impressive purpose of providing support to the students of nearby Church College while it preserves the often-fading cultures of Polynesia.

It's the most charming short-cut to Polynesia in Hawaii.

Sea Life Park

Sea Life Park is an authentic exhibit of Hawaiian marine life. The Park was opened in 1964. Its exhibits are continually changing, as knowledge of the sea increases, keeping the public informed of advances in ocean science as well as entertained. The visitor becomes acutely aware that he is seeing something of extraordinary beauty and experiencing a total situation where oceanic research, technology and esthetics are intricately meshed to produce this experience. In 1967, there were 400,000 visitors to Sea Life Park.

Sea Life Park is 15 miles from Waikiki, on an ancient lava fan sloping gently from the base of a 1,000 foot vertical cliff with a spectacular view that sweeps across open ocean from the scenic cliff-top Makapuu Lighthouse to Kaneohe Peninsula. Two islands lie directly offshore; whale-shaped Rabbit Island, a State bird sanctuary, and smaller Kaohikaipu Island.

The exhibits are designed to authentically present the life of the sea and man's role in the sea. Through relationships with associated oceanic research and development organizations, Sea Life Park continually changes and expands to keep pace with man's knowledge of the sea.

The Hawaiian Reef is re-creation of the underwater topography and sea life around the Hawaiian Islands. It contains more than 100 varieties of fish and marine invertebrates all responding to their environment as they would offshore. A ramp at surface level descends gradually, then spirals beneath a lava flow where a ribbon of glass panels affords a view of the coral shelves, limestone caves and Hawaiian marine life.

The Hawaiian Reef contains 300,000 gallons of sea water changed every hour, and is lit by natural sunlight, a vital life support system factor for the coral varieties. It is 70 feet across and 16 feet deep.

The Ocean Science Theatre provides a first-hand understanding of porpoise behavior, training techniques and ways in which porpoises can be trained to assist underwater scuba-equipped marine scientists as they explore the ocean's depths.

Shaded amphitheater seating for 600 persons allows observation through a free standing glass-walled tank, from above and below the water's surface simultaneously. The tank holds 150,000 gallons of salt water and is 50 feet in diameter and 12 feet deep. Several types



Sea Life Park at Makapuu Point.



A porpoise and a girl at Whaler's Cove at Sea Life Park.

of porpoises perform here, including the Pacific Bottlenose, the Hawaiian Spotted and the rare Rough-toothed Porpoise.

The animals are cued for each performance by an electronic method. Different sound pulses are transmitted underwater to the animals. Through training they have learned to associate frequencies with different behavior patterns. The proper behavior is reinforced by the blowing of a whistle and then the animal is rewarded with a fish.

Whaler's Cove is a re-creation of the South Sea Lagoon of myth and fable, complete with shimmering blue-green water, a palm-fringed tropical island, "a whaling ship," and a bikini-clad Polynesian maiden who swims with the porpoises. The Cove is the home of the first Spinning Porpoises in captivity. On signal, they leap into the air and make as many as three complete revolutions before splashing back into the water. A False Killer Whale leaps 23 feet in the air to receive his fish reward from a trainer perched on a boatswain's chair suspended from the rigging of the Essex.

The porpoises and whales put on a dramatic exhibition of grace, timing and agility. The million gallon pool is 220 feet long and 22 feet deep, supplied by water directly from the nearby Pacific Ocean.

The whaling ship is the Essex, five-eighths the size of the famous square-rigged whaling ship, which was rammed and sunk by a vengeful whale, an incident believed to be the basis for Melville's *Moby Dick*. In 1819, the Essex sailed out of Nantucket en route to the Hawaiian whaling port of Lahaina and was lost 1,000 miles off Hawaii.

At the Cove is seating for 1,000 people, while spectators may also watch underwater from the 24-inch portholes of the Essex.

The Leeward Isles exhibit portrays the marine fauna of the Leeward Islands, the thousand mile extension of reefs, rocks, shoals and atolls which form the northern half of the Hawaiian archipelago. The lagoon is inhabited by large sea turtles and occasionally Hawaiian Monk Seals. A re-creation of the offshore island bird sanctuary, the Leeward Isles, is a homing area for some of the more common sea birds of the central Pacific: Gooneys, Bobbies, Terns, Albatross and others. The birds at the pool constitute a rare open-rookery captive colony and are under constant study by research scientists. Protected by Federal laws, the actual Leeward Islands are administered by the U. S. Fish and Wildlife Service, U. S. Department of the Interior.

Kaupo Fishing Village has been authentically re-constructed on its original site within Sea Life Park to display the ingenious fishing techniques, implements and gear used by the early Hawaiians. Some walls of the old community are still visible.

Sea life collection for the various exhibits has been done by the Park's own collecting crew in Hawaiian waters. Porpoise and whale capture is accomplished by a highly developed netting technique that protects the animals from physical harm. The collecting vessel is rigged so that fish and invertebrates can be transferred to exhibit tanks in the same water in which they have been caught.

The five major exhibit tanks are fed by a sea water system that supplies 5,000 gallons per minute. The water is drawn from wells at the surf line, pumped through a 24-inch pipe to the Hawaiian Reef exhibit, where it flows by gravity through the other exhibits and then empties into dispersion wells. This volume of water flow and the natural purity of the water are such that no filtering, re-circulation or chemical additives are required.

A number of new Park exhibits are under design, in an effort to keep the visitor always informed of new technological advances in ocean science. Chief among these is a Marine Technology Exhibit which will display on closed circuit underwater television, undersea research which will be conducted directly offshore the Park, as well as models of underwater laboratories, deepsea submersibles, and demonstrations of the tools and techniques of undersea industry.

The Galley, a restaurant terrace with a cocktail deck, allows the visitor a sweeping view of the Park, ocean and islands offshore.

A varied display of unusual Hawaiian gifts and art forms in the marine motif fills the Park's Sea Chest Gift Shop.

In 1959, Taylor A. Pryor conceived an ambitious plan to develop a major oceanographic complex in Hawaii, today known as Makapuu Oceanic Center. To pursue this end, the Oceanic Foundation, a non-profit organization whose objective is to encourage marine progress and marine conservation, was chartered in 1960. The present 118-acre site was leased from the State of Hawaii.

Through an agreement with the Oceanic Foundation in 1962 Sea Life, Inc., a separate commercial corporation, was formed to build and operate Sea Life Park.

Sea Life Park, which opened to the public in 1964, occupies 10 acres and is staffed by approximately 80 persons.

While Sea Life Park was designed to present to the public and interpret the sea around Hawaii and man's role in marine progress, the non-profit Oceanic Institute use similar facilities and marine laboratories for research only. The Institute, through research, education and conservation, desires to learn as much as possible about the marine environment, foster learning for individuals and institutions through provision of optimum facilities for study of the sea, and to establish for the researcher and community a source of marine knowledge. The Oceanic Institute became operational in 1964.

The Oceanic Institute has just completed one of the largest marine mammal study centers in the United States. Present and future projects include work in cetacean (porpoise and whale) sonar, physical and social behavior studies, learning, echo-location and applied uses.

In cooperation with an international protein from the sea effort and with the support of the Rockefeller Foundation, the Oceanic Institute is undertaking a large-scale fish culture project to investigate producing abundant quantities of protein rich food and to develop renewable food resources.

Other programs are in such areas as artificial colonization of marine birds, life cycles of turtles, biological survey of waters off Makapuu, and the development of a submersible to observe cetacean behavior.

Oceanic Institute funding is by contracts and grants from government and private agencies, and contributions from foundations, trusts, business and industry.

In 1967 Makai Range Incorporated was formed to build finance and operate a manned undersea test range at Makapuu, under contract to the Oceanic Foundation. The Makai Range is a commercial research operation seeking to learn about the adaption of man and his machines to the marine environment. It is intended primarily as an industrial proving-ground for sea floor research and development. The Range systems include sea floor laboratories and habitats at various depths to house diver-technicians, and life support and communications systems. The Range will be available to industry, academic and government agencies who need such testing facilities to solve their undersea technology problems.

Sea Life Park, the Oceanic Institute and Makai Range, as elements of the Makapuu Oceanic Center, each contribute in their own way toward the Oceanic Foundation's chartered goal of encouraging marine progress.

Paradise Park

Nestled in the verdant Manoa Valley on Oahu—just 10 minutes from Waikiki Beach—is Paradise Park.

The \$2 million development, covering 14 acres, features colorful and exotic birds, a bird pageant, many varieties of fruit trees, a "Mark Twain" treehouse, hau and bamboo forests, floral gardens and a Polynesian restaurant.

Paradise Park, which opened February 16, 1968, is just what many tourists expect to see when they come to Hawaii—the Hawaii they won't find in Waikiki. It also shows off the Hawaii many residents have only heard about but seldom—if ever—seen.

Utilizing the natural beauty and imaginatively adding to it, Paradise Park preserves and enhances upper Manoa Valley. Landscapers have planted and transplanted to make the area even more beautiful and give an easier view of nature. The park, in short, makes the previously inaccessible beauty of Manoa Valley easily accessible to all.

James W. Y. Wong is president of Paradise Park, which has a panorama of floral gardens, several waterfalls, pools, expansive arboreta and more than a mile of pathways winding through the hau and bamboo forests and throughout the park.

The gardens highlight the beautiful flowers of Polynesia: orchids, plumeria, birds of paradise, ginger, anthuriums, jasmine and other colorful species.

There are also groves of fruit trees, including banana, mango, breadfruit, mountain apple, lichee and tangerine trees.

One of the highlights of a visit to Paradise Park is the bird pageant, featuring more than 20 trained parrots, cockatoos and macaws. The show, which lasts a half hour, is performed in the 340-seat Kamehameha Amphitheatre.

Paradise Park aims to preserve the wildlife of Hawaii through its non-profit research foundation.

Hawaii's native birds are presented in the Na Manu o Hawaii Museum, which also serves as the foundation's headquarters. On view are native birds—both live and extinct. The foundation's aim is to prevent more birds from becoming extinct.

Supported by Paradise Park proceeds, the foundation is raising native birds in captivity and breeding them. Researchers are investigating bird diseases and how the various species can be saved.

State Parks

Hawaii has more than 20 State parks and historic sites containing more than 7,000 acres. Some are little more than an acre, but the Kokee State Park on Kauai contains, 4,640 acres, with picnicking and camping facilities, fishing, hiking, and horseback riding.

There has been some discussion of making a National Park on Kauai.

Here is an Island-by-Island rundown on the State parks:

OAHU

Keaiwa Heiau—Located near Aiea at the end of Aiea Heights Road. A forested mountain area with picnicking, camping and hiking opportunities and a medicinal arboretum. Seven acres.

Nuuanu Pali State Wayside—Old Pali Highway, summit of Koolau Mountains. Superb views of Kanohohe Bay and Windward coast. Five acres.

Puu Ualakaa—On Makiki Round Top off Round Top Drive. A scenic overlook from Pearl Harbor to Diamond Head, and picnic facilities. Seven acres.

Fort Ruger—Junction of Diamond Head Road and Kahala Avenue. A three-acre landscaped area for picnicking and outdoor recreation. Three acres.

Diamond Head State Monument—East, south and west slopes of Diamond Head with access from Makalei Place off Diamond Head Road. A State historical monument offering a scenic overlook of Waikiki and an arboretum of dryland plants. One hundred forty-five acres.

Puu o Mahuka Heiau Historical Site—Across from Pupukea Homestead Road near Waimea. One of the largest known heiaus on the Island (a heiau is a Hawaiian temple) and scenic overlook of Waimea Bay and the North Shore. Four acres.

Ulu Po Heiau Historical Site—About two miles south of Kailua off Highway 61. A heiau of ancient construction. One acre.

HAWAII

Akaka Falls—Ten miles north of Hilo off Highway 22. A canyon park with spectacular waterfalls, landscaped areas and facilities for picnicking and hiking. Some 9,000 feet of trails. Sixty-five acres.

Wailoa River—In Hilo, across from Piilani Street. A landscaped river and lakeside park offering picnicking facilities and for boats, including launching ramps and docks. Sixty-five acres.

Lava Tree—In the Puna District, approximately three miles east of Pahoa. Unique standing lava tree lasts. Picnicking. Seventy acres.

Mannaka—About 20 miles south of Kailua-Kona. Picnicking and camping and a wayside arboretum of exotic trees. Thirteen acres.

MacKenzie—In the Puna District, about 10 miles east of Pahoa. Ironwood grove area along a rugged coastline. Picnicking and camping with good fishing. Historic interest: Hawaiian trail. Thirteen acres.

Mauna Kea (Pohakuloa Area)—At an elevation of 6,500 feet on the slopes of Mauna Kea about 37 miles west of Hilo. Snow and skiing during the season. Five hundred acres.

Mauna Kea (Halepohaku Area)—On the slopes of Mauna Kea at the 9,200 level, via the Humuula Sheep Station. Two hundred acres.

The Mauna Kea park areas have lodgings, hunters' camps, picnicking, hiking, hunting.

Hapuna State Park—Two miles south of Kawaihae. Excellent beach, partially developed. Seventy acres.

Hikian Heiau State Monument (Napoopoo)—Partially restored ceremonial site overlooking Kealakekua Bay. Two acres.

Kalapa State Recreation Area—Five miles southeast of Honokaa. Partially developed, forested area. Forty acres.

Kilauea State Recreation Area—One half mile east of Hawaii Volcanoes National Park. Two cabins in ohia-tree fern forest setting. Six acres.

Wailuku River State Recreation Area (Hilo)—Viewpoints of scenic Rainbow Falls and Boiling Pots. Ten acres.

MAUI

Iao Valley—About four miles west of Wailuku. A mountain canyon park with a scenic viewpoint of Iao Needle. Picnicking, tubing and swimming facilities. Four acres.

Kaunabina—About 25 miles east of Kahului on Highway 36 to Ulu. A rain forest area overlooking the rugged Hana coastline offering hiking and picnicking facilities. Seven acres.

Keenae Lookout—About 30 miles east of Kahului. Scenic over-

look of Keanae Peninsula and Koolau Gap along the Hana Coast. One acre.

Puaa Kaa—About 30 miles east of Kahului. Wayside mountain park with a series of small falls and facilities for picnicking, swimming and hiking. Five acres.

Halekii-Pihana Heiau Historical Site—About two miles west of Kahului and one mile northeast of Wailuku. The heiau is one of the most important historical sites of the Island of Maui. Ten acres.

Laniupoko State Wayside—Three miles South of Lahaina. Shaded area developed for picnics. Four acres.

Poli Poli State Recreation Area—Nine miles south of Waiako. Wooded camp ground at spring, cabin with sweeping view. Two acres.

Wai'anapanapa State Park—Four miles north of Hana. Legendary caves, spectacular rocky coast, six cabins in hala forest. One hundred twenty acres.

KAUAI

Kokee—Forest mountain park, about 15 miles north of Kekaha on Highway 35. At an elevation of 3,600 feet and situated on 4,600 acres, it is the largest park in the Islands. Four thousand six hundred forty acres.

Waimea Canyon—About 12 miles north of Kekaha on Highway 55. Elevation 3,300 feet. Scenic viewpoints. Hiking trails lead into canyon. Seven hundred sixty acres.

Wailua River (Lydgate Area)—About six miles north of Lihue on Highway 56. Beach area for swimming, picnicking, camping, fishing and a heiau of historical interest. Thirty-nine acres.

Wailua River (Fern Grotto Area)—About three miles upstream from the mouth of the Wailua River on the south fork. Unusual fern-clothed cave. Excursion boats make river trip to grotto. Four acres.

Wailua River (Poliahu Area)—Along Highway 58 about two miles south of Highway 56. Roadside area with scenic overlooks; bill stones; two heiaus and birthstones. Fifty-nine acres.

Wailua River (Kaumualii Area)—On Highway 58 opposite the Coco Palms Hotel. Picnicking in an old coconut grove. Four acres.

Wailua River (Boat Basin Area)—South bank of the river across from Kaumualii Park. Eleven acres.

Wailua River (Reserve)—Along both banks of the river extending about four miles upstream from the mouth to the point above the waterfall on the south fork and five miles above a waterfall to a point on the north fork. Two hundred ninety-seven acres.

Na Pali Coast (Nualolo Kai Area)—On the western coast of Kauai about five miles from Barking Sands. Accessible by boat only.

Na Pali Coast (Milolii Area)—Beach, accessible by boat only. Forty acres.

Polihale State Park—Five miles north of Bonham Air Force Base. Partially developed, beautiful beach at beginning of Na Pali Coast. One hundred forty acres.

MOLOKAI

Palaau—About three miles north off Highway 47. Forested mountain area with impressive overlook of Kalaupapa Settlement offering picnicking, camping and hiking facilities. Two hundred thirty-three acres.

Public Parks in Honolulu

The park system of the City and County of Honolulu dates back to the Hawaiian Kingdom in the Nineteenth Century when its rulers made the first public lands and gardens for the enjoyment of the people. Unique among the royal blessings bestowed and one which has become an inherent birthright of all subsequent generations was the freedom of access along any waterfront or beach. As a result the amount of public beach is an unknown quantity in Hawaii.

Public playgrounds got started locally in 1920 when a Recreation Commission was created, and in 1935 a semi-autonomous parks board was authorized by the Legislature of the Territory of Hawaii to develop a public park system for the City and County of Honolulu. Eleven years later the local recreation and park agencies were amalgamated to form the Board of Public Parks and Recreation, which eventually became the Department of Parks and Recreation when the City and County of Honolulu adopted a new charter in 1959.

Unfortunately the events of December 7th at Pearl Harbor cut short all park work for several years and made it necessary afterwards to practically redevelop the entire park system, since most of the recreational areas had been requisitioned for military installa-

tions of every sort. A post-war ten-year park improvement plan was prepared in 1945 and carried out in the years that followed.

The score or so of parks and playgrounds that existed prior to World War II comprised only a few hundred acres, but in recent years the parks system has been expanded to nearly three hundred areas, totalling more than three thousand acres. A large share of this park land is choice beach property stretching in a chain of parks around the entire island. Much of it is State-owned (an inheritance from the Monarchy), wisely preserved from exploitation and in later years assigned to the City and County for public park purposes.

Acquisition in the 1920's of a 1,200 acre volcanic tract at Koko Head with its scenic coastline has made it possible for Honolulu to have an outstanding natural park within its metropolitan area. In the 1930's a seaside dump adjacent to Honolulu Harbor was developed into a seventy-acre landscaped park. On the other side of the island a swamp of several hundred acres has recently been purchased by the city for park and flood control. Smaller but even more choice park acquisitions have been made at Waikiki Beach, also for expansion of the hundred-year old Foster Park Botanical Garden in the heart of the city, and with the help of the Federal Government, property for a new park overlooking the Pearl Harbor naval base. Even with this accelerated acquisition program, the Island's park lands in relation to population do not meet the national per capita standard of ten acres per thousand. However, still to be tapped for recreational use are vast mountain tracts set aside as forest reserve and watershed areas. Dual use of these lands will greatly enhance and relieve the situation. A new comprehensive long-range park acquisition and development program for the City and County of Honolulu is now being prepared.

In addition to parks and playgrounds, the Department's responsibilities have included such special facilities as golf courses (three) and a zoological garden, which has exceptionally attractive exhibits and landscaped grounds. A complex of botanical gardens is being developed which will provide a variety of natural plant habitats from sea level to the highlands. The recreational program of the Department provides athletic and passive recreational activities, including indoor and outdoor sports, classes in arts and crafts, music and dancing, and nature and science, for children of 4 to senior citizens. Street tree plantings for the entire island are also being undertaken.

A list of the major parks and beach parks:

- | | |
|---|--|
| ALA MOANA PARK
1201 Ala Moana Blvd. | KUHIO BEACH PARK
2453 Kalakaua Avenue |
| BARBER'S POINT BEACH PARK
91-121 Olai Street | KULIQUOU BEACH PARK
96 Bay Street |
| BELLOWS FIELD BEACH PARK
Kalaniana'ole Highway | LAENANI BEACH PARK
47-053 Laenani Drive |
| EWA BEACH PARK
91-027 Fort Weaver Road | LUALUALEI BEACH PARK
86-221 Farrington Highway |
| FOSTER BOTANIC GARDEN
50 North Vineyard Blvd. | LILIUOKALANI GARDEN
Waikahalulu Lane |
| HALEIWA BEACH PARK
93-449 Kamehameha Highway | MAILI BEACH PARK
87-021 Farrington Highway |
| HANAUMA BAY BEACH PARK
Hanauma Bay Road | MAKAHA BEACH PARK
84-369 Farrington Highway |
| HAUULA BEACH PARK
91-135 Kamehameha Highway | MAKAPUU BEACH PARK
41-095 Kalaniana'ole Highway |
| HONOLULU ZOO
101 Kapahulu Avenue | MOKULEIA BEACH PARK
68-919 Kaena Point Road |
| KAAAWA BEACH PARK
91-129 Kamehameha Highway | NA'AKULI BEACH PARK
89-269 Farrington Highway |
| KAHANA BAY BEACH PARK
91-222 Kamehameha Highway | NATATORIUM
2815 Kalakaua Avenue |
| KAHE POINT BEACH PARK
91-001 Farrington Highway | NUUANU VALLEY PARK
2925 Nuuanu Avenue |
| KAILUA BEACH PARK
90 Kawaihoa Road | PEARL HARBOR PARK
Kamehameha Highway |
| KAONA BEACH PARK
91-073 Kalaniana'ole Highway | POKAI BAY BEACH PARK
85-037 Waianae Valley Road |
| KANEHOE BEACH PARK
Waikaha Road | PUNALUU BEACH PARK
51-309 Kamehameha Highway |
| KAPOLANI PARK
Bounded by Kalakaua, Pali and
Diamond Avenues | PUPUKEA BEACH PARK
59-727 Kamehameha Highway |
| KAPOLANI PARK BEACH
CENTER
91 Kalakaua Avenue | SWANZY BEACH PARK
51-369 Kamehameha Highway |
| KATHOLANI PARK FLOWER
GARDEN
900 Pali Avenue | ULEHAWA BEACH PARK
87-1581 Farrington Highway |
| KEAUCU BEACH PARK
91-001 Farrington Highway | WAHIAWA BOTANIC GARDEN
1396 California Avenue |
| KEEHI LAGOON BEACH PARK
91 Lagoon Drive | WAILALAE BEACH PARK
4925 Kahala Avenue |
| KUHO CRATER BOTANIC GARDEN
Kalaniana'ole Highway | WAIKIKI BEACH CENTER
2435 Kalakaua Avenue |
| KOHO HEAD SANDY BEACH
900 Kalaniana'ole Highway | WAIMANALO BEACH PARK
41-741 Kalaniana'ole Highway |
| | WAIMEA BAY BEACH PARK
Kamehameha Highway |

Hiking in Hawaii

By HARRY WHITTEN

Star-Bulletin Hiking Columnist

One of the first things a Mainlander learns when he comes to Hawaii is that there are no snakes in the forest, no poison ivy. The climate is such that hiking can be enjoyed the year around.

Wild fruit, such as guavas, mountain apples, Java plums, thimbleberries, passion fruit, wild oranges, avocados, or bananas are sometimes found. Many streams have freshwater swimming pools.

Is this the Garden of Eden?

Not quite.

The mountains on Oahu, while comparatively low by standards of the Western United States, have been described as some of "the ruggedest small mountains" that can be found. They have jagged peaks, precipitous cliffs, and rock that is sometimes crumbly.

On green mountains, the vegetation is so dense that hikers who stray off the trail can easily wear themselves out trying to crash through hau, fern, Christmas berry or other vegetation.

In dry areas there are thorny plants such as keawe, a relative of the mesquite of the Southwest, or panini, known on the Mainland as prickly pear cactus. Lantana, another import, may scratch the hiker.

Green ridges or valleys, with beautiful forests, are apt, also, to have plenty of mud.

Balancing the good with the bad, many Islanders and visitors find hiking and mountain climbing a very enjoyable sport in Hawaii.

If a person wants to go on a hike, what should he do?

It's best to wear long pants; bushes can scratch bare legs. Good shoes, that can stand rough treatment, are essential. It's best to carry drinking water; springs or streams with safe water are seldom found.

People should not hike alone; accidents have sometimes happened even to experienced hikers. Unless he carries camping equipment for a night in the mountains, the hiker should plan to turn around and start back when he still has time to get out of the mountains before dark. Especially if he is inexperienced, he should stay with established trails. If he becomes lost, he should try to get out by following the ridges. This is the reverse of the Mainland

advice to follow the streams; streams in the steep Hawaiian mountains often lead to waterfalls that may block further progress.

Many people find one of the best ways to become acquainted with Hawaiian forests or mountains is through an organized club.

The Hawaiian Trail and Mountain Club and the Hawaii Audubon Society both welcome visitors.

The Trail and Mountain Club has a hike almost every Sunday and has Saturday afternoon hikes once a month. For the Sunday hikes it meets at 8 a.m. on the Hotel Street side of the Iolani Palace grounds. Address of the club is Box 2238, Honolulu, Hawaii 96804.

The Hawaii Audubon Society has a bird walk once a month; meeting place is the Punchbowl Street side of the Hawaii State Library; time is usually 8 a.m. The society's address is Box 5032, Honolulu, Hawaii 96814.

The trails that can be followed may have been started by the ancient Hawaiians, may have been built by the Civilian Conservation Corps, plantation ditch companies, the Army, or are just routes worked out by hikers over the years.

A map of Oahu that shows some of the trails may be obtained from the State Forestry Division, 400 South Beretania Street, Honolulu. The Trail and Mountain Club knows of about 85 trails on Oahu.

A good short trail, well marked and in good condition, is the Aiea Loop Trail, which starts at Keaiwa State Park, Aiea Heights. Shortly after the start, it leads to a lookout point offering views of Pearl Harbor, the City of Honolulu, and Diamond Head in the distance. The early part of the trail is through planted forests of eucalyptus and paperbark. Later the hiker finds plants more representative of the native forest—koa, ohia, alahee, and sandalwood. He'll pass by a bamboo thicket; he may find strawberry guava bushes or passion fruit (lilikoi) vines. He'll have occasional views over sugar cane fields in the central part of Oahu and toward the Waianac Mountains in the distance. He'll pass by a branch trail that leads, over a rough route, to the summit of the Koolau Mountains.

As the trail begins to circle back, the hikers pass wreckage of a plane that crashed during World War II, walk through a Norfolk Island pine grove, past many common guava bushes, the fruit of which may be on the ground, and to other lookout points, before returning to the starting point.

The total distance is about four miles.

ALL ABOUT HAWAII

Foster Botanic Garden

Foster Botanic Garden, on Vineyard Freeway and Nuuanu Ave., offers a display of exotic tropical plants and orchids in an eight-acre wooded park. It is open to the public daily, without charge from 9 a.m. to 4 p.m.

Foster Garden's plant collection now numbers thousands. New plants probably have arrived by the last airmail and are recovering in a special quarantine house. Others have been growing in the grounds for a century or longer. Among the latter are some old giant trees such as kapok from India, a sacred banyan from Ceylon, a South Pacific Norfolk Island pine and an enormous earpod tree from Central America.

The Garden, which maintains the atmosphere of a 19th century private estate, was started about 1855 as the grounds of Dr. William Hillebrand's new home. He was a young German who came to Hawaii in search of health and brought with him Europe's current interest in the new plants being discovered throughout the world.

The estate was sold to Captain Thomas and Mrs. Mary Foster who continued to improve it for 50 years. A neighbor, Dr. Harold Lyon, who had established a tree nursery next door, urged Mrs. Foster to leave her land as a public garden for everyone to enjoy. It was opened in 1931 under the Honolulu city park department.

Dr. Lyon, who was primarily the botanist in charge of reforestation for the Hawaiian Sugar Planters Association, was the Garden's first acting director. On the trips which he made to various parts of the world in search of useful trees, his personal interest in orchids and other gorgeous tropicals continued to mean additions to the Garden's collection. It was he who established the continuing display of several hundred blooming orchids which is still of special appeal to visitors.

The present director, Paul Weissich, has brought to his position the new and broader vision of today's generation. He is continuing, on an increased scale, the program of plant importation, greatly assisted by a supporting organization of plant lovers, called the Friends of Foster Garden. The stepped-up program of imports aims not only to add to the Garden's value, but to bring new plants to the entire island community. After new plants have been established and are growing well, any surplus material is released to nurserymen for propagation and distribution to the public.

In Focus

By URBAN M. ALLEN

*Associate, Photographic Society of America
Star-Bulletin Camera Columnist*

Hawaii was made for photographers, especially color photographers. And, thanks to today's automated cameras and accurate exposure meters, even the novice can expect good results from his picture-taking efforts.

The range of picture opportunities is broad, from active volcanoes engaged in land-building to a rainbow of races mingling old and new cultures in a setting of rare natural beauty.

If the photographer will standardize his methods and use equipment with which he is already familiar, there should be no difficulties.

The choice of film will depend upon individual needs. Overnight processing service in Honolulu for Kodak and Ansco materials (color prints take a little longer) makes it possible to check early results and make adjustments, if necessary, to insure success of later efforts.

In addition to the basic equipment, there are several accessories that will help to improve your results. A polarizing filter can help to make landscapes more dramatic. Flash—bulbs, cubes or electronic—will come to the rescue on many occasions when the light is too poor for snapshots, or to throw light into shadows when the sunlight is too intense.

Those who specialize undoubtedly already have the necessary equipment for such things as close-up flower pictures or underwater photography. The novice can obtain close-up lenses for frame-filling pictures of the brightly-colored flowers which abound in Hawaii.

Although it is a nuisance to carry, a good tripod will guarantee sharp pictures even when slow shutter speeds are necessary.

To protect equipment from salt spray and sand, plastic bags are almost indispensable. Many fine cameras have been ruined by rust resulting from spray or stripped gears caused by a grain of sand.

Two other notes of caution:

1. Do not leave films or equipment where it is hot, either exposed

to the direct rays of the sun, or in glove compartments of automobiles. Heat is one of the worst enemies of good photography.

2. Do not tempt sneak thieves by leaving valuable equipment unattended.

Taking pictures in Hawaii presents few problems not encountered elsewhere, so the photographer who enjoys consistently good results at home is likely to fare well in Hawaii. But there are some situations that require special care.

On a clear day, the sunlight is intense and this presents the color photographer with the problem of coping with extreme contrasts which extend beyond the capabilities of his film.

An example is a landscape including black lava rock, dark green foliage, a deep blue sea, at one end of the scale, and brilliant white surf and sand at the other. If surf and sand occupy only a small portion of the picture, the exposure can be based upon the relatively dark colors, but if the bright areas are prominent, it will be necessary to favor them in the exposure reading or the pictures will appear "washed out." It is a general rule of thumb in shooting color movies or color slides that exposure should favor the lighter areas, whereas in shooting for prints, we should favor the darker areas.

A basic exposure for a flatly lit scene in bright sunlight is to set the lens at $f:16$ and use the shutter speed which corresponds to the ASA speed of the film. Thus, for Kodachrome II with an ASA rating of 25, the basic exposure would be $1/25$ (or $1/30$) second at $f:16$. For Ektachrome-X or Kodachrome-X, with an ASA speed of 64, it would be $1/60$ second at $f:16$.

These are equivalent to the exposures recommended on the instruction sheet inclosed with the film. Following these recommendations for the various conditions set forth will insure consistently good results. In fact, many photographers who do not own exposure meters or automatic camera have had excellent results following the manufacturer's recommended exposure.

It is well to remember that a distant landscape, with no prominent foreground objects, requires less exposure than that recommended by the instruction slip. Close the lens down from one half to a full stop for distant scenes.

One of the first things you will notice about most Hawaiian landscapes is that they are made up almost entirely of blues and greens. These are soothing and restful colors, but it is difficult to produce

dramatic pictures with such a narrow palette. The picture will spring to life if you are able to find a cluster of red, orange or yellow flowers to provide foreground contrast. Another favorite device is to have a young lady wearing a colorful red, orange or yellow dress to provide this color accent. She should, of course, be looking into the landscape, and not at the camera, or there will be divided interest in the picture. Some professional photographers carry a spray of hardy bougainvillea blossoms in the trunk of their cars and arrange them in the foreground when the scene calls for a warm color accent.

Landscape pictures are best taken when the sun is at right angles to the camera, providing cross-lighting which creates an illusion of three-dimensional space and separates one plane from another. This type of lighting also permits the use of a polarizing filter to darken the sky and make the white clouds stand out more effectively.

Early morning and late afternoon are the best times for most landscapes. The warm light and long shadows help to dramatize the scenes. And, of course, there is nothing to win audience "oos" and "ahs" like a spectacular sunset. Be sure to include a palm tree or some equally recognizable Hawaiian trademark in the foreground to establish the locale.

When shooting a sunset, make a number of exposures at various settings. A picture that is a little underexposed will have richer color than one that is "correct," and may please you more.

Pictures of volcanic activity are best taken at dawn or dusk to include some of the surroundings without losing the vivid red of the molten lava. When working near an active volcano, keep your camera well protected from corrosive fumes and gases which can do serious damage to equipment and even etch the glass of a camera lens. Many photographers place a skylight filter over their lenses when shooting volcanic activity. Then, if the gases do any damage to the filter, it can be replaced; meanwhile the lens itself is protected.

Pictures of lava flows and lava fountaining at night will require the highest lens opening you have on your camera, and the slowest shutter speed you can hand-hold— $1/30$ second. You can get a variety of effects, depending on the shutter speed. The shorter the exposure, the deeper the color of the molten lava. For movies, use the normal running speed and the largest lens opening.

Festivals of various kinds take place throughout the year and

these provide many picture-taking opportunities. They give distinctiveness to your picture report on Hawaii. Other parts of the world have landscapes similar to those in Hawaii, but such events as Lei Day (May 1), Kamehameha Day (June 11), Aloha Week (October), the Lahaina Whaling Spree (November), the Narcissus Festival (January), the Cherry Blossom Festival (March) and similar events are exclusively Hawaiian.

No photographer will want to miss the Kodak Hula Show, presented two or more times a week near the Waikiki natatorium. This is a program of colorful dances and activities designed especially for photographers. You are even given living titles for your movies and slide shows, and you may buy a photograph record of the show's music at the service booth set up on the grounds. (Don't neglect the purchase of records of the music you will want to use later when you show your movies or slides.)

Photographers may work freely at public festivals such as Lei Day, Kamehameha Day or Aloha Week, but some performances, mainly those presented indoors, are restricted, and even those which permit cameras almost invariably forbid flash. It is always best to check at the box office as to the policy regarding cameras.

One of the most spectacular performances is that at the Polynesian Cultural Center at Laie, Oahu. It is not the easiest show to photograph. The light level is quite low when colored gels are placed over the spots. Using High Speed Ektachrome, daylight type, you will get good results, generally, at 1/30 second and f:3.5. When the white arc light is on soloists, an exposure of 1/125 at f:3.5. is recommended. Because of the distance from the audience to the stage, a telephoto lens of about 135mm is best.

Another spectacular program is that presented at Sea Life Park, where trained porpoises perform in a man-made lagoon. With the usual bright sunlight, there is no exposure problem, but the leaping porpoises require a shutter speed of 1/250. If your camera accepts a variety of lenses, you will find the 135mm or 100mm lenses most useful.

The exposure varies greatly throughout the day at the Hawaiian reef tank at Sea Life Park. The best time is at midday when the sun is directly overhead. Take your pictures as close as possible to the surface of the water. The deeper you go, the less color you will see in the pictures. At the bottom of the tank, everything will appear greenish-blue. Flash will help to bring back the color, but

it is effective for only a few feet from the glass viewing windows, and there is always the danger that it will light up small organisms in the water and reflect the light back as a general veiling of the picture.

You may find it easier to get pictures of undersea life at the Waikiki Aquarium, using flash. To avoid reflections of the flash from the glass tanks, stand at a 45° angle to the tank. One of the tanks is provided with floodlights for movie photographers.

Although Hawaii is a comparatively young state, it has a number of historical landmarks of interest. Most of these are included on the guided tours and none of them poses any special photographic problems. Choice of the time of day is important, however, to get the best lighting. Generally speaking, it is best to have the light fall on the front of a structure. The Honolulu Civic Center, for example, is best photographed in the afternoon, although the statue of King Kamehameha in front of the Judiciary Building is a morning shot. If you must shoot it in the afternoon, use flash.

Some of the most rewarding photographic subjects and areas are these:

OAHU

Honolulu: Foster botanical garden for unusual flowers and trees; Chinatown and fish market; fishermen's wharf; pineapple cannery (check for regular tours); Punchbowl cemetery for sweeping view of the city; civic center for old mission buildings, Kawaiahao church and government buildings; Ala Moana Center; Paradise Park for exotic birds; Kapiolani Park Zoo; various Buddhist and Shinto temples (check for regular temple tours).

Around the island: Arizona memorial; Hanauma Bay; Makapuu Point lookout for a breathtaking view of the Waimanalo coast; Nuuanu Pali; Trader Hall's for another impressive coastal view; Polynesian Cultural Center; Mormon Temple at Laie (morning shot); Haleiwa, a quaint shoreside village; pineapple fields on Wahiawa plateau; sugar mill at Waipahu (check for tours); Waimea Falls (privately owned); various beaches for surfing (requires a long telephoto lens, 400 mm or longer, for best results); Haiku Gardens (privately owned); sky-divers at Kunia on Sundays.

KAUAI

Waimea canyon, Kalalau valley, Moir gardens at Poipu (privately

owned), Wailua river and fern grotto, Kilauea Lighthouse (many nesting sea birds), Hanalei valley and shore (locale for movie, "South Pacific"), Lumahai beach, Na Pali from end of road.

MAUI

Haleakala crater, historic Lahaina town and Lahainaluna school, Iao valley, Keanae peninsula, pools and waterfalls between Hana and Kipahulu, Olowalu petroglyphs.

HAWAII

Hawaii Volcanoes national park, Floraleigh gardens, Liliuokalani Garden, Rainbow Falls, Akaka Falls, Kapoho, destroyed by lava; Kaimu black sands and Puna coastline, City of Refuge, Honaunau; coffee orchards and drying racks, Kona; historic Kailua, Kona; Parker Ranch; original Kamehameha statue at Halaula, Kohala; Pololu Valley; Waipio Valley.

MOLOKAI

Halawa Valley; many small churches, some built by Fr. Damien; fishing villages along East Molokai shoreline; Kalaupapa outlook.

Kodak Hula Show

Every Tuesday, Wednesday, and Thursday morning thousands of tourists and a large number of residents as well—migrate on foot and by bus to a palm-shaded portion of Kapiolani Park with a common destination—The Kodak Hula Show.

The 90-minute photo session has become one of the island's best-known and best attended attraction since its establishment in 1937 by Frederick B. Herman. Herman, who retired from Kodak Hawaii in 1968, still directs the program which he originated to give tourists the opportunity to shoot good photographs of coconut tree climbers, poi pounders and hula dancers in an authentic setting. Camera-toting tourists have enthusiastically agreed. This 30-year-old spectacular—which is offered free of charge—has grown from weekly audiences of 300 to thrice-weekly audiences of over 3,000. An estimated 300,000 persons see the show each year. Additional performances are offered during the summer months.

Color photography buffs are in their element. It would be hard to find a zestier or more action-packed entertainment. The production ranges from Hawaiian comic and serious hulas to exciting Tahitian dances. The commentary includes interpretation and explanation of classic and historic hula.

The audience learns, for example, that the hula dates back to early Hawaiian legends. One tale says that two gods, male and female and both named Laka, arrived from the South Seas in a canoe and danced for the people of Hawaii. After a time the man disappeared and Lakawahine, the woman of the pair, was left to dance alone. The people worshipped and learned, and took the hula for their own.

According to another version, the hula was originally sacred to men and was the province of two male gods, Hiiaka, sister of Pele, the volcano goddess, learned the hula from Laka, and danced on the black sands of Puna. From that time on the dance was open to women. It then became a function of religious devotion.

Be that as it may, the hula was originally danced only by men. As time went on and Island civilization became more complex, wars and governing duties kept the men too busy for the years of rigid training necessary. Women were then allowed to assume some of the ritual.

Candidates for the honor of hula lessons were required to enter

the halau or temple of an expert leader, much as an initiate to a sacred order. Every step of the training was accompanied by many kapus or restrictions. During their novitiate, often from the age of three years to 16, dancers were seldom allowed beyond the school enclosure, and no villager could speak to them.

Some of the ancient hula chants were intricately worded and held several meanings beyond the obvious word-for-word one—an occasionally ribald double meaning, a mythological, historical, or topographical import, and sometimes a secret meaning hidden in a use of the language known only to the royalty or the initiated. Many of these meanings have now been lost, because of the failure of modern scholars to understand the subtle, ancient meanings of words, and also because of inaccuracies in handing down lengthy passages by word of mouth.

From strictly religious significance, the hula gradually expanded into the "opera" of old Hawaii, with dancers and singers combining to tell history and folk tales. Meles or songs for hula accompaniment touched on almost every aspect of daily or historical life. The dancers, trained in pantomime, are believed by most historians to be the Hawaiian equivalent of the actors known in other civilizations.

Flora Pacifica

Flora Pacifica is an annual five-day exhibit of spectacular plant life from various Pacific areas at Jefferson Hall at the East-West Center in late Spring.

Sponsored and arranged by the Friends of Foster Garden and the Friends of the East-West Center, the show was first held in 1964, and it has greatly increased in popularity since then.

Objective of Flora Pacifica is to illustrate how plant life influences every aspect of human activity from economic livelihood to religious philosophy. Each year's exhibit is built around a different central theme: the first year's emphasis was on the beauty of Pacific plants; in 1965 it was limited to Central and South American plants, and plants that produce tapa cloth; 1966 focused on development of philosophy, with the Chrysanthemum featured; then the show showed how plants have influenced the economic structure of Asia and Micronesia; the 1968 theme was the use of plant life as material and motif in the development of folk art in India.



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The Statuary Hall Controversy

All States of the Union are entitled to have the statues of two prominent individuals enshrined in the Capitol in Washington. Since Hawaii achieved Statehood, Island residents have argued over who should represent Hawaii. The lawmakers decided that Father Damien, the Apostle to the Lepers, and King Kamehameha the Great should represent Hawaii.

In 1967 the Hawaii Statuary Hall Commission, on a 5-2 vote, picked a Damien statue created by Marisol Escobar, and a new controversy broke out. There was, in effect, a wave of artistic hysteria.

"The statue is disgusting and degrading," one Islander complained. "Father Damien did so much to help the lepers, why should we see him in such a pitiable state?"

Dr. Edward P. Gramlich, a psychiatrist, diagnosed the hysteria against the Marisol statue in this way:

"People prefer looking at something nice and pretty, rather than diseased and damaged. They want to keep looking through their rose-colored glasses—a kind of flight from reality. I feel the statue should depict Damien as he was in his finest hour, so to speak, when he gave himself to leprosy and died from it in the process of giving. You can't deny that to him—his badge of courage and purpose."

Dr. K. Y. Lum, another psychiatrist, commented: "We don't want heroes who suffer and show pain because in the moment they die, they show a flaw—that they're only human like the rest of us. We want heroes who are super beings who can help us escape from the reality of our human lot."

The House of Representatives first refused to go along with the Marisol statue, preferring a saccharine one designed by Nathan Labor Hale, but the Senate insisted on the Marisol design and this was accepted.

There wasn't much legislative argument about King Kamehameha. The statue will be a duplicate of the one standing in front of the judiciary building opposite Iolani Palace.

Kamehameha the Great was chosen because he unified the islands and because of his "Mamalahoa Kanawai—the Law of the Spunward Paddle." From these accomplishments, the legislators did emerge modern Hawaii.



Marisol's Father Damien.



The statue of King Kamehameha.

Art in Hawaii

The average person in search of Hawaii produced art is content to walk around Waikiki's shops and gaze at black velvet paintings, mass-produced monkey pod tikis, mechanically painted seascapes and a variety of equally commonplace objet d'art.

What these persons don't realize is that Hawaii is bursting its esthetic seams with artists and craftsmen whose work is individual, professional and often suited to the pocketbook.

Local artists and craftsmen are a little off the beaten path, but a glance at the classified pages of the telephone book will furnish the names of galleries. The most interesting of these are Gima's Art Gallery at the Ala Moana Center, Hunnicutt Art Gallery, the Little Gallery, Royal Hawaiian Art Gallery and the Contemporary Arts Center of Hawaii. Not listed but of interest are the galleries of the Library of Hawaii main branch and the Unitarian Church.

The most impressive permanent collection in the islands can be viewed at the Honolulu Academy of Arts. More than 100,000 persons visit it each year. It is the only art museum of a broad general nature in the entire Pacific area. The art treasures include outstanding examples of Oriental, Western and Pacific art from ancient times to the present. The Honolulu Academy of Arts has been called "the most beautiful museum in the world."

Within the galleries is a collection of outstanding examples of Western art, including works by Monet, Van Gogh, Matisse, Gauguin, Picasso and others. Other galleries contain sculpture from Greece and Rome, Italian paintings, decorative arts from 18th century France and England, material from Colonial America and stained glass from the Middle Ages.

The Oriental galleries contain one of the finest collections of Oriental art in the Western world, including scrolls, screens, sculpture and ceramics. Many of the earlier pieces are more than 3,000 years old, coming from China.

Within the past few years, the Academy has presented such major exhibitions as *The Arts of Thailand*, *Ancient Sculpture from India* and *7,000 Years of Iranian Art*. Exhibitions of a more contemporary nature include *Art U.S.A. Now!*, *The Guggenheim International Awards* and *Paintings by Raoul Dufy*.

A smaller, more intimate museum is the Tennent Art Foundation



"Two Nudes on a Tahitian Beach," from the collection of the Honolulu Academy of Arts.

which houses the monumental works of Madge Tennent, dean of Hawaii's painters.

In the past decade Hawaii has developed into a first class training center for young artists. The University of Hawaii and the art school of the Academy of Arts are largely responsible for this. Both of these institutions have imported excellent teachers, equipment and exhibitions from the mainland, Europe and the Orient.

Perhaps Hawaii's best known artist is Jean Charlot, who, with Diego Rievera, revived Mexico's fresco mural art.

Classical Music

There are three main sources of classical music in Hawaii: the Honolulu Symphony Orchestra, the Honolulu Chamber Music Society and the University of Hawaii Music School.

The 1967-68 season of the Honolulu Symphony Orchestra included nine pairs of subscription concerts on Sunday afternoons and Tuesday nights; youth concerts, nearly 300 music "demonstrations" to schools, a summer series of Starlight Concerts in Waikiki Shell, and an opera season.

George Barati, Hungarian-born composer-conductor, was named musical director in 1950. He resigned in 1967, the climax of a running battle with some key members of the Honolulu Symphony Society.

The new musical director is Robert LaMarchina, former director of the Metropolitan Opera's national opera company.

During Barati's tenure, attendance at concerts increased 400 percent and the budget grew from \$25,000 to \$500,000. From a small town orchestra, the symphony has grown to 80 musicians, half of whom are fulltime members. It used to play in an uncomfortable high school auditorium; its home now is the handsome and comfortable Theatre-Concert Hall of the Honolulu International Center.

The Chamber Music Society presents outstanding national and international ensembles at Orvis Auditorium on the University of Hawaii campus. In the past these have included the Juilliard String Quartet, and Vancouver, Budapest, Prague, Vienna and Moscow string groups.

The Music School at the University of Hawaii presents students and faculty members in recitals throughout the year.



A Filipino entry in the University of Hawaii's international beauty contest.

The Legitimate Theatre

John Wilkes Booth once played in Honolulu, but comparatively few other actors with a Mainland reputation have trod the boards in the Islands. So Honolulu has created its own theatres and its own actors and actresses.

The major legitimate theatre in Hawaii is the Honolulu Community Theatre, now more than 50 years old. It produces Broadway musicals, serious drama and comedies. Its 1967-68 season included "Portrait of a Queen." Its home is Ruger Theatre.

The University of Hawaii, housed in the luxurious Kennedy Theatre, plays the classics (Greek, Shakespeare and Chekhov), contemporary drama of the absurd, student-written dramas, experimental plays, and tragedies.

The Oumansky Magic Ring Theatre, home-ported in the Hilton Hawaiian Village, sails through serious drama ("Whose Afraid of Virginia Wolf?") and comedies ("The Odd Couple"). This professional company has been entertaining for more than 10 years.

The Honolulu Theatre for Youth gives children adventure ("Treasure Island") and Shakespeare ("A Comedy of Errors").

A vigorous troupe is the Windward Theatre Guild. The Mallory Players' season included "Luv." And various companies on the military posts also offer drama.

A number of Island actors, actresses and dancers have gone from Hawaii stages onto Hollywood and Broadway, including John Philip Law, a star of "The Russians Are Coming, the Russians Are Coming."

Hawaii gets classical drama from the Orient, including Chinese operas and the Noh plays and Grand Kabuki from Japan.

With the opening of the Honolulu International Center Theatre-Concert Hall, more touring companies and Mainland players are playing in Honolulu, but for week in and week out play-going, Islanders have to rely on their local companies.

International Market Place

International Market Place officials estimate that seven million travelers and residents visit the Market Place in the heart of Waikiki annually. There are 50 shops and restaurants in the Market Place.

Graceful palm trees and a stately banyan hover protectively over the grass-thatched huts and open-air shops; Polynesian craftsmen squat on the ground stringing their colorful seed and shell leis; tropical foliage and rippling pools interject their note of serenity along the winding pathways.

The Market Place features a free Sunday Camera Show, which is a two-hour exposition of dance and musical arts, pageantry, ancient rituals and handicrafts of the Pacific Islands, and a free Polynesian show held at 7 p.m. every night except Sunday. It's a lively revue of Hawaiian, Tahitian, Samoan and Maori songs and dances held in the Outdoor Theatre.

Other sounds can be heard in the nightclubs which cater to a wide variety of musical tastes. There's everything from a soft jazz pianist to rock and roll or from a flamenco guitarist to a gang of entertainers at a full-blown luau.

The smells are delicious and delightful and a wonderful potpourri. Aromas such as teriyaki and sukiyaki mingle with hamburgers, steaks, shishkebobs, tacos and pizzas.

Aside from the sights, sounds and smells, there's the merchandise—everything from aloha shirts to zabutons.

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The beachgoer at Waikiki and Ala Moana now has only 44 square feet of sand for sunning on a busy day, says planner Walter Collins. There's less sand than is available at Coney Island and far less than will be available on Oahu in 1980.

ALL ABOUT HAWAII

Midship on the town, with dates.



Ala Moana Center

The Ala Moana Center is not only a center for shopping, but also is a center for community activity. Ala Moana's growing sales record in 1967 reached a new high of \$109 million. Ala Moana's growing reputation as a community center reached a level that made it one of the most important focal points in the life and activity of Honolulu.

In 1959 the center opened with 680,000 square feet of gross leaseable area, 87 shops and 4,000 parking spaces. Three years later the Ala Moana Building was opened with 200,000 square feet of gross leaseable area. In 1966 expansion of the center was completed to make Ala Moana one of the largest shopping centers in the world—1,350,000 square feet of gross leaseable area, 155 shops and 7,800 parking spaces.

Centrally located in Honolulu, it is 1½ miles from downtown, 1¼ miles from the Waikiki tourist center, and within 15 minutes driving distance from most parts of Honolulu. It was designed to serve all of Oahu and is, therefore, classified as a regional shopping center.

In its first year of operation, 1959, Ala Moana did a total of \$39 million in retail sales, in 1967 it did \$109 million—more than doubled in just eight years. This amounts to \$81 per square foot of gross leaseable area and a 24% increase over the 1966 sales volume of \$87,700.00. Significantly, Ala Moana's market penetration into Hawaii retail sales jumped from 6.9% in 1966 to 7.8% in 1967.

A good indicator of the excellent gain during the year was revealed by car count statistics. The number of cars entering the center increased 15%—from an average 670,000 cars per month in 1966 to 770,000 cars per month in 1967 and the unit sales per car has risen from \$10.89 in 1966 to \$11.81 in 1967—an increase of 9.4%.

The center was conceived to be an integration of goods and services that would make it a veritable "City of Shopping" and an integral part of community activity.

The composition of the merchants offers apparel shops, food stores, restaurants, service shops, specialty shops, gift shops, general merchandise stores and large department stores. Within walking distance and conveniently reached by either street or mall levels—the Ala Moana Building completes the "City of Shopping" offering



25 floors of major medical, financial, business and dining facilities—topped by the La Ronde revolving restaurant.

The developers of Ala Moana—Hawaiian Land Company (a wholly owned subsidiary of Dillingham Corporation) were concerned as much with the aesthetic as well as the economic success of the Center.

Ala Moana could have been a stark, brick and mortar store complex, in a jungle of neon signs, surrounded by an asphalt desert of parking—a big collection of buildings are just places to shop.

Ala Moana is, however, an attractive spot. The center architecture, the individual store architecture, the merchandising mix of the stores, the landscaping and the art forms were all conceived as parts of one whole development; each element complements another; each sign, bench, drinking fountain, flag and tree is part of a planned whole. Each merchant was required to retain an architect to design his individual store. To insure variety, no one architect could design more than a few stores.

No mechanical houses, plumbing vents, air conditioning machines or chimneys are allowed to mar the roof line. All these facilities are carefully concealed in an interior valley between the roofs. The strictest sign regulations are enforced—no exposed neon or flashing or moving signs are permitted. A truck concourse or interior alley inside the buildings accommodates all delivery, garbage and similar “back-door” functions, completely concealed from the public eye.

What the public does see is a spaciouly designed center in a garden-like setting, where a fascinating array of fountains, trees, plants, flowers, sculpture and art work is found at every turn.

There is an intriguing combination of art and architecture that reflects the cultural origins of the diverse peoples of the Pacific.

The Mall has a 160-foot long stream filled with hundreds of colorful carp fish. There are bronze art forms especially designed for Ala Moana’s sand box area.

In the community Lanai Area, there are some of Honolulu’s major art shows; school children painting a picture for Mother’s Day; the local 4-H Club booth displays; live reindeer at Christmas time; and Lei-makers during Aloha Week.



Robin Engel, Miss Hawaii of 1967.

Special Events 1968

June 15 through 23—Centennial celebration of the first group of Japanese immigrants to Hawaii.

June 16—Kaneohe Marine Corps Air Station Water Carnival at Kaneohe Bay, Oahu.

June 17 through 22—International Festival of the Pacific in Hilo, Big Island. International pageants, lantern parade, sidewalk sales featured.

June 17 through July 26—Festival of the Arts of this Century. Dedicated to the exchange of East-West Contemporary Arts in music, visual arts, modern dances and theatre. Creative artists from Asia and Mainland U.S.A. featured.

June 28 through July 7—50th State Fair. Entertainers, exhibits of Island products, flowers, arts and crafts. Polynesian and Oriental food booths.

July 4—Walter Macfarlane Regatta, Waikiki Beach.

July 4—Parker Ranch Rodeo and Horse Races, Kamuela, Hawaii.

July 4—Makawao Rodeo staged by the Maui Roping Club at Kaionolu Ranch, Makawao, Maui Island.

July 4 through 6—Annual Naalehu Rodeo and Fair on the Big Island.

July 4 through 7—Hilo Orchid Society Annual Flower Show, Hilo.

July 14—Oahu Championship Regatta.

July 18 and 19—Miss Hawaii Pageant, Honolulu Concert Hall.

July and August—Bon Odori Season in Hawaii. Bon dances every weekend in Honolulu, open to public. Japanese-American Buddhists perform colorful folk dances honoring departed ancestral spirits.

August 3—State Championship Regatta.

August 4, 11 and 18—Hula Festival on Oahu Island with student dancers from six to sixty, taught by Department of Parks and Recreation.

September 14—Lanai-Kaanapali Outrigger Canoe Race.

October 17 through 20—Annual Orchid Show at the Honolulu International Center. Exhibits of more than 1,500 orchids, in addition to displays of Bonsai, Cactus and Japanese flower arrangements.



The 1967 Aloha Week king and queen.

October 20 through 26—Aloha Week on Oahu Island. Related festivities are held on all resort islands. Hawaiian pageantry, dances, games, and crafts demonstrations. Major celebration at Waikiki Beach with street carnival and floral parade, also Monarchy Ball. *Aloha Week—Neighbor Island dates:* Hawaii, October 5-12; Maui, October 13-18; Kauai, October 12-18; Lanai, October 9-13; and Molokai, October 14-19.

October 20—Molokai-Oahu Outrigger Canoe Race.

October—Hawaii County Fair, Hilo. Exhibits of Hawaiian arts and crafts, commercial and agricultural displays, steer show, lei contest and orchid show.

October—Maui County Fair, Kahului Fair Grounds, Maui Island. Exhibits of island grown produce, flowers, Hawaiian arts and crafts, commercial displays, 4-H beef auction and fireworks.

November 7 through 13—Hawaiian Open Invitational Golf Tournament at the Waialae Country Club.

November 18 through 26—Maalaea Boat and Fishing Club Tournament, Maui Island.

November 27 through December 1—All Islands Makahiki Festival. Oahu and the Neighbor Islands honor the Hawaiian god Lono, with a variety of events to celebrate the harvest of "time of plenty" of Old Hawaii. November 27 and 28, Oahu; November 29, Kauai; November 30, Maui; and December 1, Hilo, Hawaii.

November 29 through December 1—Kauai Annual Invitational Golf Tournament at Wailua Golf Course.

December 3 through 8—Festival of Trees. Elaborate and beautifully imaginative exhibits of decorated trees, wreaths, and Yule items, all for sale to benefit Queen's Hospital. Traditional and Hawaiian Christmas carols are performed by Hawaii's top choral groups.

December 8—Bodhi Day. Day of Enlightenment celebrated by Buddhists in Honolulu. Visitors welcome to attend religious services at Buddhist temples, English and Japanese services at many.

December—Duke Kahanamoku Invitational Surfing Championships on the North Shore of Oahu.

December—International Surfing Championships at Makaha Beach, Oahu Island. Men, women and children ride 5 to 20-foot waves in spectacular surfing competitions. Tandem and acrobatic surfing also featured.

Source: Hawaii Visitors Bureau.

The Hawaiian Volcano Observatory

By HOWARD A. POWERS
and C. K. WENTWORTH

*U. S. Geological Survey, Hawaiian Volcano Observatory
Hawaii Volcanoes National Park, Hawaii*

The Hawaiian Volcano Observatory was established in 1912 by the late Dr. Thomas A. Jaggar to provide a continuous record of volcanic and seismic activity at Hawaii's two active volcanoes, Kilauea and Mauna Loa.

During its first five years it was supported jointly by the Hawaiian Volcano Research Association and the Whitney Fund of the Massachusetts Institute of Technology.

In 1917 support of the Observatory was shifted to the Federal government; and since 1948 it has been operated by the U. S. Geological Survey with the encouragement of the National Park Service.

As a part of the U. S. Geological Survey's investigations of the fundamental processes of geology, the work of the Hawaiian Volcano Observatory is directed toward deciphering how Hawaiian volcanoes are formed and how and why they erupt.

The number and specialties of the staff members vary somewhat from year to year; usually geology, mineralogy, geochemistry, and geophysics are represented by professional specialists, supported by technical aides experienced in electronics, practical seismology, instrument making, photography and surveying techniques.

Routine observations are made that include recording and locating all earthquakes, and ground tremor, measuring and timing the details of swelling of the volcano prior to eruption and shrinking of the structure during and after eruption.

The earthquakes are recorded by seismographs located at 15 stations on Hawaii, one on Maui, and one on Oahu. Of these, eight stations within 15 miles of the Observatory at the summit of Kilauea are designed so that their disturbances are transmitted by wire and recorded on open drums, visible at all times. The waxing and waning of earthquake activity can thus be monitored at all times.

The deformation of the volcanoes is followed and mapped by sur-

face measurements that can detect a lengthening or shortening of less than a tenth of a foot in a mile, by leveling of closely spaced bench marks that readily detects vertical changes in altitude of a tenth of a foot, and by a network of tilt-meter bases installed around the summit of Kilauea.

The water-tube tilt-measuring system was designed and built at HVO and the sensitivity is such that the network could detect the tilt produced by lowering one side of Hawaii a tenth of a foot.

Study of earthquake activity and deformation of the volcano will lead to an eventual understanding of why and when eruptions are produced.

A unique program of research is being done at the Observatory since 1960. Three bodies of molten lava were left as lakes in old craters by eruptions at Kilauea Iki in late 1959, at Alae in August 1963, and at Makaopuhi in March 1965. This is the only place in the world where such stagnant ponds of molten lava are accessible to study. The research program comprises measuring and mapping the sinking of the lake surface as the melt crystallizes and cools, drilling core holes through the crystallized crust on the lakes, collecting samples, measuring temperature changes, and documenting the changes in compositions of the minerals that form and the liquid that remains. The lake at Alae is completely crystallized but there will be molten lava still within the lakes at Kilauea Iki and Makaopuhi for several decades.

Through the past century Mauna Loa and Kilauea have been among the world's most active volcanoes. Unlike most other volcanoes, those of Hawaii are gentle in their action, and can be approached with comparative safety.

Many hundreds of thousands of visitors have witnessed the spectacular fountains and lake of liquid lava, which from 1823 to 1924 were nearly always present in Kilauea Crater, and which returned in the last decade.

MAUNA LOA

Mauna Loa has averaged one eruption every $3\frac{1}{2}$ years between 1832 and 1950; it has been quiet since 1950.

There has been a very rough alternation of activity between eruption in the summit crater and lava flows on the flanks. Most of the flank eruptions take place on one of two zones of fissures that extend northeast and southwest from the summit.

TABLE OF ERUPTIONS—MAUNA LOA

- 1832 Began June 20 at summit, lasted 21 days; flow covered 6.8 square miles.
 1843 Began January 9 at summit, lasted 5 days; flank eruption followed lasting 90 days; flow covered 20.2 square miles.
 1849 May eruption in crater lasted 15 days.
 1851 Began August 8 in crater; lasted 21 days.
 1852 Began February 17 in crater for one day; flank eruption lasted 20 days and covered 11 square miles.
 1855 August 11 flank eruption lasted 450 days and covered 12.2 square miles.
 1859 Summit eruption of one day began January 23, followed by flank flow of 300 days, which covered 32.7 square miles of land and ran into the sea, over 30 miles away.
 1865 Summit eruption began December 30 and lasted 120 days.
 1868 Summit eruption of one day started March 27; flank eruption April 7 lasted 15 days; flow covered 9.1 square miles of land and streamed down into the ocean.
 1872 Summit eruption began August 10 and lasted 60 days. It is believed that there was then continuous crater activity until February 1877. Beginning in 1873, activity was visible from Hilo for 547 days and again in 1875 for 30 days beginning January 10.
 1877 Summit activity began February 14, lasted 10 days and was followed by a one day flank outbreak.
 1880 Summit eruption began May 1, lasted six days.
 1880 Flank eruption began November 1 and lasted 280 days; flow covered 24 square miles.
 1887 Flank eruption began January 16 and lasted 10 days; flow covered 11.3 square miles of land, ran into ocean.
 1892 Summit eruption began November 30 and lasted three days.
 1896 Summit eruption began April 21 and lasted 16 days.
 1899 Summit eruption began July 4, lasted 4 days, followed by a 19-day flank eruption; flow covered 16.2 square miles.
 1903 Summit eruption began October 6, lasted 60 days.
 1907 A one-day summit eruption January 9; flank eruption followed for 15 days; flow covered 8.1 square miles.
 1914 Summit eruption began November 25, lasted 48 days.
 1916 Flank eruption began May 19, lasted 14 days; flow covered 6.6 square miles.
 1919 Flank eruption of 42 days began September 29; flow covered 9.2 square miles of land, ran into ocean.
 1926 Eruption at summit April 10 followed by flank flow of 14 days which ran into sea; flow covered 13.4 square miles.
 1933 Summit eruption of 17 days began December 2, short flank eruption covered 2 square miles.
 1935 Flank eruption along northeast rift began November 21, flowed 42 days and came within 20 miles of Hilo. The flow covered 13.8 square miles.
 1940 Crater eruption began April 7 and lasted 133 days.
 1942 Crater eruption of two days began April 26; followed by northeast rift flow of 13 days which covered 10.6 square miles. This eruption was a source of great anguish to the military authorities. The red glow of the eruption could be seen in the sky for 200 miles, completely upsetting effectiveness of the strict blackout regulations enforced throughout the islands. News of the eruption was strictly censored until after it had ceased.
 1949 Summit eruption from Mokuawewewo Crater on top of the volcano began January 6, lasted 30 days; lava flowed down western slope, stopping above Honauau, the village of refuge.
 1950 Flank eruption started June 1, lasted 23 days and resulted in an outpouring of 615,000,000 cubic yards of lava; flow passed through little village of upper Hookena and reached the sea. The flow covered 35.6 square miles above sea level.

KILAUEA

Kilauea is of world renown because of its prolonged summit activity in a caldera that is accessible to all in relative safety most of



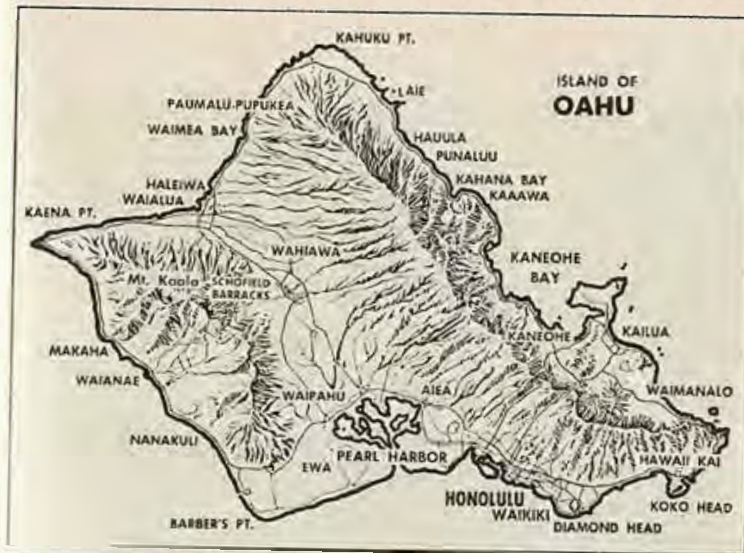
Halemaumau firepit during 1968 eruption.

the time. Many eruptions issuing from a zone of cracks extending eastward from the summit caldera have built a long, gradually sloping ridge that is mostly included in the Puna District. Some of the rift eruptions lay waste to cultivated land, but many are confined to the interior rain forest area and are inaccessible to observers except from the air.

During the nineteenth century Kilauea crater went through several periods of lava filling and collapse, and by 1921 overflows from Halemaumau had built most of the present floor of the crater. In 1924 collapse and steam explosions converted Halemaumau into a huge pit, 1500 feet deep and over 3500 feet in diameter. Since 1927, numerous eruptions have been filling the pit again so that the walls stand less than 300 feet above the youngest lava floor.

TABLE OF ERUPTIONS SINCE 1927—KILAUEA

- 1927 Crater flows began July 7 and continued 13 days.
- 1929 Two days of activity began February 20; four days of activity began July 25.
- 1930 Crater lake began filling November 19; continued for 19 days.
- 1931 Crater activity began December 23, continued 14 days.
- 1934 Activity began in Halemaumau September 6, continued 33 days.
- 1952 Activity began in Halemaumau June 27, visible for 137 days.
- 1954 Activity began in Halemaumau and on the floor of Kilauea Caldera May 31 and lasted four days. It featured a 300-foot lavafall, a 650-foot fountain and half mile long row of 100-foot fountains outside Halemaumau.
- 1955 Eruption started February 28 on the east rift zone of Kilauea at Puu Honuaula, 25 miles east of Kilauea Crater, and continued for 88 days, with an interruption of 12 days in mid-April. Lava fountains exceeded 800 feet in height. Lava flows covered 6.1 square miles of land and buried 6 miles of public roads.
- 1959 Spectacular, but intermittent activity in Kilauea Iki Crater from November 14 to December 21. Fountain attained height of 1900 feet on December 17, highest measured in Hawaii, and built a 200-foot-high cinder cone, Puu Puai, on the rim of the crater above the vent. Kilauea Iki Crater was filled to a depth of about 400 feet by a lake containing nearly 50 million cubic yards of lava.
- 1960 Eruption from the east rift zone just north of Kapoho from January 13 to February 20. Approximately 160 million cubic yards of lava was erupted; and it covered 2000 acres of old land and formed 500 acres of new land beyond the coastline. A new 300-foot-high cinder cone was built just north of the site of Kapoho, which was destroyed. Lava fountains exceeded 1500 feet in height.
- 1961 Eruption in Halemaumau, February 24, ending after eight hours. A new eruption began July 10 in the firepit, lasting for seven days. The volcano erupted in the Puna district rift zone September 22.
- 1962 Eruption at Aloi Crater, along the Chain of Craters Road in the Puna rift zone with a series of several vents opening over a period of three days.
- 1963 Koae cracking, summit subsidence, on southwest rift, May 9. Devil's Throat area, Koae cracking, summit subsidence, east rift, July 1 and 2. In and near Aiae crater, with a 50 foot lake, in the east rift, August 21 to 23. Napau and Kinalua craters, with a 20 foot lake, in the east rift, October 5 to 6.
- 1965 Makaopuhi to Kinalua craters, 270 foot and 20 foot lakes, in the east rift, March 3 to 15. In and near Aloi crater, December 24 and 25; Koae earthquake swarm continued into mid-January 1966, in east rift.
- 1967-68 A series of outflows began in Halemaumau on the 5th of November 1967 that continued far into 1968. Seventeen episodes of eruption before New Year's Day added over 40 million cubic yards, raising the lava floor to within 300 feet of the Halemaumau rim.



Oahu *The Gathering Place*

THE CAPITAL ISLAND OF THE HAWAIIAN chain is Oahu, third largest of the Islands, but with protected ports both at Honolulu and at Pearl Harbor, an advantage which accounts in large measure for its evolution as the headquarters of Hawaiian life.

Oahu, 40 miles long and 26 miles wide, with a total land area of only 595 square miles, is the most important Island of the archipelago and one of the most important islands in the entire Pacific basin.

Pearl Harbor, the home of the United States Pacific Fleet, lies seven miles from downtown Honolulu.

Oahu lies southeast of Kauai and north of Molokai and Lanai, forming a pivotal step in the arch of the islands.

Nature constructed the island to make it both beautiful and suitable for the needs of modern men. The "back" of Oahu is composed of a volcanic mountain chain, the Koolau range, running northwest to southeast at a perfect angle to catch the tradewinds and precipitate rainfall.



Iolani Palace

The highest point in the Koolau range is Puu Konahuanui, actually two peaks, the taller being 3,150 feet. The peak is at the head of the Nuuanu valley where the Koolau range drops in sheer cliffs to the shelfland below at sea level. On the south flank of this peak is another peak, with an elevation of 3,105 feet.

The western, or leeward side of the Koolau range forms a beautiful background with foothills for the city of Honolulu.

Oahu's oldest range of mountains, the Waianae, parallels the southwest coast from Barbers Point to Kaena Point. The high peak in this range is Oahu's highest, Kaala, 4,040 feet.

Between the Waianae and Koolau ranges, beginning above Pearl Harbor, is a rolling plain of fertile soil, well watered by streams from both ranges.

Honolulu harbor (the fair haven of old Hawaii) is the outlet through the protecting reef of Nuuanu stream. The harbor meant little to the ancient Hawaiians who much preferred running the surf into Waikiki beach with their shallow canoes. Only a few Hawaiians lived around the harbor, on the plains which they called Kou.

At least five different expeditions passed by the islands, including those of Captain Cook and Captain Vancouver, before the harbor was spotted on November 21, 1794, by Captain Brown of the British ship *Butterworth*. This discovery was of such importance to sailing vessels that the center of history gradually shifted from Hawaii island with its Kealakekua Bay to Oahu.

The importance of Pearl Harbor dawned upon seamen when sailing vessels began to shift to the use of coal. Pearl Harbor can shelter the world's largest battleships and Honolulu harbor the world's largest freighters and passenger ships.

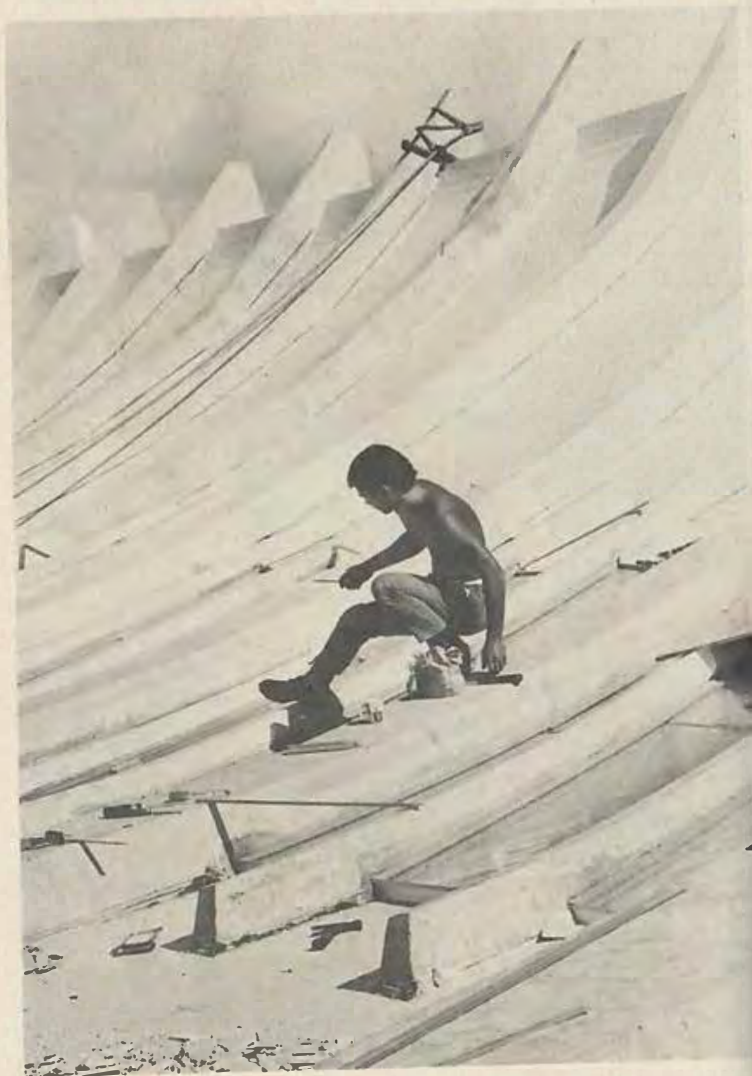
PLACES ● OF INTEREST

HONOLULU, the capital of Hawaii, has a technical claim of being the largest city in area in the United States. Honolulu boundaries extend 1,381 miles northwest to Kure Island, although the City-County normally is thought of as Oahu only.

Today Honolulu is a thriving metropolitan community, a mixture of many races, an exciting city for residents and tourists.

Here are some outstanding attractions of Honolulu:

IOLANI PALACE is the former royal palace of Hawaii and the only royal palace in the United States. The throne room is open to



Working on the roof of the new State Capitol.

the public Monday through Friday, and guide service is provided.

STATE CAPITOL, across the street from Iolani Palace, was built at a cost of \$25 million. The Legislature moved into the new structure for its 1968 session, and the offices of the Governor and the Lieutenant Governor will be moved to the Capitol when it is completed in 1969.

THE ARCHIVES OF HAWAII, situated on the grounds of Iolani palace, house the most complete Hawaiiiana collection in the United States, including documents, treaties, decorations, records and other items of historical interest. Its treasures are maintained in a modern manner and are available to all research students. Hours are 7:45 a.m. to 4:30 p.m. weekdays; 8 a.m. to noon Saturdays.

THE JUDICIARY BUILDING, across King Street from Iolani palace, is the former parliament building of the kingdom, Aliiolani Hale, the house of nobles. It was built in 1874. The courtroom of the first circuit court was the legislative chamber of the house of nobles.

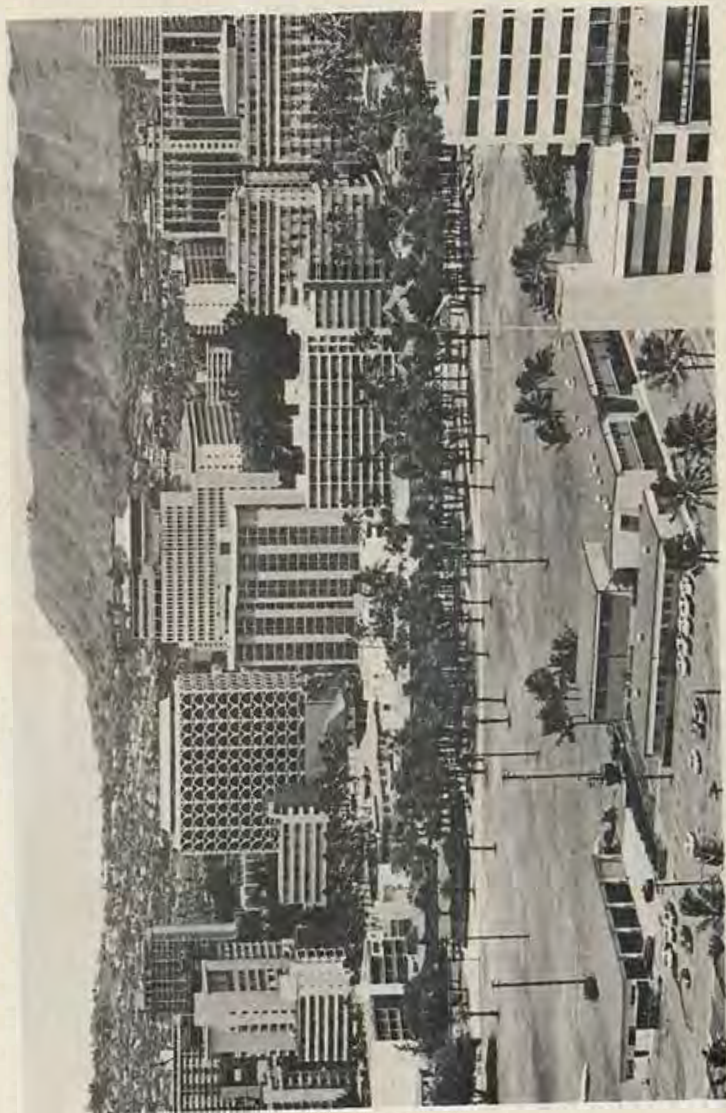
THE CITY HALL, state office building, post office, other government buildings and the Library of Hawaii are grouped about the civic center.

KING KAMEHAMEHA'S STATUE, a favorite subject for photographers, stands in front of the circuit court building. The statue is an idealized version of the great monarch and does not pretend to present a likeness of his face.

THE MISSION HOUSES are located on King Street waikiki (toward Waikiki) of Kawaiahao Church. The New England type house is the oldest frame house in the Islands. It was erected by the missionaries in 1821 of lumber brought around Cape Horn. The Printing House, built of coral and completed in 1823, took the place of the thatched house in which the first printing type was set by hand on January 7, 1822. The Chamberlain House, also of coral, was finished in 1831.

LIBRARY OF HAWAII, King and Punchbowl Streets, largest public library in the state, is built around a spacious, open-air patio where regularly scheduled art shows, changing exhibits and leisure reading can be enjoyed. Hawaii and Pacific Room contains outstanding specialized collection. Edna Allyn Room is famous for its murals by Juliette May Fraser depicting a score of Hawaiian legends. Permanent exhibit of paintings by local artists and free movies weekly.

WASHINGTON PLACE, the residence of the governor of Ha-



Waikiki has been criticized as a concrete jungle.

waii, is a block mauka (toward the mountains) of Iolani Palace on Beretania Street. This New England style colonial house was the personal residence of Queen Liliuokalani, the last reigning monarch. Queen Liliuokalani had inherited the mansion from her husband, John Dominis, son of a New England sea captain. The queen lived there in retirement until her death in 1917. The property was then purchased for an executive mansion.

HIS MAJESTY'S BARRACKS, now known as Iolani Barracks, was built in 1870 for the Royal Household Guards. This old building was shifted to the Palace Grounds, stone by stone, to make way for the new capitol.

THE HONOLULU INTERNATIONAL CENTER was completed in the fall of 1964. It was built on the former Ward Estate property, famed as "Old Plantation." The Center provides long-needed facilities for such events as symphonic concerts, opera, ballet, ice shows, Hawaiian festivals, as well as serving as a spacious area for community exhibits where thousands may be accommodated.

QUEEN'S MEDICAL CENTER, Punchbowl and Miller Streets, an accredited modern institution, is a monument to the generosity of Queen Emma, wife of Kamehameha IV. She left her personal fortune to endow the hospital, the cornerstone for which was laid on July 17, 1860.

THE HONOLULU ACADEMY OF ARTS, on Beretania Street, is a cultural center of Hawaii. Here the art of the East and West is displayed in distinctive settings. The Academy sponsors a flourishing art school. It is open daily except Monday.

PACIFIC NATIONAL MEMORIAL CEMETERY, Punchbowl Crater, was officially opened September 2, 1949. In it are buried the dead of World War II, Korea and Vietnam. The famous war correspondent, Ernie Pyle, is buried there. The cemetery is open from sunrise to sunset daily. The Hawaiian name for the crater is Puo-uhua, meaning Hill of Sacrifice.

OUR LADY OF PEACE CATHEDRAL, downtown on crowded Fort Street, stands on the grounds where the first grass-thatched Roman Catholic chapel was erected in 1828 by French Missionaries of the Congregation of the Sacred Hearts. Ground for the present cathedral was broken on July 9, 1840. The stone building was consecrated August 15, 1843.

In the yard of this cathedral, Father Bachelot in 1828 planted an algaroba seed (algaroba) from the garden of the king of France, in



Boy Scouts put leis on graves at the National Cemetery of the Pacific in Punchbowl for Memorial Day.

Paris. The seed grew into a magnificent tree, the parent of the algaroba trees now widespread throughout the Islands. The tree was cut down October 23, 1919, to make way for the Knights of Columbus building.

ST. ANDREW'S CATHEDRAL, Beretania and Emma Square, diocesan office and church of the Episcopal Church, is one of Honolulu's most beautiful edifices. It was founded in 1862 at the request of King Kamehameha IV and his wife, Queen Emma, sponsors of the Anglican Episcopal Church in the Islands.

KAWAIAHAO CHURCH, built in 1842 as the Westminster Abbey of the kingdom of Hawaii, is on King and Punchbowl Streets. This historic old church is in constant use today by Hawaiian Congregationalists [United Church of Christ]. Services are conducted each Sunday in the Hawaiian language.

State funerals for all Hawaiian monarchs and the nobility were held in this church since its erection. The first legislative sessions of the kingdom of Hawaii were held in Kawaiahao Church, as were the ceremonies wherein Hawaii's kings took the oath of office.

CENTRAL UNION CHURCH, corner of Beretania and Punahou, is a leading Congregational Church [United Church of Christ], heir to the work accomplished by the missionaries sent from New England in 1820.

THE UNIVERSITY OF HAWAII is in lower Manoa valley. The East-West Center is part of the campus. The university excels in many fields, including tropical agriculture, marine biology and Pacific and Asiatic cultures.

PARADISE PARK features birds in a lush tropical setting in Manoa valley.

BISHOP MUSEUM, on Kalihi Street, is famous the world over for its extensive Pacific collections. The museum's Hawaiian feather capes, helmets, kahilis, and other examples of Hawaiian art are the world's finest. In the main hall is presented the story of early Hawaiian life. A large mural map in the Pacific Room shows the migrations of man into the Pacific islands. The museum's extensive publications are available through Bishop Museum Press. Museum is open Monday through Saturday from 9:00 a.m. to 4:30 p.m., Sunday 1:00 to 5:00 p.m.

FOR HOTEL INFORMATION, write the Hawaii Visitors Bureau; 2285 Kalakaua Avenue, Honolulu 96815.



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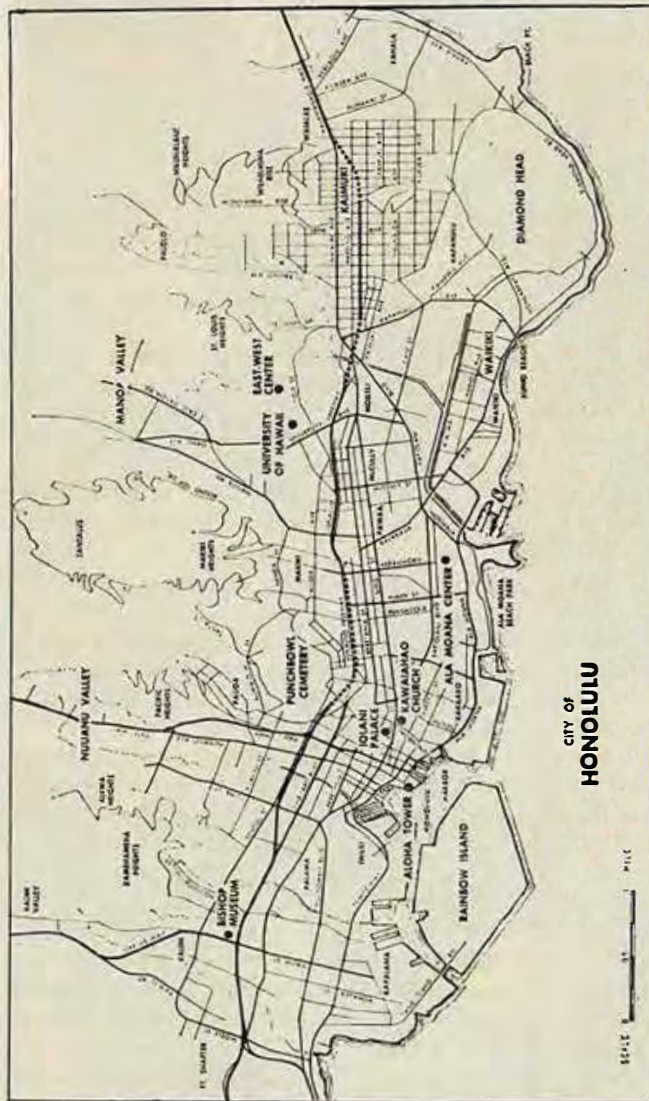
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Jean Charlot at work on a mural at the East-West Center.



A Trip Around the Island of Oahu

WAIKIKI, from where the average visitor begins a trip around the island of Oahu, was the favorite seaside resort of the Island's ancient kings and the kings of the Hawaiian monarchy.

During the reigns of these kings, Waikiki was noted for its coconut groves, fish ponds and large walled taro patches which extended inland for about a mile.

WAIKIKI BEACH extends from the mouth of Ala Wai canal (the yacht harbor) to Diamond Head. The beach is the center of water sports: swimming, surfing, outrigger canoeing and spear fishing.

ULU MAU VILLAGE in Ala Moana Park, offers a fascinating glimpse of life among the Polynesians who settled in the islands of Hawaii 1,000 years ago. Here in the shade of giant trees, Hawaiian people recreate the ancient skills of their ancestors, such as lauhala weaving, lei making, poi pounding, and quilt making.

INTERNATIONAL MARKET PLACE in the heart of Waikiki, offers free entertainment nightly, plus shops, restaurants and night clubs.

HAWAIIAN WAX MUSEUM shows ancient Hawaiian scenes through wax figures.

KAPIOLANI PARK, a large, grassy tree-shaded public park with a polo field at one end, enjoyed by thousands of Islanders who frequent the park on Sundays and holidays. Free Royal Hawaiian Band concerts on most Sunday afternoons.

KAPIOLANI GOLF DRIVING RANGE, at the Waikiki end of Kapiolani Park, is open during the day and in the evenings.

WAIKIKI AQUARIUM, on Kalakaua Avenue across from Kapiolani Park, displays the tropical marine life of Hawaiian waters.

HONOLULU ZOO, at the Waikiki end of Kapiolani Park, exhibits most of the animals found in the most modern zoos on the mainland except snakes. There are no snakes in Hawaii. Admission is free. It is operated by the Honolulu Parks Department.

WAIKIKI SHELL, a modern concert shell, is the scene of starlight concerts and productions of various types the year around.

DIAMOND HEAD LIGHT, high on the slope of Diamond Head, the lighthouse is operated by the United States Coast Guard.



A hippie love-in at Kapiolani Park.

It is the finish line for transpacific yacht races which are held every two years, from the west coast to Honolulu.

DIAMOND HEAD, the extinct volcano, was once the home of the fire goddess Pele. The Hawaiians called it Leahi, a word which may mean "the place of fire." Leahi became Diamond Head in the early 19th century when some British sailors picked up gleaming crystals, Pele's Tears, and thought they had discovered diamonds.

The highest place on the ridge facing the sea, is Leahi Point, 760 feet high.

WAIALAE COUNTRY CLUB, a private country club with an 18-hole golf course, swimming pool and tennis courts, at the end of Kahala Avenue. Right next door is the Kahala Hilton Hotel.

KUAPA OR KEAHUPUA-O-MAUNALUA is the large fishpond which the road crosses just before ascending the pass between Koko Head and Koko Crater. This pond is so old that it is said to have been built by the menehunes (elves) working at night. At one time it covered 523 acres and its longest wall extended 5,000 feet. The pond was fed by fresh water from the mountains and tidal water from the bay. A large fishing village existed in the valley of Hahaione at the head of the pond. The villagers caught fish in the bay and kept their catches alive in the pond.

Legend says this pond is connected by an underground tunnel through the mountains with a pond in Kailua. Proof offered is that from time to time great schools of mullet disappear from the Kuapa pond and are to be found in the Kailua pond. At the same time, the awa kept in the Kailua pond appear in the Maunalua pond.

KOKO HEAD AND KOKO CRATER, the prominent landmarks at the eastern tip of Oahu, are evidences of Pele's last visit to Oahu. The goddess of the volcanoes, while trying to find a home on Oahu, is said to have built them. Geologists say that Pele's last visit occurred about 10,000 years ago when a great crack opened from the east end of the Koolau mountain range. From this crack poured lava which built Kalama, the highest mountain peak at this end of the island, Koko Head (642 feet) and Koko Crater (1,200 feet).

HANAUMA BAY, one of the scenic spots on the rugged coastline, is the remains of one of the craters formed at that time.

THE BLOW HOLE is a natural hole in the lava ledge through which wave action forces the ocean water up in geysers.



Waikiki at night.

A FISHING SHRINE near the highway marks the site of an ancient fishing temple erected by Hawaiians so long ago that no living Hawaiian remembers the name. Oriental ideas of a shrine influenced the modern reconstruction of the site.

MAKAPUU POINT (700 feet) is the easternmost point of Oahu. High above the lighthouse on the mountain side is a rock with human features, Malei stone.

This rock, according to legends, is the demigoddess Malei, whom Pele left there to guard the ocean approaches. In the days of sailing vessels, Makapuu point was important to navigation for here the tradewinds generally divide. One part follows the northeast coast and the other the south coast past Diamond Head.

Makapuu is a favorite spot for the dangerous sport of body surfing.

RABBIT ISLAND, a small Island off the coast of Waimanalo, near Makapuu Point, said to be named thusly because it resembles the form of a crouching rabbit.

SEA LIFE PARK is the largest exhibit of marine life in the world. Thirteen scenic miles from Waikiki at the base of a 1,000 foot laval cliff with an offshore view that sweeps across open ocean from the scenic, cliff-top Makapuu Lighthouse to distant Kaneohe Peninsula. Open 10 a.m. to 5 p.m. Closed Monday.

THE KING'S HIGHWAY is an ancient paved road running inland about 1,200 feet from the Makapuu lighthouse. It then descends through Kealakipapa valley down through the Waimanalo gap to Waimanalo village. This remarkable example of ancient roadwork has been allowed to fall into ruin.

WAIMANALO DISTRICT is an abandoned sugar plantation area. Waimanalo village, the former plantation town, has a population of independent people as numerous as in plantation days.

There is much glamor attached to Waimanalo, for in the days of the monarchy this district was the estate of a wealthy Hawaiian nobleman, J. M. Cummins, who entertained lavishly.

The famous palis of the Koolau mountain range begin in Waimanalo. Geologists explain the beautiful fluting of these pali walls as being the resut of water action. Streams of water have cut the soft lava rock of the Koolau range back to the hard rock of the wall dikes of the main range, causing the fluting. The palis are not walls of an old volcano crater, as many imagine.

LANIKAI AND KAILUA, the residential areas built along the sandy beach of Kailua bay, occupy land that was the royal residence of Oahu's medieval kings. This area was the capital of the island before the royal residence was moved to Waikiki.

The coconut grove at Kailua then housed the famous grass palace of an 11th century king, Kakuhihewa. Legend says it was 240 feet long and 90 feet wide. It was here the king lived according to a code much like that of legendary King Arthur.

The Kailua-Kaneohe-Lanikai district in ancient days supported the largest Hawaiian population on the island. Evidences are the swamplands which were then well regulated fishponds, and the ruins of numerous temple sites.

Today's residents of the area are Honolulu suburbanites who live in this cool region and drive back and forth across the pali to work in the city. The drive is a distance of 13 to 14 miles.

MOKAPU PENINSULA divides Kailua bay from Kaneohe bay.

MOKU MANU (Bird Island) is a twin island a mile offshore, a bird refuge where terns and man-of-war birds nest. These birds are of economic importance since they lead fishermen to schools of fish running in the ocean.

KANEOHE BAY is one of the most beautiful stretches of water in the islands. The shallow waters of the bay provide good sailing for yachts and fine fishing. The shores of the bay are rimmed with ancient fishponds built by ancient Hawaiian chiefs. Many are still in use. Kaneohe Marine Corps Air Station juts into the bay.

COCONUT ISLAND, a small, privately owned island in the middle of Kaneohe Bay. A University of Hawaii Marine Biology Laboratory is on the island.

WAIKALUA, Kaneohe, is the legendary site of the home of an ancient prince from Tahiti who brought culture to the Hawaiians in the form of the hula.

Prince Laamaikahiki's house, according to legend, stood on the property now the home of Bernard K. Trask. The foundation stones are still preserved there. His temple dedicated to the hula is said to have stood on an elevation just beyond the lane leading into the coral gardens.

Inland from the village of Heeia is the site of a great temple, Kukuio Kane of ancient days. When Libby, McNeill & Libby first entered the pineapple business on Oahu, the firm leased the Kaneohe lands and planted them to pines. In doing so, they leveled the

great walls of the old temple and plowed the ground.

When the firm abandoned the pineapple fields in that area, due to a blight which attacked the plants, the Hawaiians said the failure was due to the desecration of the old temple.

KAHALUU is today a pleasant seaside resort. Its quiet was once broken by the hustle and bustle of the pineapple cannery which Libby, McNeill & Libby built there. When the firm moved from windward Oahu to upland Wahiawa, the Hawaiians said the cannery had troubles because it was built on the foundations of the sacred temple Haluakaiamoana.

CITY AND COUNTY PARKS along the five mile stretch of the Kamehameha highway from Kualoa point to Kahana bay are saving much of this beautiful section for the public.

Legendary figures may be seen on the brow of the mountain ridges in this stretch by those with imaginative eyes. The ridge overlooking Kualoa has three rock forms, a mother and two children who were overtaken by an evil force and turned to stone. Further on is Puu o Mahia, a figure called the Lion stone today. It is supposed to represent a legendary god Kauhi who was so wise he had eight heads in which to store his wisdom.

KAHANA BAY was once a well settled Hawaiian community. Breadfruit, bananas, Hawaiian bamboo and old mango trees still mark the old homesites.

POHUKAINA, Oahu's most famous legendary cave, is located in the Kaneohealani cliff between Kualoa and Kaaawa. Its entrance is concealed from mortal eyes and is supposed to be connected with a spring about 100 feet above Lae-o-Ka-Oio.

Legend says the Pohukaina cave reaches underground through the Koolau mountains with openings somewhere in Waipahu, Kahuku and Maunaloa districts. This great cave contains running streams, lakes and high caverns in which the bodies of ancient kings and their chiefly comrades were buried with their kahilis, feather capes, canoes, war clubs and other personal belongings. In ancient days, men were said to have traversed the cave's full length by the light of kukui torches. All entrances to the cave were closed and concealed with the burial of a famous king. An entrance to it at Kaahuula spring was believed to have been discovered in later legendary history when a great cape was found floating in the pool.

PUNALUU is the district famed as the haunt of the demigod, Kamapuaa. This creature could take the form of either a hog or a handsome man. As a hog, he mischievously destroyed the cultivated

lands of the nobility. As a man, he played havoc with the affections of high born women.

HAUULA offers a good luncheon stop before the hiking trip to Sacred Falls. The ranch type inn near Hauula is known for its thousands of varieties of hibiscus.

SACRED FALLS may be visited by taking a road through the canefield marked by the Hawaiian Warrior of the Visitors Bureau. The falls are located in a spectacular gorge at the head of Kaliuwa valley. The lower falls drop over an 87-foot cliff at the head of the gorge which is only 50 feet wide. Above the falls, the palis of the Koolau range tower 2,500 feet.

LAIE and the district stretching from Punaluu through Kahuku is the historic land of the great rehabilitation project for the Hawaiian people accomplished by the Mormons (Church of Jesus Christ of the Latter Day Saints). This social project began in 1864 when the church acquired the land and settled a colony of Hawaiian Mormons at Laie. This is the site of a monthly hukilau.

Sugar cane was planted and raised on 6,000 acres of land. Portions were set aside for homesites on which the colonists raised gardens and their own cattle.

THE POLYNESIAN CULTURAL CENTER, situated at Laie, is a dramatic window on Polynesian Life, providing a place where Polynesians can show their ancient culture actively applied. Hawaiian, Maori, Tongan, Fijian, Tahitian and Samoan villages and entertainment. Closed on Sunday.

LAIE TEMPLE was built in 1919 by Samuel E. Woolley, the manager of the colony. It was the culmination of his life work as a Mormon missionary and leader. The \$200,000 structure is built on an ancient sacred site, a city of refuge. Until recent years, it was the only temple outside of Utah in which the highest rites of the church could be performed.

WAIAPUKA POOL, located inland on the Kahuku side of Laie, is Oahu's most famed legendary pool. Fed by seawater which rises and falls with the tide, the pool is about 30 by 60 feet. At one side is a crevice which opens into a rock chamber. Hawaiians in the 1900's report being able to swim into the chamber which they said was large enough for 3 to 4 people. Silt has since filled up the crevice.

LAIEIKAWAI, the legendary beauty of Hawaiian literature, was hidden as a child in the Waiapuka pool chamber. She was dedicated to the sun god by her foster mother and guarded from mortal men. In maturity, she was borne on the mists to the island of Hawaii, where a house thatched with bird feathers was prepared for her in the upland forests. There she was guarded by her lizard grandmother and by seven sisters who could take the form of birds. The legend tells of the desperate attempts of the princes of that day to win her.

KAHUKU, formerly a barren plain, is now covered with sugar cane which is milled at the plantation village of Kahuku.

Kahuku district, according to legend, was once a floating island blown about by the winds. As it banged against Oahu, it made noises which disturbed the old women guarding the Princess Laieikawai. The old women grappled the island with fishhooks and attached it securely to Oahu. Polou pool on the sea side of the Kahuku mill is one spot where the hook was fastened. The other end was fastened at Kukio pond, 300 feet inland at Kahuku Point.

KAWELA BAY is the next point of interest passed as the Kamehameha highway winds its way along the coast past Kahuku Point, the extreme north end of Oahu.

Kane, the giver of life, and his brother, Kanaloa, were the two important gods of antiquity before religion became ordered theology conducted by a large priesthood. Kane and Kanaloa often came to earth in the shape of human beings to confer blessings upon the people. Legend says that at one time Kane appeared on the north side of Kawela bay, a barren spot with no water. He appeared among a group of people drawing in a netful of eels. When their work was finished, the people had no water to quench their thirst. The stranger offered to lead the people into the mountains to a spring of fresh water. The people followed. Being tired, they stopped to rest at the entrance to the valley. Kane pitied the thirsty people. In their presence, he struck the rock Waikane, from which a stream of sparkling water immediately flowed.

GEORGE WASHINGTON STONE, marked by a warrior at the side of Kamehameha highway, is the modern name given this natural stone head.

The real legend is of a Kauai prince, Kahikilani, who came to Oahu to surfride the long swells off the Paumalu beach. These waves were reputed to be the most difficult to conquer in all the islands. It was days before Kahikilani learned the trick of riding them. As he practiced, he was watched by a girl of supernatural bird powers who lived in a nearby cave. She fell in love with the prince and sent her bird messengers to place a red lehua lei about his neck. Circling above the prince, they led him to the cave of their mistress.

The two lived happily together for a season; then the call of the surf took the prince away. Before leaving, he promised the bird that he would never kiss another woman. He broke his vow almost immediately. A maiden coming along the beach, hung an ilima lei about his neck and kissed him.

The bird messengers saw the act and flew back to report the infidelity to their mistress. Taking on her bird form, she flew to Paumalu, where she snatched the ilima lei from her lover's neck, replaced it with a lehua lei, then flew away. Kahikilani tried to follow her. He got halfway up the cliff and suddenly turned to stone.

He stands there today with a stone lei about his neck, a warning to all faithless lovers.

WAIMEA VALLEY is a narrow canyon extending two miles into the Koolau range. It was heavily populated until a flood destroyed many homesites in 1894. The valley and district are rich in historic lore, for practically every mountain spur was the site of a temple. The greatest of the Oahu priests came from this region. A school for the education of kahunas (professional men) was maintained above Kawailoa.

A lush tropical gardens is maintained at Waimea Falls. It is open daily from 10 a.m. to 5 p.m.

PUU-O-MAHUKA HEIAU, the largest temple on Oahu, stood on the north ridge of the Waimea river inlet. Ruins of the great structure show remains of a 520-foot wall. A famous priest of this temple in 1780 prophesied the ultimate conquest of Oahu by the white man.

HALEIWA is a seaside resort built beside the Anahulu stream. It is also a shopping center for the community. The Kamehameha highway turns inland at Haleiwa to ascend 1,200 feet to the plateau on which Wahiawa stands.

WAIALUA PLANTATION may be visited by taking the road which branches from the Kamehameha highway above Haleiwa. This plantation is notable for the advanced social planning furthered by the management. The first plantation community association in the islands was organized here. The association is still a live factor in community affairs.

KAENA POINT, the westernmost tip of Oahu, is reached by traveling through Waialua plantation along the coastline famed for its fishing grounds. The road is not always passable. It is a rugged, sometimes dangerous route. Check it out in advance with

police. The point is the headland of the Kuaokala ridge of the Waianae mountain range.

It was at Kaena point that the demigod Maui tried to unite the islands of Kauai and Oahu. He stood at Kaena and cast his wonder fishhook far out into the sea where it engaged the foundations of Kauai. With a mighty pull, he broke off a great boulder which fell at his feet. The boulder, Pohaku-o-Kauai, is to be seen at the point today.

Kaena point is the spot where the souls of the Hawaiian dead took the leap which started them on the long journey back to Kahiki, the immortal land of their ancestors. A kindly god sailed his canoe back and forth on the route to Kahiki to look for souls which might lose their way on the journey.

WAHIAWA, a city of more than 16,000 persons, straddles the Kamehameha highway on the plateau which stretches between the Waianae and the Koolau mountain ranges. It is 14 miles from Honolulu and nine miles from Waialua.

Wahiawa provides a shopping center for the plantation communities located on the plain and for the personnel of Schofield Barracks. It is a civic center for plantations of the Dole Company, the Del Monte Corp. and Libby, McNeill & Libby. Each of these pineapple companies has built model villages for its employees near Wahiawa. Pineapple is shipped by truck from Wahiawa to the canneries in Honolulu.

SCHOFIELD BARRACKS was, until World War II, the United States army's largest outpost. It was constructed in 1909 to house cavalry troops and to provide fortifications to defend the island from this central inland point.

KAALA, 4,040 feet, is a favorite hiking spot, the highest point in the Waianae range. Since the land is within the military reservation, hiking and hunting permits must be obtained for entry.

KOLEKOLE PASS is a natural cleft in the Waianae range on the ewa side of Kaala. It leads into the valleys on the lee side of the island.

The pass takes its name from a stone guarding the pass. The stone is striking in appearance. It is shaped like a big bowl standing 8 feet high and sitting on a base of about 8 feet. The sides are deeply ridged.

In modern times, the stone has been called a sacrificial altar. This is contrary to legend which depicts Kolekole as a beneficial guardian of the pass to whom offerings of flowers and maile were made by travelers.

KUKANILOKO, the place of the sacred birthstones, is located in

a pineapple field on the Waialua side of Kaukonahua gulch, near Wahiawa.

The area is about one-half acre in size. Many large stones protrude 3 to 4 feet above ground. The stones are relics of the maternity center which served the women of royal blood from antiquity to the time of Kamehameha the Great.

The central stone, named Kukaniloko, was so shaped that it gave support to a woman in childbirth. Around the stone were 48 large stones placed there to seat the high chiefs and chiefesses of the realm while witnessing births.

KAMEHAMEHA HIGHWAY becomes a four lane road as it leaves Wahiawa and the Leilehua plateau for Pearl Harbor and Honolulu. It runs through pineapple fields and descends into the sugar cane fields of the Oahu Sugar Co.

PEARL HARBOR, five miles from Honolulu harbor as the crow flies, is a double estuary of a little stream called the Pearl River. Its name is derived from the pearl oysters which once grew there.

The value of the harbor was first made known to the United States in 1840 when Lt. Charles Wilkes, commander of a U.S. naval expedition, made the first geodetic survey of the islands. Lt. Wilkes found 15 feet of water over the bar entrance to the lochs and reported the coral bar could easily be dredged to provide passage for the world's largest ships.

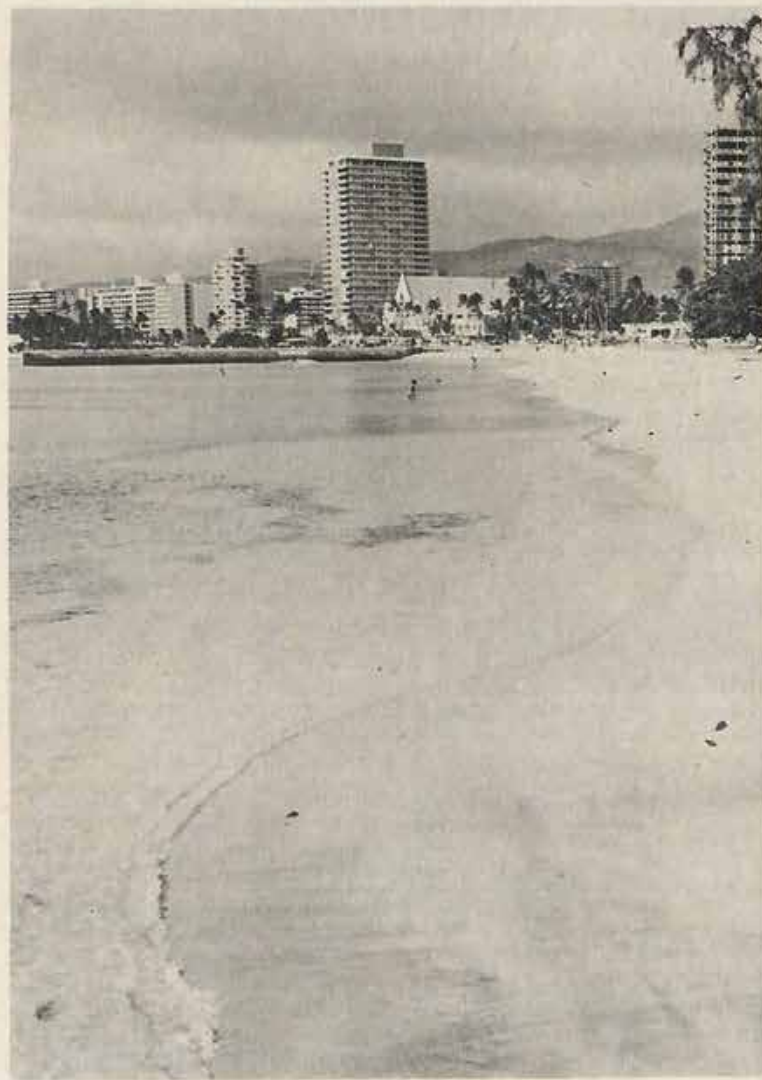
Thirty years later an army officer, Col. John McAllister Schofield, recommended that the United States acquire rights to the harbor from the Hawaiian kingdom and blast out the channel. The concession was obtained in 1873, but work was not started until 1898 when the Spanish-American war made Americans aware of the great value of Pearl Harbor.

The Hawaiian called Pearl Harbor "Puuloa" and believed it to be the home of the beneficent queen of the sharks, Kaahupahau, who dwelt in a great cavern on the Honouliuli side of the harbor. Her cavern was a majestic palace. Her chief guard was a brother shark who lived in a pit at the entrance to the lochs.

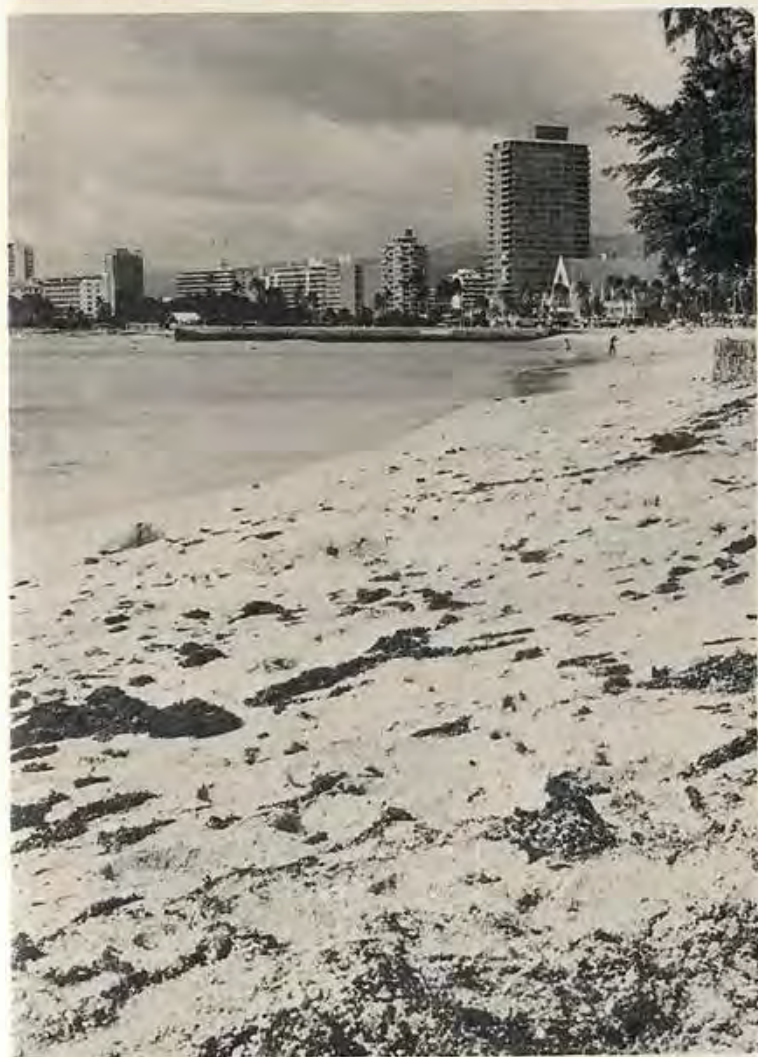
The queen of the sharks was the protector of the human race. She decreed that sharks should not molest human beings and she ordered her shark people to be on the alert to kill man-eating intruders.

A great disaster occurred when the United States navy built its first drydock at Pearl Harbor. As the work neared completion, the foundation gave way in February, 1913.

Naval officers who began the dredging of the channel entrance



It's a clean beach in Waikiki . . .



. . . until Kona weather brings in the seaweed. The City and State governments have argued on whose cleanup job it is.

to Pearl Harbor shortly after 1900 did not encounter the wrath of the sharks or the gods. Before they destroyed a fishpond and a fish shrine built by the god Kane, they ceremoniously removed the fish god stones and took them out to sea where the stones were reverently lowered into the depths.

The Navy provides free boat rides to the Arizona Memorial. This is the tomb for hundreds of men killed when the Japanese bombed Pearl Harbor on Dec. 7, 1941.

EWA JUNCTION, above Pearl City, is the intersection of the Kamehameha highway with Farrington highway, which runs westward past Waipahu to the leeward coast of the Waianae range.

The road first travels through the Oahu Plantation lands and Waipahu, the plantation center, on into historic Ewa. The Ewa district was the ancient capital of the island in its earliest legendary history.

NANAKULI is the first settlement reached on the western coastline. It is the center of a homestead area for Hawaiian people.

WAIANAЕ was formerly a plantation center but is now the center of a district being developed for small farms. A wharf and anchorage at Waianae makes the village an ideal fishing center.

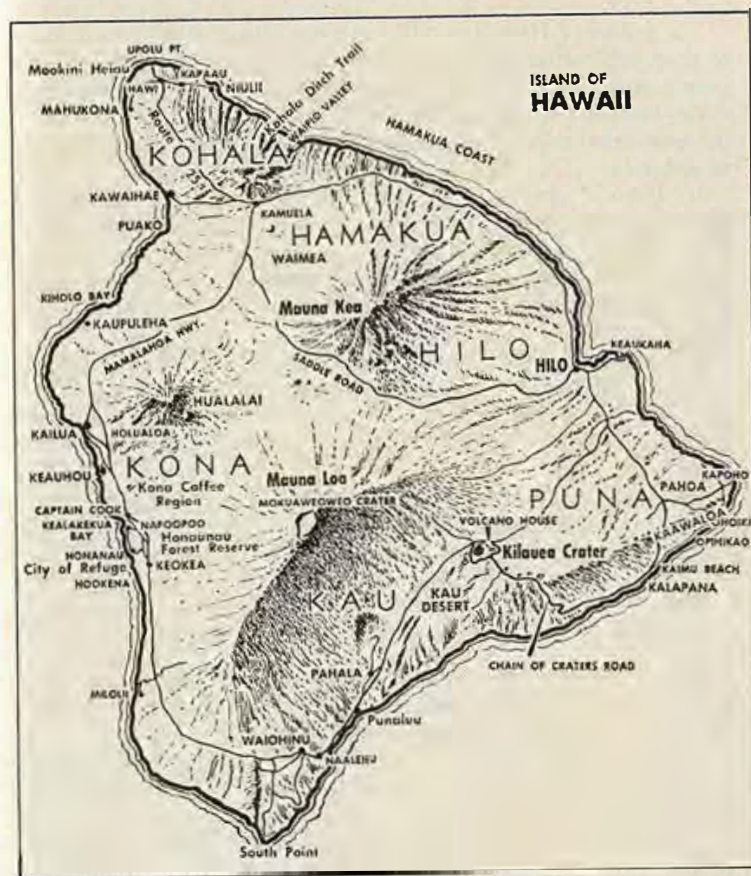
Official Flowers

The Legislature of Hawaii has established, by joint resolution, official flowers and colors for each of the islands.

<i>Island</i>	<i>Flower</i>	<i>Color</i>
Hawaii	Lehua	red
Maui	Lokelani	pink
Oahu	Ilima	yellow
Kauai	Mokihana (berry)	purple
Molokai	Kukui	green
Lanai	Kaunaoa	yellow
Niihau	Pupu (shell)	white
Kahoolawe	Hinahina	gray

In their Lei Day pageants, the people of the Islands use these flower and color combinations.

The hibiscus, as the official State flower, is generally ignored in Lei Day pageants, for the queen is dressed in white and wears white crown flower leis or cream-colored pikake leis.



Hawaii

The Big Island

The island of Hawaii is called the Big Island, the Volcano Island, or the Orchid Island, and all three names are appropriate.

It is larger than all of the other Hawaiian Islands put together; it is the island on which volcanic activity has never ceased; and within the past few years it has become the largest center of orchid culture in America.

Its historic interest is outstanding. Here was the birthplace of Kamehameha the Great, the island on which he first rose to power and the one on which he died. Hawaii was the scene of Captain Cook's tragic death. And it was the first landing place of missionaries who brought both Christianity and American traditions to the Hawaiian archipelago.

Hawaii, with a land area of 4,021 square miles—almost twice as much as all the other islands combined—was formed by five volcanoes, two of which are still active in adding land area to the island. Its greatest length (north-south) is 93 miles. Its greatest width is 76 miles.

Located at the southeast end of the Hawaiian group, the island of Hawaii is 216 air miles from Honolulu, a 40 minute flight by jet. Scheduled flights land daily at Hilo airport; at Kailua-Kona; and at Kamuela.

Hawaii has radiotelephone service, daily air mail deliveries and three radio stations and three TV stations [satellites of Honolulu stations].

HAWAII'S FIVE VOLCANOES

The fiery displays of Pele, the Hawaiian goddess of volcanoes, are one of the Big Island's great attractions for both residents and tourists.

These periodic eruptions serve as vents for the accumulated lava pressure that has built up in the earth fissures over which the islands have been built.

MAUNA LOA'S spectacular 23-day eruption in 1950 was one of the largest in historic times in terms of the amount of lava produced. Three of the flows in 1950 poured into the ocean on the Kona side

of the island. On their way, the flows destroyed several homes, a post office, a gasoline station and other structures.

Mauna Loa, the largest single mountain mass on earth, rises 13,680 feet above sea level. Mokuaweoweo, the crater of Mauna Loa, is about 3 miles long and 1½ miles wide.

MAUNA KEA, a dormant volcano, could be called the highest island peak in the world. The peak rises 13,796 feet above sea level, but the base of the island, and also of the peak, is 18,600 feet below sea level. So the entire height of the peak from the ocean floor is more than 32,000 feet. During the winter months this mountain offers skiing.

The top of Mauna Kea is covered with snow during the winter months in the Islands. Once it was covered by a glacier 250 feet thick. Evidence of this frigid period during the Wisconsin glacial age is in the moraines and glaciated areas above 10,500 feet.

KILAUEA volcano, quiet since 1955, erupted on November 14, 1959, and again on January 13, 1960. Four eruptive outbreaks occurred in 1961, three in Halemaumau and one on the flank of Kilauea volcano.

This was followed in December, 1962, with a brief eruption at Aloi crater. There were eruptions in 1963 and 1965. Halemaumau erupted on Nov. 5, 1967, with roaring fountains which tossed spatter 200 feet, and continued erupting, on and off, well into 1968.

A well-paved road leads through beautiful fern forests to the 4,000-foot plateau built up by the volcano. Here, from lodgings right on the edge of the crater, visitors may watch in comfort the colorful display in its caldron.

One of Kilauea's most famous eruptions occurred in 1790 when the Hawaiian king, Keoua, was leading his army across Kilauea to Kau. The explosion killed a portion of the army. Footprints formed in the 1790 ash may still be seen in the footprints area.

HUALALAI, 8,271 feet above sea level, is also a dormant volcano. It last erupted in 1801. This volcano's flows were notable for the number of jewel-like crystals found in its lavas.

KOHALA, 5,480 feet, is a mountain formed by a now extinct volcano, older than Mauna Kea. It is 21 miles long and 13 miles wide. Geologists point out the remains of a crater that was 2 miles wide and 3 miles long. The crater was filled in with small flows before activity ceased.



Bird Park in Hawaii Volcanoes National Park.

INDUSTRIES

With all its size and attractions for tourists, Hawaii is still a productively industrious island. Its population is engaged in the sugar, cattle, coffee, fruit, vegetable, orchid, fishing and tourist industries. Kona coffee is the only commercial coffee grown in the United States.

Sugar is king of the Big Island industries. But the growing of orchids and anthuriums on a commercial scale is pushing hard for a prominent place in the islands' economy. This million-dollar industry has mushroomed since the end of World War II and now is potentially a multi-million-dollar industry. The flowers are grown on a commercial scale around Hilo, where daily air freight service makes possible the speedy shipment of cut flowers to Honolulu and mainland markets.

Macadamia nuts are becoming an important Hawaii commodity.

Cattle ranches of the Big Island produce about 102,000 head of beef cattle a year and of this number, about 25,000 are marketed.

There are 264 ranches on the Big Island with a total overall acreage of 981,000 acres.

Parker Ranch, second largest Hereford cattle ranch in the world, comprises 300,000 acres.

HAWAII VOLCANOES NATIONAL PARK

Within Hawaii Volcanoes National Park are two of the most active volcanoes in the world. All the natural features of the park are related to these volcanoes. Although one may not be lucky enough to observe an actual eruption while here, one can't help noticing the evidences of fresh mountain building—of volcanic activity—wherever you go in the park.

Throughout this article, "caldera" refers to the broad depressions in the summits of both volcanoes; "crater" refers to smaller pits, some of them over vents from which lava has issued. However, Kilauea Crater is the name that has been given to that caldera.

A 13-mile loop road is the key that opens the wonders of the park to visitors.

It winds around the summit caldera of Kilauea volcano and into a part of it.

From overlook points along the way, one sees fresh lava flows within the caldera, cinder and ash beds from recent summit eruptions, and Halemaumau, the principal vent of Kilauea volcano. Visi-

tors will cross both of Kilauea's rift zones and can easily identify the southwest rift, for there one can see many parallel cracks extending from the summit into the Kau Desert.

The road also leads around Kilauea Iki Crater, site of the 1959 eruption that filled the bottom of Kilauea Iki with a 400-foot deep lake of molten lava. Puu Puai, "Hill of the Big Fountain," is the cinder cone that formed when trade winds blew pumice and ash into a great heap behind the main vent during this eruption. A fascinating trail leads through the devastated forest area behind the cone.

South and west of Kilauea Crater, the rim road enters the upper edge of the Kau Desert—the leeward slope of Kilauea volcano. The desert receives almost no rain from the trade winds but is soaked occasionally by heavy general storms. One can see the weird lava formations most easily in this area because they are not overgrown by forest.

On the northeast, windward side of Kilauea, travelers will pass through Hawaii's famous fern jungle and may stop at Thurston Lava Tube for a short walk among the tree ferns.

The lava tube itself, artificially lighted, forms a part of the quarter-mile walk. Traversing it is a unique experience—especially when one realizes that hundreds of years ago a river of molten lava swept through this passage.

Among other interesting stops along the Crater Rim drive are the Tree Molds, where a prehistoric flow hardened around a forest; the Sulphur Banks, and the steam vents. Each feature is clearly marked on the drive.

The Chain-of-Craters road follows the east rift zone of Kilauea, and along it one will see numerous pit craters, each formed by collapse during eruptions of the past. Makaopuhi, at the end of the road, is nearly 1,000 feet deep and is the most spectacular of the pit craters; its story is told by an exhibit at the crater rim.

From a turnoff point halfway down the Chain-of-Craters road, one can drive to the top of Hilina Pali, a steep cliff that affords a fine view of the southeast seacoast of the island. Late afternoon is a good time to visit the pali, for the sunset can be superb from there. The Hilina Pali road passes through good examples of pahoehoe lava at the edge of the Kau Desert.

Kipukas are islands of old surface or soil areas surrounded by more recent lava flows. On the slopes of Mauna Loa to the northwest of park headquarters, the kipukas support grassy meadows dotted

with clumps of koa, ohia, soapberry, kolea, and mamani trees. In Kipuka Puauu (Bird Park), a delightful self-guiding nature trail leads into the open forest where 40 varieties of native trees grow. Some of these are the only living representatives of their species.

The 10-mile drive from Kipuka Puauu to an overlook part way up Mauna Loa is over an unpaved road, but the view is well worth the trip on a clear day. From the end of the road it is a long 17 miles by trail to the summit of Mauna Loa.

Although many park features can be seen by car, visitors spending more than just a few hours will want to hike the trails to appreciate fully the drama of nature here.

Probably the most popular hike is over the Halemaumau Trail, known as the "World's Weirdest Walk" because it crosses the floor of Kilauea Crater where recent eruptions have left heaps of lava jumble. A self-guiding pamphlet for the trail is available at the park museum.

There are many other trails leading to such interesting places as the Lava Trees, the Footprints, the southwest rift cones, and the summit of Mauna Loa. Visitors should discuss plans with park rangers at park headquarters before starting on any long hike. And when hiking, one should always remain on the trail, since hidden cracks, lava tubes, and dangerously thin flows are common in the park.

To get an understanding of Hawaiian volcanoes, tourists will want to stop at the Thomas A. Jaggar Memorial Museum at park headquarters, where exhibits, relief models, and paintings bring to life the story of the park. The daily programs include an explanatory talk by a park ranger followed by a color motion picture of recent eruptions.

Most visitors are surprised to discover how varied the vegetation is around Kilauea. At one extreme is the lush fern jungle, with its vigorous growth of tree ferns and other moisture-loving plants. At the other extreme is the Kau Desert, a few miles to the west, where plant life is sparse. The northeast side of each island gets the lion's share of the rainfall, since predominant trade winds force moisture-laden clouds up the mountain slopes from this direction. Moisture remaining is rapidly dissipated as the clouds pass over Kilauea summit to the southwest, where they encounter higher temperatures. The area thus deprived of rainfall is said to be in a perennial "rain shadow." One can observe the striking contrast from the Crater Rim drive.

By far the commonest tree around Kilauea is the ohia. It has a scrubby appearance much like the live oaks in California; but its blossom, called lehua, is a distinctive shower of scarlet stamens. Although the ohia flower show reaches its climax in late spring, there are always a few trees in bloom in every season. Other common park trees include the koa, a tree with an unusual method of producing leaves, the mamani with its bright yellow flowers, and several Hawaiian representatives of the coffee and related families.

Most visitors are interested in the berry bushes growing along the Steam Flats and in the Kau Desert. These are ohelos, which the Hawaiian held sacred to Pele, the goddess of volcanoes. Ohelo berries are edible, but there is one poisonous berry, the akia, in the park. One should stop at the park museum to learn how to identify the akia before sampling park fruit.

There are two self-guiding nature trails to help one learn about Hawaiian plant life.

Whenever the ohia blooms one will find the apapane, a small, nectar-sucking bird, of the same red color as the ohia blossom but with black wings and gray belly. Nearly as abundant in the forest is the amakihi, a small yellow-green insect gatherer, and the elepaio, a flycatcher with reddish-brown, black, and white markings and a perky tail. Less common is the iiwi, which eats insects and lehua nectar. It is red, with black wings, like the apapane; but it lacks the gray belly, and is a little larger.

The koae, or white-tailed tropic bird, nests in the cliffs of Halemaumau. In the desert and on the parkland slopes of Mauna Loa the American golden plover, kolea, is common from August to May. It nests in Alaska in summer. Occasionally one may see the io, a Hawaiian hawk, and the pueo, a small owl, soaring over grassland in search of rats or mice. The imported Japanese blue pheasant, the chukar, and the California quail have become established in the open forest on the slopes of Mauna Loa. Other non-native birds to be seen are the mynah, house sparrow, cardinal, house finch, white-eyed, red-billed leiothrix, and skylark.

All land mammals now living in a wild state in the park have been introduced by man: pigs by early Hawaiians from other parts of Polynesia, goats by the British explorers, and mongooses brought from India to prey on rats that came as stowaways. The native bat may be seen occasionally in the park.

Early in the present century, public-spirited citizens began discussing ways of preserving the three great Hawaiian volcanoes for future generations. In 1906, Lorrin A. Thurston wrote in *The Honolulu Advertiser* that "The park idea is the popular one with the man on the street." Public sentiment in Hawaii and on the mainland favored the park and finally resulted in the establishment of Hawaii National Park on August 1, 1916, just 24 days before the creation of the National Park Service. Thus, the "Land of Pele" became the 11th National Park in the United States.

Included in the park were the Kilauea-Mauna Loa Section on the island of Hawaii and the Haleakala Section on the island of Maui. In 1961, however, the Haleakala Section was established as a separate National Park, and the name Hawaii National Park was changed to Hawaii Volcanoes National Park. Today the land area of this park totals about 344 square miles.

HILO

The city of Hilo, county seat and principal port of the island, is the state's second largest city, having a population of about 26,000. It is situated on the shores of Hilo bay, 193 nautical miles (216 air miles) from Honolulu, 2,006 from San Francisco and 2,156 from Los Angeles. There is now direct air service to the West Coast; previously Hilo passengers had to fly to Honolulu before jetting to California.

Hilo's breakwater-protected harbor facilities include piers capable of handling large steamers and all types of freight. A waterfront highway for sugar trucks has been constructed alongside Kamehameha Avenue.

Hilo is modern and American with a beautiful newly-completed public library, newspaper plant, a circuit court, modern hospitals and schools, several comfortable hotels and attractive residential sections.

The Wailoa River provides Hilo with facilities for berthing a fishing fleet. At the head of the Wailuku River is Rainbow Falls, a scenic attraction famed in legendary lore.

A bulk sugar storage plant, which eliminates the handling of bagged sugar, is able to receive more than 300 tons of sugar an hour and can load freighters at the rate of 600 tons an hour.

AROUND THE BIG ISLAND

THE NAHA STONE at the new county library in Hilo provided the test for ancient Hawaiians who aspired to the throne of the local kingdom. If he could move or lift this stone, he was considered a man fit to be king. It is said that as a youth, Kamehameha the Great lifted the stone and thereby established his claim to the throne.

THE PINAO STONE, entrance pillar of the great temple, Pinao, also rests on the grounds of the Hawaii County Library.

GARDENS TO VISIT WHILE IN HILO ARE fascinating. See the Hawaii Visitors Bureau for details.

LYMAN MEMORIAL MUSEUM at 276 Haili Street, Hilo, was the home of Rev. and Mrs. David Belden Lyman, missionaries, who arrived in the islands in 1832. They built the house in 1839. It is constructed of hand-hewn timbers and planks.

MAMALAHOA (King's Highway) encircles the island.

PUNA DISTRICT, with its famous Black Sand beach at Kaimu (Kalapana), green lake, unfinished murals in the old Catholic church at Kaimu, one of Hawaii's historic points of interest, and other interesting sights, is reached by the road that turns south at Olaa (Keeau) a few miles south of Hilo. This has been the locale for many colorful motion pictures.

LAVA TREES and CINDER CONES, results of volcanic activity, may be seen in the vicinity of the village of Kapoho. A new park has been opened near Pahoa containing a large number of very fine specimens of lava trees and other formations.

KEALAKEKUA BAY (pathway of the gods) is the place where Capt. James Cook wintered in January and February of 1779 and where he lost his life February 14, 1779. A plaque at the edge of the water at Kaawaloa marks the spot where he fell.

Near Kaawaloa, on a 5,682 square foot plot of land, stands a monument to Captain Cook. This land, contrary to some belief, isn't owned by Great Britain, though it was offered to that country. The monument was erected in 1876.

HONAUNAU, at the southern end of Kealakekua bay, is a revered site to Hawaiians and students of Polynesian culture. There are the remains of the great, walled City of Refuge and of the heiau which once housed the remains of Hawaii's great kings. The City of Refuge is a national historic park.

KONA DISTRICT is the home of the coffee industry and the center of deep sea fishing. Arrangements may be made at Kailua for fishing excursions, or a pleasure cruise along the coast to Napoopoo.

Public schools in Kona have their "summer" vacations in the fall and open in November to give children the opportunity to help pick the coffee crop. Kona oranges have developed from the first oranges introduced in the Islands by Captain George Vancouver on March 4, 1792. It is believed he brought the seedlings from Tahiti. Captain Vancouver also introduced the first cattle and sheep in the Islands at Kealakekua, Hawaii, on January 15, 1794, from California.

KAILUA, on the beach of a shallow bay, was the favorite residence of King Kamehameha in his old age. The remains of his favorite temple and home are at Ahuena point.

HULIHEE PALACE, Kailua, built in 1837 by Governor Kuakini, is now preserved as a museum by the state under the control of the Daughters of Hawaii.

MOKUAEKAUA CHURCH (United Church of Christ), Kailua, across the road from Hulihee palace, was built in 1823 by Governor Kuakini. After the original church was burned in 1853 the present building was constructed of rock and hand-hewn ohia timbers.

WAIMEA PLATEAU is the home of the cattle industry and famous Parker Ranch, second largest in the U.S., covering about 300,000 acres, and the largest under single ownership.

PARKER RANCH was founded by a sailor, John Palmer Parker, who left his ship about the year 1815 and was engaged by Kamehameha the Great to hunt and shoot wild cattle in the Waimea plateau area. He married an Hawaiian woman, acquired title to land, and founded a family which, generation after generation, wisely built up herds of beef cattle from the wild stock.

Three roads lead out of Kamuela (Waimea). One travels down the plateau to the seashore at Kawaihae landing where freighters tie up to load cattle and freight, and to an excellent beach where swimming and picnicking can be enjoyed. Nearby is the Laurance Rockefeller luxury resort, the Mauna Kea Beach Hotel. The second road out of Kamuela winds around the base of Mt. Kohala to the sugar plantation lands of Kohala and to Upolu point, site of an airfield. Kohala is the birthplace of Kamehameha the Great. The third fork leads to Honokaa, on the Hamakua coast, the northern (windward) coast of Hawaii.

KAMEHAMEHA STATUE in Kohala, marks the birthplace of that famous Hawaiian king. A replica of the statue was erected—and stands now in Honolulu's Palace Square—after this original was lost at sea and later recovered.

POLOLU VALLEY in Kohala, a deep cut scenic masterpiece in which ancient Hawaiian heiaus (temples) once stood. A mule back ride into this valley is a must, and arrangements may be made with William Sproat, Niulii, Kohala, or at Waimea Ranch Hotel.

KALAHIKIOLA CHURCH (United Church of Christ). At Iole in Kohala, off the main road, stands this historic old stone church in its original order, built in 1855. Kalahikiola means "The Day of Salvation." The Rev. Elias Bond, D.D., and his wife Ellen Howell Bond, were the missionaries sent to Hawaii in 1847. Rev. Bond designed the church.

THE FIRST HORSES were introduced by Captain R. J. Cleveland from California in the ship *Lila Bird* and were presented to Kamehameha the Great, May 24, 1803. A mare and a foal were landed at Kawaihae and two more horses at Lahaina, Maui.

HONOKAA, the Big Island's third city, lies near the steep valley of Waipio. This fantastic valley may be viewed from a lookout site 8 miles from the Honokaa-Waimea junction. Enclosed on three sides by 2,500-foot mountain walls ribboned with slender waterfalls, facing a heavy Pacific surf that comes thundering across an impassable reef, ancient and historic Waipio defies modernity.

LAUPAHOEHOE, one of the early boat landings along the sugar coast, is built on a finger of lava a little above sea level. More than 20 students and teachers lost their lives here in the tidal waves of April 1, 1946. It is reached by a side road that branches from the main highway between Papaaloa and Ookala.

AKAKA FALLS, 420 feet high, branches off the main road at Honomu—about 4 miles. A park is maintained here by the State of Hawaii where picnic facilities are available.

THE SADDLE ROAD runs from Hilo through the plateau between Mauna Kea and Mauna Loa to the Kona coast. This road is cut through the successive flows from Mauna Loa that have been filling the "saddle" between the two mountains for the past millions of years. Each lava flow that has occurred within historic times is marked for the visitor's benefit.

ITEMS OF INTEREST ABOUT HAWAII

THE RED LEHUA BLOSSOM is the official flower of the Big Island. It blooms on the ohia lehua tree in the upland forests. The lehua is sacred to Pele and her sister, Hiiaka. Hawaiians say that the first blossom plucked should be offered to Pele.

PANINI is the Hawaiian name for the cactus which covers the dry areas of the cattle ranching country. Panini was introduced in the early 1800's and has been the means of maintaining cattle on land that would otherwise be a desert. The cattle strip the thorny covering from the panini leaf and chew the flesh for its water content.

DEEPSEA FISHING off the Kona coast is considered the best in the Pacific area, with blue marlin of more than 1,000 pounds.

Each year the International Billfish Tournament draws hundreds of big game fishermen to the village of Kailua-Kona.

FOR HOTEL INFORMATION on the Island of Hawaii, write the Hawaii Visitors Bureau, 2285 Kalakaua Ave., Honolulu 96815.

For a hotel overlooking a volcano, write Volcano House, Hawaii National Park, Hawaii.

HAWAII PONOI is Hawaii's "State song." It was the national anthem of the kingdom, composed by King Kalakaua and set to music by Henry Berger, the royal bandmaster.

King Kalakaua, his brother, Prince Leleihoku, and his sisters, Queen Liliuokalani and Princess Likelike, were all gifted musicians and composers. Each left songs that are sung today.

The State, by official decree of the Legislature, adopted as its nickname "The Aloha State." Hawaii's motto, both as Territory and as State, is Ua-Mau-Ke-Ea-O-Ka-Aina-I-Ka-Pono, which in Hawaiian means: "The life of the land is preserved in righteousness." The official State flower is the hibiscus.

ALOHA OE, Hawaii's best-known song, was composed about 1882 by Queen Liliuokalani while returning on horseback from a day spent at the home of the king's chamberlain, Edwin Boyd, at Maunawili ranch on the windward side of the Pali. The basis of the tune is an old song, "The Lone Rock by the Sea." After the queen put the Hawaiian words and the music on paper, the English translation was made by Charles B. Wilson, father of Honolulu's former mayor, John H. Wilson. The music was arranged by Henry Berger.