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10-23
(May 1929)
6—7410

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Hawaii NATIONAL PARK

FILE NO.

MONTHLY REPORT

~~JUNE~~

1934

IMPORTANT

This file constitutes a part of the official records of the National Park Service and should not be separated or papers withdrawn without express authority of the official in charge.

All Files should be returned promptly to the File Room.

Officials and employees will be held responsible for failure to observe these rules, which are necessary to protect the integrity of the official records.

ARNO B. CAMMERER,
Director,

U. S. GOVERNMENT PRINTING OFFICE: 1933 6—7410

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

January 8, 1935

The Director
National Park Service
Washington, D. C.

Dear Mr. Director:

Following is the administrative report of Hawaii National Park for the month of December 1934:

000 General

010 Introduction

On December 22 the last necessary installations were completed and electric current from Hilo became a reality. To those of us who have lived in the Volcano district for years, the completion of this project means more than any other development since the first passable road was built. No longer do those who were dependent upon kerosene lamps fear the damage which might result from the upsetting of one of these lamps by our all too frequent earthquakes. Oil lamps and the unreliable individual light plants are passing into the realm of forgotten things.

Through the construction of this 20 miles of line which required over 500 poles and 30 tons of copper wire, this district is now adequately and safely lighted. The total investment by the Hilo Electric Light Company amounted to about $40,000 and the park spent $2,430.00 in underground installation in the residence and utility areas.

It is safe to say there was not a home in the district which did not rejoice when at last the long awaited and hoped for day came. We all feel that the company is deserving of praise for their undertaking, for the line spans a long strip of country which in all probability will never produce any revenue and that derived from the Volcano District will for some years be very small.

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020 General weather conditions

Rainfall for December amounted to 12.52 inches compared to 12.46 inches a year ago. There were only six clear days during the mohth, and the prevailing wind was from the mortheast. Snow fell on Mauna Loa and Mauna Kea on the 2nd and 24th accompanying electrical storms. The maximum temperature was 75 degrees on the 4th and the minimum 46 degrees on the 28th.

100 Administrative

110 Status of Work

Current filing is up to date under new system, but no attempt has been made to bring old files into harmony, due to changes in temporary clerical employees. As soon as the permanent clerical vacancy is filled, the rearrangement of the files will be brought to a conclusion. All reports were made on time.

120 Park Inspections

121 Superintendent

The Superintendent returned to Park Headquarters on December the 22nd. Immediate inspections of all projects in progress in the Kilauea area were made with special attention being given to the Halemaumau--Bird Park road where heavy rains have done considerable damage to shoulders, the CCC camp and landscaping projects under ECW.

On December 13 the Acting Superintendent in company with Associate Architect Sager, Ranger Philip Murray and Camp Superintendent W.J. Stevens hiked from Hilina Pali to Mauna Iki. The trip was made for the purpose of locating favorable camp sites and to determine the type and amount of work to be done on this trail by a CCC crew.

Park Superintendents' Conference, Washington

On November 4 the Superintendent left Park Headquarters for the conference in Washington arriving in Honolulu the next day. He sailed from Honolulu November 8 the ship being delayed one day due to stormy weather. Arriving in San Francisco November 13, he proceeded by rail immediately to Washington and arrived there November 17 in time to get acquainted with some of the Director's staff that day.

By direction of the Director, the Superintendent made the return trip by way of the Grand Canyon and Yosemite National Parks. He arrived in Honolulu on December 17, spent three days there making official contacts and arrived home at the Park Headquarters on December 22nd.

The Superintendent's reactions to the Conference and his visits to the other Parks and the San Francisco and Berkeley offices have been the subject of a special letter to the Director. However, he wishes to take this occasion to express his very real appreciation to all of those whom he met, both officially and unofficially, for contributing some-

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thing of genuine friendship and stimulating conversation to make of the somewhat long and tiresome trip, one not to be forgotten. Very frankly he feels that each moment spent with a Park man was worthwhile. It was inspiring to find so large group dedicated to an ideal of Service.

122 Special Field Representative

Associate Architect Merel S. Sager was in the Haleakala Section from November 29 to December 5 and from December 16 to December 21 inspecting progress on the Haleakala road and ECW projects. The remainder of the month he spent in the Kilauea Section supervising landscape work by the CCC and prepairing preliminary plans for proposed buildings under a Public Works program. While on Maui, he met with the "Road Dedication Committee of the Maui Chamber of Commerce." Mr. Sager has been giving a series of ten weekly talks on Landscape Architecture in Hilo under the auspicies of the Y.W.C.A.

125 Other Government Officers

Mr. E.S. Wheeler, Principal Highway Engineer, Bureau of Public Roads, visited the Park December 19 on an inspection of Federal Aid roads on this island. He conferred with the Acting Superintendent and Park Foreman, relative to the Haleakala road opening celebration, and surfacing on the park utility area road.

130 Finance and Accounts

A detailed statement showing the status of park appropriations is attached as Statistical Report No. 8.

140 Labor Situation

The Superintendent while in Honolulu conferred with Governor Poindexter relative to the labor situation in respect to a contemplated expansion of the Territorial ECW program.

150 Equipment and Supplies

One set of the "Standard Cyclopedia of Horticulture," (3 volumes) purchased for the Naturalist's Library ~~were~~ received, also, miscellaneous tools.

Six pack mules were purchased during the month for the CCC camp.

The new electric light system in the park has necessitated changing one washing machine and six refrigerator motors from Direct to Alternating Current.

170 Plans, maps, surveys

The Acting Chief Ranger surveyed the boundaries of the Kilauea Volcano House lease on December 12.

Associate Architect Sager, commenced preliminary plans for the Haleakala Observation Station and the proposed Volcano Observatory and

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Naturalist's Building.

180 Circulars, placards, publicity bulletins
Attached is a Volcano Letter of October 1936.

200 Maintenance, Improvement and New Construction

210 Maintenance
The usual maintenance of park roads and trails and other park property was carried on during the month.

220 Improvements
A crew of six men was engaged in rock lining ditches and shoulders on the Halemaumau--Bird Park road where erosion has been serious.

Rangers were engaged in painting park cars.

230 New Construction
Approximately six miles of trail at the 13,680 feet summit of Mauna Loa were completed by a crew of ten CCC boys. This trail work connects the Kilauea--Mauna Loa trail to the two other trails leading to the summit and makes the new rest house available to any party ascending the mountain. It was one of the most important projects completed under park supervision during the year.

The CCC crew working in the Haleakala Section completed an excellent trail from the road terminus to the top of White Hill. It is hoped and believed that this trail will put an end to the requests by Maui people for a spur road to this elevation.

Work was begun on surfacing the Headquarters Utility Area road under Public Works allotment. Due to constant rains this project was only 20 % complete at the end of the month.

240 Improvement of approaches to the Park
Contractor E.E. Black is making satisfactory progress on the Territory's Pahala--Volcano road project. Several miles are being relocated to eliminate dangerous curves. This portion has been for years one of the poorest along the whole island belt road.

260 Landscape Work
A crew of CCC boys have continued landscaping about the park residences during the month. The Superintendent has been pleased to note that several residents of this island have come up to the park, especially, to see the progress in this work as well as methods and materials used.

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300 Activities of other Agencies in the Park

310 The Interurban Electric Light Company completed its powerline to the Park on December 22nd. It is now with the Superintendents approval, extending its line across the park to serve the Kilauea Military Camp and adjoining Ranch.

317 Status of Authorized Projects of Contractors

On December 30 the Halemaumau Road, project NP 7, was 93.4% complete with 78 % of the time consumed.

All rough excavation on this project has been completed. Fine grading has been completed over the entire project with the exception of two small sections. Crusher run bottom course has been applied on the entire project with exceptions as above. Emulsified asphalt surface treatment has been applied from Station 0 to Station 104. About three gallons emulsion has been used per square yard. So far, this section which has been subjected to heavy traffic has stood up very well, though some repair work will be necessary before acceptance can be given.

330 Cooperating Government Agencies

The Kilauea Military Camp continued operation throughout the month. There were no changes in the permanent commissioned personnel.

Visitors this year compared with last year show decided decrease.

340

340 State, County, or municipal legislation affecting parks.

On December 5 The Board of Supervisors of the County of Hawaii adopted a resolution requesting the FERA administration to appropriate $5,000 for a survey of the proposed Kalapana road which would connect with the Chain of Craters road in this park.

400 Flora, Fauna and Natural Phenomena

410 Ranger, Naturalist and guide service

A vacancy in position 13 on Ranger Staff was filled by the arrival on December 22 by Hugh H. Waesche who had traveled from San Francisco with the Superintendent. Ranger Waesche's training and experience in two other National Parks should make him a valuable addition to the Staff.

Rangers continued their usual duties of patrolling, maintaining roads and trails, giving service to the public, painting signs, repairing telephone and electric lines, etc.

420 Museum Service

Museum attendance was 630. There was 15 museum lectures to 545 persons and a total of 16 lectures by the Park Naturalist and Rangers to 605 people.

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At the invitation of the Kohala Womans Club, the Park Naturalist, on December 15, journeyed to that district to lecture on "Adult Education from the viewpoint of the National Park Service." Mrs. Doerr accompanied him.

480 Natural Phenomena

There was no surface activity at any of the craters during the month other than the usual steaming, occasional falling of rocks and blue fume issuing from several vents near the margin of the new lava flow in Halemaumau.

During the month, there was a total of seventy local seismic disturbances recorded on the Volcano Observatory seismographs. Two of these shocks were felt on December 22, one of which at 1:AM awoke many of the local residents.

Unusual widening of rim cracks about the edge of Halemaumau was observed on December 22.

500Use of Park facilities by the Public

510 Increase or decrease in travel

Total visitors to the park numbered 18,367 compared with 19,431 a year ago. This represents an increase of .008 % over the total a year ago to date.

530 Visitors

One hundred and seventy five cadets from the Japanese training ship H.M.S. Sata visited the Park on December 14 and 15. They were given special attention with lectures at the museum by Ranger Lamb.

From December 26 to 29 a group of thirty-nine Boy Scouts visited the park. A program of special lectures and hikes were arranged for the group.

600 Protection

610 Police protection

The usual patrol of the park was carried on by park rangers during the month.

630 Accidents

No accidents in the park were reported.

640 Destruction of Predatory Animals

Nineteen wild goats and two wild pigs were killed in December.

650 Signs

Ranger Williams, Assistant Camp Director of the CCC work in this park, and stationed in the Haleakala Section, forwarded a list of signs

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which he considered necessary for proper protection and information in that Section. This list was checked by this office and he was directed to use ECW labor on rainy days in preparation of the signs.

Other signs were painted as needed.

900 Miscellaneous

There were two public dances held at the Volcano House during the month. The one on December 29 being a special free dance given by the manager Mr. George Lycurgus in commemoration of the opening of his third year as manager. A buffet supper was served.

On the afternoon of December 24 the park women had a Christmas Tree party for the local children. Presents were distributed after recitations and songs had been given by several of the children. Music was furnished by the CCC orchestra which also performed in the evening for the "no host" park community dinner at the Volcano House. This dinner was also Ranger Waesche's introduction to the community.

Upon returning to the Park the Superintendent found the community on this island very pleased to learn that the Kilauea Military Camp lease was subject to renewal after the expiration of the five year extension granted by the Secretary. The Superintendent has previously conveyed this information to the people here through the local press representative in Washington.

On 28 the Honolulu Star Bulletin carried an article from their Washington correspondent which in part was as follows: "HOPE TO SAVE DOMICILES OF OLD SETTLERS. Delegate-Elect S.W. King is Expected To Confer With Secretary Ickes. The National Park service may make a recommendation to Secretary of the Interior Harold Ickes that the federal government extend the boundaries of the Hawaii National Park to include land extending toward Kalapana making possible preservation of a number of old-time settlers' homes in that section." This article has created much interest locally both among Hawaiian Organizations as well as the local Chamber of Commerce which has long advocated a road from the Park to Kalapana. The general reaction to the proposed extension appears very favorable and the Superintendent hopes the Service will push the matter in Washington. He is to confer with committees of the Chamber of Commerce and Order of Kamehameha in the near future relative to this project.

The local people were appreciative of the Department's interest in the serious financial difficulties confronting the Volcano Observatory. In an interview with the press the Superintendent had stated that the Department would do all it could to remedy this condition. No reference was made to the proposed transfer of the Observatory to the National Park.

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In closing this report, the Superintendent wishes to take this opportunity to express his appreciation to his staff for the fine manner in which they carried on during his absence, and to the Service in Washington and the Field, A Happy and Prosperous New Year.

Edward G. Wingate
Superintendent

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Ranger Hugh H. Waescho
upon arrival in Hilo.

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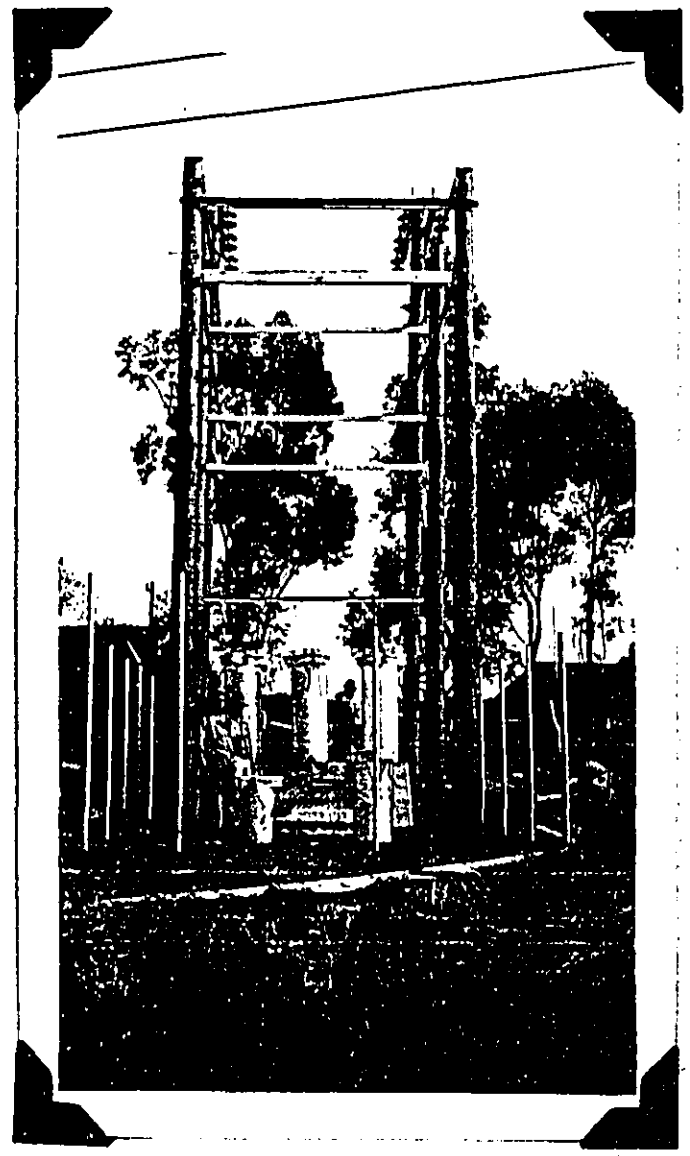

The New Electric System, Hawaii National Park Station transformer at the Volcano House.

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Crew engaged in lining underground Cable for New Electric Light System.

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New Electric Light System
underground cable in place.

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Form No. 1009—Met'l.

U. S. Department of Agriculture, Weather Bureau.

COOPERATIVE OBSERVERS' METEOROLOGICAL RECORD:

Month of December, 1954 ; *Station,* Haw. Volcano Obsty. ; *County,* Hawaii

State, ; *Latitude,* ; *Longitude,* ; *Time used on this form,* ; *Hour of Observation,* 8:A.M.

DATE.	TEMPERATURE. Maximum.	Minimum.	Range.	*Set Max.	PRECIPITATION. Time of Beginning.	Time of Ending.	†Amount.	Hour. Snowfall, in Inches.	Depth of Snow on Ground at Time of Observation.	Wind. Prevailing Wind Direction.	CHARACTER OF DAY, SUNRISE TO SUNSET.	‡MISCELLANEOUS PHENOMENA.
	1	2	3	4	5	6	7	8	9	10	11	
1	65	58	7	64			.01	90	Lt.	WNW	Cloudy	
2	69	58	11	59			3.59	100	Lt.	NW	Cloudy	Thunder. Snow Mts. Ml. & MK
3	71	57	14	62			.43	89	Lt.	SW	PC	Mts. Snow remains
4	75	56	19	61			.02	90	Lt.	NW	Clear	" " "
5	74	56	18	62			.05	91	Very Lt.	NE	PC	" " "
6	74	56	18	62			.01	95	Calm		Clear	" " "
7	74	56	18	61			T	92	"		"	" fog "
8	70	54	16	68			T	78	Lt.	ENE	"	Snow gone
9	74	61	13	62			T	87	Lt.	SW	PC	
10	67	56	11	58			.05	96	Lt.	ENE	PC	
11	73	50	13	55			.01	92	Lt.	ENE	PC	
12	71	56	17	58			.01	87	Calm		PC	
13	74	53	21	58			T	92	Calm		Clear	
14	73	54	19	59			T	89	Lt.	NE	Clear	
15	71	55	16	58			.01	95	Lt.	NE	Clear	
16	71	51	20	59			.01	88	Lt.	N	Clear	
17	68	53	15	56			.01	90	Stg.	ENE	Cloudy	
18	64	54	10	58			.44	93	Stg.	ENE	Cloudy	
19	65	53	12	56			.52	92	Lt	NE	PC	
20	66	55	15	60			.07	89	Lt	NE	PC	
21	60	52	8	58			.18	82	Lt	ENE	Cloudy	
22	66	52	14	57			.28	87	Med.	ENE	Cloudy	
23	61	55	6	56			.87	96	Med.	NE	Cloudy	
24	67	54	13	61			.12	74	Lt	NE	PC	Thunder-Snow Mt. & MK
25	69	54	15	60			.02	89	Mod.	NE	Cloudy	Mts. snow remains
26	61	56	5	59			2.41	95	Mod.	NE	Cloudy	" " "
27	65	53	12	55			1.15	92	Stg.	NE	Cloudy	" " "
28	58	46	12	55			1.61	96	Mod	NE	Cloudy	Snow gone
29	63	49	14	59			.57	73	Mod	ENE	Cloudy	
30	62	51	11	56			.07	91	Mod.	NE	PC	
31	63	51	12	56			T	86	Stg.	NE	PC	
SUM	2104	1671	423	1828			12.52	2776				
MEAN	64.6	53.9	13.6	59.0			4.04	89.5				

*Reading of maximum thermometer immediately after setting.
†Including rain, hail, sleet, and melted snow.
‡Thunderstorms, halos, auroras, etc.

(IN TRIPLICATE.) See cover for instructions. 8—213 GOVERNMENT PRINTING OFFICE

Signed T. A. Jaggar, *Cooperative Observer.*

Post-Office Address, Hawaii Nat'l. Park

MONTHLY SUMMARY.

TEMPERATURE.

Mean maximum, 64.6

Mean minimum, 53.9

Mean, 59.25

Maximum, 75 ; date, Dec. 5

Minimum, 46 ; date, Dec. 28

Greatest daily range, 20 Dec. 16

PRECIPITATION.

Total, 12.52 inches.

Greatest in 24 hours, 3.59 ; date, Dec. 2.

SNOW.

Total snowfall, inches; on ground 15th, inches;

at end of month, inches.

NUMBER OF DAYS—

With .01 inch or more precipitation, 4

Clear, 8 ; partly cloudy, 11 ; cloudy, 12

DATES OF—

Dense December 17, Morning

Killing frost,

Thunderstorms, December 13-Morning 24

Hail { Light, Moderate, Heavy,

Sleet,

Auroras,

REMARKS:

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10-157
(July, 1929)

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

TRAVEL REPORT

Hawaii National Park for the Month of December 1934

	This Month	This Travel Year To Date	This Month Last Year	Last Travel Year To Date	Increase for Travel Year	
					Number	Percent
PRIVATE TRANSPORTATION:						
Cars first entry,						
Cars reentry,						
Motorcycles,						
Total motor vehicles,						
Persons entering via motor vehicles,	18,388	54,589	16,856	53,738	851	.016
Persons entering via other private transportation,	184	518	246	640	- 122	.191
Total persons entering via private transportation,	18,572	55,107	17,102	54,378	729	.013
OTHER TRANSPORTATION:						
Persons entering via ~~Stages~~ Hotel,	295	1,033	1,329	2,212	--1,179	.533
Persons entering via trains,						
Persons entering otherwise,						
Total other transportation,	295	1,033	1,329	2,212	--1,179	.533
GRAND TOTAL ALL VISITORS,	18,867	56,140	18,431	56,590	-- 450	.008

	This Year	Last Year	Increase	
			Number	Percent
Automobiles in public camps during month,				
Campers in public camps during month,				

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10-158

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF AUTHORIZED PROJECTS

Hawaii National Park for the Month of December 1934

Description of Projects	Percent Constructed To Date	Percent Constructed This Month	Percent Constructed Last Month	Probable Date of Completion
Fp 102.8 Parapet Lookouts, Kilauea Iki, etc.,	99	0	0	
Fp 311.1r Fire-Equipment Storehouse & Garage	100	1	53	
Fp 312.14 Building Reconditioning for Elimination of Fire Hazards	100	2	32	
516 Utility Area Road, Paving (F.A.)	20	15	5	

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10-215
(August 1933)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Office of National Parks,
Buildings and Reservations

Hawaii National Park

REPORT OF NON-APPOINTED PERSONNEL
(TEMPORARY)

Changes outside the District of Columbia for the month of December 1934

Total at beginning of month	Additions	Separations	Net Gain or loss (a)	Total at ending of month
4	0	0	0	4

(a) If loss, indicate by minus sign.

NOTE: NO PER DIEM WOMEN EMPLOYEES.

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10-159
(May, 1931)

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF PERSONNEL

Hawaii National Park for the Month of December 1934

	This Month		This Month Last Year	
	Appointed	Non-Appointed	Appointed	Non-Appointed
Number of employees beginning of month	16	4	16	11
Number of additions	1	0	0	6
Total	17	4	16	17
Number of separations	0	0	0	0
Number of employees close of month	17	4	16	17
Number of promotions during month	0	0	0	0
Aggregate amount of annual leave taken	1			
Aggregate amount of sick leave taken	0		18	0
Aggregate amount of leave without pay	0		10	0

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10-160

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF PARK REVENUES

Hawaii National Park for the Month of December 1934

	This Year	Last Year
Park revenue on hand beginning of month,	0.00	0.00
Received,	25.00	0.00
Total,	25.00	0.00
Remitted,	25.00	0.00
On hand close of month,	0.00 25.00	0.00

Park revenues received this year to date, 250.00

Park revenues received last year to date, 250.00

Increase, 000.00

Per cent of increase, 000.00

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10-161

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF SALES OF PUBLICATIONS

	Number	Value
GOVERNMENT PUBLICATIONS:		
On hand beginning of month,	861	153.55
Received during month,		
Total,	861	153.55
Sold during month,	0	0.00
On hand at close of month,	861	153.55
NON-GOVERNMENT PUBLICATIONS:		
On hand beginning of month,		
Received during month,		
Total,		
Sold during month,		
On hand at close of month,		
Cash on hand beginning of month,		14.62
Sales during month,		00. 00
Total,		14.62
Remitted during month,		5.40
Balance,		9.22

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FINANCE AND ACCOUNTS

December 1934

Symbol	Appropriation			
45415	Salaries & Expenses, National Park Service, 1935	35,150.00	29,768.51	5,381.47
45406	Forest Protection & Fire Prevention (N.P.S.) 1935	300.00	14.02	285.98
44415.3	Salaries & Expenses, Office of Nat'l. Parks, Bldgs., & Reservations, 1934	31,392.55	29,495.61	1,896.94
4x39[illegible]	Roads & Trails, Nat'l. Parks, Emergency Construction Act June 19, 1934.	16,165.00	1, 827.46	14,337.54
4-03/5640.8 NIR,	Interior, Nat'l Parks Roads & trails, 1933-35	491,000.00	473,104.78	17,895.22
4-03/5640.14 NIR,	Interior, Nat'l Parks, Bldgs. & Reservation, 1933-35	11,250.00	11,102.34	147.66

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The Volcano Letter

No. 416—Monthly U. S. Geological Survey, Hawaii National Park OCTOBER, 1934

KILAUEA REPORT FOR OCTOBER, 1934

Including weekly press reports 1185 to 1188
September 30 to October 28 midnight
Section of Volcanology, U. S. Geological Survey
T. A. Jaggar, Volcanologist in Charge

VOLCANOLOGY

Oct. 1 at 9 a. m. the west fountain pot started exploding and the lake drained. At 10:46 a. m. the liquid returned by overflow of the east fountain well. Another spell in the evening sent the glowing spray almost up to the pit rim 770 feet high. The noises were heard 3.5 miles away. This ended the detonating phase of activity. Oct. 2 the west fountain was overflowing its cone with seven streams, then the east fountain sent out a torrent 100 feet wide, then a middle fountain sent a stream northward to a new pool, which there overflowed the lake basin and reached the base of the north wall of the pit. After noon the wells lowered to weak bubbling fifty feet down. At seven in the evening heavy fume was rising from the wells.

Oct. 3 three quarters of the lake basin had become a slag-heap, with the north pool a depression in its flank 300 feet long. The middle fountain and the north pool were actively liquid. There were nine smoke holes. At night three pools were outlined by glow. Streaming showed there were tunnels to outlets east and west from the west pot. At the outer edges of the floor there was glow in cracks east, south and southwest. Intrusive lava was welling up along the edges of the floor cake. October 4 the middle fountain noisily jetted up diagonally like a hose, supplied the north pool, and kept the pit luminous at night, but this was the end of illumination. The east pot was a smoke hole, the east pool was dark at night, only a trickle remained at the west pool, and the floor margin glow was less. October 5 the lake area had collapsed, there was fume, streaming continued in the north pool, and blowing noise was audible. Around the edges of the floor there was conspicuous swelling from intrusion, especially northeast. Oct. 6 and 7 the central cone became a whitened fuming heap, the north pool was liquid underneath and showed crusts cracking and foundering in the melt, and the west cone had ceased fuming. Thuddung noise was heard in the western part of the swelling floor, prolonged wall-slides began at the north, and the steaming lessened at the taluses.

The last moving lava in Halemaumau was seen Oct. 7, and the last day of eruption was October 8. On Oct. 8 at 10 a. m. hisses were heard from the middle fume cone. At 11:25 there was prolonged wall-sliding north, and dust arose through a rim crack NNE. About 1 p. m. there were two north slides. Sliding all day occurred at west end of Canoe Sill. At 11:30 a. m. there was a slide east of Southwest Tunnel. At 11:43 a. m. there was a slide at top of West Talus. At 8 p. m. there were 11 glow spots along the east and south wall crack of the floor, and 12 about the lake area.

Oct. 9 at 7:17 a. m. a big avalanche took away the upper edge wall slab NNE of Halemaumau. The lake basin and the northern and eastern taluses were fuming. Out to the edge of the floor from the lake area there are left ten radiating tension cracks. There was a slide N. at 9:06 a. m., a big fall of fresh rock from the lower wall lay on the floor SE, and a few fresh bowlders lay on the floor NE. During the next week the taluses showed dry hot places at the bottom, 11 places on the northeastern half of the floor showed blue fume, and border swellings had cracked into chasms at the edge of the floor east, west and south. The solfatara at the base of the east talus increased its fuming. At the end of the month there was no visible shrinking down of the floor, there was wall-crack heat everywhere, slides were few, snapping was heard, spots of white and yellow staining appeared, especially at the base of the WNW wall cascade and on the NW pumice bank left against the talus by the big fountains of Sept. 6. A curved line of stain on the floor in front of this outlined and buried front of the talus cone.

Weekly measurements of rim cracks around Halemaumau, 32 in number, gave:—

Oct. 6, 11 opened, 3 closed, aggregate opening 5.5 mm
Oct. 13, 7 opened, 4 closed, aggregate opening 3.0 mm
Oct. 20, 9 opened, 5 closed, aggregate opening 3 mm
Oct. 27, 10 opened, 5 closed, aggregate opening 2.5 mm

A levelling circuit from South Sandspit as base by Jones Oct. 17-25, showing changes since July 2, 1934, in elevation of rim of Halemaumau, relative to the south rim of Kilauea Crater, revealed the following facts, presumably correlated with the outbreak of September that was concentrated at the north side of the Halemaumau bottom:—

Elevation to maximum of 1.28 feet within a stretch of the north rim 1800 feet long.

Depression to a maximum of 0.5 foot northwest and northeast of the pit, along a thousand feet of the rim on each side of the elevated tract.

The rest of the rim shows diminishing depression southward to a line of no change 400 feet SSE of the pit.

The north tilt cellar was involved in the elevated area to an elevation of 0.69 foot; its disturbance at the time of the outbreak was much less than that of the other two cellars in the slightly depressed areas. T. A. J.

EARTHQUAKES

TABLE

Week ending	minutes of tremor	very feeble earthquakes	feeble earthquakes	moderate earthquakes	distant earthquakes	local * seismicity
Oct. 7	5,091	5	0	0	0	1,252.
Oct. 14	64	2	0	1	1	20.00
Oct. 21	23	4	1	0	0	8.75
Oct. 28	63	2	1	0	0	17.75

* For local seismicity index see Volcano Letter 371.

The following successive local disturbances began at the times indicated; the epicenters as shown were located from seismograms; when possible the depth of the source is indicated. The location of epicenters is based on three main seismograph stations, Kilauea, Hilo, and Kona. The intensity is that recorded on the Kilauea instruments.

October 3. 1:50 p. m. very feeble, lat. 19° 18′ N. long. 155° 26′.5 W. 21 miles deep under Kaoiki fault.

October 8 to 9 numerous tremors and very feeble shocks correspond with avalanching of Pit walls.

October 12. 5:45 p. m. a shock was felt at Honokaa, not recorded at Kilauea.

October 13. 7:14 p. m. moderate. Felt generally over the island of Hawaii. 19° 28′ N 155° 30′ W. 44 miles deep under the central part of Mauna Loa.

October 18. 0:20 a. m. feeble, felt generally on Hawaii. 19° 30′ N. 155° 40′ W. 39 miles deep, under central part of Mauna Loa. Followed at 1:41 a. m. by a very feeble shock from near the same place. 19° 30′ N. 155° 42′ W.

October 27. 7:47 a. m. feeble, felt near Kilauea crater. 19° 56′ N. 155° 38′.5 W. 23 miles deep.

The preliminary waves of a teleseism began recording at 5:20:09 a. m. October 10, the secondary waves began at 5:26:34 a. m.

Microseismic motion of the ground was normal October 9, 10, 11, 12, 16, 17, 18, 21, 22, 23, 24, 25, 27, 28, and was abnormal October 15: Other days subnormal.

The 5,091 minutes of tremor in the table represents the closing week of the lava inflow, and has about half the value of other weeks. (See Volcano Letter 415.) The explosive sequence that began in Halemaumau 9:15 a. m. October 1 made at first a record similar to a small earthquake record, later records were obscured by tremor. The last detonation at 9:57 a. m. was felt at Hawaiian Volcano Observatory 2 miles away. The harmonic tremor almost disappeared after October 1, its amplitude always stronger at the stations nearer the pit, and showing direct relation to the visible lava fountaining. A. E. J.

TILTING OF THE GROUND

The table shows tilt by weeks from seismograms at Kilauea Observatory, northeast rim of Kilauea crater; and at Halemaumau the algebraic sum of radial tilts for the three clinoscope cellars, towards or from the center of the pit.

At the Observatory the total accumulated tilt in the year ending October 28, 1934 is 1.0″ N and 1.7″ E.

TABLE OF TILT

Date 1934	Observatory	Halemaumau
Sept. 30 to Oct. 7	1.2″ NE	9.1″ from
Oct. 8 to Oct. 14	0 6″ N by W	23.3″ toward*
Oct. 15 to Oct. 21	1.4″ ENE	21.3″ from
Oct. 22 to Oct. 28	0.6″ NE by N	2.2″ toward

* Disturbance following quake of October 13.

A. E. J.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

December 2, 1934

The Director
National Park Service
Washington, D. C.

Dear Mr. Director:

Following is the administrative report of Hawaii National Park for the month of November 1934.

000 General

010 Introduction

Superintendent E. G. Wingate left the park November 4 to attend the Superintendent's Conference in Washington. During his absence Park Naturalist, John H. Doerr, Jr served as Acting Superintendent.

I regret to report that on the morning of November 30, Peter Hale, CCC enrollee, was accidentally killed. Hale was engaged in handling road material from the cinder cone near the Devil's Throat. At the time of the accident Hale was riding on top of a load of cinder. The truck had proceeded about 300 yards from the cinder pit when Hale was seen falling backwards off the load, his head hitting the pavement. He was rushed to the CCC camp and then to the Kilauea Military Camp Hospital. Hale was dead when arriving at the hospital. Captain Kenneth G. Gould, medical officer at the hospital, reported Hale's death as instantaneous, being due to a fracture of the skull.

020 General weather conditions

A number of cloudy days with considerable rain were experienced during the month.

022 The approach areas to the park received a sufficient amount of rain during the month. There were no reports of a shortage of water in any section of the island.

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100 Administrative

110 Status of work

All office work is current with the exception of the filing. With only temporary clerk-stenographer assistance we have been able to accomplish very little toward getting the files up-to-date.

120 Park inspections

121 Acting Superintendent

Routine inspections of all projects were made during the month. Special attention was given to the construction of the Interurban Electric Light Co., Ltd. power line, the work of preparing the park utilities road for surfacing, and the Uwekahuna--Bird Park road.

On November 26 I was the guest of the U. S. Navy on an airplane flight around the island of Hawaii. A squadron of six planes took off from Hilo harbor at 8:00 A M. Three hours later the squadron returned to the harbor, having made a clock-wise circuit of the island, a distance of approximately 270 miles.

The weather was ideal Flying at an altitude of 2000 to 2500 feet, and just far enough off shore to give a good view of the shoreline and features on the lower slopes of the mountains, made the trip most interesting for me. I was particularly interested in getting the perspective view of the southern section of the park, and the relationship between the lava flows on the Kona side of Mauna Loa.

122 Special field representative

Associate Architect M. S. Sager was at headquarters supervising the work of the CCC from November 1 to 28 The remainder of the month, Mr. Sager spent in supervising the CCC work and the road project in the Haleakala section of the park.

On November 7 and 8 Mr. Sager, accompanied by Acting Superintendent Doerr, Ray Enos, CCC foreman, and Henry Kini, Packer, went to the summit of Mauna Loa for the purpose of laying out a proposed horse trail which will connect the park's summit rest house and the Ainapo trail. A detailed account of this trip is included in the Park Naturalist's monthly report.

123 National Park Service Officers

Regular inspections were carried on during the month by Acting Chief Ranger J. H. Christ and the ranger staff.

125 Other governmental officers

E. S. Wheeler, Principal Highway Engineer, B P. R. inspected

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the road project in the Haleakala section of the park. On November 14 Mr. Wheeler called at the headquarters section to discuss the proposed date of the Haleakala road opening celebration, and the necessity for immediate post construction work on the Haleakala road While at headquarters, Mr. Wheeler, accompanied by Acting Superintendent Doerr and Associate Architect M. S. Sager, inspected the Uwekahuna--Bird Park Road, and the construction on project 516, Utilities Area road.

130 Finance and accounts

A detailed statement showing the status of park appropriations is attached as statistical report No. 8.

150 Equipment and supplies

Only small miscellaneous equipment and supplies were purchased during the month.

170 Plans, maps and surveys

Park Utility Sheets, Road and Trail Maps, and Telephone Maps for the park were revised and returned to Field Headquarters during the month.

200 Maintenance, Improvements and New Construction

210 Maintenance

Routine maintenance of roads, trails, buildings, telephone lines, power lines, automobile equipment, signs and general equipment was carried on during the month.

220 Improvements

The work of exterior painting of the Volcano House and adjoining cottages was completed during the month. The chocolate brown color and buff trimming makes the Volcano House property much less conspicuous. The red roof of the Volcano House--for years a very outstanding feature of the north rim of Kilauea Crater--no longer exists. The roof's new coat of black paint blends very nicely into the blackish green ohia forest.

The work of marking the features along nature trails was continued under the Park Naturalist's supervision.

230 New construction

Haleakala Road

Project NR 7 Haleakala Road was 86.5 per cent complete on November 20 with 72.5 per cent of the contract time consumed. E. S. Wheeler, Principal Highway Engineer, B P R. informs this office that the project will be completed February 16, 1935. The date for the formal opening is set for February 23, 1935. Mr. Wheeler recommends immediate post construction on the Haleakala road.

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During the month this office recommended that the $5000 alloted for covering the rock fills with soil be turned over to the B. P. R. and that the contractor do the work cost plus. Taking everything into consideration, this seems to be the most efficient method of handling the work.

F. P. project 102.8 Parapet Lookouts, Kilauea Iki, etc, was 99 percent complete at the end of the month.

F. P. project 312.14 Building reconditioning for Elimination of Fire hazards was 95 percent complete at the end of the month.

P. W. project 516 Utilities Area Road Paving 10 percent complete at the end of the month.

At the end of the month F. P. 163.14 project, Underground Electrical Distribution System was approximately 30 percent complete. The Interurban Electric Light Company Ltd., expects to complete the project before January 1, 1935. In connection with getting electric power from Hilo, it is interesting to note that the Kilauea Military Camp will also take electricity. The electric company is planning to extend the power line from the Volcano House to the Camp.

240 Improvement of approaches to Park

Those people of the community who appreciate the natural beauties of the road from Hilo to the park regret that some action was not taken toward getting the Interurban Electric Light Company to construct their power line back from the road. We now have another line of poles along the road and numerous places where the line crosses the road. The construction of the line necessitated cutting many fine trees. Nature will soon obliterate the scars of cutting but the poles and lines will always be present.

Construction work on the road between the Kau entrance and Pahala continues. The relocation of portions of the around-the-island road along the Hamakua coast will be a big improvement. Both of these projects will, when completed, add greatly to the comfort of those making the tour of this island.

The road from Pahoa to Kaimu Beach is being widened and surfaced. This is an important piece of construction in view of the fact that a number of park visitors make the trip to Kaimu (Black Sand) Beach.

260 Landscape work

A small crew of CCC workers continued on the general landscaping project in the park residential area.

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300 Activities of other Agencies in the Park

320 Cooperating governmental agencies

The Kilauea Military Camp continued operation throughout the month. Due to military maneuvers on the island of Oahu, the camp had very few visitors.

On November 12 Private Dale M. Dixon, member of the permanent party at the Military Camp, was brought before the Acting Superintendent, charged with stealing gasoline from cars owned by residents of the community. Evidence was presented by Acting Chief Ranger Christ, Gilbert Aio, and Mrs. Johnny Siurigao. Private Dixon pleaded not guilty. Circumstantial evidence was very much against Private Dixon. The case was turned over to the Military Camp authorities. Such has been the procedure in handling matters involving Military Camp personnel. To date this office has received no report as to the outcome of the case; however, I feel confident that the case was handled in such a manner that the community will have no further cause for complaint.

400 Flora, fauna, and natural phenomena

410 Ranger, naturalist, and guide service

Rangers carried on their regular duties of patrolling, maintenance of road and trails, painting signs, repairing telephone and electric lines, and serving the public.

November being one of the poorest travel months of the year, there was comparatively a small number of naturalist contacts. In certain respects it was a fortunate condition in view of the administrative duties handled by Park Naturalist Doerr during Superintendent Wingate's official trip to Washington. Ranger S. H. Lamb assisted in making naturalist contacts. On November 21 Park Naturalist Doerr gave two illustrated lectures at Honokaa School, Honokaa, Hawaii.

The naturalist staff made the following contacts during the month:

Guided Trips	No. 17	Attendance	417
Lectures	" 8	"	251
Museum Visitors			433
Lectures (Outside Park)	" 2	"	750
Total contacts			1851

420 Museum service

A total of 433 contacts were made at Uwekahuna Museum. The museum was kept open on Sundays, holidays, and a such other times as needed.

430 Activities in Archaeology, Prehistory and History

On November 5 Park Naturalist Doerr, accompanied by Rangers Peck, Barnett and Lamb, explored the northwest portion of Kilauea Crater. A number of small, hot and very interesting lava tubes were discovered.

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During the month, Acting Chief Ranger J. H. Christ and Ranger S. H. Lamb planted silversword seeds on the slopes of Mauna Loa.

480 Natural Phenomena

Both Kilauea and Mauna Loa remained inactive during the month. Blue fume continued to rise from a number of places on the 1934 floor of Halemaumau. A number of rock slides occurred on the walls of Halemaumau. The staff of the Volcano Observatory conducted regular measurements on the cracks around the rim of Halemaumau. No significant changes were found.

During the month 74 local seismic disturbances, 6 feeble shocks, and one distant earthquake were recorded on the Volcano Observatory seismographs. The seismic index for the month was 4.35, indicating very quiet conditions as compared with the third week of volcanic activity in September when the seismic indix was 2808.00. The one distant earthquake, recorded on November 29, originated at a point 6,200 statute miles from the Observatory. As yet the exact location of the point of origin has not been determined. A tidal wave warning was sent out. The fishing fleet observed the warning by remaining off-shore in Hilo harbor during the afternoon and night of November 29. No wave was recorded.

It is interesting to note that a year ago to-day (December 2) Mauna Loa's summit crater erupted.

500 Use of Park Facilities by the Public

510 Increase or decrease in travel

Travel figures for the month indicate 16,090 park visitors compared with 21,183 for October and 19,790 for a year ago. Travel figures to date this year indicate 37,273 visitors compared with 38,159 for last year. This is a decrease for travel year of 886 or .023 percent.

520 Conditions which affect travel

November is one of the poorest travel months of the year for Hawaii. It is mid-way between summer travel and winter travel. Under ordinary conditions travel to Hawaii increases appreciably after the holiday season. For local people, weather conditions in the volcano district during November are not favorable.

530 Visitors

Rear Admiral H. E. Yarnell, U. S. N. Pearl Harbor T. H., made a three day visit at the Navy Camp during the month.

Rear Admiral S. Gannon, U. S. N. visited the park on November 18.

Major General Briant C. Wells, U. S. A. retired, Secretary of the Hawaiian Sugar Planters Association, visited the park on November 11.

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Each of the above mentioned people were given special attention by members of the park staff.

On November 18 Acting Superintendent Doerr served as a member of the Aloha committee of the Hilo Chamber of Commerce to welcome Admiral S. Gannon and his flagship, the U. S. S. Oglala, to Hilo.

600 Protection

620 Fire protection
On November 2 a fire drill was conducted at the Volcano House.

630 Accidents
Rangers assisted visitors with minor car trouble.

On November 20 Ranger Philip F. Murray, while in the line of duty, accidentally injured his right leg with a climbing spur. Ranger Murray had climbed a tree to repair telephone line. On returning to the ground he was overbalanced by a clump of ferns. In falling backwards the climbing spur on his left foot penetrated the flesh of his right foot to a depth of 1½ inches. Medical attention was given at the Kilauea Military Camp Hospital. Ranger Murray was on sick leave, due to the injury, one day.

The accidental death of Peter Hale, CCC enrollee, is reported under paragraph 010 general.

640 Destruction of predatory animals
Twenty-one wild goats and nine wild pigs were killed during the month.

900 Miscellaneous

On November 16 Mrs. Philip F. Murray, wife of Ranger Murray, and two children Bob and Phyillis arrived in Hilo from Petrified Forest. A number of the members of the community were at the dock to welcome the Murray's.

On the evening of November 17 the park people gave a welcoming dinner at the Volcano House for Ranger Murray and his family. Several of the ladies of the community made a very lovely table decoration using tropical fruits and flowers, and arranged very clever place cards. following the dinner the group enjoyed an evening of dancing.

On the evening of November 26 the park community gave a farewell party for Miss Jane Christman who has been on the park staff as temporary clerk-stenographer, and Ranger T. W. Barnett who hopes to depart

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from Hawaii to fill a vacancy in Grand Canyon National Park.

Respectfully,

Edward G. Wingate, Superintendent
John E. Doerr, Jr. Acting Superintendent

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Supt. and Mrs. Wingate
Supt. Wingate leaving Hilo for
Superintendent's Conference at
Washington, D. C. Nov. 4, 1934

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Park People saying Aloha to Superintendent Wingate as he departs from Hilo for Superintendent's Conference.

Ltr: Gilbert Lee, Betty Wingate, Ranger Peck, Mrs. Peck, Mr. Rivenburgh, ? Lee (" sister) Mr. Wingate, Jane Christman Albritten, Merel S. Sager, ?, Mrs. Lee, ?.

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View of the Volcano House from main highway before hotel was painted. The roofs were bright red.

The same view after the Volcano House was painted brown.

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Form No. 1009—Met'l.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU

COOPERATIVE OBSERVERS' METEROLOGICAL RECORD:

Month of November, 1934; *Station,* Hawaii Vole. Obsy.; *County,* Hawaii

Hour of Observation, 8 a.m.

State, ; *Latitude,* ; *Longitude,* ; *Time used on this form,* P S T

DATE	TEMPERATURE				PRECIPITATION				WIND		CHARACTER OF DAY, SUNRISE TO SUNSET	‡ MISCELLANEOUS PHENOMENA
	Maximum	Minimum	Range	* Set Max.	Time of Beginning	Time of Ending	†Amount	Snow, Sleet on Ground	Direction of Fastest Mile	Prevailing Wind Direction		
	1	2	3	4	5	6	7	8	9	10	11	
1	68	58	10	66			.03	92	Lt	NE	Cloudy	
2	71	58	13	68			.17	92	Med	ENE	PC	
3	73	55	18	61			.01	91	Lt	NE	Clear	
4	75	55	20	64			T	79	Lt	NE	Clear	
5	70	56	14	61			T	86	Med	NE	PC	
6	70	55	15	56			.05	89	Stg	NE	PC	
7	68	52	16	55			.18	91	Lt	NE	PC	
8	72	54	18	59			.10	90	Calm		Clear	
9	72	55	14	60			.05	98	Lt	SW	Cloudy	
10	72	54	18	59			.07	89	Lt	NE	Clear	
11	70	54	16	63			T	88	Med.	NE	Clear	
12	72	55	17	61			.01	87	Lt.	NE	Clear	
13	73	58	15	62			.02	89	Lt.	NE	Clear	
14	71	56	15	61			.05	90	Med.	NE	PC	
15	68	56	12	62			.50	87	Stg.	NE	PC	
16	67	54	13	62			.04	92	Med.	NE	Cloudy	
17	69	57	10	61			.90	95	Lt	NE	Cloudy	
18	69	57	12	57			98	14	Stg.	NE	Cloudy	
19	68	55	13	60			.37	89	Med.	NE	PC	
20	65	55	10	55			T.	91	Med.	NNE	PC	
21	66	56	10	59			.10	93	Stg.	NE	Cloudy	
22	65	56	9	60			1.22	95	Stg.	ENE	Cloudy	
23	67	56	11	60			.23	95	Lt	ENE	Cloudy	
24	64	57	7	58			.56	75	Lt.	NE	PC	
25	70	55	15	61			.03	90	Med.	NE	Cloudy	
26	69	55	14	58			102	90	Med.	NE	Cloudy	
27	64	55	9	58			.44	94	Lt.	NE	Cloudy	
28	78	52	27	59			.47	88	Calm		PC	
29	71	54	17	60			T	87	Lt.	SW	Clear	
30	72	56	16	60			.02	86	Lt.	SW	Cloudy	
31												
Sum	2089	1668	484	1801			6.75	2700				
Mean	69.6	55.5	14.1	60.0			.225	90.0				

* Reading of maximum thermometer immediately after setting.
† Including rain, hail, sleet, and melted snow.
‡ Thunderstorms, halos, auroras, etc.

(Signed) J. A. Jaggar, *Cooperative Observer.*

(IN TRIPLICATE) See cover for instructions. 8—253 U. S. GOVERNMENT PRINTING OFFICE: 1933

Post Office Address, Hawaii National Park, Hawaii

MONTHLY SUMMARY

TEMPERATURE

Mean maximum, 69.6

Mean minimum, 55.5

Mean, 62.55

Maximum, 79; date, 28

Minimum, 52; date, 7 & 28

Greatest daily range, 27 & 28

PRECIPITATION

Total, ; inches 6.25; greatest in 24 hours 1.22

Date, 22nd

SNOW

Total snowfall, inches

On ground 15th, inches

At end of month, inches

NUMBER OF DAYS—

With .01 inch or more precipitation,

Clear, ; partly cloudy,

Cloudy,

DATES OF—

Fog { Light, Dense,

Killing frost,

Thunderstorms,

Hail { Light, Moderate, Heavy,

Sleet,

Auroras,

REMARKS:

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10-157
(July, 1929)

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

TRAVEL REPORT

Hawaii National Park for the Month of November, 1934

	This Month	This Travel Year To Date	This Month Last Year	Last Travel Year To Date	Increase for Travel Year: Number	Increase for Travel Year: Percent
PRIVATE TRANSPORTATION:						
Cars first entry,						
Cars reentry,						
Motorcycles,						
Total motor vehicles,						
Persons entering via motor vehicles,	15,588	36,201	19,155	36,888	-681	.018
Persons entering via other private transportation,	123	334	228	394	-60	.153
Total persons entering via private transportation,	15,711	36,535	19,383	37,276	-741	.020
OTHER TRANSPORTATION:						
Persons entering via Hotel stages,	379	738	407	883	-145	.164
Persons entering via trains,						
Persons entering otherwise,						
Total other transportation,	379	738	407	883	-145	.164
GRAND TOTAL ALL VISITORS,	16,090	37,273	19,790	38,159	-886	.023

	This Year	Last Year	Increase: Number	Increase: Percent
Automobiles in public camps during month,				
Campers in public camps during month,				

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10-158

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF AUTHORIZED PROJECTS

HAWAII National Park for the Month of NOVEMBER 1934

Description of Projects	Percent Constructed To Date	Percent Constructed This Month	Percent Constructed Last Month	Probable Date of Completion
Fp 102.8 Parapet Lookouts, Kilauea Iki, etc.,	99	0	0	
Fp 311.1r Fire-Equipment Storehouse and Garage	100 99	1 53	53 46	
Fp 312.14 Building Reconditioning for Elimination of Fire Hazards	100 98	2 32	32 31	
516 Utility Area Road, Paving (F.A.)	20 5	15 5	5 0	

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10-215
(August 1933)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Office of National Parks,
Buildings and Reservations

..... National Park
Hawaii

R E P O R T O F N O N-A P P O I N T E D P E R S O N N E L
(TEMPORARY)

Changes outside the District of Columbia for the month of ..... 19.....
November 36

Total at beginning of month	Additions	Separations	Net Gain or loss (a)	Total at ending of month
1	3	0	3	4

(a) If loss, indicate by minus sign.

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10-159
(May, 1931)

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF PERSONNEL

Hawaii National Park for the Month of November 1934

	This Month		This Month Last Year	
	Appointed	Non-Appointed	Appointed	Non-Appointed
Number of employees beginning of month	16	1	12	0
Number of additions	0	3	3	2
Total	16	4	15	10
Number of separations	2	0	0	3
Number of employees close of month	16	4	15	7
Number of promotions during month	0	0	0	0
Aggregate amount of annual leave taken	7	0	0	0
Aggregate amount of sick leave taken	2	0	0	0
Aggregate amount of leave without pay	0	0	0	0

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10-160

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF PARK REVENUES

.....Hawaii..... National Park for the Month of .November...1934.....

	This Year	Last Year
Park revenue on hand beginning of month, ...	000.00	100.00
Received, ...	100.00	125.00
Total, ...	100.00	125.00
Remitted, ...	100.00	125.00
On hand close of month, ...	000.00	000.00

Park revenues received this year to date, ... 225.00

Park revenues received last year to date, ... 250/00

Increase, Decrease 25.00

Per cent of increase, Decrease . . . . . 10 percent

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10-161

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF SALES OF PUBLICATIONS

	Number	Value
GOVERNMENT PUBLICATIONS:		
On hand beginning of month,	870	159.25
Received during month,	0	0.00
Total,	870	159.25
Sold during month,	9	5.70
On hand at close of month,	861	153.55
NON-GOVERNMENT PUBLICATIONS:		
On hand beginning of month,		
Received during month,		
Total,		
Sold during month,		
On hand at close of month,		
Cash on hand beginning of month,		13.47
Sales during month,		5.70
Total,		19.17
Remitted during month,		4.55
Balance,		14.62

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

December 2, 1934

The Director
National Park Service
Washington, D. C.

Dear Mr. Director:

Following is the administrative report of Hawaii National Park for the month of November 1934.

000 General

010 Introduction

Superintendent E. G. Wingate left the park November 4 to attend the Superintendent's Conference in Washington. During his absence Park Naturalist, John E. Doerr, Jr served as Acting Superintendent.

I regret to report that on the morning of November 30, Peter Hale, CCC enrollee, was accidentally killed. Hale was engaged in handling road material from the cinder cone near the Devil's Throat. At the time of the accident Hale was riding on top of a load of cinder. The truck had proceeded about 300 yards from the cinder pit when Hale was seen falling backwards off the load, his head hitting the pavement. He was rushed to the CCC camp and then to the Kilauea Military Camp Hospital. Hale was dead when arriving at the hospital. Captain Kenneth G. Gould, medical officer at the hospital, reported Hale's death as instantaneous, being due to a fracture of the skull.

020 General weather conditions

A number of cloudy days with considerable rain were experienced during the month.

022 The approach areas to the park received a sufficient amount of rain during the month. There were no reports of a shortage of water in any section of the island.

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STATISTICAL REPORT NO. 8

FINANCE AND ACCOUNTS

November 1934

Symbol	Appropriation			
45415	Salaries & Expenses, National Park Service, 1935	35,150.00	28,799.81	6,350.19
45406	Forest Protection & Fire Prevention (N.P.S.) 1935	300.00	4.77	295.23
44415.3	Salaries & Expenses, Office of Nat'l Parks, Bldgs., & Reservations, 1934	31,392.55	29,495.61	1,896.94
4X391	Roads & Trails, Nat'l Parks, Emergency Construction Act June 19, 1934	11,200.00	1,256.78	9,943.22
4-03/5640.8	NIR, Interior, Nat'l Parks Roads & Trails, 1933-35	491,000.00	473,104.78	17,895.22
4-03/5640.14	NIR, Interior, Nat'l Parks, Bldgs, & Reservation, 1933-35	11,250.00	10,989.79	260.21

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

November 2, 1934

The Director
National Park Service
Washington, D. C.

Dear Mr. Director:

Following is the administrative report of Hawaii National Park for the month of October 1934.

000 General

010 Introduction

On October 1 the Superintendent accompanied by Associate Architect M. S. Sager left Maui and arrived in Honolulu on the same date. Among several calls which the Superintendent had on his list to make in Honolulu was one on the President of the Honolulu Ad Club, Mr. P. L. Murphy.

It was found in the course of conversation that the available funds of the Hui o Pele had apparently been misused. A special meeting of the Ad Club members was called and a resolution was put through which disbanded the existing Hui o Pele committee, giving the Superintendent complete custody of all funds, and also giving the Superintendent authority to place the society with some realiable organization. The investigations connected with this affair occupied several days.

The following week the Superintendent returned to Hawaii and remained in the park from October 6 to 10 finishing up the months business. On the 10th the Superintendent again returned to Honolulu to complete the Hui o Pele investigation and other matters which had been held over until this was settled. On October 17, the Honolulu Ad Club was dissolved and Mr. Chas. R. Frazier appointed custodian of records. A promissory note was received from the Ad Club signed by Mr. P. L. Murphy, President, and Mr. A. L. Moss, Secretary and Treasurer for the amount of the misused Hui o Pele funds. Several organizations

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have approached the Superintendent offering to sponsor the Hui o Pele and their applications are receiving consideration. Also, during this visit the Superintendent got under way, what has been designated a Superintendent's advisory committee which will be composed of outstanding men in the community. Through such a committee the Superintendent hopes to bring the Park Service into much closer contact with the island people than it has been for years previous. The Superintendent called on Frank Atherton, President of Castle & Cook Ltd. and a director of a number of island corporations, suggesting this committee and Mr. Atherton not only approved of the suggestion but offered his services on the committee. Both Mr. Alfred W. Carter, manager of the Parker Ranch and Director of the Inter-Island Steam Navigation Co., Ltd., and Mr. J. R. Farrington, son of former Governor W. A. Farrington, very willingly agreed to fill places on the committee. Likewise Mr. James Henderson, Mr. Herbert Shipman and Judge Stephen Desha of Hilo have agreed to serve. Other men from the island of Maui and Honolulu will be approached.

While in Honolulu contacts were made with the following:

Former Governor, Lawrence M. Judd, who strongly advised the Park Service to oppose any legislation which would alienate the land now leased to the trustees of the Kilauea Military Camp. Governor J. B. Poindexter; Land Commissioner C. T. Bailey; Territorial Surveyor Robert M. King; Mrs. Charles Wilder, Executive Secretary of the Outdoor Circle; Mr. C. S. Judd, Territorial Forester; Captain Herbert Baldwin, Finance Officer, Fort Shafter; Lt. Colonel George Paine, Recreation Officer, Hawaiian Department; Lorrin P. Thurston, Editor of the Honolulu Advertiser; Homer Tyson, manager KGU; Fred Green, Business manager of the Honolulu Advertiser; Dr. Arthur L. Dean; Mr. L. W. deVis Norton; Mr. Riley Allen, Editor Star Bullentin; Mr. H. P. Field, Electrical engineer, Hawaiian Electric Light Company; Judge J. J. Banks; Mr. Arthur Green, Secretary of the Territory of Hawaii; Mr. James Loyd, Business administrater of the Territory ECW.

020 General weather conditions

The mean maximum temperature for the month was 71.6, the mean minimum 57.3, and the mean for the month 54.4 degrees. The total rainfall was 5.90 inches, comparing with 9.41 for September and 1.67 a year ago. October rainfall at the C.C.C. Camp about one and a half miles south of the Volcano Observatory was 4.30 inches.

100 Administration

110 Status of work

All office work is currant with the exception of the filing which we have been unable to bring up to date and are still approximately two months behind.

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120 Park inspections

121 Superintendent

Routine inspections of all projects were made during the month with special attention being given to the new Halemaumau-Bird Park Road.

122 Special Field Representative

Associate Architect M. S. Sager was at headquarters supervising work of the C.C.C. etc., during the month of October except for a week in Honolulu, in company with Superintendent Wingate, from October 1 to 6 and a week on the Island of Maui, October 11 to 16 inspecting the Haleakala Road project as well as supervising the first ECW work on Haleakala.

123 National Park Service Officers

Regular routine inspections were carried on during the month. On October 20 Acting Cheif Ranger Christ took a trip to Halape to inspect the coconut trees which were planted by the CCC boys the month before.

On October 22, Park Naturalist Doerr; Assistant Camp Director, Mr. Stevens and Associate Architect Sager accompanied by Mrs. Doerr made a reconnaissance for a new trail location leading from Kilauea Iki to the Thurston Lava Tube. This is a CCC project.

Ranger Peck patrolled the telephone line up Mauna Loa on the 23d of the month and on the 29th Ranger Murray made his first trip up to the mountain to bring down two rolls of copper wire.

130 Finance and Accounts

A detailed statement showing the status of park appropriation is attached as Statistical Report No. 8.

150 Equipment and supplies

Small miscellaneous supplies and equipment were purchased during the month.

180 Circulars, placards, publicity bullentins

Volcano letters issued by the Hawaiian Volcano Observatory during the month of August are attached. Septembers Volcano Letter is attached.

200 Maintenance, Improvements and New Conatruction

210 Maintenance

There was the usual maintenance of automobile equipment, roads, trails, telephone, buildings, electricity, etc.

220 Improvements

On September 24 work was started on the painting of the Volcano House and seven cottages. The utility buildings in the rear were not included in this paint contract. The roof has been painted black and

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and the walls a chocolate brown with the trimmings of a buff color. Landscape Architect Sager requested the roof to be painted green but due to the fact that two coats of green would be necessary to satisfactorily cover the old red roof and there were so many buildings to be painted the Superintendent in the interest of economy gave permission to Mr. Lycurgus to paint the roof one coat of black. This painting will render much less objectionable the eyesore formerly presented by the red roof and faded yellow walls which were visible over the entire crater floor. With the new colors the building becomes almost invisible from a distance.

This work is being done by contract and represents an investment of $3500 by the Hotel. The work to date is 96 percent complete.

On October 24 a contract was entered into with the Interurbun Electirc Light Company, Ltd., for an underground electrical distribution system for Hawaii National Park residential area.

Each species of tree in Bird Park is being labled.

230 New Construction

PW project 312.14 Building Reconditioning for Elimination of fire hazards was 75 percent completed at the end of the month.

On October 30, the fire equipment storehouse PW project 311.14 was completed.

Haleakala Road

Project NR 7 Haleakala Road was 81 percent complete on October 15.

Considerable trouble was experienced at first in getting the proper perdentage of fine material in the crusher run and it seemed for a time almost impossible to get a surface which would not kick up under traffic. However, all of the three miles which have been treated is now in good shape and stands traffic admirably. The section from Station 168+75 to 404 will not be treated with asphalt until all heavy hauling has been done. This section is now being maintained properly and is compacted nicely under traffic. Any small sections which show evidences of insufficient fines are being treated with additional fines until they compact and do not kick out under traffic. Frequent light rains or rather precipitation of moisture from heavy clouds which hover over this mountain assist materially in water binding this material.

It is now estimated that this project will be completed early i· Janurary 1935.

Supplimental agreement is now being entered into with the c to do the work of covering the rock fills with soil, $5000 add· money has been alloted for this purpose.

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240 Improvement of approaches to the Park

The holes have been dug and the poles laid to within two miles of the Volcano, for the newelectric light line which is being constructed from Hilo to the National Park.

The road between the Kau entrance to the park and Pahala is under improvement construction. The sharp curves are being eliminated and irregularities surfaced over. This is a Territorial PW project. Also the road from Hilo to the Hilo Park entrance has been improved somewhat by the elimination of dangerous depressions caused by sinking of the subgrade.

260 Landscape Work

A small crew of CCC workers continued working on the landscaping project in the Government residential area.

300 Activities of other agencies in the Park

320 Cooperating government agencies

The Kilauea Military Camp has continued operation throughout the month.

400 Flora, Fauna and Natural Phenomena

410 Ranger, Naturalist and guide service

Rangers continued their usual duties of patrolling, maintaining roads, trails, giving service to the public, painting signs, repairing telephone and electric lines, etc.

On October 24, Rangers, Barnett, Lamb, Murray and Acting Chief Ranger Christ, surveyed the boundary line for the proposed Footprint Area Addition. On the 27th Charles H. Merriam, manager of the Land Department, C. Brewer & Company; B. M. Sumner, manager Kapapala Ranch; Mr. Rycroft, acting manager during the absence of Mr. Sumner, Acting Chief Ranger Christ and the Superintendent held a meeting on the ground at the Halfway House on the Government road near the proposed Footprint Area. The boundary located previously by Acting Chief Ranger Christ was found acceptable.

At an early date the Territorial Surveyor will be requested to have these lands surveyed and the matter turned over to the Commissioner of Public Lands for action by his Department and by the Governor.

420 Museum Service

There were 7 lectures to 367 people at the Uwekahuna Museum. In addition there were 12 auto caravans with 42 cars and 286 persons in attnedance. There was 1 field trip with 15 in attendance. Total museum attendance was 670 and total contact 1420.

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480 Natural Phenomena

The last glow in the evening from molten lava in Halemaumau pit was on October 8. The last day of the eruption may be set as October 8, thirty two days after the beginning. During the last eight days of the eruption, there was a distinct change in activity every few hours. The forenoon October 2 showed the west fountain overflooding its cone with seven streams, then the east fountain sent out a torrent more than 100 feet wide, and a new pool overflowed to the north wall of the pit. On October 3 the middle fountain and the north pool were most active, three quarters of the former lake was now a slagheap, with the north pool a depression in its flank 300 feet long. It was evident that the floor was lift over intrusive lava. October 4, the fountains were still noisy, the eastern one only a smoke hole, the west pool only a trickle. The middle fountains was jetting diagonally like a hose. It supplied the north pool and kept the pit bright, but this might was the end of illumination. The conspicuous feature on October 5 was the swelling of the edges of the floor. The west cone had ceased even to smoke and the north pool had cracking and foundering crusts onthe 6th and 7th. The steaming was less at the taluses. At 8 pm October 8 last glows were seen in Halemaumau pit.

The above was taken largely from reports by the Volcanologist, Dr. T. A. Jaggar.

The Hawaiian Volcano Observatory continued routine measurements of temperatures of cracks and rim fissures as usual throughout the month. A moderate earthquake beginning at 7:14 pm October 13 was generally felt throughout the island. This quake was strongly felt at Kona, Waimea, and Honokaa and it was reported felt in Honolulu and on the island of Maui. Its indicated orgin was 44 miles from Kilauea.

From October 14 to 21 there was an increase of smoke from the floor of the pit, and no sign of the floor sinking was obs erved. All during the month there were slight seismic disturbances recorded and feeble shocks which were felt at various places on the island of Hawaii. Avalanching from the walls of Halemaumau was frequent for several weeks following the eruption. Only one of these was large enough to cause any disturbance large enough to be recorded onthe pit seismo-graph located 400 feet from the rim of the crater.

At the time this report is being written slight blue fume can be constantly seen rising from the fire pit of Kilauea.

500 Use of Park Facilities by the Public

510 Increase or decrease in travel

Total travel for the month was 21,183 compared with 40,529 for September and 18,369 a year ago. Total travel to date is 21,183 compared with 18,369 for last year.

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530 Visitors

On October 6 four YMCA boys arrived for a short visit at the Westervelt cottage. Special lectures and tours were given for their benefit. Also four boy scouts arrived for a two day visit at the Kilauea Military Camp.

On October 11, Mr. H. Liebman and Mr. G. W. Rose, Investigators from the General Accounting Office in Washington arrived to inspect the books of this park. They remained inthe Park three days during which time Acting Chief Ranger Christ conducted them on several tours.

Fourteen members of the Lions Club of Honolulu were visitors in the park on October 13, a special lecture and tour was prepared for their short visit.

Major General Halstead Dosey, Commanding Officer of the Hawaiian Department was a guest visitor at the Kilauea Military Camp on October 13.

Hon. J. B. Poindexter, Governor of Hawaii and Col. Walter Dunham were over night guests at the Volcano House on October 22. Governor Poindexter was on an official trip to this Island.

On October 25 Col. Allen Gullion NRA administrator for the islands and his assistant Captain Archer Lerch arrived at the Kilauea Military Camp for a short stay.

600 Protection

610 Police protection

The usual minor cases of traffic violation were handled on the spot by rangers.

640 Destruction of predatory animals

Twenty four wild goats and nine wild pigs were killed during the month.

900 Miscellaneous

On the 10th Mrs. C. Hargrave arrived as a Temporary Clerk-Stenographer vice Mr. Hodges but due to illness in her family she only remained till the 21st.

On October 29, Ruth Kauhane a local girl arrived at the park to take up duties as a Temporary Clerk-Stenographer vice Mrs. Hargrave. She was recommended by the local FERA office.

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During the latter part of the month two soldiers, Private Wilcox and Private Faircloth road horseback, despite the sign directing them not to, in Bird Park making deep holes in the trail. This was reported to the Commanding Officer of the Kilauea Military Camp and the following day these two men were taken back to Bird Park with shovels and stayed there until they had filled in all the holes which their horses had made.

On October 8, the first air mail service was started between the islands of Kauai, Oahu, Maui and Hawaii. This service will be a real benefit to everyone on this island for now it is possible to have a mail service to and from Honolulu daily instead of only twice a week as previously existed.

Very respectfully,

Edward G. Wingate
Superintendent

EGW:JC

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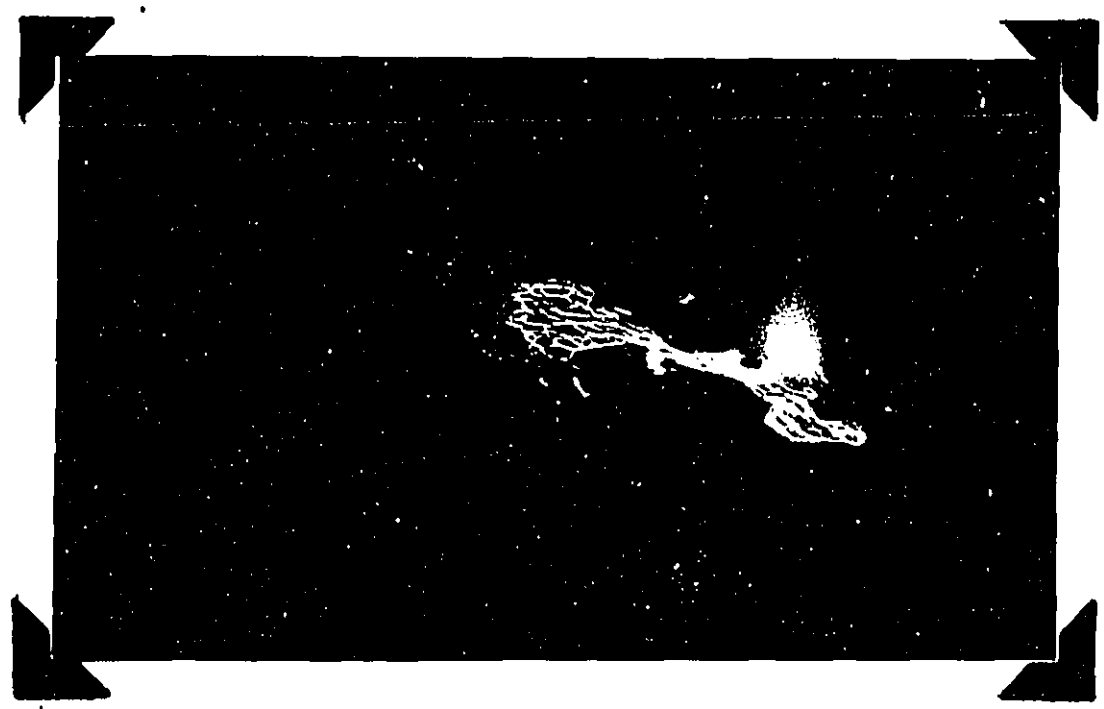
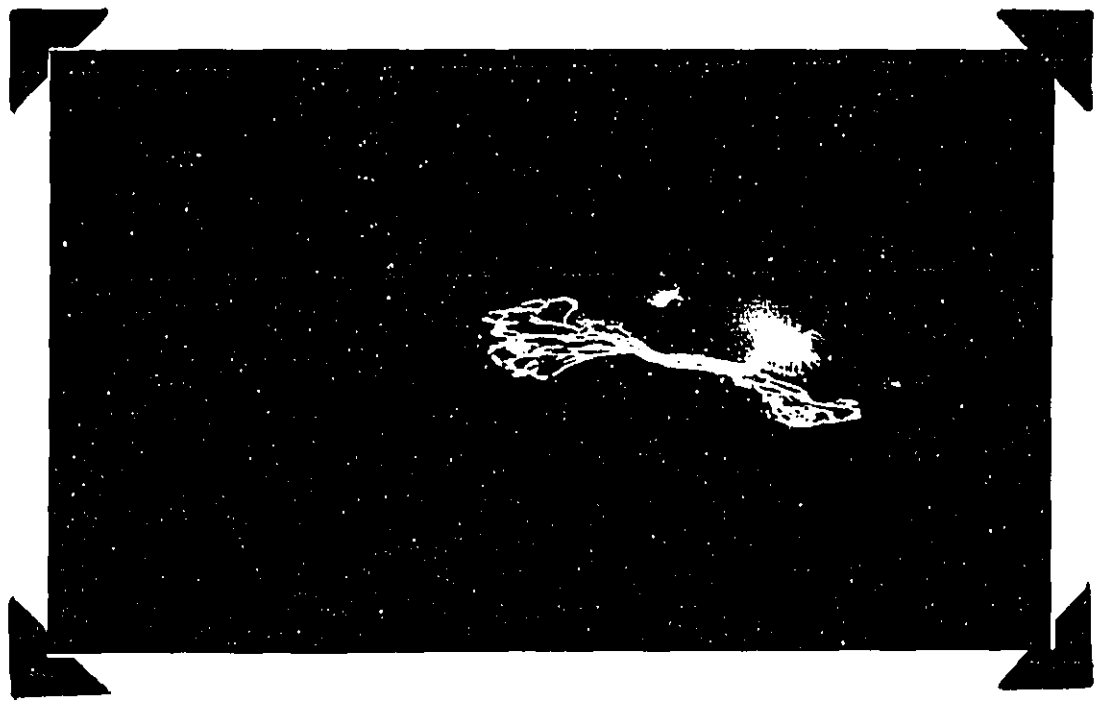
A series of four photographs taken between the hours of 7:45 - 9:15 P. M. September 30, 1974 showing the ever changing nature of the activity.





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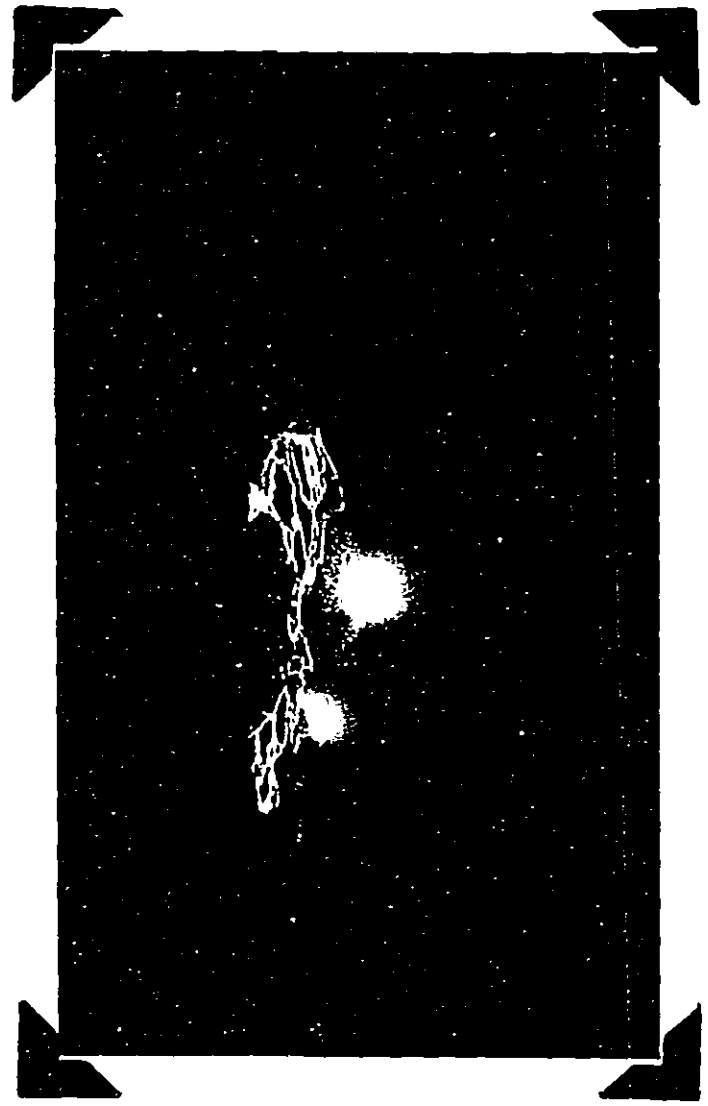

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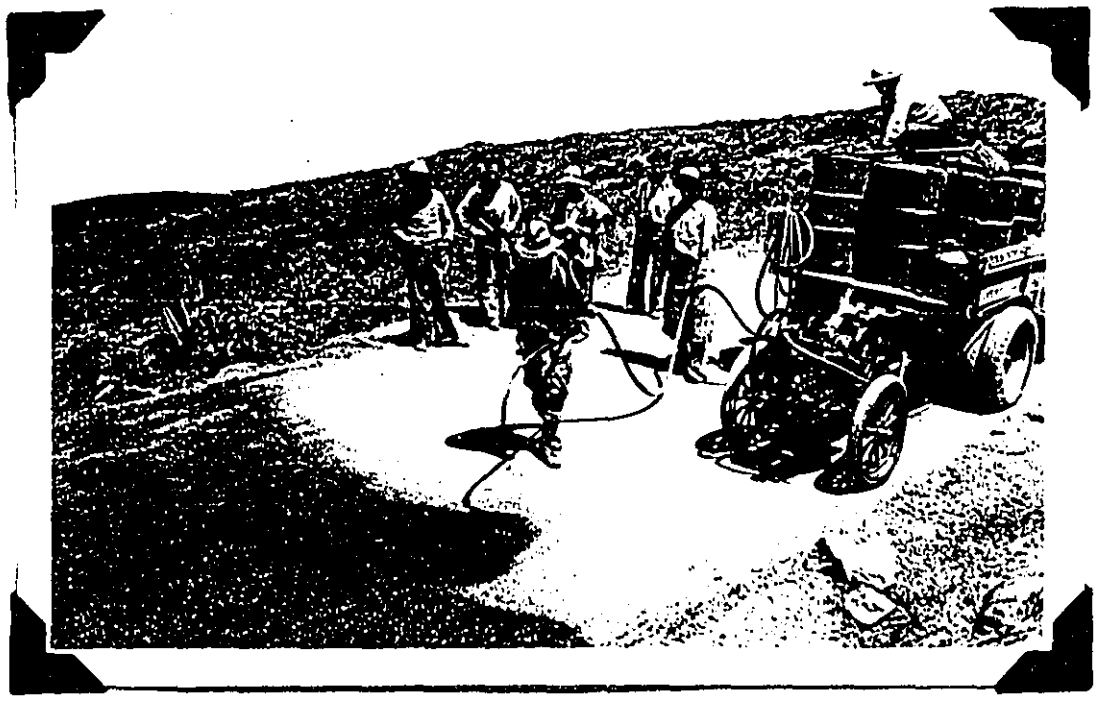

Asphalt emulsion application by pressure distributer.
Project 7 Haleakala Highway Public Works project.

At the top of White Hill on Haleakala, Maui. Left to right E. J. Walsh, Wailuku; seated Ranger Williams; standing Superintendent Wingate, Merel Sager and Dr. Powers, U. S. Geological Survey.

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Form No. 1009—Met'l.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU

COOPERATIVE OBSERVERS' METEROLOGICAL RECORD:

Month of October, *1934; Station,* Haw'n Volc. Obsy., *County,* Hawaii

Hour of Observation, 8 a.m.

State, ; *Latitude,* ; *Longitude,* ; *Time used on this form,* H S T

DATE	TEMPERATURE Maximum 1	Minimum 2	Range 3	* Set max. 4	PRECIPITATION Time of Beginning 5	Time of Ending 6	† Amount 7	HUM [illegible] 8	WIND [illegible] Time of [illegible] 9	Prevailing Wind Direction 10	Character of Day, Sunrise to Sunset 11	‡ Miscellaneous Phenomena
1	71	57	14	63		.05	.05	84	Stg	NE	Clear	
2	75	56	19	67			T	.75	Lt	NE	PC	
3	66	59	7	65			.20	.85	Stg	NE	Cloudy	
4	68	57	11	61			.12	.90	Med	NE	Cloudy	
5	70	55	15	61			.09	.88	Stg	NE	PC	
6	73	55	18	64			T	.75	Med	NE	Clear	
7	74	56	18	61			T	.90	Lt.	NE	PC	
8	73	57	16	64			.01	.89	Lt	NE	Cloudy	Thunder
9	73	57	16	61			.89	.94	Med	NE	PC	Thunder
10	73	58	15	64			.07	.89	Med	NE	PC	
11	71	59	12	62			.08	.89	Med	NE	Clear	
12	73	56	17	61			.01	92	Med	NE	Clear	
13	71	61	10	64			.02	89	Lt	ENE	Cloudy	
14	74	60	14	62			.09	89	Lt	SW	Clear	
15	72	60	12	66			T	90	Med	SW	PC	Lightning
16	78	54	24	64			T	93	Lt	SW	Clear	
17	78	58	20	67			T	89	Lt	NE	PC	
18	71	58	13	63			.28	87	Lt	NE	PC	
19	66	59	7	64			.59	89	Lt	NE	PC	
20	69	56	13	59			.30	92	Stg	NE	PC	
21	67	57	10	62			.29	90	Stg	NE	Cloudy	
22	69	58	11	60			.83	92	Med	NE	Cloudy	
23	71	58	13	60			.21	91	Med	NE	Cloudy	
24	70	59	11	61			.38	94	Med	NE	Cloudy	
25	72	54	18	61			.07	84	Med	NE	PC	
26	71	55	16	62			.11	91	Med	ENE	PC	
27	74	54	20	67			.01	83	Lt	NE	Cloudy	
28	72	57	15	66			.10	89	Lt	NE	Cloudy	
29	73	57	16	67			.05	90	Lt	NE	Cloudy	
30	73	60	13	65			.40	85	Lt	NE	Cloudy	Thunder
31	70	60	10	62			.65	94	Lt	NE	Cloudy	
Sum	221	1777	444	1956			5.90	2742				
Mean	71.6	57.3	143	63.1			.19	88.4				

* Reading of maximum thermometer immediately after setting.
† Including rain, hail, sleet, and melted snow.
‡ Thunderstorms, halos, auroras, etc.

T. A. Jaggar, *Cooperative Observer.*

(IN TRIPLICATE) See cover for instructions.

8—253
U. S. GOVERNMENT PRINTING OFFICE: 1930

Post Office Address, Hawaii Nat'l Park

MONTHLY SUMMARY

TEMPERATURE

Mean maximum, 71.6

Mean minimum, 57.3

Mean, 64.4

Maximum, 78; date, 16 & 17

Minimum, ; date, 25 & 27

Greatest daily range, 24 16th

PRECIPITATION

Total, ; inches 5.90; greatest in 24 hours .8

Date, 9th

SNOW

Total snowfall, inches

On ground 15th, inches

At end of month, inches

NUMBER OF DAYS—

With .01 inch or more precipitation, 25

Clear, 6; partly cloudy, 12

Cloudy, 13

DATES OF—

Fog { Light, Dense,

Killing frost,

Thunderstorms, 8, 9, 15, 30

Hail { Light, Moderate, Heavy,

Sleet,

Auroras,

REMARKS:

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10-157
(July, 1929)

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

TRAVEL REPORT

HAWAII National Park for the Month of OCTOBER 1934

	This Month	This Travel Year To Date	This Month Last Year	Last Travel Year To Date	Increase for Travel Year	
					Number	Percent
PRIVATE TRANSPORTATION:						
Cars first entry,						
Cars reentry,						
Motorcycles,						
Total motor vehicles,						
Persons entering via motor vehicles,	20,613	20,613	17,727	17,727	2,886	.163
Persons entering via other private transportation,	211	211	166	166	45	.271
Total persons entering via private transportation,	20,824	20,824	17,893	17,893	2,931	.164
OTHER TRANSPORTATION:						
Persons entering via ~~HOTEL busses~~	359	359	476	476	117	.246
Persons entering via trains,						
Persons entering otherwise,						
Total other transportation,	359	359	476	476	117	.246
GRAND TOTAL ALL VISITORS,	21,183	21,183	18,369	18,369	2,814	.153

	This Year	Last Year	Increase	
			Number	Percent
Automobiles in public camps during month,				
Campers in public camps during month,				

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10-158

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF AUTHORIZED PROJECTS

HAWAII National Park for the Month of OCTOBER 1934

Description of Projects	Percent Constructed To Date	Percent Constructed This Month	Percent Constructed Last Month	Probable Date of Completion
Np 102.8 Parapet Lookouts, Kilauea Iki, etc.,	99	0	0	
Np 311.14 Fire-Equipment Storehouse and Garage	99	53	46	
		0	53	
Np 312.14 Building Recondi-tioning for Elimination of Fire Hazards	66	31	17	
	98	32	31	
516 Utility Area Road, Clearing (F.A.)	5	5	0	

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10-215
(August 1933)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Office of National Parks,
Buildings and Reservations

.....PARK ART..... National Park

R E P O R T O F N O N-A P P O I N T E D P E R S O N N E L
(TEMPORARY)

Changes outside the District of Columbia for the month of ..... 19.....

Total at beginning of month	Additions	Separations	Net Gain or loss (a)	Total at ending of month
1	0	0	0	1

(a) If loss, indicate by minus sign.

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10-159
(May, 1931)

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF PERSONNEL

.....HAWAII..... National Park for the Month of .....OCTOBER 1934.....

	This Month		This Month Last Year	
	Appointed	Non-Appointed	Appointed	Non-Appointed
Number of employees beginning of month	17	1	16	0
Number of additions	2	0	1	0
Total	19	0	17	0
Number of separations	1	0	1	0
Number of employees close of month	18	1	16	0
Number of promotions during month	0	0	0	0
Aggregate amount of annual leave taken	0	0	0	0
Aggregate amount of sick leave taken	10	0	0	0
Aggregate amount of leave without pay	0	0	0	0

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10-160

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF PARK REVENUES

HAWAII National Park for the Month of OCTOBER 1934

	This Year	Last Year
Park revenue on hand beginning of month,	0.00	0.00
Received,	50.00	41.35
Total,	50.00	41.35
Remitted,	50.00	41.35
On hand close of month,	0.00	0.00

Park revenues received this year to date,	125.00
Park revenues received last year to date,	125.00
Increase,	00.00
Per cent of increase,	0.00

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10-161

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF SALES OF PUBLICATIONS

	Number	Value
GOVERNMENT PUBLICATIONS:		
On hand beginning of month,	876	163.90
Received during month,	000	0.00
Total,	876	163.90
Sold during month,	6	4.65
On hand at close of month,	870	159.25
NON-GOVERNMENT PUBLICATIONS:		
On hand beginning of month,		
Received during month,		
Total,		
Sold during month,		
On hand at close of month,		
Cash on hand beginning of month,		23.42
Sales during month,		4.65
Total,		28.07
Remitted during month,		14.60
Balance,		13.47

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STATISTICAL REPORT NO. 8

FINANCE AND ACCOUNTS

October 1934

Symbol	Appropriation			
45415	Salaries & Expenses, National Park Service, 1935	35,150.00	27,826.28	7,323.72
45406	Forest Protection & Fire Prevention (N.P.S.) 1935	300.00	4.77	295.23
44415.3	Salaries & Expenses, Office of Nat'l Parks, Bldgs., & Reservations, 1934	31,392.55	29,528.11	1,862.44
44406.3	Forest Protection & Fire Prevention, (N.P.S.) 1934	520.00	509.23	10.77
4x391	Roads & Trails, Nat'l Parks, Emergency Construction Act June 19, 1934	11,200.00	0.00	11,200.00
4-03/5640.8	NIR, Interior, Nat'l Parks Roads & Trails, 1933-35	490,000.00	473,104.78	16,895.22
4-03/5640.14	NIR, Interior, Nat'l Parks, Bldgs, & Reservation, 1933-35	11,250.00	10,718.78	531.22

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The Volcano Letter

No. 414—Monthly U. S. Geological Survey, Hawaii National Park AUGUST, 1934

KILAUEA REPORT FOR AUGUST, 1934

Including weekly press reports 1176 to 1180

July 29 to September 2, midnight

Section of Volcanology, U. S. Geological Survey

T. A. Jaggar, Volcanologist in Charge

VOLCANOLOGY

Slides in Halemaumau during August were:—

At 9:10 a. m. August 4, south wall, a small slide.

9:12 a. m. August 4, north wall.

On the previous day August 3 a small slide was reported northwest about 10 a. m.

About 11 a. m. August 12, small slide at the north.

At 9:25 a. m. August 19, an avalanche at the north.

At 1:15 p. m. August 19, another similar slide.

At 10:30 a. m. August 25, slide at the north.

Weekly measurement of opening and closing of thirty-two marked rim-crack points, around the edges of Halemaumau, showed the following changes Saturday forenoons:—

August 4. 6 opened, 4 closed, aggregate opening 2 mm.

August 11. 7 opened, 11 closed, aggregate closing 2.0 mm.

August 18. 9 opened, 7 closed, aggregate opening 2.0 mm.

August 25. 7 opened, 6 closed; aggregate opening 1.0 mm.

September 1. 7 opened, 1 closed, aggregate opening 3.0 mm.

No excessive movement occurred at Crack No. 37, described in July Volcano Letter.

August 30 temperature readings were made on the Kilauea floor north of Halemaumau. A new trail for the purpose has been built by the Hawaii National Park. Heat is at vapor vents. These vents are persistent deep crackings, which assert themselves up through surface flows. Similar temperatures are found over definite areas. Presumably deep cracking has let down rain water and brought up vapor. The mapping of these areas is important, and their changes of temperature may possibly bear on forecast. Hitherto the data of forecast for eruption are elusive, except where based on statistics, or phenomena only a few hours before the event.

In a whitened area north of Halemaumau, in 1919 lava, maximum temperature was 86° Cent; heavy grass and moss grew in the wet vapor. The 1924 ash has assisted vegetation everywhere. Farther north opposite Uwekahuna trail, the temperature was 45° C., also 1919 lava with less vegetation. In 1894 lava near the big lava dome northeast of Halemaumau, a whitened area showing lichens and grass gave 79° C. The whitening is due to insoluble sulphates. On the Volcano House trail farther east, whitened cracks cutting both 1894 and 1921 lava gave 85° C. A big steam hole farther northeast on the line between Halemaumau and the north side of Kilauea Iki gave 89° C (the boiling point of water for this elevation is about 97° C.) This was 1894 lava, the cracks showed blue-green algae in the openings, the rock was rusty and covered with salts, and a reddish belt of these cracks extended east-northeast away toward the outer walls of Kilauea crater, in a sharply marked zone radial to the Halemaumau center. The larger steam-holes that show vapor on a sunny day are very hot. Along the telephone line east of Halemaumau in 1894 lava, the maximum temperature was 63° C., the ground showing some whitened cracks and grass. The temperature of the air was 26°C.

A. E Jones was in charge of a party under Hawaii National Park July 30 to August 3, to map the lava floor of the summit crater of Mauna Loa, as left by the eruption of December 1933. The floor was flagged and a revised topographic map made with plane-table. The helpers were John Mahaiula, Fred Pestana, Louis Braz and Torao Nishimoto. The new summit rest-house was occupied and was found a protection against cold. The four days on the summit were generally clear and comfortable. The temperature was 32° F. at sunset and 20° F. at daylight. The crater was quiet, sounds of falling rocks were heard occasionally, and the 1933 lava was shell pahoehoe. Near the eruption vents the rock was hot enough to be uncomfortable, the shell lava broke easily and in places was dangerous, and sulphurous fume was locally strong. The results of mapping show the new lava field in the eastern half of the main Mokuaweoweo bowl to be two miles long by three-fourths mile wide and 100 feet thick; the source cones at the southwest are 100 feet high. The depression contour basins of the crater are now at the north and southeast. The new lava heap is thus an elongate dome highest at the southwest athwart the crater sink, with its axis northeast-southwest.

T.A.J.

EARTHQUAKES

TABLE

Week ending.	Minutes of tremor.	Very feeble earthquakes	Slight earthquakes	Distant earthquakes	Local * Seismicity.
August 5	11	4	0	0	4.75
August 12	.14	3	0	1	5.00
August 19	12	1	1	0	5.50
August 26	18	2	0	0	5.50
September 2	11	4	0	0	4.75

* For local seismicity see Volcano Letter 371.

The following successive local disturbances began at the times indicated, the epicenters as shown were located from seismograms; when possible the depth of the source is indicated. The location of epicenters is based on four main seismograph stations, Kilauea, Hilo, and Kona. Waiki did not return any records for days when earthquakes ocurred. The intensity is that recorded on the Kilauea instruments.

July 30. 0:23 a. m. very feeble, Lat. 19° 40′ N. Long. 155° 45′ W; under Hualalai.

July 30. 4:18 a. m. very feeble, Lat. 19° 20′ N. Long. 155° 14′ W; under Ainahou Ranch.

July 30. 3:28 p. m. very feeble, Lat. 19° 22.5′ N. Long. 155° 17′ W; under the south slope of Kilauea 1 mile from crater.

July 31. 0:06 a. m. very feeble, Lat. 19° 22.5′ N. Long. 155° 13′ W; 1 mile deep under Heake crater, one of the chain of craters.

August 7. 10:19 a. m. very feeble, Lat. 19° 32′ N; Long. 155° 32′ W; 5 miles deep under Mauna Loa NE rift, near summit. Felt in Hilo.

August 11. 2:38 p. m. very feeble, Lat. 19° 18′ N. Long. 155° 28′ W; 1 mile deep under SE flank of Mauna Loa, near Wood valley.

August 16. 2:08 a. m. slight, Lat. 19° 38′ N. Long. 155° 15′ W; 5 miles deep uder Mauna Loa NE rift. It was felt in Hilo and Honomu.

August 25. 2:08 p. m. very feeble, Lat. 19° 25.3′ N. Long. 155° 16 5′ W; 1 mile deep under Kilauea crater.

August 28. 5:51 p. m. very feeble, Felt by several on Kilauea crater rim, probably centered under crater.

The long waves of a teleseism began recording at 5h:30m:40s. p. m. August 6.

USC&GS reports it as occurring near the New Hebrides, Lat. 14° S. Long. 168° E.

Microseismic ground motion was normal (20 to 30 microns) July 30 and 31, and was subnormal (8 to 20 microns) August 1 to September 2.

A.E.J.

TILTING OF THE GROUND

The table shows tilt by weeks from seismograms at Kilauea Observatory, northeast rim of Kilauea crater; and at Halemaumau the algebraic sum of radial tilts for the three clinoscope cellars, towards or from the center of the pit.

At the Observatory the total accumulated tilt in the year ending September 2, 1934 is 1.9″ N and 2.7″ E.

TABLE OF TILT

Date 1934	Observatory	Halemaumau
July 30 to Aug. 5	0.7″ NNW	0″
Aug. 6 to Aug. 12	0.4″ WNW	1.0″ from
Aug. 13 to Aug. 19	0.8″ ENE	6.9″ towards
Aug. 20 to Aug. 26	1.2″ ENE	5.6″ towards
Aug. 27 to Sept. 2	0.5″ N by E	1.2″ towards

A.E.J.

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The Volcano Letter

No. 415—Monthly U. S. Geological Survey, Hawaii National Park SEPTEMBER, 1934

KILAUEA REPORT FOR SEPTEMBER, 1934

Including weekly press reports 1181 to 1184
September 2 to September 30, midnight
Section of Volcanology, U. S. Geological Survey
T. A. Jaggar, Volcanologist in Charge

VOLCANOLOGY

Halemaumau pit of Kilauea Volcano broke into lava eruption in its bottom about 2:44 a. m. September 6. On the preceding day there were slides before and after noon, and the seismograph SE of Halemaumau registered southwesterly tilt the afternoon of the 5th. This was the first real premonitory symptom.

Sept. 6 tremor spasms began 1:07 a. m. a few minutes apart, and shocks close to the pit accompanied the outbreak, the feeble shock at 2:44 a. m. being followed by the continuous tremor of fountaining, and by the bright glow of inpouring lava and clouds of fume. The fountaining places began at the edge of the 1932 floor north, northwest and west. The first two were at the base of taluses, the third a crack back of the west buttress. Here the lava squirted up in 25 jets along a horizontal line halfway up the wall of the pit. These jets cascaded down the wall in ribbon cataracts. They poured over the large west talus and went out of action by 6 a. m. The northwest fountains were several hundred feet high like jets from hose nozzles, covering up the northwest talus with pumiceous lava. The northern line of fountains trending E-W about 600 feet was quickly submerged under the spreading lake, and became a lake center destined to survive. Between 3 and 4 p. m the northwest fountains went out of action, making a great diminution in fume volume, and the eruption adopted stability of action at the northern fountains, followed by gradual dwindling for thirty days.

Sulphurous fume of absinthe red color in transmitted light boiled up several thousand feet the first twelve hours. With it went fragments of basaltic pumice, but nothing resembling ash. The reflected fountain light was yellow-green to orange. The noise was a rumbling, and a rushing of gas. Hundreds of whirlwinds swept up clouds of dust west and southwest of Ha'emaumau, the trade wind being from the northeast. Pumice fragments up to 30 cm. fell on the ground outside of the pit.

At 4 a. m. Sept. 6 there were 30 jet fountains. At 8 a. m. the new bottom pool covered the entire 1932 floor 60 feet deep. Its area was 90 acres and its volume 9 million cubic yards. Only the top of the 1932 border cone was still emergent. Ten main vents persisted until 6 a. m. along the cascade crack, the cascades being 300 to 400 feet high, and there were two or three subordinate cascades, on an extension of the crack which opened on the north side of the west boss.

Northeast and southwest of the pit, the broken ground exhibited new breaks in the ash soil. At noon Sept. 6 the north fountains had dwindled and the northwestern ones were very violent. The lake was covered with a bright-line pattern and black silky skins. There were straight lines of bubble fountains along the meeting belt of surface currents. A bench and rampart of crusts developed around the lake, wider at the taluses, where the submerged slope was flatter. The tremor diminished when the violent northwest fountaining stopped rather suddenly, between 3 and 4 p. m., and only thin blue fume was left arising from the northern interior fountains.

Sept. 7 there were 8 fountains, the larger one making blast-like detonations, flinging up lava 300 feet, and emitting brown puffs. Tremor increase rang the annunciator bell at the Observatory two miles away. The lake diminished to a northern circle around the fountains 1200 feet in diameter. Sept. 9 the floor had shrunk and lowered 10 to 20 feet, and the inner lake was smaller, at the NNE side of the floor. There was a slump scarp all around. A few slides occurred. The lake Sept. 10 measured about 1000 feet east-west by 400 feet north-south, and was defined by a border rampart over which went overflows. The lake became an oval plateau on top of a terraced heap. Spatter banks formed behind the two bigger fountains east and west, showing that the lake was shallow as usual. Only the fountains were over wells. September 11 overflows poured out of the lake heap on all sides. Sept. 12 islands of crust and spatter began to form near the eastern fountains. Detonations came from the wells from time to time as the vents clogged. Five sulphur patches appeared on the taluses. Sept. 15 there were five principal fountains and a line of islands from NW to SE across the lake. Sept. 16 the western fountain was dominant, with a cone and crater about it. There were ten fountains, six islands and a peninsula.

Sept. 20 the floor measured 2700 by 2200 feet. The lake pool measured 744 by 390 feet. This pool stood 38 feet above the floor, and the highest grotto heap of its banks stood 136 feet above the pre-eruption floor of 1932 immediately under it. The average 1932 floor level was 2796 feet above sea-level, while the average 1934 new floor level is 2874 feet. This makes the average thickness of the new layer 78 feet.

Overflows built up the new lake heap against the north wall of the pit. Ten cracks gradually developed in the outer floor radial to the lake. The overflows appeared to be a stiff viscous pahoehoe Always the streaming was outward from the west fountains as source well, and sometimes the east fountains exhibited a well of inward cascading downward. Evidently a convectional circulation was being established, and the sinkhole well tended to explode with detonations. The lake remained brimming full and the fume remained thin.

Sept. 20 a new feature back of the border slump scarp at the edge of the greater floor of Halemaumau was the welling up of trickle flows glowing red, evidently following the "wall-crack" between the talus and the new cake of 1934 fill. This was the first time after the early days that any glowing lava had appeared from a source away from the lake. These trickle flows at 11 a. m. rose along the base of the east talus, and at 2:30 p. m. they rose along the base of the south taluses. The next day September 21 the west talus developed the same kind of trickle flows along its base. These risings at the floor edge were favored by freedom of percolation of the lava among talus bowlders, but the trickle flows extended to places under the rock walls of the pit. In no case did they cascade over the slump scarp inward, but rose as a dike between the floor cake and the outer funnel. In each case their appearance was marked by extra pressure at the lake, accompanied by overflows. The band of border extrusion was 20 feet wide in places. Sept. 22 during a big overflow from the lake southwest, wall-crack trickle appeared along the small talus heaps west-northwest.

Sept. 22 detonation spells from both east and west wells of the lake recurred from time to time, usually when the east fountain had been transformed into a sinkhole grotto Big bursts of gas and flame came up. The phenomenon of downpouring would last from 10 to 20 minutes. Then the pot would resume ordinary fountaining with outward streaming. Harmonic tremor greatly increased during detonation spells. September 23 the west fountain had become a pool in a raised cratelet, from which a cascade poured southward into the lake.

This cratelet made noisy high explosions emitting brown fume bursts. Four avalanches were observed at the north wall of the pit. About 2 p. m. the lake drained out almost completely through the eastern sinkhole, leaving an empty saucer 20 or more feet deep, with the western source quiet, and explosions at the sinkhole Then the liquid poured in again. The duration of these drainages was from a half-hour to two hours, increasing until October 1 in duration and violence at intervals of about six hours. Eventually the detonations were heard three miles away.

The elevation above sea-level of the lake Sept. 20-21 was 2882 feet, of the floor, 2844 feet, of the floor edge 2860 feet. The spatter heaps stood 26 to 28 feet above the lake. The depth of the pit from the Tourist Stand southeast (B. M. 3644 feet) to the lake plateau was 762 feet, and to the mean level of the bottom 770 feet. The highest spatter heap at the lake stood 71 feet above the lowest part of the floor.

The last week of the month was characterized by the six-hour intervals between explosive drainages of the lake, and by swelling up of the edges of the floor. Probably the whole floor was swelling by intrusion. This accounts for the drainages, and agrees with the earlier wall-crack trickle flows. Apparently the pulsations of lowering the lake basin—all overflows had now ceased—were occasioned by inflow of the liquid under the shell of crust forming the floor of Sept. 7-8. The floor was lifted and the lake went down. The lake heap was thereby abolished. The explosions

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were due to clogging of the gases in the increasingly viscous lava of the wells, unable to fountain freely with artesian well action, when by r[illegible] of recession the effervescent fluid was trying to fo[illegible]m at the bottom of a shaft. Failing to overflow, the wells became gun barrels. With each detonation an umbrella-shaped fling of stiff lava would shoot up 400 feet, the roofs of the grottoes would be blown to pieces, and fragments would clatter down all over the surrounding surfaces. Finally the explosive spells would be followed by complete quiet for a half-hour. Then the liquid would quietly recover in the wells, and restore the lake to a period of four or five hours of quiet streaming.

The drainages tended to come after noon and after midnight, and usually once in between. Sept. 25 a band of red glow showed around the floor edge of Halemaumau, indicating that wall-dike intrusion was still in progress. Sept. 26 this disappeared, but a week later it reappeared. The detail of a sinking spell of the lake was as follows. At 9 a. m. the west fountain cone was cascading over its flank; at 11 a. m. the lava had lowered 25 feet from the lake, both east and west fountain wells were cannonading vertically, long squirts of viscous melt were sent up 200 feet, the intervals between detonations or hisses were from five to ten seconds, then the lava pooled in the wells and came back with quiet fountaining at 12:15 p. m. The explosions gradually lessened, a fan-shaped flood from the west fountain met an expanding puddle from the east fountain in mid-lake, the new liquid overriding the foundered crust that formed the floor of the lake.

September 28 there were still some overflows from the lake. An elephant-back ridge 25 feet high was revealed swollen and crevassed, in the edge of the new floor at the foot of the east talus. Instead of welling up the wall-crack, the under-lava was now blocked in that direction, and so was lifting the floor instead. The floor which had been 15 feet below the slump-scarp, was now 25 feet above it.

Another survey by T. A. Jaggar September 29 showed the average floor border at elevation 2860 feet as before; the inner floor 2881 feet instead of the former 2844 feet. The lake had lowered slightly from 2882 to 2879 feet elevation. The summits of the lake heap now averaged 2903 feet, where on September 21 they stood at 2909 feet. The length of the lake, now narrower and irregular, had increased from 744 to 812 feet. Its width decreased from 390 to 360 feet. The relative height of the lake heap above the floor remained about 75 feet for its maximum relief above a valley in the floor southeast of the lake basin. The east cone was its highest point, elevation 2910 feet. The relief of the floor is much greater than is apparent as seen from above. The cones about the fountains were 20 to 30 feet above the full lake.

Sept. 29 the lake made small overflows, overhanging grottoes surmounted the two fountains, gradual drainage until noon was followed by intense explosions at both wells, lasting until 1:30 p. m. The explosions demolished the arched grottoes. There was repose until 2:00 p. m. Then the wells quietly filled from below with red puddles covered with gray skin. The lake basin was refilled from both wells by torrents cascading downward over the slag-heaps of the ridge. The lake area was being converted into several ponds. Sept. 30 there was a forenoon drainage; at 8 p. m. the west fountain started lowering and exploding, while the eastern one was giving vent to a voluminous river of lava, which stopped flowing at 8:30 p. m. Then its source the east well gave vent to explosions 400 feet high, the smaller shots coming 20 to the minute. The west pot exploded sending fiery spray 600 feet high, the maximum to date; the detonations were heard 2.2 miles away and rattled iron roofs. The well seemed empty, but the gushes occasionally brought up great sheets of lava; splashes stuck on the pit wall a third of the way to the top. The greater explosions came about every 8 minutes. Cessation followed as usual. By night five glow spots showed along the edge of the floor east.

Weekly measurements of rim cracks around Halemaumau, 32 in number, gave:

Sept. 8. 14 opened, 12 closed, aggregate opening 24 mm.
Sept. 15. 11 opened, 6 closed, aggregate opening 6 mm.
Sept. 22. 10 opened, 2 closed, aggregate opening 5.5 mm.
Sept. 29. 8 opened, 6 closed, aggregate opening 2.5 mm.

By measuring the cracks the forenoon of the eruption Sept. 6, a movement of opening of 20 mm. had already taken place, involving 12 opened and 11 closed; 12 mm. of the opening was at Crack No. 37, a deep border fissure of the Kilauea crater floor southeast, which had cracked the road paving. The differential movement was down to the northwest, and up to the southeast. This movement had been in progress for some months (See July Volcano Letter).

The tilt movements at the three clinoscope cellars around Halemaumau accompanying the eruption, were inward towards the pit at the north and southeast cellars, and away from the pit at the west cellar. This amounted to more than 100 s[illegible]ds at the west and southeast cellars, but the instrument[illegible]ere dismantled, so that the values are indefinite. The north cellar registered 225 seconds south since the previous day, (Sept. 5-6).

The tilt at these cellars after the eruption proceeded was recovery at the southeast and west cellars, and continuance in the same direction at the north cellar. The west cellar recovered 21 seconds to the ENE; the southeast cellar 7 seconds to the SE; and the north cellar continued 5 seconds to the SW, between Sept. 6 and Sept. 10. The tilting movements were more normal after September 10. This was the first demonstration of the effect of eruption on these tilt cellars. The instrument pivots are not yet proof against earthquakes. T. A. J.

EARTHQUAKES.

TABLE

Week ending.	Minutes of tremor.	Very feeble earthquakes	Feeble earthquakes	Slight earthquakes	Local * Seismicity.
Sept. 9	4,878	9	1	1	1,725.
Sept. 16	10,080	1	0	0	2,565.
Sept. 23	10,075	3	2	0	2,808.
Sept. 30	9,885	0	0	0	2,763.

* For local seismicity index see Volcano Letter 371.

Note, Some of the tremor was very feeble in amplitude and was weighted accordingly.

The following successive local disturbances began at the times indicated; the epicenters as shown were located from seismograms; when possible the depth of the source is indicated. The location of epicenters is based on three main seismograph stations, Kilauea, Hilo, and Kona. No earthquakes were recorded at Waikii. The intensity is that recorded on the Kilauea instruments.

September 6, 1:07 to 2:44 a. m. several very feeble shocks and tremors occurred that were near or in the crater; they preceded the eruption in Halemaumau. At 2:21 a. m. a slight earthquake (2 Rossi-Forel) was felt by several persons living on the rim of the crater. It was located in the creater near Halemaumau. lat. 19° 25′ N long. 155° 17′ W and very near the surface of the crater floor. At 2:44 a. m. a feeble earthquake (1 Rossi-Forel) occurred. It was located near the south rim of Kilauea near the surface, in lat. 19° 23.5′ N long. 155° 16.7′ W. All of the above shocks immediately preceded the out-flow of lava in Halemaumau, and were supposedly caused by the breaking of the crust under the strain of trapped volcanic gas and magma.

September 17. 11:56 a. m. a feeble shock was felt at the Observatory and at Honomu. It was located at 19° 02′ N, 155° 13′ W. 11 miles deep.

Sept. 22. 9:44 a. m. a feeble shock was felt at the Observatory and at Kapapala ranch. It was located 11 miles deep under Hilina Pali, at 19° 15′ N. 155° 20′ W.

September 23. 1:49 a. m. a very feeble shock occurred probably one of seven felt at Kapapala ranch. It was located 9 miles deep under Pa'ima Point on the Kilauea SW rift. 19° 11.5′ N. 155° 27′ W.

No teleseisms were noticed on the seismograph records. Any small records would have been obscured by the large continuous "Harmonic Tremor" generated by flowing lava in Halemaumau.

This tremor had a period of 0.6 seconds and represented a ground movement of from 6 to 48 microns during the early hours of the eruption. Towards the end of the month the fluctuations in amplitude became more marked, dropping at times to less than one micron, at other times becoming as large as 15 microns, all with the same period. These spells were coincident with spells of explosion that recurred at 6 to 7 hour intervals during the last week of the month. (Sept. 24 to 30).

Microseismic motion of the ground was normal on the following days of the month, September 6, 7, 8, 12, 14, 19, 21, 24, 26, and 30, and subnormal the rest of the month.

A. E. J.

TILTING OF THE GROUND

The table shows tilt by weeks from seismograms at Kilauea Observatory, northeast rim of Kilauea crater; and at Halemaumau the algebraic sum of radial tilts for the three clinoscope cellars, towards or from the center of the Pit.

At the Observatory the total accumulated tilt in the year ending September 30, 1934 is 0.4″ S and 1.4″ E.

TABLE OF TILT

Date 1934	Observatory		Halemaumau	
Sept. 3 to Sept. 9	2.0″	SW	120.″ ?	towards
Sept. 10 to Sept. 16	1.4″	ENE	0.4″	towards
Sept. 11 to Sept. 23	1.0″	NNE	2.6″	from
Sept. 24 to Sept. 30	1.2″	NNE	6.0″	from

A. E. J.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

October 10, 1934

The Director
National Park Service
Washington, D. C.

Dear Mr. Director:

Following is the administrative report of Hawaii National Park for the month of September 1934:

000 General

010 Introduction

Of greatest importance to the National Park, as well as the people on the Island of Hawaii, was the return of lava to the fire pit in Kilauea Volcano at approximately 2:45 a. m. September 6. This eruption came with little preliminary warning such as had been evidenced in the past eruptions during the present cycle of Kilauea activity. There were a few reports the afternoon previous stating that blue fume had been seen issuing from the fire pit and that there had also been several avalanches from the walls.

It is unfortunate that the very small appropriation available for Volcanologic research has prohibited the scientists at the Volcano Observatory continuing the precise and frequent measurements around Kilauea which had been in effect for several years previous. However, a review of seismic disturbances and ground movements both preceeding and following the last outbreak of lava on December 23, 1931, seemed to indicate that during the year preceeding the 1930 outbreak the lava column had risen very close to the surface and remained without recession until the present eruption commenced. This statement is based on the result of frequent ground measurements determing both horizontal and vertical displacement of the Kilauea dome as well as continuous instrumental measurements by specially designed tiltmeters, of the tipping of the ground away from or toward the center of the fire pit in Kilauea.

At about 2:50 a.m. September 6th most of the park people were awakened by a more or less continual ringing of the telephone by the night watchman at the Volcano House. Upon awakening it was at once apparent that after almost three years of quiet molten lava had again appeared in Halemaumau. Dence clouds of sulphurous smoke poured from the crater reflecting luridly the light of the fiery fountains within the pit. A general alarm was

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rung and with the exception of a ranger on duty at the Park Headquarters most of the staff, as well as all of the guests at the Volcano House, Kilauea Military Camp and local residents hastened to the scene of activity. As in the last previous eruption an almost cyclonic wind was blowing from the northeast carrying the smoke of the eruption and pumice from the fountains far to leeward. Two small earthquakes, one of which awakened Mrs. T. A. Jaggar, wife of the government volcanoligist, preceeded the outbreak. These were not generally felt and did no damage.

Upon reaching the fire pit it was seen that the outbreak occurred along a semicircular crack which extended several hundred feet across the old floor of the crater in the north corner of the pit, at the foot and partly through the northwest wall, and again breaking through the west and south west wall about 425 feet above the old floor of the crater. This cracking through the wall while quite common in Mauna Loa eruptions had not before been witnessed at Kilauea. This part of the source crack was about 700 feet in length and from it for several hours poured beautiful cascades of molten lava while to the north and across the old floor were almost countless fountains some of which resembled water poured from a nozzle of a firemans hose in their continuous action. Two to four hundred feet in to the air these streams of highly gas-charged lava shot forth. This spectacular activity endured for almost twelve hours after the first outbreak. After this initial fiery gas-charged froth had been discharged and the floor level raised approximately 70 feet the spectacular fountaining ended, and the main eruption commenced with six to ten moderate fountains active along a small arc in the north corner of the pit.)

By the afternoon of September 7 it appeared that the activity was about to end. The fountains were barely bubbling with only one or two at all active. The new floor entirely crusted over, had shrunken greatly through loss of gas and cooling, and small gas bubble explosions such as had preceeded by a few hours the dying out of the 1931-32 eruption, were heard. However, our disappointment was not long lived since by the morning of September 8 the activity was definitely increasing and continued so until September 12 when two large fountains were violently active throwing lava one to two hundred fifty feet into the air. These fountains were inthe center of a lake some 20 odd acres in extent from which there were frequent over-flows onto the blackened surface of the first days eruption. This fountaining continued for several days when it was observed that the whole of the crater floor was being lifted up by under flows from these fountains. Radial cracks extended on all sides from the lake as a center. A day later marginal flows or squeezings-up of lava at the foot of the crater walls developed and lasted for two or three days. Following this there was a short period of mild activity which ended on the morning of September 22 when the most interesting phase of the entire eruption commenced.

For some days previous the two major fountains had been building small cones. On this particular morning the lava in the westernmost

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fountain was seen to be bodily heaved up in great surges above the walls of the surrounding cone, pouring in torrents across the lake, and disappearing into the mouth of the eastern fountain. As the gas bubbles arose through this downward flood terrific explosions occured some of which were reported heard in Bird Park three miles distant. This violent activity and circulatory action in the lake would continue for a period of from 10 to 30 minutes and be followed by a period of relative quiet with both fountains mildly active. This phase of the activity lasted most of the week following and was most violent at the end of the month at which time the average height of the fountains was close to four hundred feet and some of the jets were reported as being thrown fully to the rim of the crater a height of some 750 feet. While the initial activity was no more spectacular than other recent eruptions in Kilauea later development proved it to be far more interesting and seemed to indicate that a return to semi-permenent activity will be shortly forth-coming. There is an eleven year cycle in volcanic events and it has now been almost 10½ years since the major collapse accompanying the steam blast eruption of 1924.

During the first three or four days of the eruption thousands of people witnessed the spectacular display and it became necessary to double the size of the tourist lookout at the rim of the fire pit. For several nights the new parking area was completely filled with cars but there were no traffic jams and only minor accidents were reported.

As in the last previous eruption of Kilauea a radio broadcast was given from the rim of the Fire Pit over station KGU Honolulu. Two island wide broadcasts were given and a third over NBC network. The NBC broadcast was given during a rather violent electric storm which added considerable to the occasion. Professor T. A. Jaggar, Park Naturalist Doerr, and the Superintendent participated in this broadcast.

Superintendent's trip to the Island of Maui

On Sunday September 23, the Superintendent left Park Headquarters for an official trip to inspect the progress of the Haleakala Road, assist in the establishing of the CCC Camp in Haleakala Crater, and to meet with the Maui Chamber of Commerce.

Of most importance to the Park was the transfer of the control of the Haleakala rest house from the Chamber of Commerce of Maui to the National Park Service. This transfer was very graciously made and for the time being temporary authority was given Mr. E. J. Walsh, who has been operating the Haleakala rest house, to continue operation pending the approval of an application to the Department for a permit to provide accomodations etc., for visitors to that section.

Though some discussion was held at the meeting with the Chamber no definite date was set for the official opening of the Haleakala Road.

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In company with Associate Architect Sager, Mr. E. J. Walsh, Resident Engineer Handley and Ranger K. J. Williams an inspection of the White Hill parking area and proposed road to the summit of this hill was made. A thorough inspection was given the Rest House and suggestions made for improving the accomodations offered. Another day was given to a general inspection of the Haleakala Road.

Contact were made with Territorial Forester Wm. Crosby; Mr. H. P. Baldwin; Mr. Sam Baldwin; Dr. Will Baldwin; Mr. Stafford Austin, President of the Maui Chamber of Commerce; Judge C. C. Conradt; U. S. Commissioner; Sheriff Clem Crowell; and others.

Both Associate Architect Sager and the Superintendent spoke at the meeting of the Chamber of Commerce.

In company with Ranger Williams the Superintendent visited various ranchers and small homesteaders in search of pack animals for the CCC Camp in Haleakala. The Kula Sanatarium was visited and arrangements made to have the enrolled boys given medical attention by the hospital staff.

020 General weather conditions

The mean maximum temperature for the month was 70.9, the mean minimum 57.7, and the mean for the month 64.3 degrees. The total rainfall was 9.41 inches, comparing with 2.38 for August and 3.40 a year ago. September rainfall at the CCC Camp about one and a half miles south of the Volcano Observatory was 6.47 inches.

100 Administration

120 Park inspections

121 Superintendent

Routine inspections of all projects were made during the early part of the month in the Kilauea Section and during the latter part of the month the Superintendent made an official trip to the Haleakala section to inspect road Project NR 7 and direct establishment of CCC Camp in the crater and for official contacts.

122 Special Field Representative

Associate Architect Merel S. Sager was at headquarters supervising work of the Civilian Conservation Corps, etc., during the month of September except for a weeks visit to the Island of Maui, September 23 to 28 to inspect the Haleakala Road under construction.

123 National Park Service Officers

Regular routine inspections were carried on during the month.

130 Finance and Accounts

A detailed statement showing the status of park appropriation is attached as Statistical Report No. 8.

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150 Equipment and supplies

Small miscellaneous supplies were purchased during the month. In addition three reels on "Glimpses of our National Parks" arrived on September 13 and that afternoon the first showing was given to the people in the Volcano area.

180 Circulars, placards, publicity bullentins.

During the eruption of Kilauea a daily statement was prepared for press use on the nature of the activity. These statements were generally given over phone to Hilo papers and radio to those in Honolulu.

200 Maintenance, Improvements and New Construction

210 Maintenance

There was the usual maintenance of automobile equipment, roads, trails, telephone, buildings, electricity, etc.

230 New Construction

On September 30 the fire equipment storehouse PW project 311.14 was 96 percent constructed.

PW project 312.14 Building Reconditioning for Elimination of fire hazards was 35 percent completed at the end of the month.

A small shack to shelter the radio equipment used during the KGU broadcast was erected at the rim of the fire pit of Kilauea during the eruption.

Haleakala Road

On September 15 the road was 73 percent complete. Rough excavation has advanced and also the dressing up crews have advanced from Station 0 to 395. Box culverts are all completed and backfilled. Considerable trouble has been experienced in getting sufficient percentage of fine material in the crusher run bottom course material. The crusher being unable to make sufficient fines from the available crushing material. The contractor purchased a regrinding crusher for the purpose of making fines. On September 11 the application of emulsified asphalt was begun and is working out very successfully.

240 Improvement of Approaches to the Park

The construction of the new electric light line up to the Park is now advanced so that there remains only seven miles to be completed before it reaches the park boundary.

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260 Landscape Work

A small crew of CCC workers have been working on the landscaping project in the government residential area.

Early in the month a crew of CCC boys carried out a planting project at Halape, the only section of our sea coast area which can be developed. The project consisted of planting 105 coconut trees and the construction of a protective wire fence.

300 Activities of other agencies in the Park

320 Cooperating government agencies

The Kilauea Military Camp has continued operation throughout the month.

400 Flora, Fauna, and Natural Phenomena

410 Ranger, Naturalist and guide service

Rangers continued their usual duties of patrolling, maintaining roads, trails, giving service to the public, painting signs, repairing telephone and electric lines, etc.

During the month ranger scedules had to be completely revised in order to properly handle the enormous crowds of visitors who came into the Park to witness the fiery display in Halemaumau. Rangers were on duty day and night continuously during the time the crater erupted. Ranger service was greatly assisted by volunteer groups of CCC boys who directed traffic in the Parking area and also served as guards on the rim of the pit.

420 Museum Service

There were 25 lectures to 1,856 people at the Uwekahuna Museum. In addition 12 auto caravans were conducted with 51 cars and 307 persons in attendance. There were 4 field trips with 81 in attendance. Total museum attendance was 3,922 and total contacts 11,036. Due to the eruption there were lectures at the Fire Pit of Kilauea totaling 35 with 4,870 people in attendance. The Park Naturalist spoke on each of the broadcasts given over KGU and also their broadcast over NBC network.

480 Natural Phenomena

The eruption of Kilauea is covered under 000 General

500 Use of Park Facilities by the Public

510 Increase or decrease in travel

Total travel for the month was 40,529 compared with 22,479 for August and 37,597 a year ago. Total travel to date is 240,997 compared with 171,570 a year ago representing an increase of 40.5 percent.

520 Conditions which affect travel

The recent eruption in Kilauea has caused a marked increase in travel to this island this month. The first night of the eruption

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approximately 6000 people were at the rim of Halemaumau to witness the spectacle.

When the Halemaumau-Bird Park-Uwekahuna Road was completed the park service received considerable adverse criticism locally concerning the size of the Parking area at Halemaumau. It was thought to be entirely too large and contrary to our policy of preserving the appearance of the landscape. The eruption of Kilauea, however, demonstrated the necessity of having an area of this size convenient to the pit. The parking was handled without difficulty and though at times the area was filled with cars there were no traffic tangles, damaged fenders, etc. The local paper devoted an editorial to this subject, in which it apoligized for its previous criticism.

530 Visitors

On the first of September Hon. J. J. Banks, Associate Justice of the Territorial Supreme Court, visited the park and remained at the Volcano House for more than two weeks.

The French Cruiser Regualt de Genouilly arrived in Hilo on the second of September for a few days. During this time the officers and men visited the park and special lectures and tours were prepared for them. Ranger K. J. Williams, the only member of the staff who speaks French at all fluently, made it possible on the tours for the cadets to fully appreciate the trip.

Attorney General Pittman of the Territory of Hawaii visited the park for about two weeks on September 5.

On September the eighth Hon. J. B. Poindexter, Governor of Hawaii, Commander R. F. McConnell, Chauncey S. Wightman and Admiral C. W. Cole arrived at Hilo by Navy Plane for a two day visit at the Volcano House and to view the eruption in Kilauea. The Governor and his party were the guests of George Lycurgus and the Superintendent during their stay at the Volcano House.

Mr. Homer Tyson and Mr. J. R. Smith arrived to supervise the and direct the broadcast from the rim of the pit over KGU.

On September 18, Mr. Samuel W. King condidate for delegate, on the Republican ticket, to Congress talked at the Volcano House. He and his party were over night guests so that they might view the Volcano by night. On the following day Mr. J. H. Wilson also a candidate for the same office on the Democratic ticket gave a talk to the people of the Volcano region at the Volcano House. The Hon. L. L. McCandless, Delegate to Congress for the Territory of Hawaii and a candidate for reelection gave a speech at the Volcano House later in the month.

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Colonel Van Voorhies, Chief of Staff, Hawaiian Department was a visitor at the Kilauea Military Camp during the month.

Mildred Leo Clemens, niece of Mark Twain, and Francis Parkinson Keyes, a magazine writer were visitors of the Volcano House and Park during the eruption of Kilauea.

Mr. V. Hinkley, special correspondent and John Williams, staff photographer, for the Star Bullentin were visitors in the park. Both of these men wrote very complimentry articles which appeared in the Star Bullentin at different times.

Mr. R. S. Wheeler, Bureau of Public Roads, was on an official inspection tour of the park roads during the early part of the month.

Paul Marques, representing the Pathe News for the Territory of Hawaii arrived following the outbreak of Kilauea and took some very interesting movies of the Fire Pit in action.

Dr. Harold T. Stearns, Hydrologist for the U. S. Geological Survey, spent some time in the Park witnessing the eruption of Kilauea. Dr. Stearns', Water Supply Paper 616, "Geology and Water Resources of the Kau District Hawaii", is an able reference on the geology of this region.

Colonel Charles C. Elliot was a visitor at the Kilauea Military Camp during the month. He discussed the matter of the extension of the Military Camp here in the park with the Superintendent. The discussion was the subject of a letter to your office.

600 Protection

610 Police protection

The usual minor cases of traffic violations were handled on the spot by ranger warnings. A few accidents were reported in the park during the rush of cars coming to view the Volcano, but none of serious nature. As far as possible these were taken care of immediately by rangers on duty.

One way traffic to the Fire Pit was maintained at night to avoid possible accident.

640 Destruction of predatory animals

Seven wild goats and twelve wild pigs were killed during the month.

900 Miscellaneous

On September 19 Park Ranger Lamb discovered a fresh landslide in

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Aloi Crater. When further investigated by Acting Chief Ranger Christ it was found that the slide had uncovered a new steam crack in the Crater.

An electric storm lasting for two days started on the eleventh of September. Snow fell on Mauna Loa during the storm.

On September 8 Ranger P. Murry arrived to take up duties in this park. Ranger Murry was transferred from Petrified Forest National Monument where he had been a ranger for several years. Mr. Murry is replacing Ranger D. Eaton who had been on duty in this park for three years. Ranger Murry arrived in time to receive a genuine initiation into the fold of those who pay homage to the Goddess of Pele.

Very respectfully,

Edward G. Wingate
Superintendent

EGW:JC

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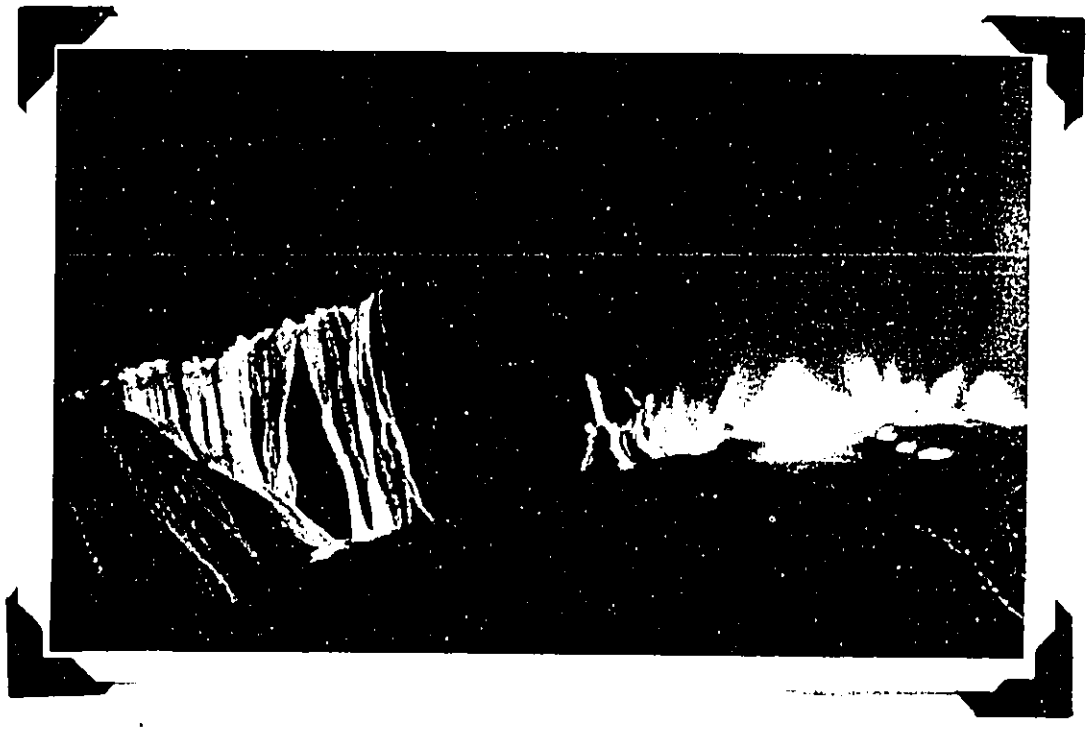
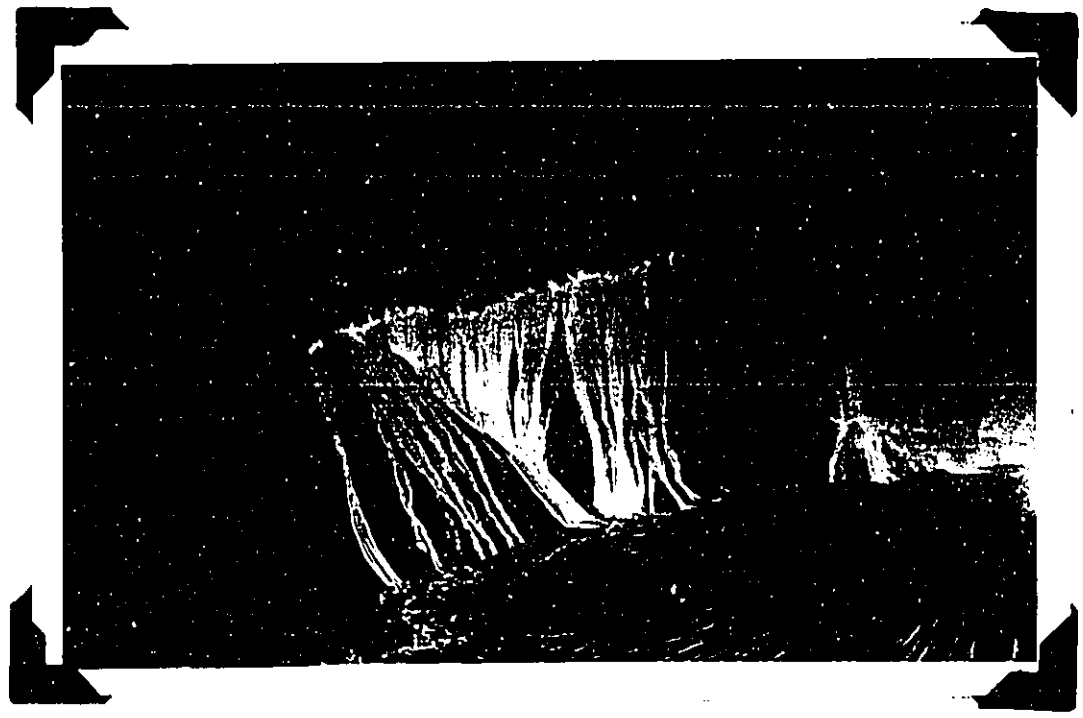


View of lava cascade and spectacular fountaining. Morning of the eruption. - September 6, 1934



Lava Cascade down west wall of fire pit. This cascade was 700 feet wide and flowed down 425 feet into lava lake below. September 6, 1934.

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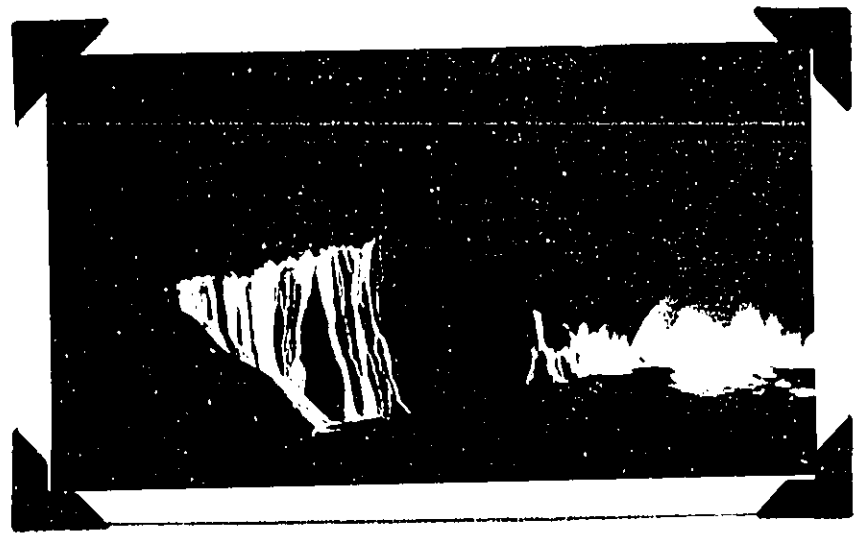
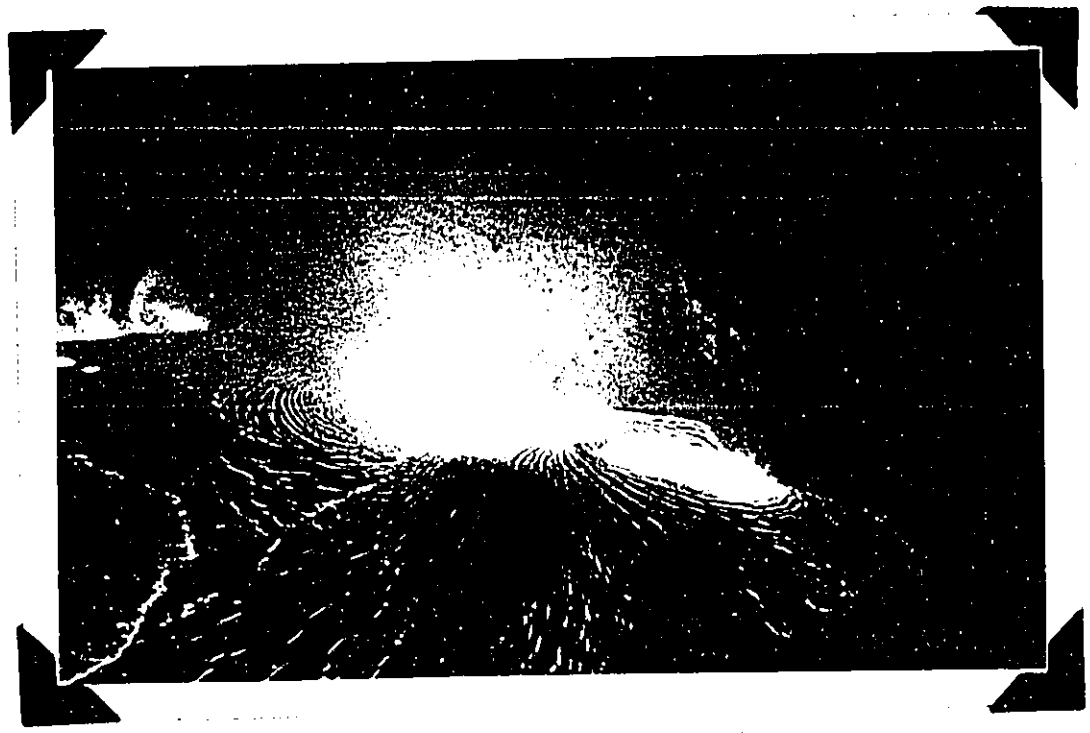


Spectacular cascading and fountaining the first morning of the eruption. September 6, 1934



Fountaining at the north end of the fire pit. Fountains playing 300 to 400 feet in the air. September 6, 1934.

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View of fountains taken directly from above the first night of the eruption.

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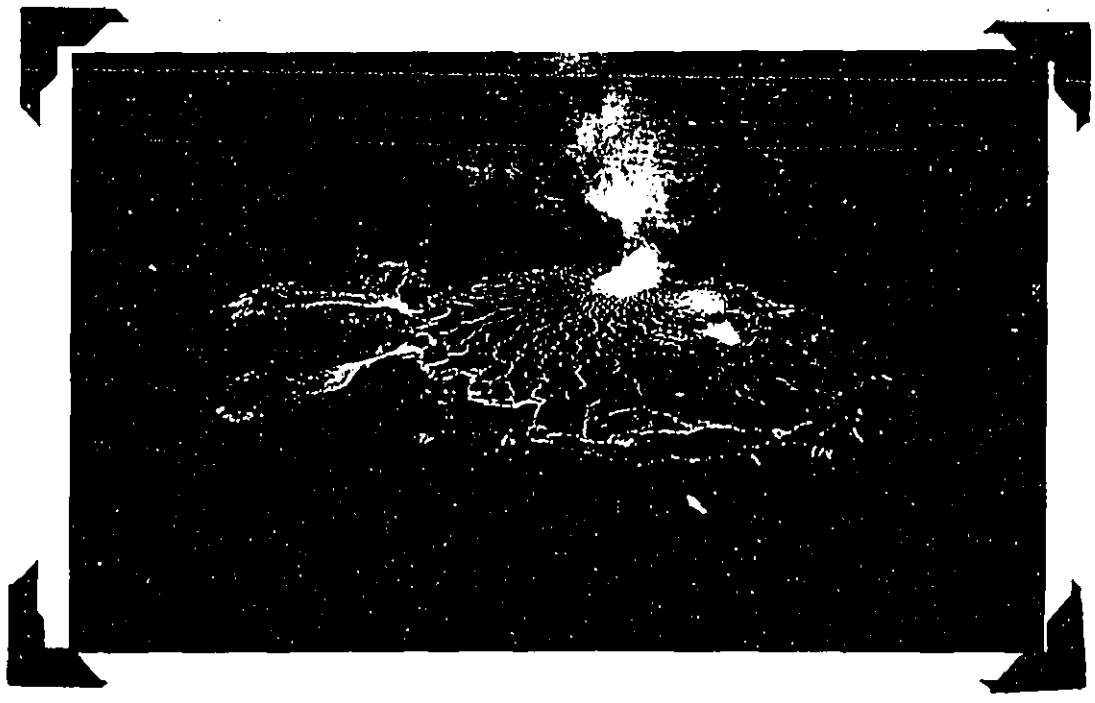
Night view third day of eruption. Note low state of activity with fountains only 10-20 feet high.



Twilight view on 5th day. Lake had decreased in area but frequent overflows occurred. Fountains had commenced cone building and were 25-75 feet in height.

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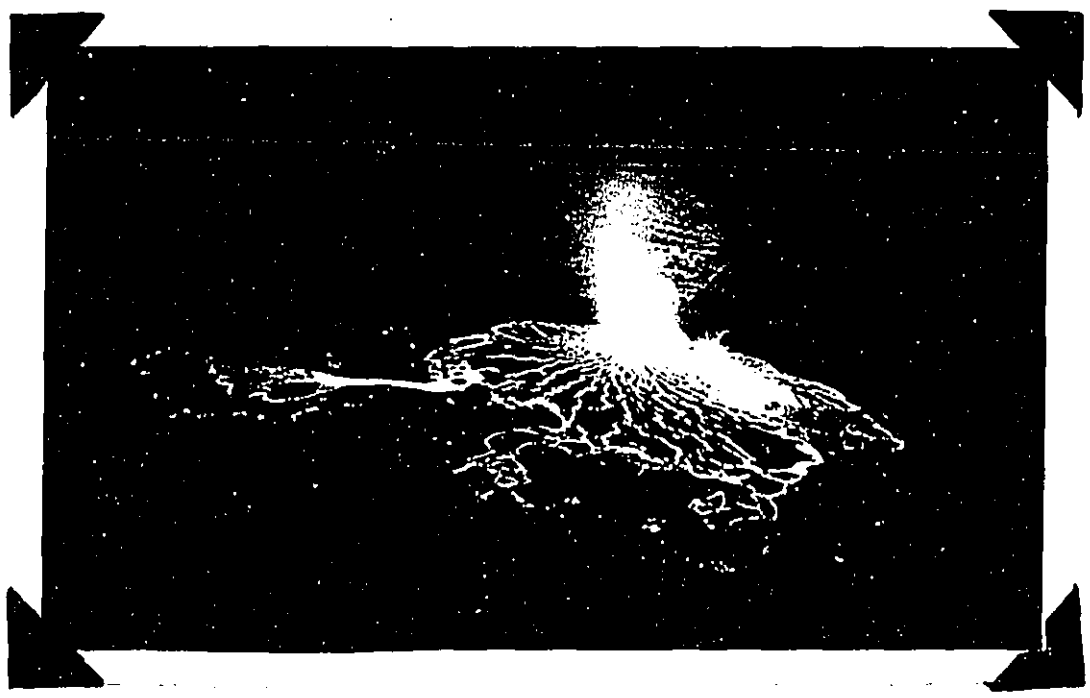
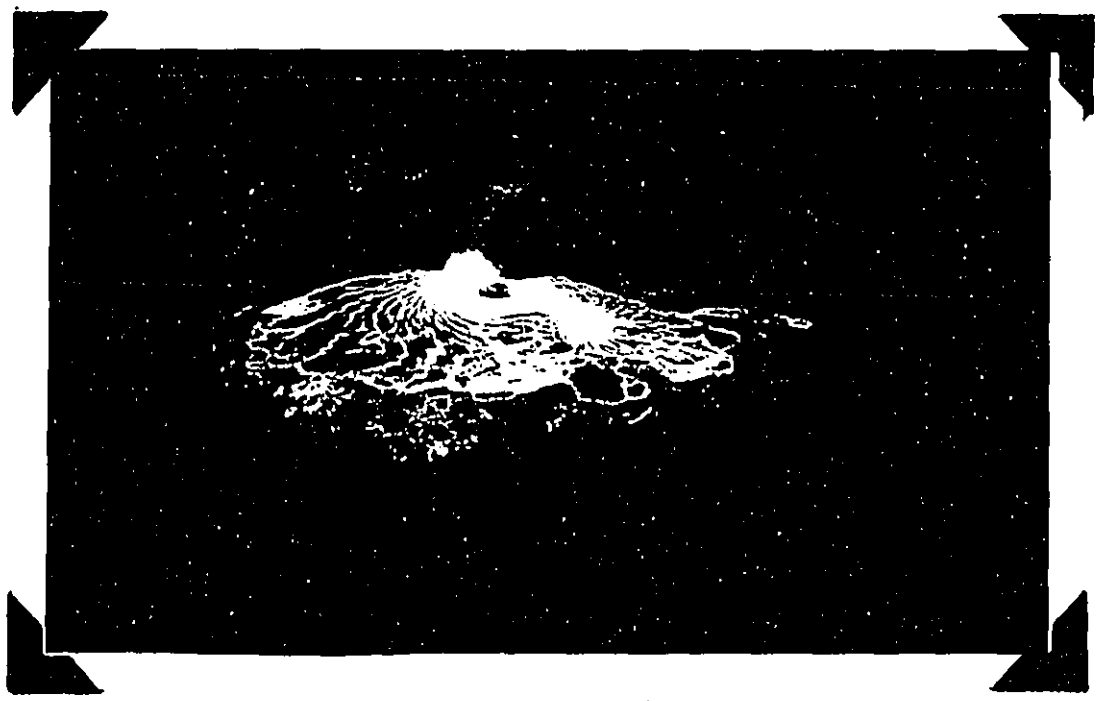


Night view on 7th day. Note increased activity in fountains.



Night view on 8th day. Flows from lake beneath surface were doming up the whole crater floor.

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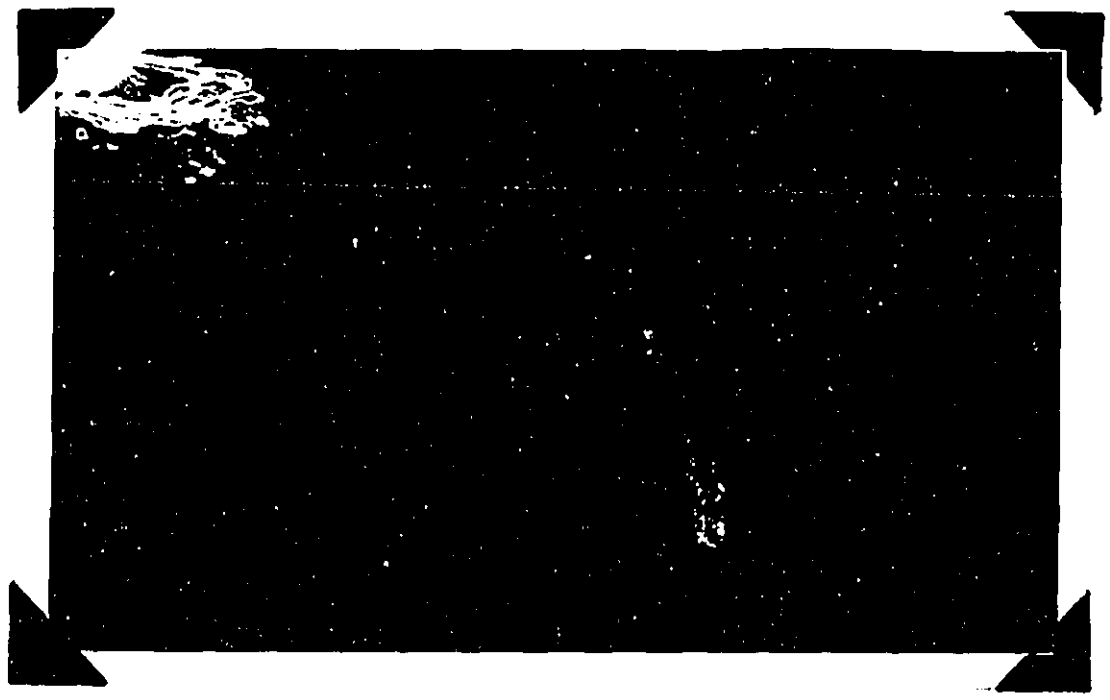
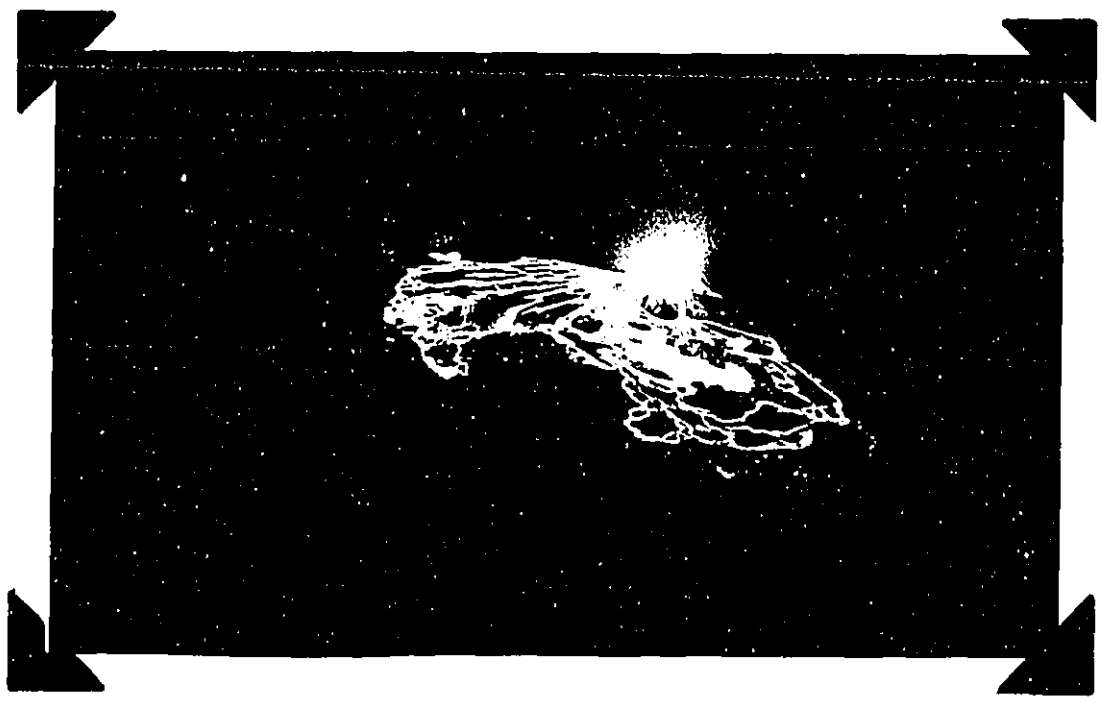


Night view 14th day. Flows beneath surface had reached crater walls and were squeezing up around margin of floor.



Night view during the most violent period of the eruption. Note circulation in lava lake with lave from large fountain pouring across lake and down into vent of smaller fountain. This action was accompanied by loud gas explosions heard several miles distant.

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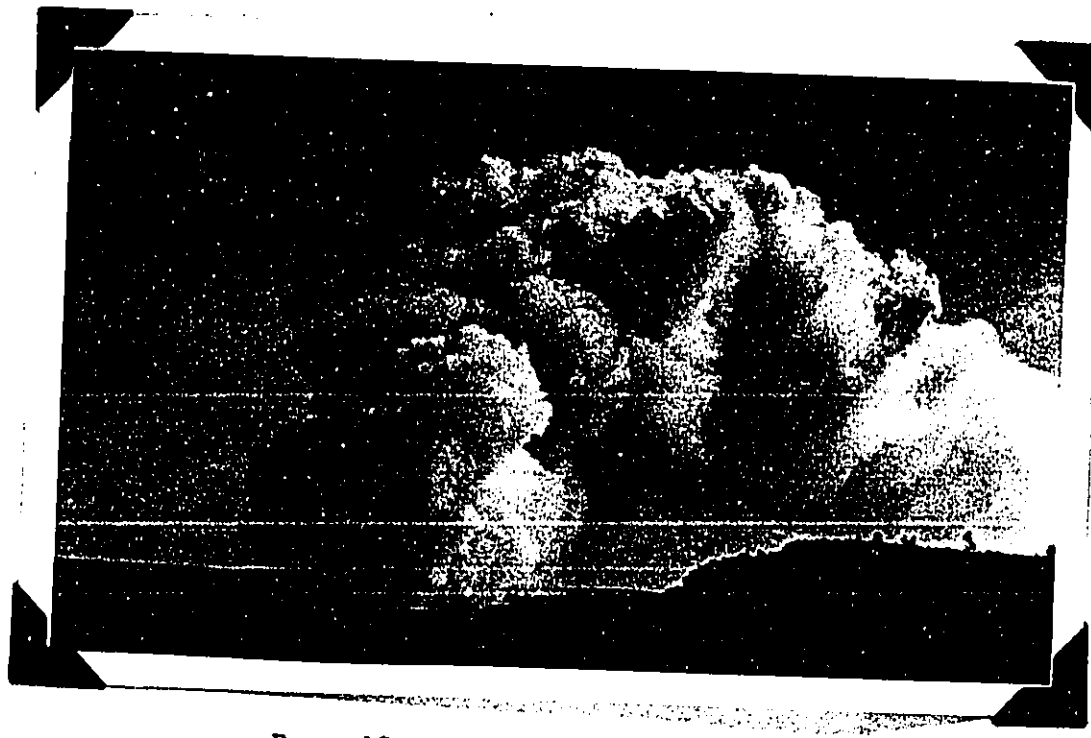

Dense blue fumes seen issuing from pit
the afternoon of September 6, 1934.

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Visitors at Kilauea fire pit two days after the beginning of the eruption. September 8, 1934.

The Governor and party in front of Volcano House. Left to right C.S. Wightman, Commander R. Mc Connell, Hon. J.J. Banks, George Lycurgus, Gov. J. B. Poindexter, Rear Admiral C. W. Cole and the Superintendent.

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Governor J. B. Poindexter and Superintendent at rim of fire pit during the eruption. September 8, 1934

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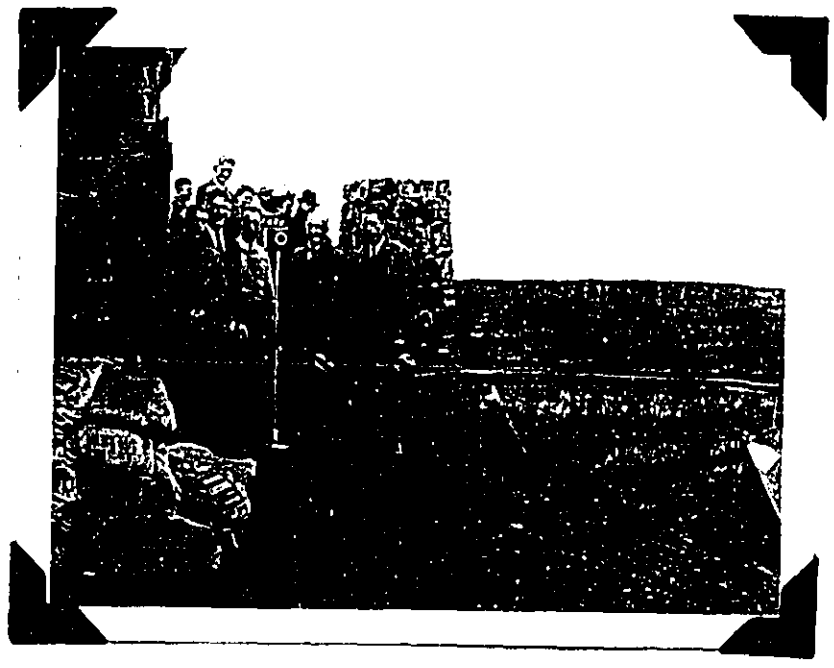

Radio Broadcast at rim of fire pit in Kilauea crater. Left to right, Superintendent Wingate, Mr. Tyson, announcer, Mr. Smith, radio technician, Dr. T.A. Jaggar Volcanologist and Park Naturalist John E. Doerr.

NBC Broadcast at rim of fire pit. Left to right, Superintendent Wingate, Park Naturalist John E. Doerr Jr., Mr. Tyson announcer, Mr. Smith radio technician, Dr. T.A. Jaggar Volcanologist, R.H. Craik Foreman and Acting Chief Ranger Christ.

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Form No. 1009—Met'l.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU

COOPERATIVE OBSERVERS' METEROLOGICAL RECORD:

Month of September, 1934; *Station,* Volcano Observatory; *County,* Hawaii

Hour of Observation, 8 a.m.

State, ; *Latitude,* ; *Longitude,* ; *Time used on this form,* HST

DATE	TEMPERATURE				PRECIPITATION			WIND		Prevailing Wind Direction	CHARACTER OF DAY, SUNRISE TO SUNSET	‡ MISCELLANEOUS PHENOMENA
	Maximum	Minimum	Range	*Set Max.	Time of Beginning	Time of Ending	†Amount	Hourly Movement	Direction of Resultant Movement			
	1	2	3	4	5	6	7	8	9	10	11	
1	72	58	14	63			.53	94	lt	NE	PC	
2	73	57	16	65			.03	86	lt	NE	PC	
3	74	56	18	66			.05	76	med	NE	PC	
4	72	56	16	65			.15	90	stg	NE	PC	
5	72	57	15	66			.06	86	stg	NE	PC	
6	65	58	13	63			.18	90	lt	NE	Cloudy	
7	69	60	9	62			.57	95	lt	NE	Cloudy	
8	73	56	17	65			.08	82	med	NE	Clear	
9	74	57	17	64			.01	86	med	NE	Cloudy	Thunder
10	71	61	10	67			.19	90	med	NE	Cloudy	Heavy thunderstorm
11	74	61	13	67			.86	90	calm	E'ly	Cloudy	Thunder
12	72	61	11	63			.47	92	med	ENE	PC	Thunder
13	79	57	22	66			.01	81	lt	NE	PC	Thunder
14	76	60	16	65			.02	95	lt	SW	PC	
15	69	61	8	62			.17	97	med	NE	Cloudy	Thunder heads Hamna Loa
16	69	58	11	61			.08	91	med	NNE	Cloudy	
17	66	58	13	62			.25	97	lt	NE	Cloudy	
18	69	57	8	61			.28	89	lt	NE	Cloudy	
19	69	57	8	59			.09	93	med	NE	Cloudy	
20	70	55	15	63			.10	87	med	ENE	Clear	
21	69	56	13	64			.01	86	Very lt	NE	PC	
22	72	60	12	63			.11	82	lt	NE	PC	
23	70	58	12	62			.08	88	lt	NE	Cloudy	
24	69	56	13	60			.32	91	lt	NE	Cloudy	
25	67	57	10	59			.23	95	med	NE	PC	
26	65	57	8	63			.12	93	lt	NE	Cloudy	Rainy
27	69	60	9	60			3.96	95	med	NE	Cloudy	
28	70	57	13	61			.18	91	med	ENE	PC	
29	74	53	21	62			.03	87	lt	NE	Clear	
30	75	58	17	64			t	86	med	NE	Clear	
31												
Sum	2128	1732	397	1891			9.41	2680				
Mean	70.9	57.7	13.2	63.0			.314	89.3				

*Reading of maximum thermometer immediately after setting.
†Including rain, hail, sleet, and melted snow.
‡Thunderstorms, halos, auroras, etc.

(IN TRIPLICATE) See cover for instructions.

T. A. Jaggar, *Cooperative Observer.*

8—253

U. S. GOVERNMENT PRINTING OFFICE: 1930

Post Office Address,

MONTHLY SUMMARY

TEMPERATURE

Mean maximum, 70.9

Mean minimum, 57.7

Mean, 64.3

Maximum, 79; date, 13

Minimum, 53; date, 29

Greatest daily range, 22 13th

PRECIPITATION

Total, ; inches 9.41; greatest in 24 hours 3.96

Date, 27

SNOW

Total snowfall, inches

On ground 15th, inches

At end of month, inches

NUMBER OF DAYS—

With .01 inch or more precipitation, 29

Clear, 4; partly cloudy, 12

Cloudy, 14

DATES OF—

Fog { Light,

Fog { Dense,

Killing frost,

Thunderstorms, 9 10 11 12 13 15

Hail { Light,

Hail { Moderate,

Hail { Heavy,

Sleet,

Auroras,

REMARKS:

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10-157
(July, 1929)

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

TRAVEL REPORT

HAWAII National Park for the month of SEPTEMBER 1934

	This Month	This Travel Year To Date	This Month Last Year	Last Travel Year To Date	Increase for Travel Year	
					Number	Percent
PRIVATE TRANSPORTATION:						
Cars first entry,						
Cars reentry,						
Motorcycles,						
Total motor vehicles,						
Persons entering via motor vehicles,	38,334	229,483	16,917	165,601	63,882	.386
Persons entering via other private transportation,	723	3,390	218	1,635	1,755	1.073
Total persons entering via private transportation,	39,057	232,873	17,135	167,236	65,637	.392
OTHER TRANSPORTATION:						
Persons entering via ~~HOTEL~~	1,472	8,124	432	4,334	3,790	.874
Persons entering via trains,						
Persons entering otherwise,						
Total other transportation,	1,472	8,124	432	4,334	3,790	.847
GRAND TOTAL ALL VISITORS,	40,529	240,997	22,885	171,570	69,427	.405

	This Year	Last Year	Increase	
			Number	Percent
Automobiles in public camps during month,				
Campers in public camps during month,				

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10-158

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF AUTHORIZED PROJECTS

HAWAII National Park for the Month of SEPTEMBER 1934

Description of Projects	Percent Constructed To Date	Percent Constructed This Month	Percent Constructed Last Month	Probable Date of Completion
Fp 102.8 Parapet Lookouts, Kilauea Iki, etc.,	✓ 99	- 0	0 2	
Fp 311.14 Fire-Equipment Storehouse and Garage	99 96	53 46	46 50	
Fp 312.14 Building Recondi-tioning for Elimination of Fire Hazards	66 35	31 17	17 18	

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10-215
(August 1933)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Office of National Parks,
Buildings and Reservations

.....HAWAII..... National Park

R E P O R T O F N O N-A P P O I N T E D P E R S O N N E L
(TEMPORARY)

Changes outside the District of Columbia for the month of .....[illegible]..... 19.34.....

Total at beginning of month	Additions	Separations	Net Gain or loss (a)	Total at ending of month
0	1	0	1	1
1	0	0	0	1

(a) If loss, indicate by minus sign.

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10-159
(May, 1931)

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF PERSONNEL

HAWAII National Park for the Month of SEPTEMBER 1934

	This Month		This Month Last Year	
	Appointed	Non-Appointed	Appointed	Non-Appointed
Number of employees beginning of month	17	0	17	2
Number of additions	0	1	0	34
Total	17	1	17	36
Number of separations	0	0	1	36
Number of employees close of month	17	1	16	0
Number of promotions during month	0	0	0	0
Aggregate amount of annual leave taken	30	0	1	0
Aggregate amount of sick leave taken	0	0	2	0
Aggregate amount of leave without pay	0	0	0	0

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10-160

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF PARK REVENUES

HAWAII National Park for the Month of SEPTEMBER 1934

	This Year	Last Year
Park revenue on hand beginning of month,	0.00	0.00
Received,	50.00	41.35 75.00
Total,	50.00	41.35 75.00
Remitted,	50.00	41.35 75.00
On hand close of month,	0.00	0.00 0.00

Park revenues received this year to date,	1.25.00 75.00
Park revenues received last year to date,	125.00 125.00
~~Increase~~ Decrease,	50.00 00.00
Per cent of ~~increase~~ decrease,	.40 .00

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10-161

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF SALES OF PUBLICATIONS

	Number		Value	
GOVERNMENT PUBLICATIONS:				
On hand beginning of month,	898	876	179.00	163.90
Received during month,	000	000	0.00	0.00
Total,	898	876	179.00	163.90
Sold during month,	22	6	15.10	4.65
On hand at close of month,	876	870	163.90	159.25
NON-GOVERNMENT PUBLICATIONS:				
On hand beginning of month,				
Received during month,				
Total,				
Sold during month,				
On hand at close of month,				
Cash on hand beginning of month,			15.46	23.42
Sales during month,			15.10	4.65
Total,			30.56	28.07
Remitted during month,			7.14	14.60
Balance,			23.42	13.47

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STATISTICAL REPORT NO. 8

FINANCE AND ACCOUNTS

September 1934

Symbol	Appropriation	Allotted	Expended & Obligated	Balance
45415	Salaries & Expenses, National Park Service, 1935	35,150.00	27,826.28 27,378.98	7,323.72 7,771.02
45406	Forest Protection & Fire Prevention (N.P.S.) 1935	300.00	2.50 4.77	297.50 295.23
44415.3	Salaries & Expenses, Office of Nat'l Parks, Bldgs.,& Reservations, 1934	31,392.55	29,535.31 29,528.11	1,857.24 1,862.44
44406.3	Forest Protection & Fire Prevention, (N.P.S.) 1934	520.00	509.23	10.77
4x391	Roads & Trails, Nat'l Parks, Hdqrs., Emergency Construction Act June 19, 1934	11,200.00	0.00	11,200.00
4003/5640.8	NIR, Interior, Nat'l Parks, Roads & Trails, 1933-35	490,050.00 409,000.00	473,104.78 373,104.78	16,895.22
4-03/5640.14	NIR, Interior, Nat'l Parks, Bldgs, & Reservation, 1933-35	11,250.00	7,976.18 10,718.78	3,273.82 531.22

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

September 10, 1934

The Director
National Park Service
Washington, D. C.

Dear Mr. Director:

Following is the administrative report of Hawaii National Park for the month of August 1934:

000 General

010 Introduction

The outstanding event during the month of August in Hawaii National Park was the visit on August 8 of Attorney General and Mrs. Homer S. Cummings and party which included Assistnat Attorney General H. W. Blair, Mr. Stanley Reed, general counsel for the RFC and Mrs. Reed, Mr. H. H. Clegg, inspector of the division of investigation, Department of Justice and Mr. Carusi, Secretary to the Attorney General.

At the request of the Attorney General the Superintendent selected as official guides, familiar with local flora, Territorial Forester L. W. Bryan, Park Naturalist J. E. Doerr and Park Ranger Kenneth Williams. These together with the Superintendent and numerous Territorial and County officials and members of the local bar as well as representatives of the Hilo Chamber of Commerce welcomed the Attorney General and party on arrival by Inter-Island Steamer at the pier in Hilo.

Through the courtesy of Mr. A. J. Lafforty, Manager of the Hawaii Consolidated Railway, a special train was placed at the disposal of the distinguished guests for a sightseeing trip along the scenic windward coast of Hawaii. The party boarded this train at the dock and two hourse were given to the journey with numerous stops at points of interest and to take on the different plantation managers along the way.

Upon returning to Hilo the party proceeded in autos provided by the Chairman of the Board of Supervisors to the Volcano Where luncheon was had at the Volcano House, Dr. and Mrs. Jaggar and C.C.C. Camp Director and Mrs. Rivenburgh joined the party at luncheon and accompanied it through the Park and the return to Hilo.

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At Uwekahuna Museum the Park Naturalist gave a brief lecture with moving pictures before proceeding to the fire pit of Kilauea. The return was made by way of the fern jungle, drive to the C.C.C. Camp where a short inspection was made and to the Lava Tube. After exploring the tube and twin craters the party returned to the boat in Hilo following a visit to the Keaukaha Development Settlement. This is a Territorial project designed to assist in rehabilitating the native Hawaiians.

On the train trip Territorial Forester L. W. Bryan was guide to the Attorney General; on the drive to the Volcano Park Naturalist Doerr; through the Park the Superintendent, accompanied him and returning to Hilo Professor Jaggar. The Superintendent enjoyed especially a lengthy conversation with Assistant Attorney General Blair on matters pertaining to the C.C.C. and rehabilitation of and protection to the native Hawaiians.

The Attorney General appeared very interested in every phase of the E.C.W. program on this island and the Superintendent gathered that he was more interested in the tropical forest jungle than in the geology of the region.

Mr. Stanley Reed, general counsel for the RFC was in close conversation with Camp Director Rivenburgh former land Commissioner of the Territory concerning the sugar industry and labor problems in the Territory.

We were again fortunate in having a clear sunny day for our guests.

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020 General weather conditions

The mean maximum temperature for the month was 73.0, the mean minimum 58.9, and the mean for the month 65.9 degrees. The total rainfall was 2.38 inches, comparing with 5.67 for July and 1.65 a year ago. Total rainfall to date is 47.97 comparing with 69.71 inches a year ago. August rainfall at the C.C.C. Camp, about 1½ miles south of the Volcano Observatory was 1.511 inches.

100 Administration

120 Park inspections

121 Superintendent

Routine inspections of all projects were made during the month in the Kilauea Section.

122 Special Field Representative

Associate Architect Merel S. Sager was at headquarters directing work of the Civilian Conservation Corps, etc. during August, except for a weeks visit to the Island of Maui, August 19 to 25 to inspect the Haleakala Road under construction.

123 National Park Service Officers

Regular routine inspections were carried on during the month.

130 Finance and supplies

A detailed statement showing the status of park appropriation is attached as Statistical Report No. 8.

150 Equipment and supplies

On August 3 the new Franklin stoves arrived for the fire places. These stoves had been delayed for quite a while due to the strike on the San Francisco water front.

180 Circulars, placards, publicity bulletins.

Attached are a number of Volcano Letters.

200 Maintenance, Improvements and New Construction

210 Maintenance

There was the usual maintenance of automobile equipment, roads, trails, telephone, buildings, electricity, water system, etc.

220 Improvements

The telephone line from Halemaumau shelter to its junction with the Summer Camp line, where there is also a Hilo line, was changed from galvanized to copper wire. By throwing a switch this line can now be changed from the Park to the Hilo line.

230 New construction

A new copper telephone line to Puu Ulala rest house on Mauna Loa

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was completed during the month by C.C.C. labor.

The new Hui o Pele rest house on the summit of Mauna Loa and a stable for six horses were completed during the month.

Work has been resumed on the Fire Equipment Shed with the arrival of the steel windows. This work had been delayed but is now coming along rapidly.

Haleakala Road

On August 15 the road was 66 percent complete. The crushing plant is in operation between stations 87+00 and 271+00, but no attempt has been made to finish the surface to apply asphalt except on three test sections between stations 138 and 170. The bridge is nearing completion. Considerable time and discussion was necessary to get the stonework somewhere near the type wanted by Associate Architect Merel S. Sager.

240 Improvement of approaches to the Park

The construction of the new electric light line has made great progress during the month with about twelve miles remaining before it reaches the park.

300 Activities of other agencies in the Park

320 Cooperating government agencies

The Kilauea Military Camp has continued operation throughout the month.

Volcano Observatory

Mr. A. E. Jones, Seismologist U.S.G.S., for the Hawaii Volcano Observatory, was furloughed to a Fellowship Fund, donated by the University of Hawaii, for a six months period. This was done because of the serious financial situation confronting the Volcano Observatory.

400 Flora, fauna and Natural Phenomena

410 Ranger, Naturalist and guide service

Rangers conducted their usual duties of patrolling maintaining roads and trails, giving service to the public painting signs, repairing telephone and electric lines, etc.

420 Museum Service

There were 28 lectures to 1,795 people at the Uwekahuna Museum. In addition 18 auto caravans were conducted with 82 cars and 599 persons in attendance. There were 12 field trips with 232 in attendance. Total museum attendance was 1,831 total contacts 4,487.

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480 Natural Phenomena

Routine measurements of temperatures of cracks and rim fissures were continued as usual. Tilting of the ground was slight and very variable in direction. Slight earthquakes were registered on the seismograph at various times during the month. Also there were numerous slides from the wall of Kilauea Crater.

There has been no new motion or sign of lava activity at Halemaumau pit this past month.

A party to map the new lava floor of Makunweowco, the summit crater of Mauna Loa, in charge of A. E. Jones, was at work under the Hawaii National Park July 30 to August 3. There were strong sulphurous fumes and the ground on the new floor was hot enought to be uncomfortable to the feet. The floor was flagged and a revised topographic map made with plane-table.

500 Use of Park Facilities by the Public

510 Increase or decrease in travel.

Total travel for the month was 22,479 compared with 23,911 for July and 44, 845 a year ago. Total travel to date is 200,468 compared with 200,093 a year ago representing an increase of .002 percent. The travel figures for last year have not as yet been revised and the travel decrease is due to a new system used in commuting the number of visitors as registered on the traffic counter.

530 Visitors

The S.S. City of Los Angeles docked at Hilo on August 3 for one day bringing approximately 225 cruise passengers to visit the Park.

On August 11, Professor Alfred M. Tozzer. of Harvard University and Mr. Greene, Dean of School of Engineering at Princeton were visitors in the Park. Ranger Barnett took both men on a tour of the Park.

On August 14, Mr. E. P. Loveridge, United States weather bureau official, visited the Superintendent and they had a very interesting afternoon discussing weather conditions on Mauna Loa and Haleakala.

Professor E. W. Skeats, head of the Geology Department of the University of Melbourne, Australia spent a week at the Volcano House. Professor Skeats spent most of his time hiking to various interesting points in the park to study the natural phenomena.

Mr. Lincoln Ellsworth, antarctic explorer, returned to the Park and spent a week here before starting on his expedition to the antarctic. Mr. Ellsworth states that his coming expedition will be his last whether he accomplishes his purpose or not. H walked on the average of 14 to 24 miles a day to keep in condition for his strenuous trip. On leaving he promised to return for a lengthy stay after his exploration was completed.

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Mr. Fred Green, business manager of the Honolulu Advertiser arrived in the Park on August 18 and remained until August 27. During his stay Mr. Green was taken to visit the C.C.C.Camp by the Camp Director B. G. Hivenburgh and also he was conducted by the Park Naturalist to the Summit of Mauna Loa. While at the summit the party had an opportunity to spend an entire day in the summit crater studying the extent and nature of the 1933 activity. On Mr. Green's return to Honolulu he wrote two very fine articles one about the C.C.C. Camp and the other about his trip to the summit of Mauna Loa, in the Honolulu Advertiser.

Brigadier-General Robert S. Abernethy was a visitor at the Kilauea Military Camp during the latter part of the month. He was taken on Park tours and given two special illustrated lectures.

Major Harold Riegelman, counsel for the Citizens' Budget Commission New York visited the park and was taken on a two day trip to the summit of Mauna Loa by Ranger K. Williams.

The Japanese training vessel "Shintaku Maru", arrived in Hilo August 18. Park Naturalist and Rangers conducted tours and gave lectures for the enjoyment and benefit of the Cadets. The Cadets were in the park two days.

600 Protection

610 Police protection

The usual minor cases of traffic violations were handled on the spot by ranger warnings. Painting of a line in front of headquarters has added to the safety of traffice

640 Destruction of predatory animals

Nineteen wild goats and seventeen wild pigs were destroyed during the month.

660 Sanitation

Gutters and tanks were cleaned as usual during the month.

900 Miscellaneous

A new horse purchased last month fell through the roof of a ten foot lava cave on the slopes of Mauna Loa and remained for 12 days without food or water. The animal suffered no ill effects from this experience. The fact that this recently purchased pony was named "New Deal" must be the explanation for its remarkable vitality.

On August 24, the Superintendent and Acting Chief Ranger conducted a group of C.C.C. enrollees on a trip around the island. These boys had previously won a song contest sponsored by the Superintendent. The

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trip was entirely paid for from the proceeds of concerts given at various points on the way. The boys were enthusiastically received at Waiohinu where they spent the night after giving their first concert and the people of their home district. Kohala, could not do enough to show their appreciation for the good work the C.C.C. is doing on this island. Two nights were spent in Kohala, a concert being given the first and the second the Kohala people gave a luau (dinner) for the boys. The Superintendent is more convinced than ever, after this trip, of the far reaching benefits of the C.C.C. The party left the park at four thirty P.M. Friday August 24 and returned at noon Monday the 27th. Saturday and Sunday were spent in sightseeing through the Kona and Kohala Districts. Some photographs taken during the trip are included in this report.

Ranger Donald Eaton and family left Hawaii on August 1 for Petrified Forest where Mr. Eaton will occupy a similar position to that which he held in this park.

Very respectfully,

Edward G. Wingate
Superintendent

INC.

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Attorney General Gerding: Arriving in Hilo

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Attorney General and party at the end of train trip, Jamestown.

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Attorney General visiting [illegible] Museum.

DOCUMENT CAPTURED AS RECEIVED

Attorney General Visiting Uyahara Museum.

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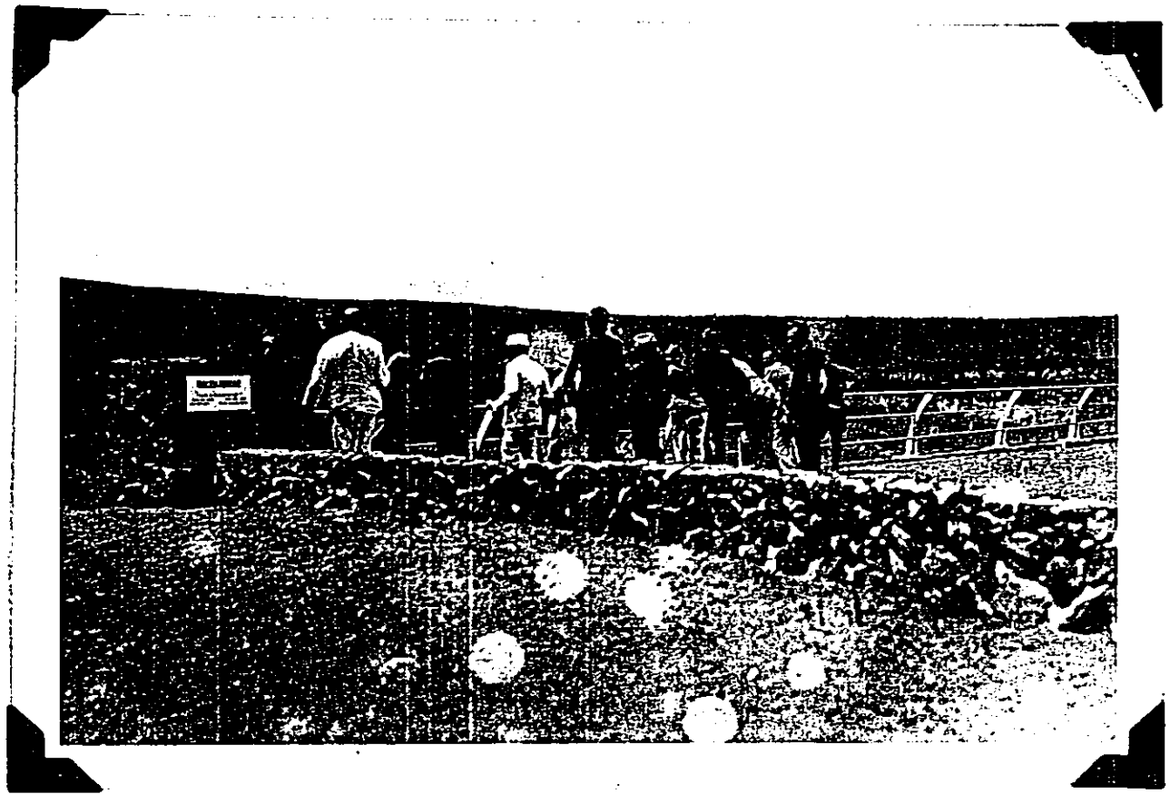

Attorney General at the Fire Pit, Salamanca.

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Attorney General at the Fire Pit, Helemarmu.

DOCUMENT CAPTURED AS RECEIVED

CCC boys - Kona - The 1926 lava flow from Mauna Loa - Stone monument marks spot of old Catholic Church destroyed by lava.

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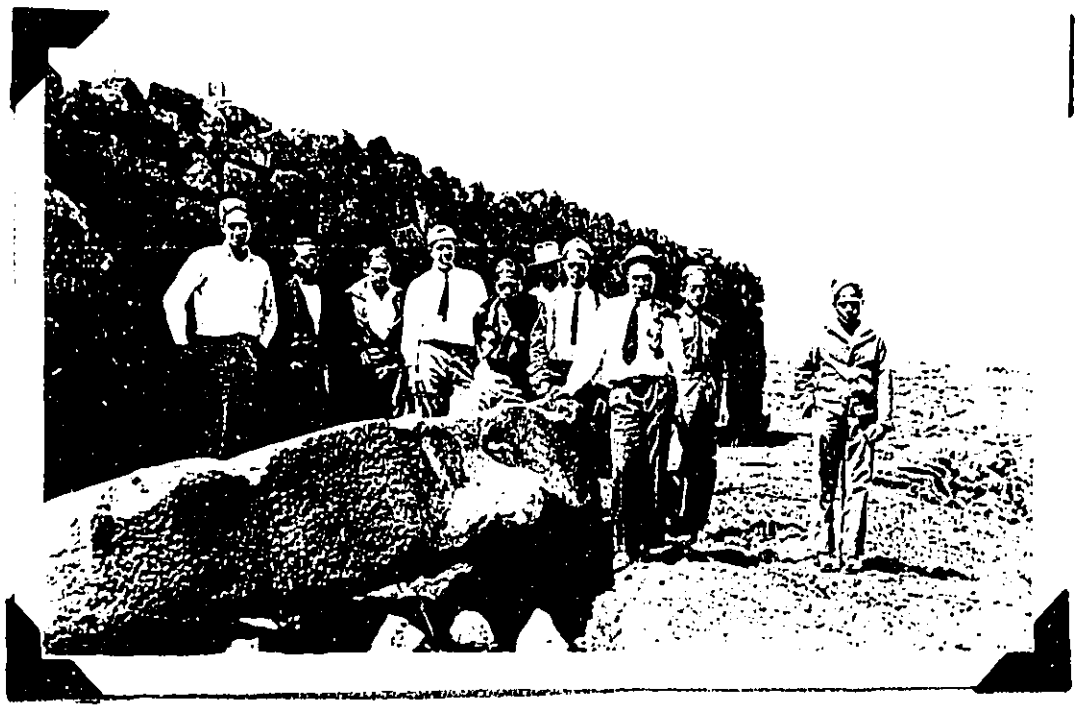
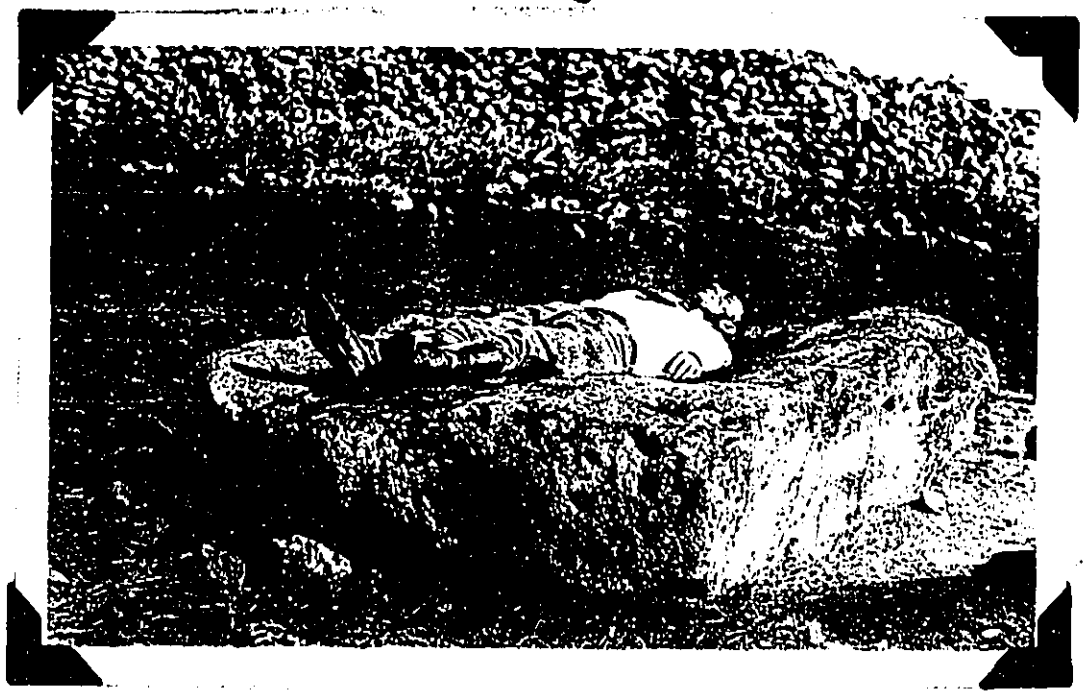


CCC boys sightseeing in Kona District - Honaunau - Ancient Heiau in The City of Refuge



CCC Trip around Island - Upolu Point, Kohala District - Ancient Heiau (Temple) in background. Ranger Williams lying in position of old time law breaker who has been killed as a sacrifice and the body placed ready for the priests to separate the flesh from the skeleton.

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Form No. 1009—Met'l.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU

COOPERATIVE OBSERVERS' METEROLOGICAL RECORD:

Month of August, 1934; *Station,* Volcano Observatory; *County,* Kau

Hour of Observation, 8 A.M.

State, ; *Latitude,* ; *Longitude,* ; *Time used on this form,* HST

DATE	TEMPERATURE: Maximum	Minimum	Range	* Set Max.	PRECIPITATION: Time of Beginning	Time of Ending	† Amount	Snowfall	Depth on Ground at Time of Observation	Prevailing Wind Direction	Character of Day, Sunrise to Sunset	‡ Miscellaneous Phenomena
	1	2	3	4	5	6	7	8	9	10	11	
1	66	59	7	60			.41	94	Str	NE	PC	
2	70	58	12	60			.10	93	Str	NE	PC	
3	74	59	15	64			.03	86	Mod	NE	Clear	
4	75	60	15	65			.04	91	Mod	NE	PC	
5	75	58	17	66			.03	86	Lt	NE	Clear	
6	72	57	15	67			T	89	Lt	NE	Cloudy	
7	74	60	14	66			.11	89	Mod	NE	PC	Lightning
8	73	63	10	64			.03	89	Lt	NE	Clear	
9	76	59	18	63			.01	92	Mod	NE	Clear	
10	72	58	14	62			T	93	Lt	NE	Cloudy	
11	73	59	14	65			.10	92	Calm	NE	Cloudy	
12	71	59	12	61			.31	96	Mod	NE	Cloudy	
13	72	57	15	61			.11	94	Lt	NE	PC	
14	73	57	16	64			.04	87	Lt	NE	Cloudy	
15	70	61	9	64			.12	95	Lt	ENE	Cloudy	
16	67	59	8	63			.17	96	Lt	NE	Cloudy	
17	71	61	10	63			.04	95	Lt	ENE	Cloudy	
18	71	59	13	64			.36	84	Lt	NE	PC	
19	74	59	15	67			T.	89	Lt	NE	Cloudy	
20	75	62	13	64			.30	94	Lt	SE	PC	
21	73	63	10	65			.03	88	Str	NE	PC	
22	72	58	14	60			.05	94	Str	NE	PC	
23	73	57	16	63			.01	89	Str	NE	Clear	
24	71	60	11	63			T	84	Lt	NE	Clear	
25	76	55	21	66			T	89	Lt	NE	PC	
26	78	56	22	67			.05	84	Lt	NE	Clear	
27	80	60	20	68			.03	82	Lt	NW	PC	
28	74	60	14	68			.01	85	Lt	NE	Clear	
29	73	56	16	65			T	62	Mod	NE	Clear	
30	73	58	17	62			.00	93	Str	NE	PC	
31	75	59	16	65			.09	93	Lt NE	to SE	Cloudy	
Sum	2264	1825	438	1985			2.38	2767				
Mean	73	589	141	64			.07	89.2				

* Reading of maximum thermometer immediately after setting.
† Including rain, hail, sleet, and melted snow.
‡ Thunderstorms, halos, auroras, etc.

T. A. Jaggar, *Cooperative Observer.*

(IN TRIPLICATE) See cover for instructions.

8—253
U. S. GOVERNMENT PRINTING OFFICE: 1930

Post Office Address, Hawaii National Park

MONTHLY SUMMARY

TEMPERATURE

Mean maximum, 73.0

Mean minimum, 58.9

Mean, 65.9

Maximum, 80; date, 27

Minimum, 55; date, 25

Greatest daily range, 22 26th

PRECIPITATION

Total, ; inches 2.38; greatest in 24 hours .41

Date, 1st

SNOW

Total snowfall, inches

On ground 15th, inches

At end of month, inches

NUMBER OF DAYS—

With .01 inch or more precipitation, 24

Clear, 9; partly cloudy, 12

Cloudy, 10

DATES OF—

Fog { Light, / Dense,

Killing frost,

Thunderstorms, Distant lightning 7th

Hail { Light, / Moderate, / Heavy,

Sleet,

Auroras,

REMARKS:

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10-157
(July, 1929)

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

TRAVEL REPORT

.....HAWAII..... National Park for the month of .....AUGUST 1934.....

	This Month	This Travel Year To Date	This Month Last Year	Last Travel Year To Date	Increase for Travel Year	
					Number	Percent
PRIVATE TRANSPORTATION:						
Cars first entry, ...						
Cars reentry, ...						
Motorcycles, ...						
Total motor vehicles, ...						
Persons entering via motor vehicles, ...	38,334 / 20,904	229483 / 191,149	16,917 / 44,005	165,601 / 104,774	63,882 / -3,625	.386 / .019
Persons entering via other private transportation, ...	723 / 407	3390 / 2,667	218 / 326	1,635 / 1,417	1,755 / 1,250	1.073 / .882
Total persons entering via private transportation, . . .	390,57 / 21,311	232873 / 193,816	17135 / 44,331	1,672,36 / 196,191	65637 / -2,375	.392 / .012
OTHER TRANSPORTATION:						
Persons entering via ~~HOTEL~~ .	1,472 / 1,168	8,124 / 6,652	432 / 514	4,334 / 3,902	3,790 / 2,750	.874 / .705
Persons entering via trains, .						
Persons entering otherwise, . .						
Total other transportation, .	1,472 / 1,168	8,124 / 6,652	432 / 514	4,334 / 3,902	3,790 / 2,750	.874 / .705
GRAND TOTAL ALL VISITORS, . . .	40,529 / 22,479	240.997 / 200,468	22,885 / 44,845	171,570 / 200,093	69,427 / 375	.405 / .002

	This Year	Last Year	Increase	
			Number	Percent
Automobiles in public camps during month, ...				
Campers in public camps during month, ...				

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10-158

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF AUTHORIZED PROJECTS

HAWAII National Park for the Month of August 1934

Description of Projects	Percent Constructed To Date	Percent Constructed This Month	Percent Constructed Last Month	Probable Date of Completion
Fp 102.8 Parapet Lookouts, Kilauea Iki, etc.,	99	0 2	2 1	
FP 311.14 Fire-Equipment Storehouse and Garage	90 96%	50 46	0 50	
FP 312.14 Building Reconditioning for Elimination of Fire Hazards	20 35%	18 17	0 18	

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10-215
(August 1933)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Office of National Parks,
Buildings and Reservations

.....NAMES..... National Park

REPORT OF NON-APPOINTED PERSONNEL
(TEMPORARY)

Changes outside the District of Columbia for the month of ..... 19.....

Total at beginning of month	Additions	Separations	Net Gain or loss (a)	Total at ending of month
0	0	0	0	0
0	1	0	1	1

(a) If loss, indicate by minus sign.

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10-159
(May, 1931)

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF PERSONNEL

HAWAII National Park for the Month of August 1934

	This Month		This Month Last Year	
	Appointed	Non-Appointed	Appointed	Non-Appointed
Number of employees beginning of month	18 17	7 0	17	4 2
Number of additions	0 0	0 1	0	3 4
Total	18 17	7 1	17	7 3 6
Number of separations	1 0	7 0	0 1	5 3 6
Number of employees close of month	17 17	0 1	17 16	2 0
Number of promotions during month	0 0	0 0	0	0
Aggregate amount of annual leave taken	16 30	0 0	1	0
Aggregate amount of sick leave taken	21 0	0 0	2	0
Aggregate amount of leave without pay	0 0	0 0	0	0

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10-160

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF PARK REVENUES

Hawaii National Park for the Month of August 1934

	This Year	Last Year
Park revenue on hand beginning of month,	0.00 0.00	0.00
Received,	50.00 0.00	75. 25.00
Total,	50.00 0.00	75. 25.00
Remitted,	50.00 0.00	75 25.00
On hand close of month,	0.00 0.00	0.00

Park revenues received this year to date,	75.00 25.00
Park revenues received last year to date,	125.00 25.00
~~Decrease increase~~,	50.00 0.00
Per cent of ~~decrease increase~~,	40 0.00

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10-161

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF SALES OF PUBLICATIONS

	Number		Value	
GOVERNMENT PUBLICATIONS:				
On hand beginning of month,	898	920	179.00	186.00
Received during month,	000	000	0.00	00.00
Total,	898	920	179.00	186.00
Sold during month,	22	22	15.10	7.00
On hand at close of month,	876	898	163.90	179.00
NON-GOVERNMENT PUBLICATIONS:				
On hand beginning of month,				
Received during month,				
Total,				
Sold during month,				
On hand at close of month,				

Cash on hand beginning of month,	15.01	15.46
Sales during month,	~~7.00~~	15.10
Total,	22.01	30.56
Remitted during month,	~~6.55~~	7.14
Balance,	~~15.46~~	23.42

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STATISTICAL REPORT NO. 8

FINANCE AND ACCOUNTS.

AUGUST, 1934

Symbol	Appropriation	Allotted	Expended & Obligated	Balance
45415	Salaries & Expenses, National Park Service, 1935	35,150.00	27, 570.06	7,579.94
45406	Forest Protection & Fire Prevention, (N.P.S.) 1935	300.00	2.50	297.50
44415.3	Salaries & Expenses, Office of Nat'l Parks, Bldgs & Reservations, 1934	31,392.65	29,696.62	1,696.03
44406.3	Forest Protection & Fire Prevention, (N.P.S.) 1934	520.00	509.23	10.77
4-03/5640.8	NIR, Interior, Nat'l Parks, Roads & Trails, 1933-'35	490,000.00	473,104.78	16,895.22
4-03/5640.14	NIR, Interior, Nat'l Parks, Bldgs, & Reservations, 1933-'35	11,250.00	7,693.46	3,556.54
4x391	Roads & Trails, Nat'l Parks, Emergency Construction Act June 19, 1934	11,200.00	0.00	11,200.00

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The Volcano Letter

No. 412—Monthly U. S. Geological Survey, Hawaii National Park JUNE, 1934

KILAUEA REPORT FOR JUNE, 1934

Including weekly press reports 1168 to 1171
June 3 to July 1, midnight.

Section of Volcanology, U. S. Geological Survey
T. A. Jaggar, Volcanologist in Charge

VOLCANOLOGY

At Halemaumau pit of Kilauea Volcano there was no new motion nor sign of lava activity. It is of interest to note how the pressure ridges around the edges of what was the lava lake of 1932 (January), now the floor of the pit, show three stages of shrinkage of the lake. There is the ridge around the edge of the floor, outlining the large lake of December 1931. Then there is a narrow ridge across the floor from the northwest to southeast, marking the first stage of diminution. Lastly there is an innermost rampart with hummocks *inside*, just in front of the big southwest cone, which contained the last fountaining source of the lava. What liquid lava receded must have finally sucked down the vent under the cone, and so made the slumping of crusts which are now seen in tumbled condition on the floor and at the cone.

Measurements of vapor temperatures by Jaggar, at cracks near Halemaumau, June 1, 2, 3, and 5 gave the following figures in degrees Centigrade (35° C. equals 95° F., and 88° C. equals 190° F.):—

Southwest, over Kau Desert rift line, 54, 57 and 64 degrees C.

West, near big steam crack, 58 and 67 degrees C.

East, north of tourist outlook, 50 and 55 degrees C.

One hundred feet back of this from the pit, 70 to 75 degrees C.

Near road terminus houses, southeast, 35 to 48 degrees C.

Near flag northwest of pit, 51, 53, 56, 58 and 64 degrees C.

Whitened 1919 lava half-mile north of pit, 74, 83, and 88 degrees C.

Whitened 1894 lava southeast of Halemaumau, 82 to 88 degrees C.

These figures show temperatures lower than January 1925 for cracks near the pit (See Volcano Letter 301). The high temperatures in cracks more remote are as usual. The implication is that deeper cracks are found, tapping deeper and hotter vapor, towards the border of the greater Kilauea crater. Probably at the border of the inner fill of Halemaumau, now inaccessible, there are very hot places. These would correspond with the old "postal card crack," which was at the border of a Halemaumau fill of 1894, a "wall-crack," destroyed by overflow in 1919 and by collapse in May, 1922.

Slides in Halemaumau during June were:—

5:30 p. m. June 8, from the notch to the east of the north buttress.

June 14-15, large fresh fall of rocks found, making a broad gray streak on the east talus.

9:42 a. m. June 23, small and continuous slide on north side of lower buttress at the southeast wall, lasting some minutes.

10:57 and 11:21 a. m. June 30 over the middle of the north sill.

Weekly measurement of opening and closing of thirty-two marked rim-crack points, around the edges of Halemaumau, showed the following changes Saturday forenoons:—

June 9. 7 opened, 3 closed, aggregate opening 3.0 mm.
June 16. 6 opened, 5 closed, aggregate opening 0.5 mm.
June 23. 8 opened, 5 closed, aggregate opening 3 mm.
June 30. 9 opened, 7 closed, aggregate opening 1.5 mm.

T.A.J.

EARTHQUAKES

TABLE

Number of minutes of tremor; numbers of very feeble, and moderate local earthquakes as registered at Kilauea; teleseisms or distant large earthquakes; and local seismicity index (see Volcano Letter 371)

Week ending	tr.	v. f.	mod.	tel.	seis.
June 10	15	1	0	0	4.25
June 17	102	3	0	0	27.00
June 24	51	2	0	0	13.75
July 1	32	6	1	1	14.00

The following successive local disturbances began at the times indicated, and the epicenters as shown were located from seismograms; when possible, the depth of the source is indicated. The location of epicenters is based on four main seismograph stations. Kilauea, Hilo, Kona, and Waikii. The intensity is that recorded at Kilauea instruments.

May 16 at 6:29 p. m. very feeble, Lat. 19° 01'N, Long. 155° 38'W.

May 20 at 6:14 p. m. tremor, Lat. 19° 49'N, Long. 156° 13'W on the extension of the Hualalai rift.

June 5 at 8:59 a. m. very feeble on the NE Mauna Loa rift, nearer Hilo than Kilauea.

June 15 at 10:50 p. m. very feeble, Lat. 19° 42'N, Long. 155° 22'W, 6 miles deep under SE slope of Mauna Kea.

June 25 at 2:30 p. m. very feeble, Lat 19° 36'N, Long. 155° 20'W on the northeast Mauna Loa rift.

June 26 at 7:07 p. m. moderate, Lat. 19° 12'N, Long. 155° 05'W, a few miles at sea south from the Puna coast, felt at Honokaa, Hilo, and Kilauea.

June 27 at 7:01 a. m. very feeble, Lat. 20° 02.5'N, Long. 155° 18'W, under Hamakua coast, felt in Honokaa.

Other very feeble local earthquakes at Kilauea crater were two in number June 12, and one each June 19, 23, 26, and 28.

The distant large earthquake was incompletely recorded beginning June 28 at 10h:06m:43s; p. m.

Microseismic motion was subnormal, becoming normal June 4, 19, 24, and 25.

TILTING OF THE GROUND

The table shows tilt by weeks from seismograms at Kilauea Observatory, northeast rim of Kilauea crater; and at Halemaumau the algebraic sum of radial tilts for the three clinoscope cellars, towards or from the center of the pit.

At the Observatory the total accumulated tilt in the year ending July 1, 1934 was 3.3" N and 1.6" E of the position July 1, 1933.

TABLE OF TILT

Date 1934	Observatory	Halemaumau
June 4 to June 10	0	3.3" towards
June 11 to June 17	0.9" NE by E	2.0" towards
June 18 to June 24	0.9" NNE	0.6" towards
June 25 to July 1	0.9" W by N	72.8" towards (Earthquake 26th)

A.E.J.

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The Volcano Letter

No. 413—Monthly U. S. Geological Survey, Hawaii National Park JULY, 1934

KILAUEA REPORT FOR JULY, 1934

Including weekly press reports 1172 to 1175
July 1 to July 29, midnight

Section of Volcanology, U. S. Geological Survey
T. A. Jaggar, Volcanologist in Charge

VOLCANOLOGY

Slides in Halemaumau during July were:—

At 1:15 p. m. July 5, north side, making dust cloud, leaving fresh break in wall over west end of Canoe Sill, and leaving fresh debris on the talus.

10:20 a. m. July 7, small slide north.

9:33 a. m. July 19, small slide north.

2:36 p. m. July 20, slides from east and north walls started by an earthquake. The shock was felt by an observer standing on the southwest rim, a swaying motion. This was Mr. Twigg Smith, who immediately saw a considerable slide at the east corner of the pit, and a smaller one at the north buttress. Dust rose above the pit. Rocks were still falling at the east at 3:05 p. m. The earthquake origin was probably under the southeast part of Kilauea crater. The pit instruments were partly dismantled, and the cracks used for measurements were somewhat changed.

10:15 a. m. July 21, slide at northwest talus.

Afternoon, July 21, slide made a dust cloud.

8:40 a. m. July 22, a few rocks sliding north.

1:45 p. m. July 24, a few rocks heard sliding.

National Park workers at the summit crater of Mauna Loa reported disagreeable fumes in the west part of the crater, and on July 22 two noises like blasts about twenty seconds apart, to the eastward.

Weekly measurement of opening and closing of thirty-two marked rim-crack points, around the edges of Halemaumau, showed the following changes Saturday forenoons:—

July 7. 8 opened, 3 closed, aggregate opening 5.0 mm.

July 14. 4 opened, 4 closed, aggregate opening 1.5 mm.

July 21. 11 opened, 4 closed, aggregate opening 4.5 mm.

July 28. 6 opened, 8 closed, aggregate closing 1.0 mm.

Crack point No. 37, about 800 feet back from the southeast rim of Halemaumau, and extending northeast along the wall-crack of Kilauea crater against the "Sand Spit" where the Volcano House road emerges on the lava floor, has been opening extensively. It has made marked cracks in the paving of the road, and in the mortared stone coping. This was observed by A. E. Jones June 25. The total opening is 15 mm. (0.6 inch) April 14 to August 4, 1934. This crack had opened slowly during the previous half-year, but it suddenly began rapid weekly movement after April. (For position see map Volcano Letter 395).

T.A.J.

EARTHQUAKES

TABLE

Week ending.	Minutes of tremor.	very feeble earthquakes	Slight earthquakes	Distant earthquakes	Local * Seismicity.
July 8	24	8	0	1	10.00
July 15	12	2	0	0	4.00
July 22	25	1	1	5	9.25
July 29	14	2	0	1	4.50

* For local seismicity see Volcano Letter 371.

The following successive local disturbances began at the times indicated, the epicenters as shown were located from seismograms; when possible, the depth of the source is indicated. The location of epicenters is based on four main seismograph stations, Kilauea, Hilo, Kona, and Waikii. The intensity is that recorded on the Kilauea instruments.

July 5. 2 20 a. m. very feeble, Lat. 19° 17'N. Long. 155° 35'W, 22 miles deep under the SE flank of Mauna Loa.

July 5, 3:15 p. m. very feeble, Lat. 19° 33'N, Long. 155° 23'W, 3 miles deep under the Mauna Loa NE rift.

July 20, 2:36 p. m. Slight, felt strongly by visitors near the Pit of Halemaumau, felt slightly at the NE end of Kilauea, occurred under the SE rim of the crater. Dismantled the Pit seismograph, only recorded as a small tremor on both the Hilo and Kona seismographs.

July 20, 1:30 a. m. Felt at Kapapala Ranch, Lat. 19° 24.5'N, Long. 155° 27'W, 4 miles deep.

The teleseisms were recorded as follows;

July 6, 0h:27m:02s. p. m. the secondary waves began at 0:32:45 p. m. It's origin was 41.5° N 124.9° W (Jesuit Seis. Ass.) off the coast of Northern California.

July 17, 3:17:50 p m. secondary waves at 3:27:15 p. m. Its origin was 16° N, 84° W, (USC&GS) in northern Panama.

July 18, 9:19:31 a. m. secondary waves at 9:26:14 a. m. Origin 14° S, 168° E, (USC&GS) near the New Hebrides.

July 18, a fragment of a distant earthquake began recording at 9:30 p. m.

July 20. 7:57:17 p. m. secondary waves at 8:04:48 p. m. Origin 3,700 miles away.

July 21, 0:20:29 a. m. secondary waves at 0:29:52 a. m. 4,900 mi. to origin.

July 27, 11:14:08 a. m. secondary waves at 11:23:36 a. m. 4,985 mi. to origin.

Microseismic ground motion was normal July 6, 18, 19, 21 and 27 and was subnormal the other days of the month.

A.E.J.

TILTING OF THE GROUND

The table shows tilt by weeks from seismograms at Kilauea Observatory, northeast rim of Kilauea crater; and at Halemaumau the algebraic sum of radial tilts for the three clinoscope cellars, towards or from the center of the pit.

At the Observatory the total accumulated tilt in the year ending July 29 is 3.8" N and 1.8" E.

TABLE OF TILT

Date 1934	Observatory	Halemaumau
July 2 to July 8	0.5" North	3.0" from
July 9 to July 15	0.8" N by W	5.4" towards
July 16 to July 22	1.4" N by W	64.3" from * (quake)
July 23 to July 29	1.2" ENE	4.0" from

* Local earthquakes have caused the SE clinoscope to change 73" towards the pit June 26 and 64" from the pit July 20. What portion of these changes represent actual tilt is uncertain.

A.E.J.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

August 12, 1934

The Director
National Park Service
Washington, D. C.

Dear Mr. Director:

Following is the administrative report of Hawaii National Park for the month of July 1934:

000 General

010 Introduction

The outstanding event during the month in Hawaii National Park was also one of the outstanding events in the history of these islands. On July 24 a President of the United States for the first time came into the Territory of Hawaii while holding office and on the morning of July 25 for the first time set foot upon Hawaiian soil. The U.S.S. Houston with President Franklin D. Roosevelt, two of his sons and party appeared off the west or Kona side of the Island of Hawaii early in the morning of July 24 and was met by the U.S.S. Coast Guard Cutter Itasca bearing Governor J. B. Poindexter, who officially welcomed the President to the Territory. The Governor returned on the Itasca to Honolulu and the President spent the remainder of the day fishing. However both the big and little Hawaiian fish eluded him though he did get a couple of strikes. Captain Brown his Naval Aide remarked later that the President took an awful beating in the hot sun that day.

Considerable confusion accompanied the preparation for the President's visit to this island due, it appears, principally to the fact that our new Governor, who had been on this island but a few hours in his life, did not come over to make the arrangements himself but at three different times designated different men or groups to make them for him. Seeing this confusion the Superintendent decided to keep out entirely except to have the Park in order for the President's visit, though he did urge Dr. Jaggar's selection as a companion for the President. However this confusion did not affect the President's visit to the island but on the contrary everything went smoothly from the time he landed at nine in the morning until he sailed at two in the afternoon.

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After a day of cool misty rain and north east wind on the 24th few of us went to bed with any feeling but that the next day would be the same. Yet the morning of the 25th dawned without a cloud to mar the view of either Mauna Loa and Mauna Kea rising above the fields of sugar cane and surrounding belts of darker colored forest jungle. That sunrise on the 25th was the keynote to the whole day. And when in the early afternoon the moment of departure came and the President with his two sons stood upon the upper deck of the Houston with bared heads the realization came to all of us that for a day there had been amongst us a man who in the fullest sense was The President. We know now as never before that the New Deal was real and not a political catchword that this man who had raised the hopes of millions would not fail them. He was an inspiration and the impression we gained that day will be lasting.

The Superintendent was requested by the President's Naval Aide to be at the dock to discuss certain arrangements and so had the opportunity of greeting the President on board the Houston with other members of the welcoming committee. The President graciously remarked that he had heard of the Superintendent previously, expressed his regret that Secretary Ickes could not have accompanied him and said that he brought the Secretaries greeting to the Park Staff. The Superintendent replied that he regretted this also but hoped that we would have that honor also before long and that we all hoped the President would find our simple arrangements to his liking and not too tiresome.

After a short press conference, songs by the Hawaiian church choir and music by the band the party proceeded to the National Park. Through Hilo school children scattered flowers in the President's path. At the entrance of the park the President had Dr. T. A. Jaggar enter his car and continue with him the remainder of the trip. The President recalled having been in one of Dr. Jaggar's classes while a student at Harvard. Contrary to plans the President called for a stop at Kilauea Iki as he was much interested in the geology of the volcano region as shown at this deep crater separated from the greater Kilauea by a low isthmus. About ten minutes were spent here the party then proceeding to Halemaumau after the President had slowly passed by reviewing the 200 C.C.C. boys who lined the road near their camp. At Halemaumau the President threw some ohelo berries into the pit as was the ancient custom among the Hawaiians when arriving in the Volcano region. These were given to him by laborer Charles Kauhi of the Park staff and the President addressed a few words to him. Dr. Jaggar was called upon for a considerable discussion upon the history and mechanism of this volcano and both the President and his two sons asked many questions. In order that the President could view the crater without leaving his car some 500 feet of road were constructed and the cars driven close to the lookout fence.

From Halemaumau the party proceeded by way of the new road Public Works project NR4 to Uwekahuna Museum where he was greeted by Park Naturalist Doerr and George Lycurgus, manager of the Volcano House. On behalf of the Park Staff the Park Naturalist presented the President with a framed certificate of membership in the Hui-o-Pele. The President then after

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placing his autograph in both the Park and Hotel registers questioned Mr. Doerr on bird life, rainfall, temperature etc. He also questioned the Superintendent asking whether or not this park needed any addition and if so what was contemplated. The Superintendent sketched briefly the Kalapana addition or reservation also the Footprint area which brought out the fact that the footprints had been left by a company of soldiers passing seven miles below the volcano during the great explosive eruption of 1790. In this the President was greatly interested and the section was pointed out to him on the new relief model which had been set up in the Museum window. Dr. Jaggar was questioned about the mechanism of explosive eruptions and the President then spoke of Mauna Loa asking if it had been recently active and if there was any road to the top. When told no he asked Mr. Spencer if he would recommend a road, apparently under the impression that this mountain was not in the Park.

Following a short stop at the Kilauea Military Camp, where the register was signed, the party returned to Hilo to view an Hawaiian parade staged in the Presidents honor. This was a repetition of the beautiful Kamehameha Day parade on June 11, but was more elaborate. The President seemed keenly interested in the several floats depicting scenes from everyday ancient and modern Hawaiian life. His sons appeared to prefer the Hula girls and one remarked that he would like to get in the parade behind one of the floats which had a particularly pretty group. As one float passed showing a fishing scene with a variety of native fish hung from a bamboo pole the Captain of the Houston leaned over, touched the President on the shoulder and remarked, "There Mr. President are some fish."

When the parade was over President Roosevelt returned to his ship stopping only to plant a banyan tree on what is becoming Hilo's famous Banyan Drive.

Various photographs taken during the day are included in this report.

University of Hawaii Summer School in Hawaii National Park

The fourth season of the Kilauea Summer School, sponsored jointly by the University of Hawaii and the Hawaii National Park, ended its six week's session on July 27. It is evident that no other season has been as successful as the one held in the Park this year. There was a registration of one hundred students and eight varied courses were offered. For details of these courses see June report.

Four evening programs during the month were given by various members of the Summer School faculty and students, at the Volcano House. These programs were conducted by Park Naturalist Doerr, who saw that press notices were arranged and helped in every possible way. The speeches were on varied topics such as, "We Move in New Directions," given by Dr. Peterson, director of the Summer School and "Leprosy in the Hawaiian Islands," given by Dr. T. Rhea. Dr. T. A. Jaggar also gave a very interesting lecture on his work with an Alaskan expedition and Dr. Swezey gave an illustrated talk on Forest Entomology. These programs drew large attendances and were worth while in every way.

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020 General weather conditions

The mean maximum temperature for the month was 71.8, the mean minimum 57.0, and the mean for the month 64.4 degrees. The total rainfall was 5.67 inches, comparing with8.90 for June and 1.02 a year ago. Total rainfall to date is 45.59, comparing with 68.06 inches a year ago. July rainfall at the C.C.C. Camp about 1½ miles south of the Volcano Observatory was 4.45 inches.

100 Administration

110 Status of work

New filing system has not yet been brought up to date due to long delay in receipt of angle tab folders and pressure of other work on clerical force. Several reports were delayed in transmission due to the same pressure of work on the small staff.

120 Park inspections

121 Superintendent

Routine inspections of all projects were made during the month in the Kilauea section with special attention given to route taken by the President through the Park.

122 Special Field Representative

Associate Architect Merel S. Sager was at headquarters giving technical supervision to the work of the Civilian Conservation Corps, etc, during the month of July, except for a visit to the Island of Maui July 15 to 21 to inspect the Haleakala Road under construction.

123 National Park Service officers

Eight inspection trips were made in the park including three to Mauna Loa and on to the sea coast at Halape.

130 Finance and accounts

A detailed statement showing the status of park appropriation is attached as Statistical Report No. 8

150 Equipment and supplies

A four year old mare was purchased. Two cars loaned to the C.C.C. Camp were returned to the Park after receipt of one new station wagon and one canopy type truck purchased for the camp from E.C.W. funds. Fifty folding chairs were purchased for general use. Two relief maps one of Hualalai and one of Kilauea were received during the month for use at the Uwekahuna Museum. A paint spray gun was also purchased.

160 Circulars, placards, publicity bulletins

Attached are a number of press memoranda including a special article prepared by the Superintendent for publication in the Presidential Edition of the Hawaii Manichi Sha.

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200 Maintenance, improvement and new construction

210 Maintenance
There was the usual maintenance of automobile equipment, roads, trails, telephone, buildings, electric, water systems, etc.

220 Improvements
The east and west wall at the Uwekahuna lookout were torn down and a driveway constructed in front and around the Museum, and a ramp was placed at curb at Halemaumau also 500 feet of road leading to the Tourist lookout were built to facilitate the President during his visit to the Park. These roads were obliterated and the ground restored to its natural appearance after the Presidents departure.

Work on a telephone line to the Summit of Mauna Loa was started this month as an E.C.W. project. Eight miles have been completed and the work has continued to make good progress.

Trail construction in Bird Park another E.C.W. project has been making good headway. One mile has been finished.

230 New Construction
Tables are being constructed for use at the picnic grounds.

Haleakala Road
On July 15 the road was 57 percent complete.

Crusher run is now being delivered on the road and about four thousand linear feet of bottom course has been laid. About 5,000 square feet of surface have been treated with .3 gal. of asphalt emulsion per square yard. Although care was exercised to obtain uniformity of fines, some places have raveled. Mr. Wheeler has requested that additional allotment be made in the amount of $41,000 so that more asphalt can be applied now to protect the base and completely finish the surfacing under this contract. The orginal intention was to let a contract for armor coat next year but inasmuch as the fills are stable it is not necessary to wait a year. If the additional emulsion is applied during the present contract it is estimated there will be a saving to the Government of at least $20,000. Both Merel S. Sager, Associate Architect, and Superintendent have approved this recommendation in radio to the Director and Field Headquarters on July 23.

General progress on this project is good and attempt is being made to cover the rock fills with soil so that vegetation will diminish the scars where ther road is viewed from below. In as much as there are no trees on this slope the road is more conspicuous than is the case on a forested slope.

240 Improvement of approaches to the park.
The approach road from Hilo was cleared, grass cut and superflous foliage cut away for the Presidential visit. Also numerous rough spots in the pavement were repaired. The entire 30 miles presented a neat and pleasing appearance.

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260 Landscape Work

A group of E.C.W. boys have continued the grading and landscaping around the Park residences.

300 Activities of other agencies in the Park

320 Cooperating government agencies

Captain Boineau, Commanding Officer in charge of the Kilauea Military Camp put at the Park disposal 40 enlisted men to place at various points of the Park for patrol on the day of the President's visit. He also placed some of his men at the disposal of the county for duty on 10 miles of road before reaching the Park entrance.

Complaints

Three complaints were received at the Superintendents office concerning actions of enlisted men at the Kilauea Military Camp. One reported a stolen camera after the maid had seen two soldiers enter private grounds but a check by Sargent Baker at the camp failed to produce any evidence. Another reported that two maids of families living in the district had been chased by what were thought to be enlisted men. The general feeling among summer residents seems to be that the enlisted men roam both the Park roads the roads in the summer residence district outside the park too much at night and women do not feel safe on foot unless protected.

Volcano Observatory

Due to the serious financial situation confronting the Volcano Observatory a meeting of the Board of Directors of the Hawaiian Volcano Research Association went on record as favoring a transfer of the Observatory work to the National Park Service. It was hoped by this means to insure continuity of the work of the Observatory in investigation volcanic phenomena. A resolution was adopted which requested the President of the Association to study the matter and he appointed a committee to work with him, on which were Dr. T. A. Jaggar and the Superintendent. On July 3 the Superintendent addressed a letter to the Director outlining the action taken at this meeting and recommending that if agreeable to the Geological Survey the transfer to the jurisdiction of the Park Service, be effected.

400 Flora, fauna and natural phenomena

410 Ranger, naturalist and guide service

Rangers conducted their usual duties of patrolling, maintaining roads and trails, giving service to the public, painting signs, repairing telephone and electric lines, etc.

420 Museum Service

There were 23 lectures to 1970 people at the Uwekahuna Museum. In addition 19 auto caravans were conducted with 107 cars and 731 persons in attendance. There were 16 field trips with 379 in attendance. Total museum attendance was 23,911.

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480 Natural Phenomena

Routine measurements of temperatures of cracks and rim fissures were continued as usual. Tilting of the ground was slight and north by east and north by west in direction. Microseismic motion was consistently light. There were 61 tremors and 9 feeble shocks recorded on the seismographs during the past month.

The volcano of Kilauea has shown no new motion or sign of lava activity. On July 20 a slight earthquake occurred which was felt by residents and visitors. It started a slide from the east wall of the pit and a smaller slide from the north wall. The quake was probably located in the southeast part of the crater.

Acting Chief Ranger Christ, recently at work at the summit of Mauna Loa, reports increasing disagreeable sulphurous fumes from the northern end of the fissure system in the bottom of the crater, which was actively spouting lava last December.

500 Use of Park Facilities by the Public

* 510 Increase or decrease in travel

Total travel for the month was 23,911 compared with 20,187 for June and 37,214 a year ago. Total travel to date is 177,989, compared with 155,248 a year ago and representing an increase of 14.64 percent. The travel figures for this park were the subject of a special study by the Superintendent which resulted in a new method being devised to compute actual travel as registered in the traffic counter. A report was made to the Director on this investigation.

530 Visitors

On June 30 the U.S.S. Oklahoma, with 1,000 officers and men and 400 R.O.T.C. Cadets on board, arrived in Hilo for a two-day visit. Approximately 225 men from the ship visited the Park during the day. A special program of lectures at Uwekahuna was arranged for the group.

On July 1, Park Naturalist Doerr conducted the following people from the U.S.S. Oklahoma on a tour of the Park.

Captain W. R. Van Auken, Commanding Officer of the U.S.S. Okalahoma.
The following civilian guests on board the ship:
Dean Claude D. Hutchinson, University of California
Dr. Carl A. Schmidt, University of California
Chester R. Rowell, Editor, San Francisco Chronicle
A. C. Smith, Reporter, New York Sun.
Russel L. McGrath, Reporter, Seattle Times.
James. S. Fox, Reporter, Seattle Star
Malvin E. Meachan, International News Service.
The Superintendent and Dr. T. A. Jaggar joined the party for lunch at the Volcano House.

* The decrease in travel is due to the new system used in computing the number of visitors as registered on the traffic counter. This was the subject of a special report to your office. Figures for last year have not been as yet revised.

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From July 1 to 6 a group of 60 "Navy Juniors", were guests at the Navy Camp in the Park. Special hikes, tours and lectures were arranged for the group during their visit.

On July 4, the Inter-Island Steam ~~Ship~~ Navigation Company ran a special one-day excursion from Honolulu to the National Park. Eighty people visited the Park on this excursion. A special conducted auto tour and lecture was arranged for the excursion group.

From July 9 to 14 a group of 20 Y.W.C.A. girls were in the Volcano area. The Park Naturalist arranged four special field trips for the group.

On July 25, Franklin D. Roosevelt, President of the United States and his two sons, Franklin Jr. and John Roosevelt were visitors in this Park. Accompaning the President was an official Presidential party.

On July 28, Dr. and Mrs. Rufus Mather Bagg were conducted by the Park Naturalist on a Park Tour. Dr. Bagg is a Professor of Geology at Lawrence College, Appleton, Wis.

Also on July 28, Lincoln Ellsworth, famous explorer by air of the Artic and Antarctic regions, arrived in the Park to spend a few days at the Volcano. The explorer, who is on his way to his last expedition to the Antarctic, is spending most of his time hiking around this area. Mr. Ellsworth requested that he be told where he could hike and not have to contend with too much lava. Acting Chief Ranger Christ furnished the explorer with a map of various trails and in the mornings he leaves with his pack and returns when he has had sufficient exercise. Mr. Ellsworth is leaving on August 4 but it is understood that he will return to this region for a two weeks stay. The Superintendent enjoyed several very pleasant and stimulating contacts with both Mr. and Mrs. Ellsworth who are the very finest of people.

600 Protection

610 Police protection

Seven minor cases of violation were handled on the spot by rangers. Traffic lines were painted on curves on the Rim road and caution signs on the main road near Park Headquarters. Eight cases of assistance rendered to motorists with minor trouble., were reported

620 Fire protection

Work on the new water line for fire protection was completed during the month.

630 Accidents

On July 6, Henry Kini, Driving 1133 enroute to Six Tanks reported a wreck 1½ miles within Kau entrance. The wrecked station wagon driven by a Mr. Mendoca, and owned by S. Shaughnessy was transporting beer and pretzels for delivery to selling points in Kau. It was driving at the excessive speed of 80 miles an hour said one of the passengers and control was lost by the driver when it got too far to the side of the road at the

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at the curve, skidded, hit the bank on the opposite side and turned over. The driver was picked up by a party unknown and transported to the Kilauea Military Camp hospital where he remained unconsious for 3 hours. The three other passengers excaped with minor injuries. Acting Chief Ranger went immediately and saw that the car was removed and glass cleared away.

On July 24 two motorcycles one driven by Reginal Ho from Pahoa and the other by E. Vierra, police officer had a head on collision at first lookout at Kilauea Iki. Ho was taken to Kilauea Military Camp hospital and from there transported by Ranger Lamb to Hilo where a badly injured leg was treated.

640 Destruction of predatory animals
Fifty four wild goats and five wild pigs were killed during the month.

650 Signs
All signs have been repainted so far as necessary.

660 Sanitation
Gutters and tanks were cleaned during month.

900 Miscellaneous

On July 25 a 66 percent elicipse of the moon was witnessed by several at Uwekahuna Museum through the telescope

On July 26, a baby girl was born to Mr. and Mrs. Hodges at the Hospital in Hilo. The childs name is Amy Kathleen Hodges

On July 26, Mr. Richmond Hodges, Clerk, left this Park to be transferred to Crater Lake National Park. The evening before he left a dinner party was given in his honor and a picture of a scene in Hawaii presented to him as a gift from the park personnel. Mr. Hodges was an active person and participated in various organizations on this island. The day he sailed there was a large number of people at the boat to bedeck him with leis and bid him goodbye. A picture is attacked showing his departure at the Hilo dock with his oldest son Richmond Jr.

On July 5, Ranger Williams accompanied Mr. and Mrs. Skinner, Mr. Westgate, Dr. Bachman, and Mr. LeRoy Bush to the summit of Mauna Loa. Mr. Skinner is the Supervisor of schools on West Maui and Dr. Bachman is a professor at the University of Hawaii. The trip was made without mishap and Mrs. Skinner, although a very small women, fared as well and even better than any of the men in the Party. The evening of their return Mrs. Skinner was the hostess of a dinner party at the Volcano House.

On July 18, construction of the 20 mile electric power line to the National Park was commenced by the Hilo Electric Light Company. The completion of this power line will be one of the greatest benefits to the Park community in years and progress in the construction is being watched with interest.

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Sun Fo, President of the House of Representatives and Senate of the Republic of China, spent some time on the Island of Maui the latter part of July. Sun Fo is the son of the late Dr. Sun Yat Sen. Mr. Sun and his family spent two days and a night at the summit of Haleakala and after leaving Maui he and his family anticipate visiting the Kilauea section of the Park.

Very respectfully,

Edward G. Wingate

Edward G. Wingate
Superintendent

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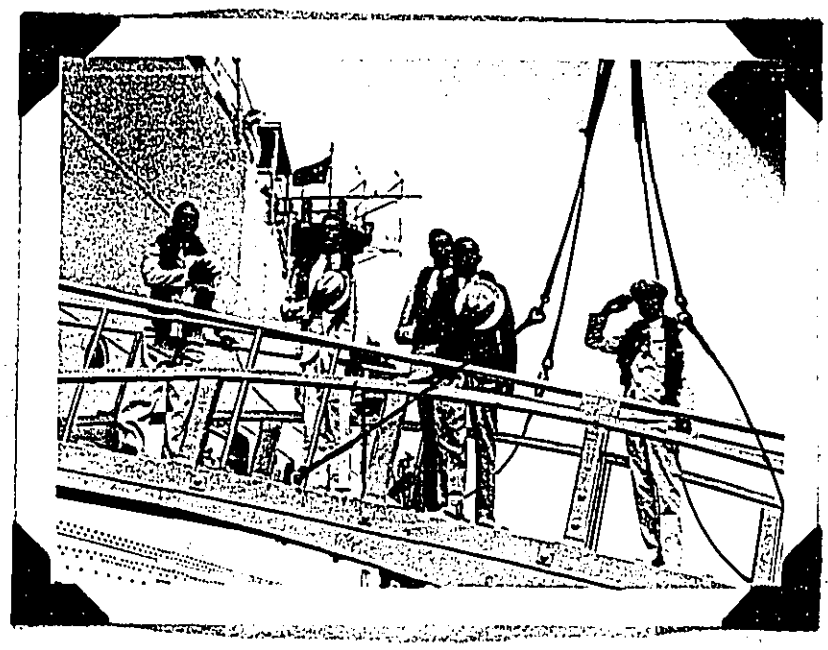
President leaving the boat at Hilo



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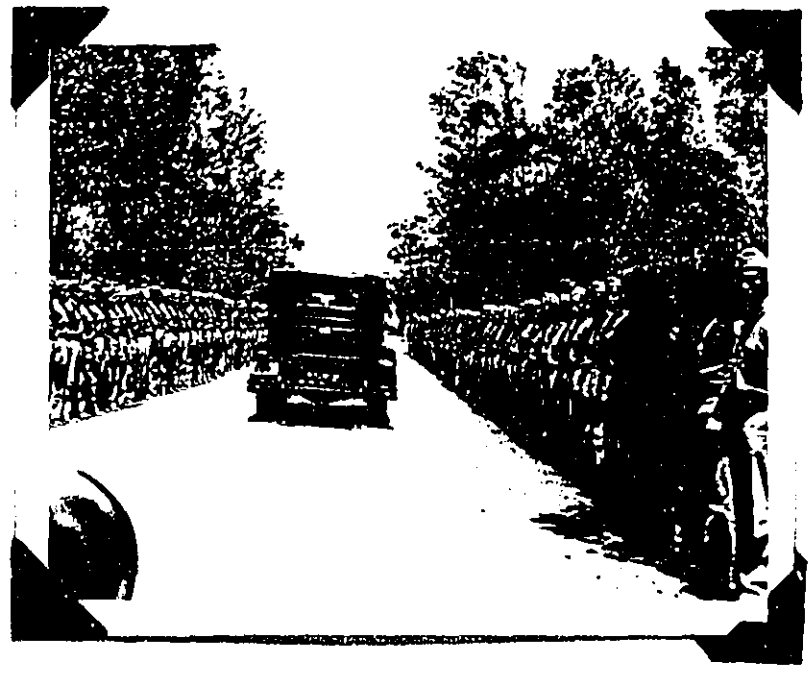

Reviewing C.C.C. boys

President's party at rim of Halemaumau Crater

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At Halemaumau - Professor Jaggar explaining volcanic action
to President and son Franklin

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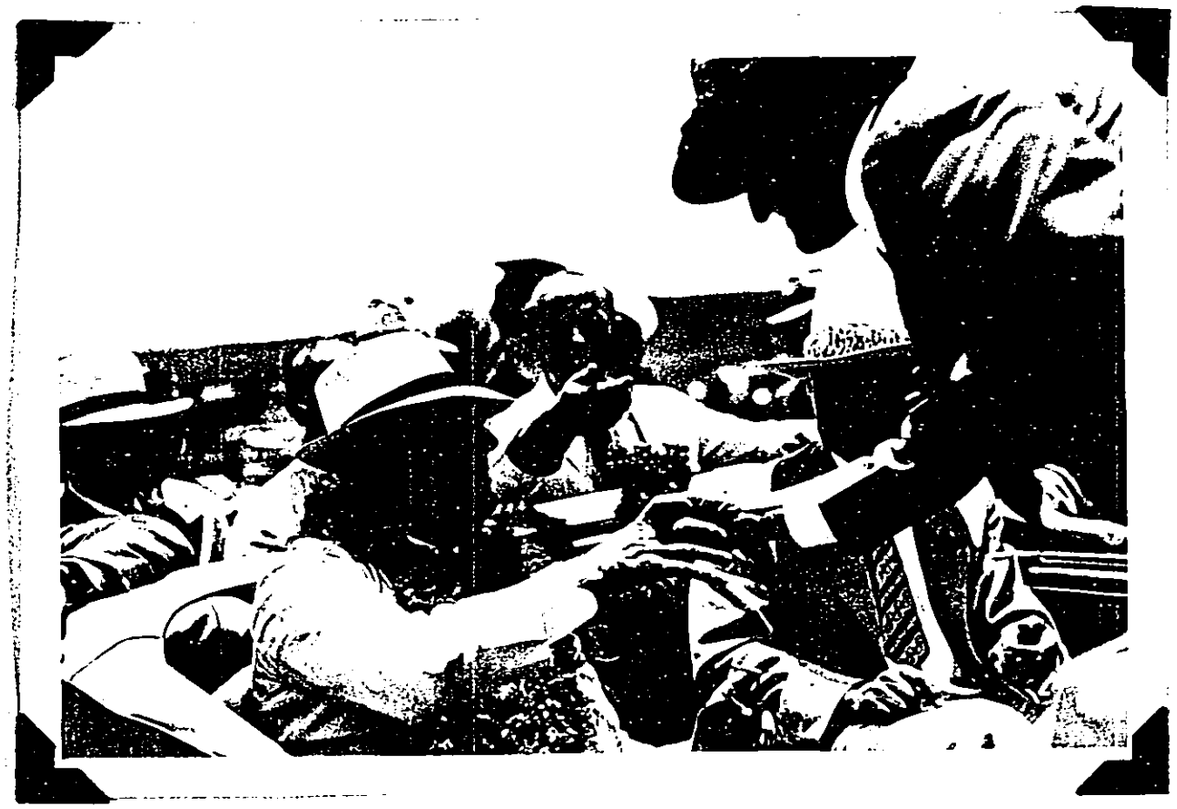

Professor Jaggar handing President ohelo berries brought by Hawaiian laborer Charles Kauhi for President to make traditional offering to Pele, Hawaiian Goddess of Volcanoes.

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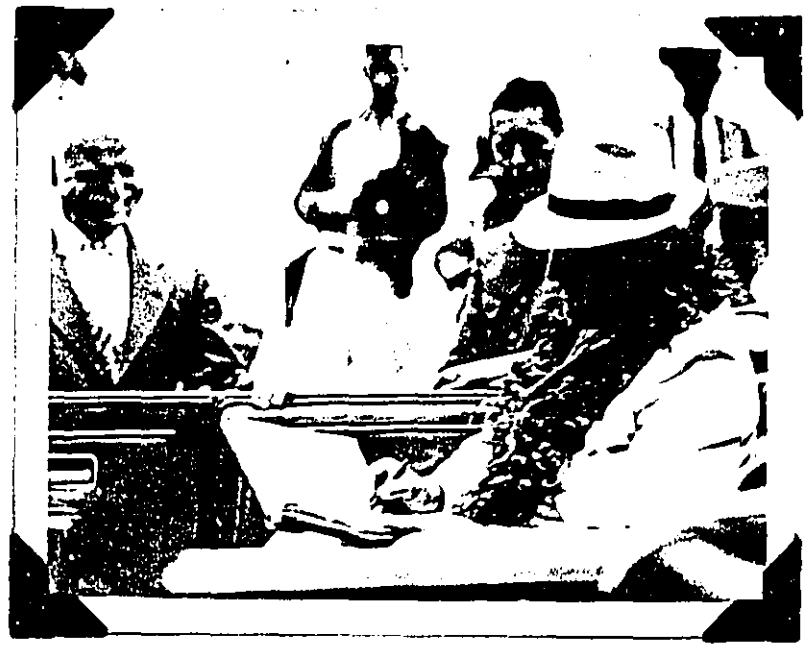

Signing Volcano House register at Uwekahuna

Signing Park register at Uwekahuna

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President signing Park and Hotel registers at Uwekahuna Museum - Park Naturalist Doerr in uniform - George Lycurgus, Manager Volcano House, with back to camera

DOCUMENT CAPTURED AS RECEIVED

President at Uwekahuna Museum
Park Naturalist Doerr - The President

DOCUMENT CAPTURED AS RECEIVED

President at Uwekahuna Museum
Left to right - Professor Jaggar with Straw hat, Superintendent Wingate, The President with Hon. Samuel Spencer in car.

DOCUMENT CAPTURED AS RECEIVED

At Uwekahuna Museum
Superintendent Wingate - The President

DOCUMENT CAPTURED AS RECEIVED

President Roosevelt decorated with flower wreaths after planting banyan tree in Hilo

DOCUMENT CAPTURED AS RECEIVED

Mr. R. B. Hodges, clerk, and son as they left from Hilo, July 25

DOCUMENT CAPTURED AS RECEIVED

Trail building by CCC crew, Bird Park

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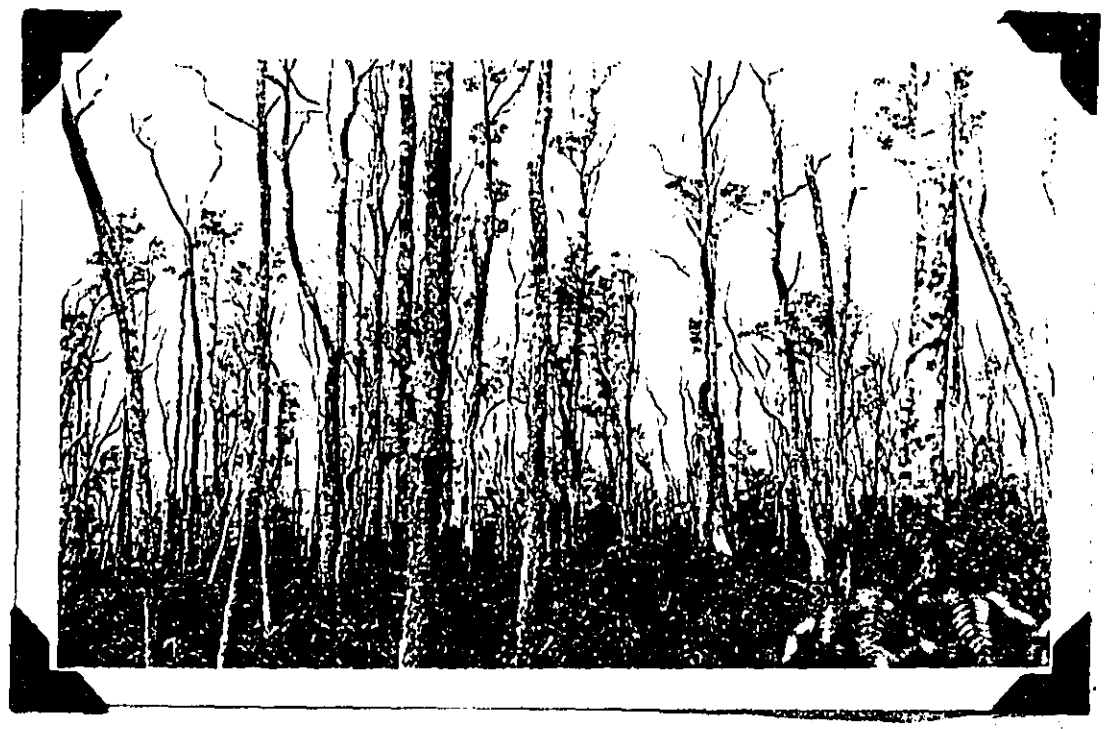

Showing condition of Ohia Lehua forest along Chain of Craters road near Makaopuhi Crater. These trees were killed by fire a number of years ago and are now infested with various insects.

CCC fire hazard reduction crew cutting fire wood near Makaopuhi on Chain of Craters Road.

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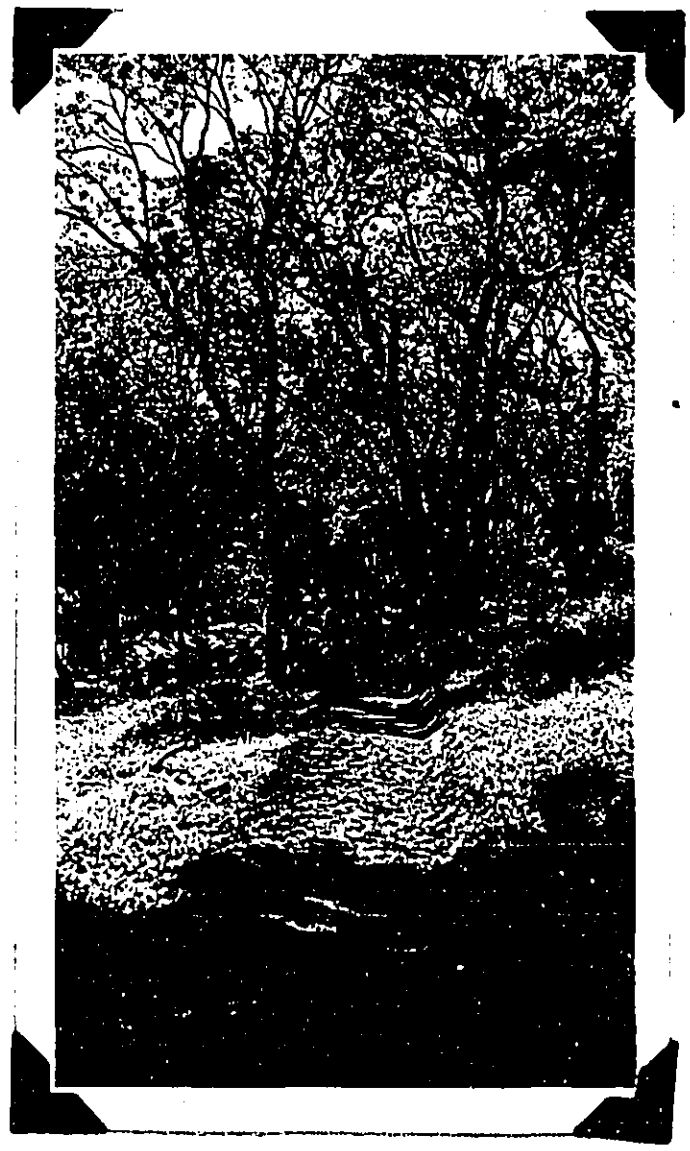

Trail building by CCC crew, Bird Park

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Form No. 1009—Met'l.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU

COOPERATIVE OBSERVERS' METEROLOGICAL RECORD:

Month of July, 1934 ; *Station,* Volcano Observatory ; *County,* Kau

Hour of Observation, 8 a.m.

State, ; *Latitude,* ; *Longitude,* ; *Time used on this form,* H.S.T.

DATE	TEMPERATURE				PRECIPITATION			WIND		PREVAILING WIND DIRECTION	CHARACTER OF DAY, SUNRISE TO SUNSET	‡ MISCELLANEOUS PHENOMENA
	MAXIMUM	MINIMUM	RANGE	*SET MAX.	TIME OF BEGINNING	TIME OF ENDING	†AMOUNT	[illegible]	[illegible]			
	1	2	3	4	5	6	7	8	9	10	11	
1	67	58	9	62	Set	max.	.09	90	Lt.	NE	PC	
2	73	55	18	66	applies to		.04	91	Lt	NE	PC	
3	72	56	16	59	preceding		.01	92	Lt	NE	PC	
4	68	56	12	62	day		.10	88	Lt	NE	PC	
5	74	55	19	64			.03	86	Lt	NE	Cloudy	
6	76	58	18	65	Max. is		.13	91	calm		"	Lighting storm
7	78	59	19	68	entered for		.29	90	"		"	
8	69	57	12	66	preceding		1.40	94	Lt	NE	PC	
9	72	55	17	63	day always		.06	89	Str	NE	Clear	
10	69	59	10	62	8 a.m.	reading	.07	93	Str	NE	PC	
11	70	56	14	66			.04	82	Str	NE	PC	
12	71	57	14	63			.14	91	Med	NE	PC	
13	70	55	15	62			.01	--	Med	NE	PC	
14	74	56	18	66			.02	80	Med	NE	Cloudy	
15	72	59	13	65			.27	84	Lt	NE	PC	
16	72	56	16	64			.03	91	Med	NE	Clear	
17	70	57	13	64			.02	82	Str	NE	"	
18	74	63	11	67			T	83	Med	NE	"	
19	76	58	18	67			T	88	Lt	NE	PC	
20	73	57	16	64			T	84	Str	NE	PC	
21	72	55	17	62			.16	88	Lt	NE	Clear	
22	69	58	11	68			T	84	Str	NE	Cloudy	
23	73	56	17	64			.43	96	Med	NE	"	
24	65	60	5	63			1.69	95	Lt	NE	"	
25	72	54	18	58			.20	91	Str	NE	PC	
26	76	55	21	66			.06	90	calm		Clear	
27	73	59	14	62			.03	86	Lt	NE	"	
28	74	60	14	66			.01	80	Str	NE	"	
29	71	58	13	61			T	89	Str	NE	PC	
30	73	56	17	61			.05	85	Str	NE	Cloudy	
31	68	55	13	66			.19	84	Lt	NE	"	
SUM.	2225	1768	457	1979			5.67	2637				
MEAN.	71.8	570	14.7	63.8			18	87.9				

* Reading of maximum thermometer immediately after setting.
† Including rain, hail, sleet, and melted snow.
‡ Thunderstorms, halos, auroras, etc.

at 8 a.m. T. A. Jaggar, *Cooperative Observer.*

(IN TRIPLICATE) See cover for instructions.

8—253
U. S. GOVERNMENT PRINTING OFFICE: 1930

Post Office Address, Hawaii National Park

MONTHLY SUMMARY

TEMPERATURE

Mean maximum, 71.8

Mean minimum, 57.0

Mean, 64.4

Maximum, 78 ; date, 7

Minimum, 54 ; date, 25

Greatest daily range, 21 on the 26th

PRECIPITATION

Total, 26 days inches 5.67 ; greatest in 24 hours 1.69

Date, 24

SNOW

Total snowfall, inches

On ground 15th, inches

At end of month, inches

NUMBER OF DAYS—

With .01 inch or more precipitation, 26

Clear, 8 ; partly cloudy, 14

Cloudy, 9

DATES OF—

Fog { Light,
Dense,

Killing frost,

Thunderstorms, 6th

Hail { Light,
Moderate,
Heavy,

Sleet,

Auroras,

REMARKS:

Set max. is entered in the morning of the reading

Max is entered on the record of the day before

12th Humidity not recorded

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10-157
(July, 1929)

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

TRAVEL REPORT

HAWAII National Park for the month of JULY 1934

	This Month	This Travel Year To Date	This Month Last Year	Last Travel Year To Date	Increase for Travel Year Number	Increase for Travel Year Percent
PRIVATE TRANSPORTATION:						
Cars first entry,						
Cars reentry,						
Motorcycles,						
Total motor vehicles,						
Persons entering via motor vehicles,	20 904 / 22,788	191,169 / 170,345	44,005 / 36,110	194,774 / 150,769	-3,625 / 19,476	.019 / 12.91
Persons entering via other private transportation,	407 / 320	2 667 / 2,260	326 / 489	1 417 / 1,021	1,250 / 1,169	.882 / 107.15
Total persons entering via private transportation,	21311 / 23,108	193 816 / 172,505	44331 / 36,599	196,191 / 151,860	-2,375 / 20,645	.017 / 13.59
OTHER TRANSPORTATION:						
Persons entering via HOTEL buses,	1168 / 803	6 652 / 5,484	574 / 615	3902 / 3,388	2,750 / 2,096	.705 / 61.86
Persons entering via trains,						
Persons entering otherwise,						
Total other transportation,	1168 / 803	6 652 / 5,484	574 / 615	3902 / 3,388	2,750 / 2,096	.705 / 61.86
GRAND TOTAL ALL VISITORS,	23,911 / 22,479	200,468 / 177,989	37,214 / 44,845	155,248 / 200,093	22,741 / 375	14.64 / .007

	This Year	Last Year	Increase Number	Increase Percent
Automobiles in public camps during month,				
Campers in public camps during month,				

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10-158

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF AUTHORIZED PROJECTS

Hawaii National Park for the Month of July, 1934

Description of Projects	Percent Constructed To Date	Percent Constructed This Month	Percent Constructed Last Month	Probable Date of Completion
FP 102.8 Parapet Lookouts, Kilauea Iki, etc.	97 99	1 2	1	
FP 311.14 Fire-Equipment Storehouse and Garage	40 90	0 50	35 0	
FP 312.14 Building Reconditioning for Elimination of Fire Hazards	2 20	0 18	0 0	

(Work on last two projects held up due to strike on coast which has prevented shipment of materials.)

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10-215
(August 1933)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Office of National Parks,
Buildings and Reservations

.....HAWAII..... National Park

R E P O R T O F N O N-A P P O I N T E D P E R S O N N E L
(TEMPORARY)

Changes outside the District of Columbia for the month of ..... 19.....

Total at beginning of month	Additions	Separations	Net Gain or loss (a)	Total at ending of month
9	8	10	-2	7
7	0	7	-7	0

(a) If loss, indicate by minus sign.

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10-159
(May, 1931)

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF PERSONNEL

.....Hawaii..... National Park for the Month of .....July 1934.....

	This Month		This Month Last Year	
	Appointed	Non-Appointed	Appointed	Non-Appointed
Number of employees beginning of month	19 18	9 7	17	4
Number of additions.....	1 0	8 0	0	0 3
Total.....	20 18	17 7	17	4 7
Number of separations.....	2 1	10 7	0	0 5
Number of employees close of month.....	18 17	7 0	17	4 2
Number of promotions during month.....	0	0	0	0
Aggregate amount of annual leave taken	6 16	0	11 1/2	0
Aggregate amount of sick leave taken....	4 21	0	3 2	0
Aggregate amount of ~~leave~~ furlough without pay..	0	0	0	0

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10-160

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF PARK REVENUES

Hawaii National Park for the Month of July 1934

	This Year	Last Year
Park revenue on hand beginning of month,	0.00	0.00
Received,	25.00	25.00
Total,	25.00	25.00
Remitted,	25.00	25.00
On hand close of month,	0.00	0.00

Park revenues received this year to date,	25.00
Park revenues received last year to date,	25.00
~~Increase~~ Decrease,	0.00
Per cent of ~~increase~~ decrease,	0.00

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10-161 DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF SALES OF PUBLICATIONS

	Number	Value
GOVERNMENT PUBLICATIONS:		
On hand beginning of month,	920 ~~940~~	186.00 ~~193.85~~
Received during month,	~~000~~	~~00.00~~
Total,	~~940~~ 940	~~193.85~~ 186.00
Sold during month,	~~20~~ 22	~~7.85~~ 7.00
On hand at close of month,	~~920~~ 898	~~186.00~~ 179.00
NON-GOVERNMENT PUBLICATIONS:		
On hand beginning of month,		
Received during month,		
Total,		
Sold during month,		
On hand at close of month,		
Cash on hand beginning of month,		~~19.82~~ 15.01
Sales during month,		~~7.85~~ 7.00
Total,		~~27.67~~ 22.01
Remitted during month,		~~12.66~~ 6.55
Balance,		~~15.01~~ 15.46

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STATISTICAL REPORT NO. 8

FINANCE AND ACCOUNTS.

JULY, 1934

Symbol	Appropriation	Allotted	Expended & Obligated	Balance
45415	Salaries & Expenses, National Park Service, 1935	35,150.00	27,118.14	8,031.86
45406	Forest Protection & Fire Prevention, (N.P.S.) 1935	300.00	3.50	296.50
44415.3	Salaries & Expenses, Office of Nat'l Parks, Bldgs & Reservations, 1934	31,392.55	29,869.63	1,522.92
44406.3	Forest Protection & Fire Prevention, (N.P.B. & R.) 1934	520.00	509.23	10.77
4-03/5640.8	NIR, Interior, Nat'l Parks, Roads & Trails, 1933-'35:	490,000.00	472,672.03	17,327.97
4-03/5640.14	NIR, Interior, Nat'l Parks, Bldgs, & Reservations, 1933-'35:	11,250.00	7,716.62	3,533.38

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

July 9, 1934.

MEMORANDUM FOR THE PRESS

IMMEDIATE RELEASE

BY
Edward G. Wingate,
Superintendent.

HAWAII NATIONAL PARK, JULY _____. (Special) On Wednesday evening, July 11, at 8 o'clock, Professor Otto Swezey, Consulting Entomologist of the H.S.P.A. and Bishop Museum, will give a public lecture at the Volcano House. Professor Swezey's subject will be, "The Balance in Nature as Illustrated by Insect Life in the Hawaiian Islands." His talk will be accompanied by a number of lantern slides.

This lecture will be the fourth of a series of evening programs sponsored by the National Park Service in cooperation with the University of Hawaii. The programs which have been given since the opening of the University Summer School in the Volcano District have been enthusiastically received by large audiences. The public is cordially invited to attend Professor Swezey's lecture.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

July 16, 1934

MEMORANDUM FOR THE PRESS

By Edward C. Wingate

Edward C. Wingate
Superintendent

KOHALA BOYS WIN SONG CONTEST

C.C.C. Camp, Hawaii National Park, Hawaii, July_____. The boys from the Kohala District were declared winners in the contest to determine the best singing group in the C.C.C. Camp of Hawaii National Park. The contest was held Friday night July 13 with a large number of summer residents of the Volcano District in attendance.

Of the two hundred enrolled boys in the camp about seventy are of Hawaiian ancestry and in order to assist the recreation officer in his duties, Superintendent Wingate announced several months ago that a song contest would be held the winning group to receive a free trip around the Island of Hawaii.

Camp Director Rivenburgh and Recreation Officer Gilbert Lee encouraged the development of a stringed orchestra as well as several singing groups. Landscape Architect Hager, assisted the boys with technical instruction.

As soon as the Enrollees were told of the prize for the best group of singers, the different districts represented in camp began to seek out their best.

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Four districts viz; Hilo, Puna, Kona, and Kohala developed singing groups averaging about ten members each and practice went forward with a vim. The leaders of each group jealously guarded their rehearsals and one would come upon boys singing out in the woods a long way from the camp.

As the day of the contest approached more pressure was applied and when they appeared before the judges they were in the pink of condition.

On the evening of July 13 a large gathering greeted the boys in the camp mess hall. Vacationers in the Volcano area, guests of the Volcano House, members of the University Summer Session faculty and guests of the Kilauea Military Camp were among those who with non singing Enrollees applauded heartily each number.

Mrs. Laura Kennedy Kaulukou, Mrs. Elizabeth Lee, and Mr. Merel S. Sager served as judges.

After the various groups had sung, several songs each, the judges awarded the first prize to the boys from Kohala. This was a unanimous choice.

The competition was so keen that it was necessary to have the other three contesting clubs sing one song each before the judges could decide upon the award for second prize, which went to the boys from the Puna District.

It was a very entertaining evening and those present were rewarded with much beautiful harmony such as only the native Hawaiian singing in his carefree manner can produce.

Members of the winning group were; Alexander Ah Sam, Joseph Perez, Arthur Ah Loo, Eben Kalaau, John Spencer, Philip Akana, William Kanuha, George Kipapa, Nicholas Perez.

Besides the two contest songs, Ke Makani Kaili Aloha and Hilo Hanakahi they gave three selections, Pai Ma Puna, Lei Loke Lani, and Alekoki.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

July 21, 1934

MEMORANDUM FOR THE PRESS

IMMEDIATE RELEASE

By Edward G. Wingate, Superintendent.

HAWAII NATIONAL PARK, JULY_____. The University of Hawaii summer session in the Volcano District will end July 27. The final number of a series of evening programs held during the summer session will be given at the Volcano House Wednesday evening, July 25, at 8 O'clock.

The program will open with a Choral Verse Speaking Recital by the students who have been studying under Mrs. Violet L. Chester. The recital will be directed by Mrs. Chester, whose dramatic ability has attracted much attention in the islands. Mrs. Chester describes Choral Verse Speaking as a recent development in teaching vocal expression and diction. Such training aims to cultivate the appreciation and beauty of poetry.

The choral recital, given by forty students, will include old Scotch ballads a Biblical psalm, and selections from Edgar Allen Poe, Kipling and Don Blanding.

Following the thirty-minute choral recital, Dr. T. A. Jaggar will give an illustrated talk on volcanoes. Dr. Jaggar will use both slides and motion pictures illustrating his volcanological work in Alaska. The opportunity of hearing Dr. Jaggar assures us of a very interesting and instructive talk on a subject of the greatest importance to Hawaii.

This concluding program at the Volcano House, Wednesday evening at 8 o'clock promises to be one of the outstanding numbers of the series of programs given during the University summer session. The interest has been most gratifying.

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Special article prepared for Hawaii Manichi Sha Presidential Edition

HAWAII NATIONAL PARK

AND

THE NATIONAL PARK SERVICE

by

Edward G. Wingate

Superintendent

Hawaii National Park

Twenty three years ago a descendent of the kings of Hawaii, Prince Jonah Kalanianaole, delegate from Hawaii to the Congress of the United States, introduced the first bill for the creation of a National Park on the Island of Hawaii. This bill which was finally approved on August 1, 1916 established a Federal Reservation about the active craters of Mauna Loa and Kilauea on the Island of Hawaii and the giant crater of Haleakala on the Island of Maui. The passage of this bill fittingly rewarded the long continued efforts of men whose lives had been dedicated to public service; Prince Kalanianaole, Hon. W. R. Castle, Gov. W. F. Frear, Hon. Lorrin P. Thurston, Dr. T. A. Jaggar and others.

As far back as 1903 Mr. Castle wrote, "The time has come when the United States Government might well reserve the whole region from Makuaweowco (summit crater of Mauna Loa) to the sea at Puna." In his report to the Secretary of the Interior on the proposed National Park in Hawaii, Dr. T. A. Jaggar wrote, "There is the same justification for creating a National Park about the three great volcanoes of Hawaii that

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there was for setting aside the wonders of the Yellowstone Geyser District, the big trees of California and the great canyon of the Yosemite. The Hawaiian volcanoes are truly a national asset, wholly unique of their kind, the most famous in the world of science, and the most continuously active volcanoes on earth."

About the same time that the bill creating the Hawaii National Park was approved the Act establishing the National Park Service became law. Written into this act was the fundamental purpose for which this service was established and in 1918 Hon. Franklin K. Lane, Secretary of the Interior made a statement of National Park Policy. It is summed up in the three following broad principles:

First: That the National Parks must be maintained x in absolutely unimpaired form for the use of future generations as well as those of our own time.

Second: That the National Parks are set aside for the use, observation, health and pleasure of the people.

Third: That the National interest must dictate all decisions affecting public or private enterprise in the parks.

To this fundamental purpose and statement of policies we of Hawaii National Park are dedicated. It is not for nothing that the bureau, formed to administer the several parks, bears as part of its title the work Service. Our duty is twofold; to protect and to serve.

Given into our charge is an area of unique natural beauty. It is for us to preserve it unmarred for the enjoyment of all future generations. Given us also is the obligation to provide opportunity

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for all the people to observe, study, and enjoy the area under our control.

That this twofold duty may be fulfilled an organization has been built up at the head of which is the Superintendent of the Park, whose duty is to coordinate the activities of the several divisions.

First among these divisions is the Ranger Staff composed in Hawaii of several rangers under the immediate direction of a Chief Ranger. To each ranger is assigned a certain portion of the park as his particular district where he must be on duty unless, as is frequently the case, he is called for special work elsewhere. The rangers duties are manifold and he must be something of a Jack-of-all-trades and good at them as well. He is not a forester but he must know the names of most of the common trees and plants. He is not a geologist but he must know the common products of volcanoes and the different types. He is not an ornithologist yet he is expected to give the names of birds and their habits. He is not employed by a tourist agency but he should be able to give the cost of a room at the Kona Inn or luncheon at Waimea. He is not a nurse but frequently cares for babies. He is neither blacksmith, cowboy, nor packer yet must be able to perform the duties of each. To the historian he must speak of Vancouver and Cook, of Ledyard, Menzies, and Ellis. To the maker of literature of the legends of Pele, of Kamapuaa, of Hiiaka and of Maui. He carries the authority of a police officer yet he prefers to interpret the law. He is truly philosopher, guide and friend. A good ranger is a Superintendents' pride and joy.

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In recent years the actigities of the Naturalist Division have become increasingly important and the quality of the service rendered has matched the rapid expansion of its activities. At the head of this Division is the Park Naturalist who plans, maps and carries into effect all the educational work in the Park. The Naturalist Division is the principal source of public contacts. All lectures are prepared and are generally given by the Park Naturalist. He directs and frequently conducts tours, on foot, on horse, or by automobile to the points of outstanding interest in the Park. The Naturalist Division is the source of all scientific information concerning the park. This division maintains and operates the public museum of volcanic and other products. The Ranger answers the question What? The Naturalist answers also the questions Why? and How?

So that the public may be enabled to see and enjoy the natural beauties of the park, roads, trails and buildings for shelter and comfort must be built and maintained. Throughout the National Park System, all major road work is constructed by the Bureau of Public Roads, through an inter Bureau agreement, under plans and specifications approved by the Bureau of Plans and Design of the National Park Service. Maintenance of these roads and construction of all buildings and water and sewer systems falls under the direction of the Park Foreman. The visitor seldom sees or meets the staff under the supervision of the Foreman but the full enjoyment of his visit is made possible by the work of these men.

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Closely associated with the Superintendent is the Clerical staff under direction of a Chief Clerk. The staff handles all correspondence, keeps cost accounts, handles the files, disburses all funds allotted the park, and prepares reports and annual estimates for submission to congress. The duties of the clerical staff are perhaps the most burdensome in the whole park, yet their praises are seldom publicly sung except by the Superintendent.

Not directly connected with any of the individual parks is the Landscape Architect. The Branch of Plans and Design and the Branch of Engineering are separate units in the National Park Service. All plans for roads, trails and buildings must have the approval of these two branches before construction may commence. Both landscape architects and engineers are assigned for duty in the several parks by the chiefs in charge of these two branches with offices in San Francisco and Washington, D. C. The landscape architect sees to it that the fundamental purpose of preserving the natural beauty of the scenery if fulfilled, both in the plans and in the construction. The landscape architect might be said to be the guardian of the park policy of unimpaired preservation. In this guardianship it is proper that they should be independent of the Superintendents of the individual parks.

Within the National Park Service are other specialized branches or divisions which serve in advisory capacities to the different parks such as the Wild Life Division, Office of the Chief Forester, also cooperating with the National Park Service are the Bureau of Public Health and the Bureau of Plant Industry, etc.

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Active administration of Hawaii National Park commenced with the arrival of the first Superintendent, Thomas E. Boles, in the winter of 1922. From that date on the area within the park has been continually developed with the emphasis placed on the development of the active volcanic areas in the Kilauea and Mauna Loa Sections. Now that almost all points with these sections may be reached by good roads and trails the administration is turning to the development of Haleakala on the Island of Maui. In cooperation with the Territorial Government which built a road as far as the Park Boundary the Service is spending $400,000.00 on the continuation of the road to the summit of the mountain. The contractor expects to complete this project before the spring of 1935 when the people of Maui are planning a festival, which will, "Bring the World to Haleakala."

As at Kilauea, ranger quarters will be built, on Haleakala, trails improved and properly marked, animal and plant life protected, and the public cared for. Then will this sectio of Haleakala on the Island of Maui, which among all the National Parks is second to none in the sheer majesty of its volcanic beauty, assume its proper place in the chain of National Parks.

Along with the development of the National Park has been that of the Kilauea Military and Navy Camps. This camp located on land included within the National Park but originally leased for a period of twenty years from a local estate has been of great benefit ot the men of the regular army and navy in Hawaii. Administered by commissioned officers of the two services and maintained by company and

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recreation funds it has been so economically managed that over three thousand enlisted men and officers each year have made it their vaction ground. The visitors to these camps have been among the most enthusiastic supporters of the educational work of the Park. On innumerable occasions the personnel of these camps have assisted the Park administration with loans of equipment and personal services and always has this service been given gladly. Among the officers permanently detailed to the camps is a medical officer in charge of a small hospital and dispensary. Both the park personnel and the public have received the benefit of this service without which the nearest doctor would be twenty miles. away. In many other ways have these camps been of value to the park and to the community and always have the officers in command been ready and willing to cooperate to the fullest, whether in laying a telephone line to the summit of Mauna Loa, or in fighting fire, or searching for missing persons.

No article on Hawaii National Park would be complete without mention of the valuable assistance given the Park by two Island organizations, The Hawaiian Volcano Research Association and the Hui o Pele. The former provided the funds for construction and equipment for the Uwekahuna Museum now the center of Naturalist Activities. The latter through funds derived by memberships in the society has erected trail and roadside shelters throughout the park and has now completed the first man-made shelter on the summit of Mauna Loa. A rest house with sleeping and eating accomodations for twelve persons now rises on the desolate wastes where Menzies, Wilkes, Coan, Douglas, Brigham Alexander and other scientists, explorers and tourists have

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glady found shelter in any cave or hollow from the wind and snow.

There are still some roads to be built and trails constructed but not many more. These that exist will take the visitor to most of the points of interest. National Park roads are not the end but the means. We want the visitor to travel on the roads not because they are pleasant riding but because they lead him to the trails and it is afoot on the trail that any National Park is best understood. We are glad to have the visitor see our forests but we hope he learns the different kinds of trees. We are anxious he should see Kilauea but before he says goodbye we hope has found the Alealea has had steam blast eruptions too.

Edward G. Wingate

Edward G. Wingate
Superintendent

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

July 8, 1934.

The Director,
National Park Service,
Washington, D. C.

Dear Mr. Director:

Following is the administrative report of Hawaii National Park for the month of June 1934:

000 General

010 Introduction

The fourth season of the Kilauea Summer School, sponsored jointly by the Hawaii National Park and the University of Hawaii, opened for the six-weeks period beginning June 18. There was a registration of one hundred students, compared with 63 last year. Eight courses were offered, with class registrations totaling 227. Theodore Ehea, director of health, Territorial Department of Public Instruction, has a class of 57. Dr. Paul Bachman, professor of political science, has a class of 50 in political science and 30 in contemporary history. Mrs. Violet Chester, instructor in English at the University, has a class of 33 in speaking. Dr. Francis E. Peterson, director of the summer session, has 24 registered for his class in education. Dr. Thomas A. Jaggar has 15 in his geology class. Dr. Jaggar is assisted this season by Mr. Austin E. Jones, Seismologist and Geologist at the Hawaiian Volcano Observatory.

The Hilo Tribune-Herald, under date June 16, said of this school:

"No other university, no other college, in the entire world can boast of conducting regular class work at a volcano where science classes may have the advantage of conducting study and research first hand. Popular as is this volcano summer school, the possibilities of it have not even been tapped. With the proper presentation to the teaching profession on the mainland, this summer school should develop into one of the most outstanding in the United States. Mainland teachers wishing to take further educational work could do so in Hawaii and at the same time enjoy a most glorious vacation.

"With an enlarged faculty, drawing personnel from several of the better known institutions, the local school could be developed into one of international renown . . one in which faculty members from all sections would seek for positions and one in which the enrollment would be limited only by the housing capacity.

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"Excellent as the school is at present, there is a marvelous opportunity for further development. Next year's enrollment could be increased five-fold by the proper presentation campaign to mainland teachers."

The Naturalist Division is sponsoring a series of evening lectures, free to the public, at the Volcano House, by the members of the summer school faculty. One lecture is held each week. The lecture on Wednesday evening of the first week of the school, by Dr. Paul Bachman, on "Inter-National Affairs," was very well attended by about 125 people. The program started with a half-hour of music by the CCC camp orchestra, after which various school and park officials were introduced to the group. Dr. Bachman's talk was very stimulating and gave a wonderfully clear insight to the political situation in Europe particularly and in the Orient. The second lecture, June 27, was by Mrs. Violet L. Chester, and was the reading of a three-act play, "Biography." Mrs. Chester demonstrated her dramatic ability in a most impressive and entertaining manner.

The local press printed several editorials commenting on the fine work of the Park Service in making it possible, through the series of evening programs, for the community to have the opportunity of coming in contact with the University instructors. There will be four evening lectures during July.

020 General weather conditions

The mean maximum temperature for the month was 69, the mean minimum 56, and the mean for the month 62.5 degrees. The total rainfall was 8.90 inches, comparing with 7.73 for may and 3.92 a year ago. Total rainfall to date is 40.10, comparing with 67.04 inches a year ago. June rainfall at the CCC camp, about 1½ miles south of the Volcano Observatory, was 5.62 inches.

100 Administration

110 Status of work

The strikes on the Pacific Coast have greatly delayed construction of our fire equipment storehouse and garage because of nonreceipt of steel windows; and of building reconditioning and elimination of fire hazards because the Franklin stoves, which are to be built into the chimneys fireplace style, have not arrived.

120 Park inspections

121 Superintendent

Routine inspections of all projects were made during the month in the Kilauea Section.

122 Special Field Representative

Landscape Architect Merel S. Sager was at headquarters directing work of the Civilian Conservation Corps, etc., during June, except for a visit to the Island of Maui June 17 to 20 to inspect the Haleakala Road under construction.

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On June 1 he addressed the Hilo Federal Business Association on the subject, "Landscape Architecture in the National Parks." The talk was given publicity in the principal Hilo newspaper.

180 Circulars, placards, publicity bulletins, etc.

Attached are a number of press memoranda, Volcano Letters, etc. Particular attention is invited to a press notice prepared by the Superintendent on June 9 on, "A National Park Year." This was given very favorable notice in all local newspapers.

200 Maintenance, Improvements and New Construction

210 Maintenance

There was the usual maintenance of automotive equipment, electric, water, telephone, and sewer systems, etc., during the month.

220 Improvements

Halemau Trail

On June 3 Acting Chief Ranger Joseph H. Christ went to Maui and hired 8 men to improve and, in places, relocate the Halemau Trail into the Crater of Haleakala. The trail was subject to heavy erosion and an attempt was made to provide drainage in a way to protect the new surface. He returned to the park on June 23.

Halemaumau-Uwekahuna-Bird Park Road

A part of this road at the southwest rim of Kilauea Crater has required improvement in the form of stone gutters, due to heavy erosion on Desert Hill from a storm centering in that region late in May. Pictures of the damage accompanied the May report, and pictures showing the rock-lined ditch are attached hereto.

230 New construction

Fire equipment storehouse and garage

The concrete walls have been poured and the shipment of steel roof framing is at hand, but the steel windows still await shipment. It is hoped that the building will be completed within several weeks.

Haleakala Road

On June 15 the road was 47 per cent complete. The crushing plant is in operation, and experiments are now being made with short stretches of surfacing to determine the stability under traffic of the prescribed base course with 0.3 gallon bitumuls per square yard. This sample of surfacing has not stood up under traffic and action should be taken immediately to apply an armor coat surface to protect the base. Fills seem to be in a stable condition, and probably will not affect the surface.

Plans continue to be formulated for an impressive and well advertised road opening ceremony.

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300 Activities of Other Agencies in the Park

320 Cooperating Government Agencies

The Kilauea Military Camp very kindly loaned a number of their chairs for the use of the students of the Kilauea Summer School classes held in the sun room and on the big porch of the Kilauea Volcano House. The school directors chose this location, rather than the Uwekahuna Lecture Hall, because of the greater convenience and better lighting.

400 Flora, fauna and natural phenomena

410 Ranger, naturalist and guide service

Rangers conducted their usual duties of patrolling, maintaining roads and trails, giving service to the public, painting signs, repairing telephone and electric lines, etc. In addition, 21 pheasant eggs were collected for the Board of Agriculture, Honolulu, and shipped June 6.

420 Museum service

There were 17 lectures to 858 people at the Uwekahuna Museum. In addition 13 auto caravans were conducted with 51 cars and 381 persons in attendance. There were also 5 field trips with 57 in attendance. Total museum attendance was 1,117.

480 Natural phenomena

A number of slides were noted at various times in the fire pit Halemaumau. Routine measurements of temperatures of cracks and rim fissures were continued. Of interest were swarms of harmonic tremors, one spell lasting 17 minutes on June 20. There were also 203 tremors, 11 very feeble earthquakes, 1 moderate earthquake felt locally, and 1 distant earthquake. Tilting of the ground was slight and very variable in direction. Microseismic motion was consistently light.

The volcano of Kilauea has shown no new motion or sign of lava activity. In his weekly report dated June 17 Dr. Jaggar states that it is of interest to observe how the ramparts or pressure ridges around the edges of what was the lava lake of 1932 show three stages of shrinkage of the lake. This is revealed in the arrangement of the lava floor left by the activity of January 1932. There is the ridge around the edge of the floor marking the largest lake of December 1931, then a narrow ridge across the floor from northwest to southeast, and lastly an innermost rampart with hummocks inside, just in front of the big cone that was the last fountain of that eruption. The lake was thus receding in the direction of the funnel under the cone.

On June 25, after noting during recent weeks that crack No. 37 had been opening, Seismologist Jones observed hair cracks crossing the paved Halemaumau road southeast of the pit (see picture attached) in the extension of this crack eastward from the measuring point. There is evidently motion on that crack, which is 800 feet back from the rim of Halemaumau.

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500 Use of Park Facilities by the Public

510 Increase or decrease in travel

Total travel for the month was 20,187, compared with 17,755 for May and 31,182 a year ago. Total travel to date is 153,978, compared with 119,457 a year ago and representing an increase of 35.59 per cent.

530 Visitors

On June 15 Boy Scout Commissioner Kiso Takase, of the Boy Scout Confederation of Japan, was a visitor to the park, accompanied by Dr. Mr. Kubo, one of the most successful dentists of Hilo. Mr. Takase first became interested in Scouting when a merchant in Buffalo in 1914. In 1922 he moved to Tokyo, the city of his birth, and became active in the Japanese Boy Scout organization.

Overlooked in the report for May was the visit on May 24 of Messrs. Curtis Nagel, Palmer Miller, and Owen Prentiss, motion picture photographers of Hollywood. They made pictures of park scenes and were given special attention.

On June 13, Grand Master of Masons C. E. Gist, of California, and party, visited the park, lunching at the Volcano House with the Superintendent.

On June 16, Mr. B. Heflebower, Assistant Manager in charge of the Honolulu office of the Twelfth U. S. Civil Service District, visited the park while on this island on official business. After spending a night at the Volcano House he returned to Honolulu by steamer.

On the same day, Dr. Frederick E. Trotter, President of the Territorial Board of Health; A. Dopemeyer, Senior Sanitary Engineer, U. S. Public Health Service, in charge of anti-plague activities on the Island of Maui; and Joseph S. Caceres, head of the local Board of Health office, conferred with the Superintendent.

Also on the same day, about 250 Hilo High School alumni held their annual dinner and dance at the Volcano House. They were given the official welcome of the park by Ranger Kenneth J. Williams in the absence of the Superintendent, who was obliged to be absent from the park on other business.

On June 23, the Maui Japanese wrestling team, composed of 32 men and augmented by 8 members from Hilo, made a brief tour of the park while en route to Kona for competitive games.

On June 26, 200 members of the Hawaiian Evangelical Society, then in session on this island, made a visit to the park. Special lectures were given them at the Uwekahuna Lecture Hall by the Park Naturalist.

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600 Protection

610 Police protection
There were a few cases of minor assistance to motorists.

620 Fire protection
A fire test on June 15, instigated by Mr. Sager, showed that the park organization must be considerably improved in order to combat fire hazards efficiently. It was found that fire hose stored in the warehouse was too remote for ready use, that the single line, for collecting water from roofs and storing it in the reservoir, was inefficient due to the valve system and air locks, and that the personnel did not know procedure to be followed. In other words, it was found that we functioned very poorly in such an emergency. Steps were taken at once to correct the situation. A second pipe line was installed for fire purposes only, and this line is kept filled with water with no chance of air locks. Hose lines were placed at strategic points. Other tests will be held from time to time until organization is perfected.

With the new pipe line, water can be obtained anywhere in the residential area within four minutes.

630 Accidents
On June 4, Mrs. R. V. Woods, of Keslakekua, while walking with Mrs. T. A. Jaggar, fell through the railing on a bridge on the Sandalwood Trail, by stepping on some loose gravel, and dropped into an earthquake crack. She was caught on a ledge about 10 feet below. In falling, she attempted to reach for the rail and suffered a double fracture on one finger bone. All bridges have since been overhauled and additional rails placed in a way to prevent the recurrence of an accident of this type.

640 Destruction of predatory animals
There were 19 wild goats and 15 wild pigs destroyed during the month.

900 Miscellaneous

Federal Business Association
On June 1 there was held the regular quarterly meeting of the Hilo Federal Business Association and the annual election of officers. Superintendent Wingate, who had been Vice President, was elected President for the ensuing year; Richmond B. Hodges was reelected Secretary, and Capt. L. C. Boineau, commanding the Kilauea Military Camp, was elected Vice President. Thus all the officers are from the National Park.

Following the business meeting, Landscape Architect Sager gave a very interesting talk on landscape architecture, after which there was a spirited discussion of national park ideals and purposes.

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Personnel increases

On the 3d, Park Naturalist Doerr went to Honolulu for the purpose of completing arrangements for the Kilauea Summer School and to meet our newest addition to the permanent ranger staff, Mr. Samuel H. Lamb, and his bride, from Colorado. On the 9th the entire park staff assembled at a dinner at the Volcano House in honor of the new residents of the park. Before accepting appointment as park ranger, Mr. Lamb was forest technician for the U. S. Forest Service in a CCC camp in South Dakota. Previously he had two seasons as fire guard at Rocky Mountain National Park. With his bride he drove to Los Angeles from Colorado. His car will be shipped over later.

On June 16, Harold Morley, of Honolulu, accepted appointment as Ranger Naturalist for one month. Mr. Morley is an outstanding student of botany at the University of Hawaii and came very highly recommended.

On June 19, advice was received by radio of Presidential authority (Journal 64, Serial 3168; approved June 14, 1934) for filling vacant Position 13, Park Ranger, vice Vernon Lowery, who resigned last December.

Birth

On the 23d, a baby boy was born to Mr. and Mrs. William Elderts, Jr. Mr. Elderts has been an employee of the park for a great many years. He name the child Kenneth, after one of the rangers.

Emergency Conservation Work

The general health condition of the boys is good. The epidemic of mumps is about all over. There are still some cases of pink eye. During the last quarter there have been seven operations for appendicitis. At the end of April all the boys were weighed, and it was found that there was a total gain of 1,368 pounds, an average of 7 pounds per man.

There was a total of six discharges for various reasons, and the corps enrollment now stands at 194 boys.

On June 11, Kamehameha Day (so called because it commemorates the birth of Kamehameha I, who united the Hawaiian Islands under one government), the corps was invited to march in a parade in Hilo. The boys were drilled by their platoon leaders and learned to keep step, etc. They were equipped with khaki overseas caps and green and white shield-shaped insignia on their left shoulders. They looked well and marched well, causing much applause and favorable comment all along the line. It was the first time many of the citizens had seen a CCC boy and the first time any had seen them in a body.

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The CCC orchestra, which Landscape Architect Sager helped organize and train, has made many public appearances at the hotel. They are appearing several times at the evening entertainments of the University of Hawaii Summer School now in session at the Volcano House.

The flattening and rounding of road slopes has been completed and many of the slopes have grass growing on them.

The reduction of fire hazards has continued by cutting of dead timber: 150 acres were worked over during the month.

Three miles of fence have been constructed, 1.2 miles of which were done this month. This project consisted in replacing the fence around Bird Park.

Insect pest control has been carried on over an area of 73 acres, and eradication of exotic plants over an area of 20 acres.

The project which has made the greatest improvement in appearance and has caused the most favorable comment is the landscaping around the Government employees residences. The grounds of six residences have been worked on and several of these are complete. The soil in this region supports fern growth admirably well, but has not had sufficient years to disintegrate into a well balanced soil. Hence it has been necessary to prepare the soil thoroughly in all cases of landscaping around the residences. Mud press, a waste product from the sugar industry, has been hauled in in great quantities. This is the principal source of humus for this soil, which is essentially a rocky soil from geologically recent lava flows. This mud press is supplied gratis from several of the plantations.

Materials for the telephone line up Mauna Loa have arrived and are now being packed up the mountain.

A trail system through Bird Park is underway and should be completed during July.

In all of these projects the supervision of Landscape Architect Sager has been most fortunate for this park.

Very respectfully,

Edward G. Wingate,
Superintendent.

Inclosures.

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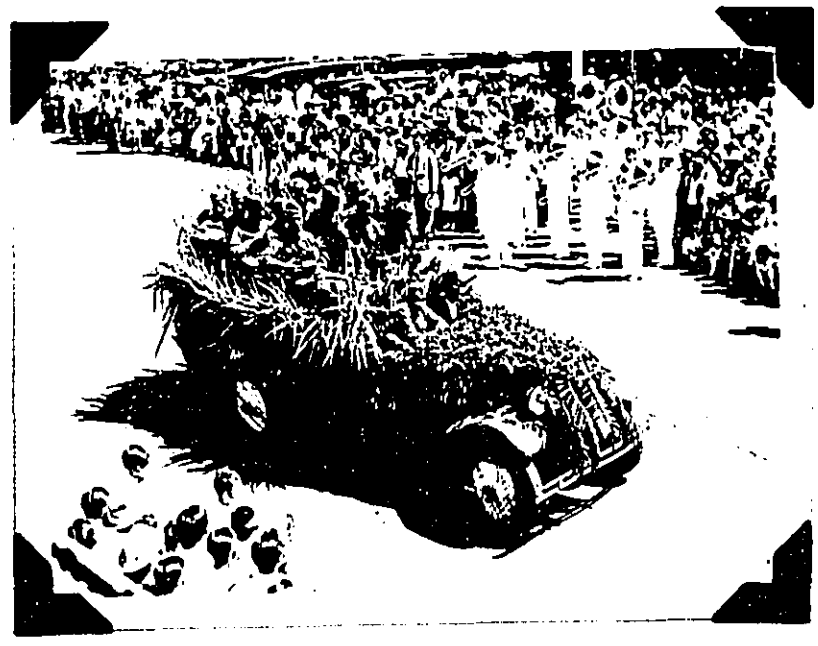
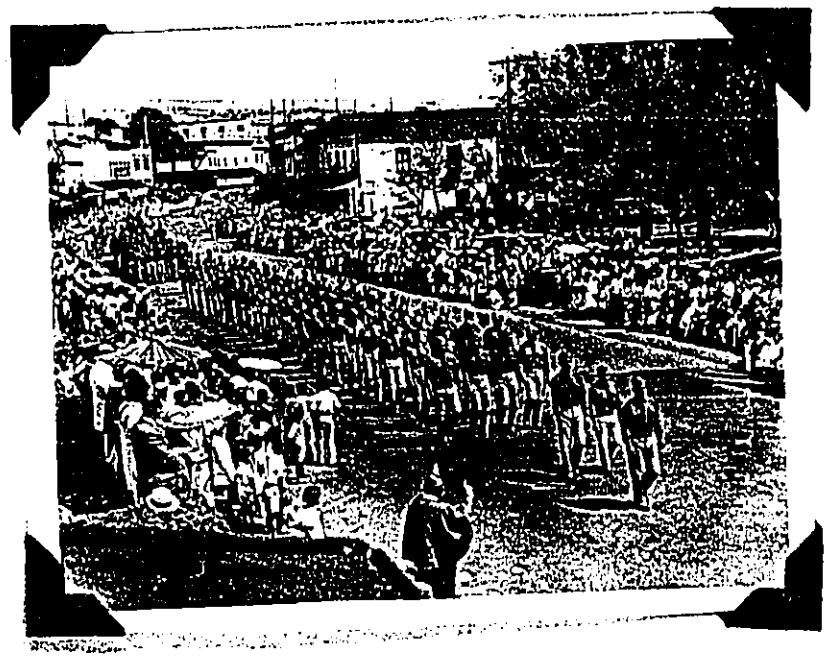


C.C.C. float, Kamehameha Day, Hilo



C.C.C. boys, Kamehameha Day, Hilo

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Trail construction, Bird Park, by C.C.C. enrollees

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Construction work, rock-lined ditch, Desert Hill

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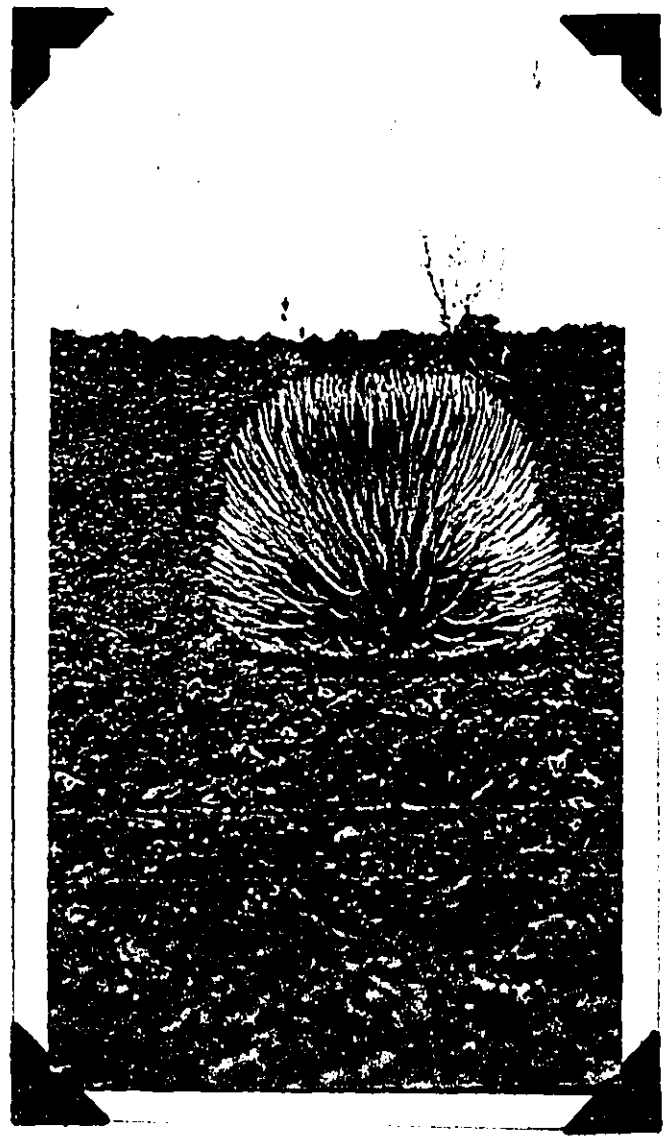

Silversword fern, Haleakala Section

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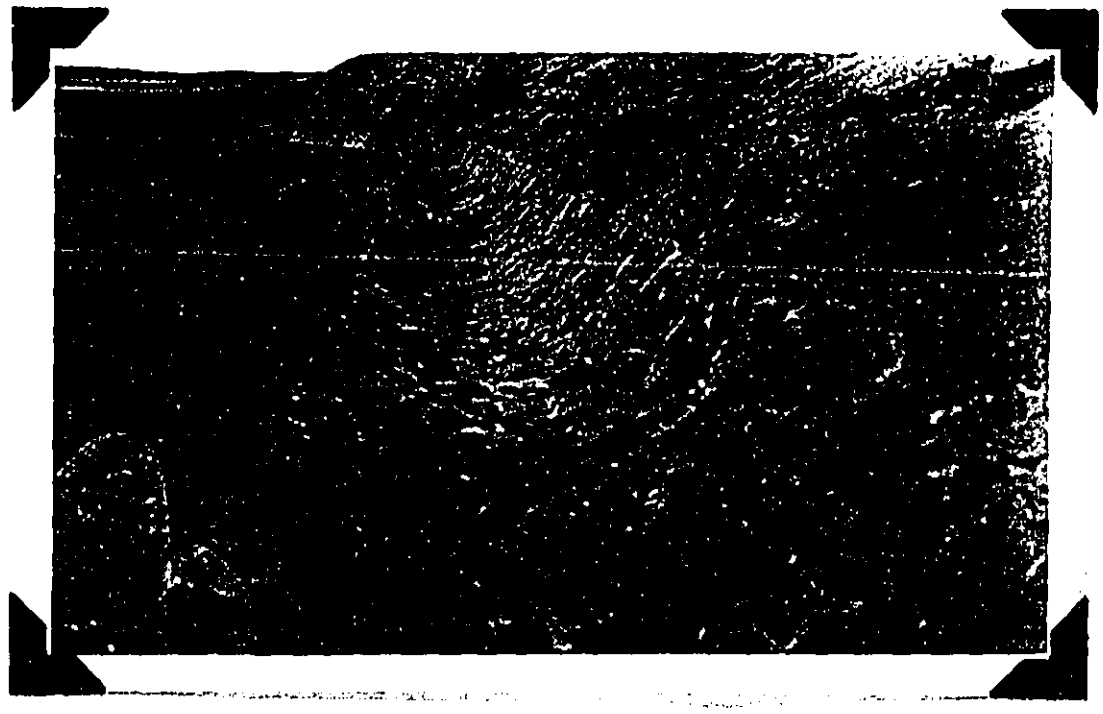
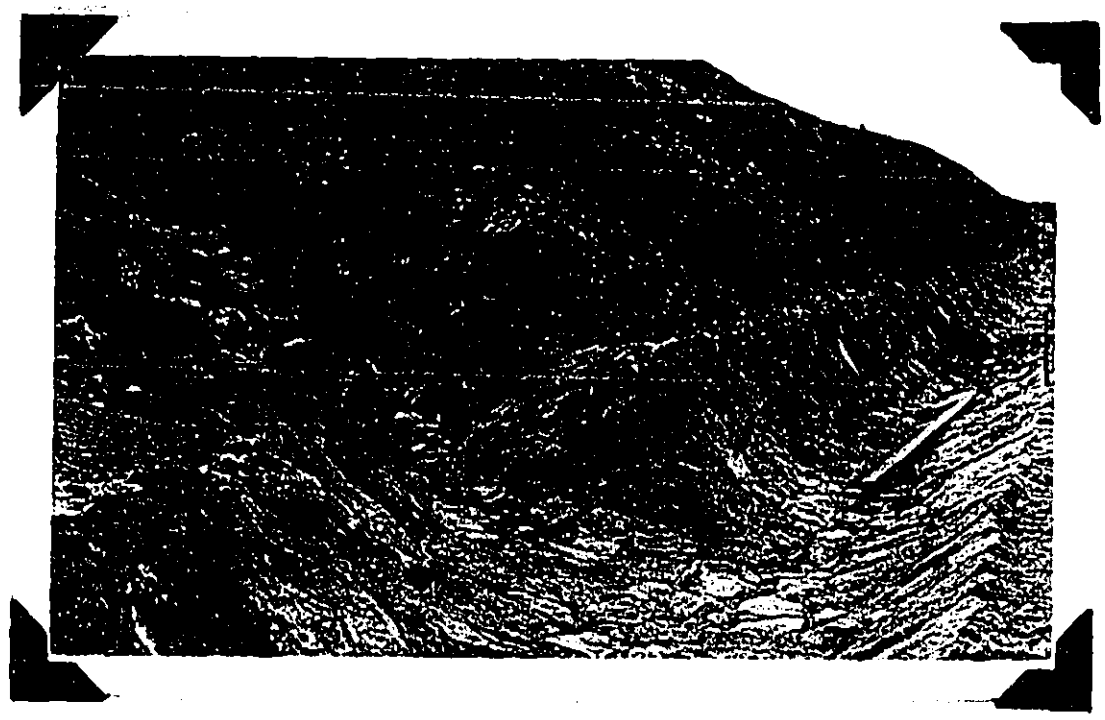


Completed rock-lined ditch, Desert Hill.



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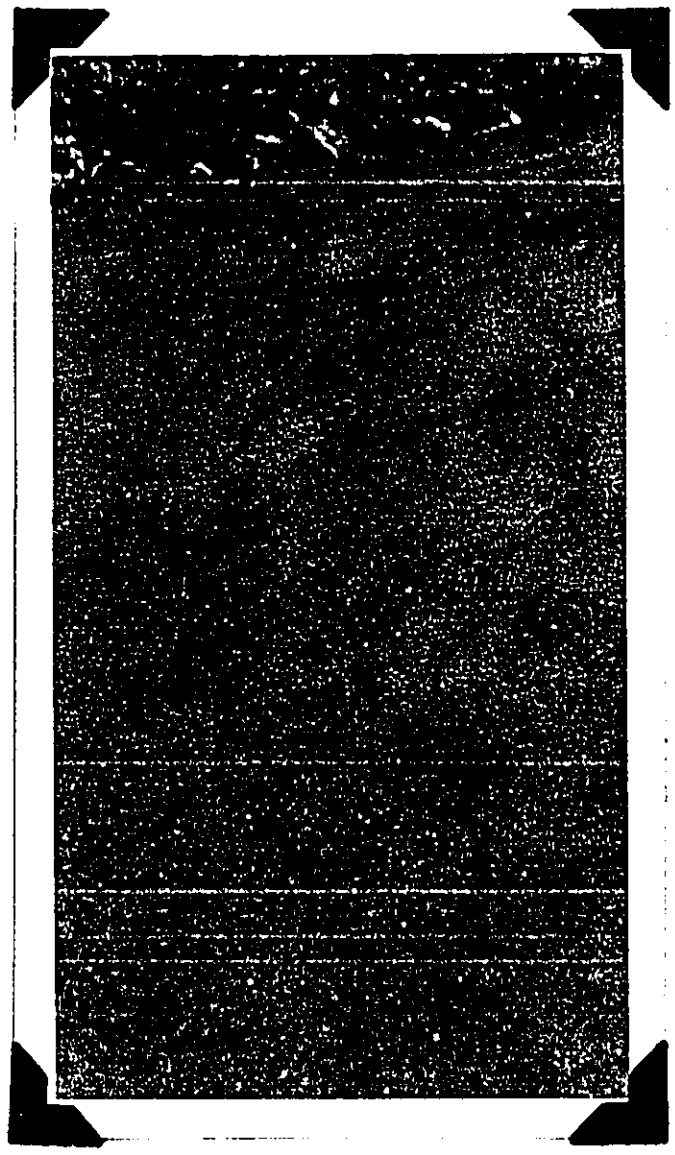

Crack across new road at Haleamaumau indicating movement of rim segment. Distance from pit rim about 800 feet. This crack represents part of a crack along the same line which has been studied by the Volcano Observatory for two years and which has showed consistent widening of about 1 mm per week.

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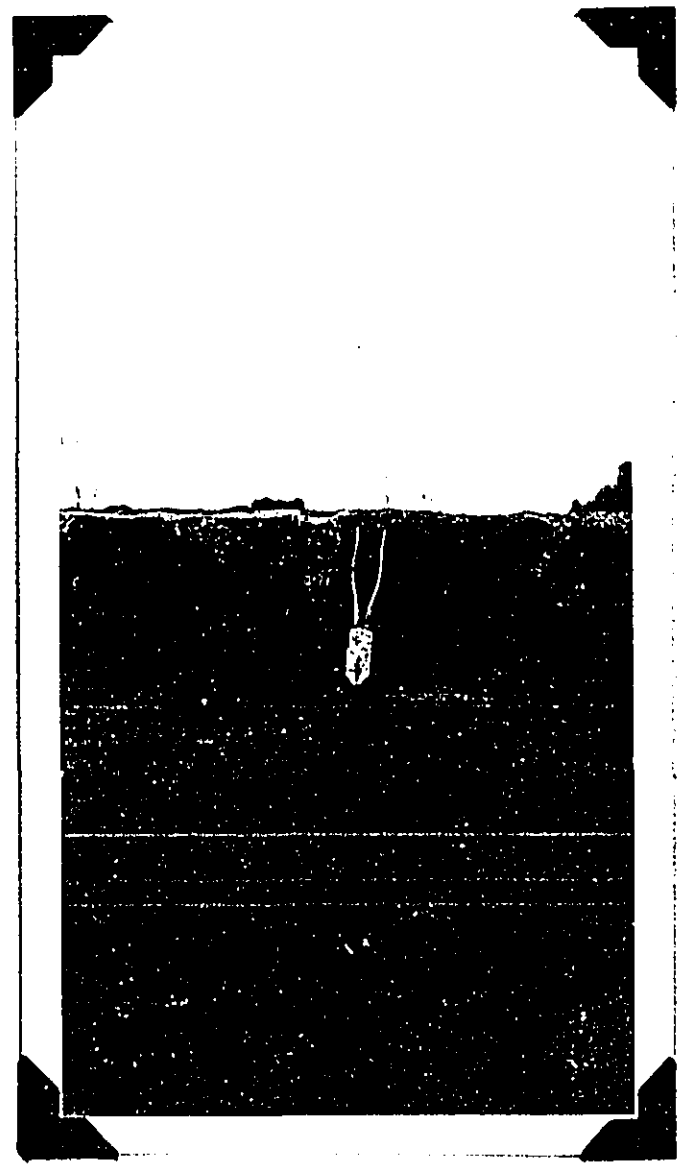

Crack in curbing in line with crack across road at Halemaumau, showing motion of rim segment.

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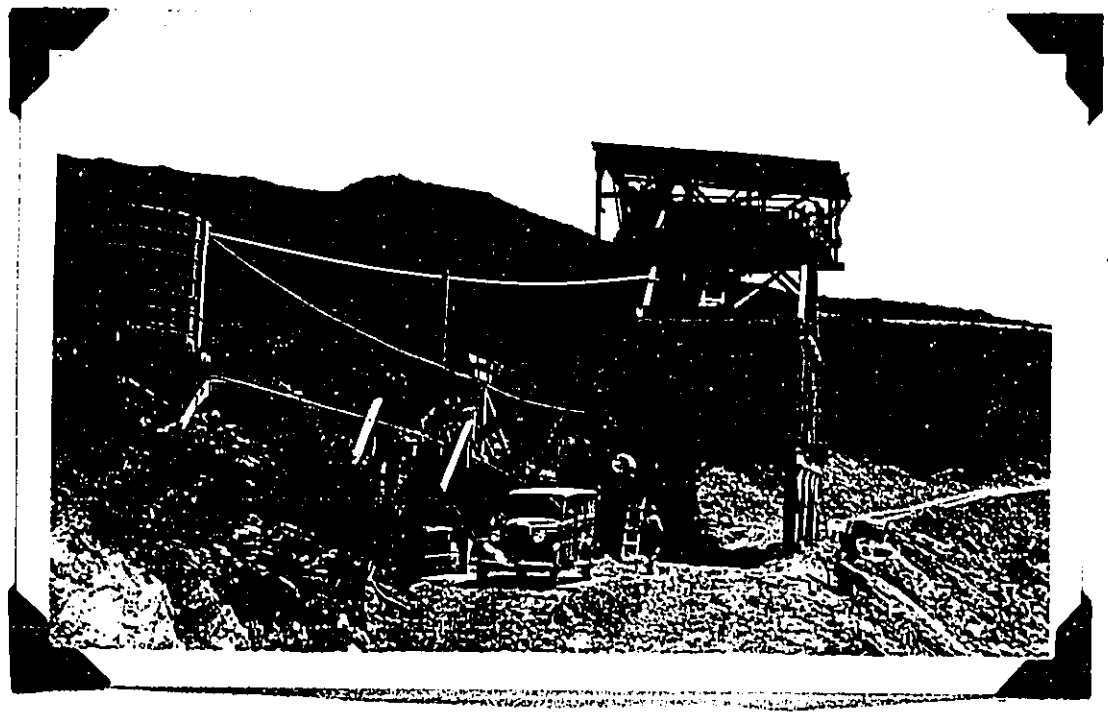

Rock crusher, Haleakala Road

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Repair work on Halemau Trail, Haleakala Section

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Repair work on Haleman Trail, Haleakala Section

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Form No. 1009—Met'l.

U. S. Department of Agriculture, Weather Bureau.

COOPERATIVE OBSERVERS' METEOROLOGICAL RECORD:

Month of JUNE, 1934, 192 ; *Station,* Volcano Obsy. ; *County,* Kau

State, T. H. ; *Latitude,* ; *Longitude,* ; *Time used on this form,* ; *Hour of Observation,*

DATE.	TEMPERATURE.				PRECIPITATION.			WIND		PREVAILING WIND DIRECTION.	CHARACTER OF DAY, SUNRISE TO SUNSET.	‡MISCELLANEOUS PHENOMENA.
	MAXIMUM.	MINIMUM.	RANGE.	*SET MAX.	TIME OF BEGINNING.	TIME OF ENDING.	†AMOUNT.	DEPTH OF SNOW (IN INCHES) ON GROUND, 8 A.M.				
	1	2	3	4	5	6	7	8	9	10	11	
1	69	56	13	63			1.76	92	Mod.	NE	PC	
2	69	55	14	60			.12	92	"	"	"	
3	72	58	14	67			.01	84	Lt.	"	Clear	
4	66	58	8	62			.31	93	"	"	PC	
5	68	58	10	62			.17	88	Mod.	"	"	
6	67	58	9	62			.32	94	Lt.	"	"	
7	67	58	9	62			.38	94	"	"	Cloudy	
8	69	55	14	64			.19	96	"	NW	"	
9	71	56	15	65			.13	88	"	NE	Clear	
10	72	54	18	66			.08	81	"	"	"	
11	79	57	22	67			.02	86	"	"	PC	
12	72	59	13	64			T	84	"	"	"	
13	73	52	21	67			T	83	Mod.	"	Clear	
14	73	56	17	67			.04	88	Lt.	"	"	
15	74	56	18	61			.01	91	"	"	PC	
16	70	53	17	61			.40	90	Mod	"	Clear	
17	66	56	10	62			.23	90	"	"	"	
18	67	57	10	58			.66	98	"	"	PC	
19	64	57	7	60			.21	95	Lt	"	Cloudy	
20	64	57	7	60			.92	93	"	"	"	
21	69	53	16	58			.25	91	Mod	"	PC	
22	74	56	18	68			.01	82	Lt	"	"	
23	70	54	16	63			.18	86	"	"	"	
24	68	55	13	60			.27	94	Sta	"	"	
25	65	56	9	61			T	93	Mod	"	Cloudy	
26	67	60	7	61			.32	92	Str	"	"	
27	72	58	17	61			.19	99	Mod	"	"	
28	64	53	11	---			T	---	---	---	---	Not Read.
29	69	56	13	64			1.06	85	Mod	NE	Cloudy	
30	66	58	8	61			.69	97	Lt.	"	PC	
31												
SUM.	2076	1682	394	1811			8.90	26.34				
MEAN.	69.2	56.07	13.10	60.60			.29	87				

*Reading of maximum thermometer immediately after setting.
†Including rain, hail, sleet, and melted snow.
‡Thunderstorms, halos, auroras, etc.

(IN TRIPLICATE.) See cover for instructions.

8—313 GOVERNMENT PRINTING OFFICE

..... *Cooperative Observer.*

Post-Office Address, ...

MONTHLY SUMMARY.

TEMPERATURE.

Mean maximum, 69.20

Mean minimum, 56.07

Mean, 62.63

Maximum, 74; date, 15, 22

Minimum, 52; date, 13

Greatest daily range, 22; Date: 11

PRECIPITATION.

Total, 8.90 inches.

Greatest in 24 hours, 1.76; date, 1

SNOW.

Total snowfall, ... inches; on ground 15th, ... inches;

at end of month, ... inches.

NUMBER OF DAYS—

With .01 inch or more precipitation, 26

Clear, 7; partly cloudy, 14; cloudy, 9

DATES OF—

Killing frost, ...

Thunderstorms, ...

Hail { Light, ... Moderate, ... Heavy, ...

Sleet, ...

Auroras, ...

REMARKS:

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10-157
(July, 1929)

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

TRAVEL REPORT

.....Hawaii..... National Park for the month of .....June 1934.....

	This Month	This Travel Year To Date	This Month Last Year	Last Travel Year To Date	Increase for Travel Year	
					Number	Percent
PRIVATE TRANSPORTATION:						
Cars first entry, ...						
Cars reentry, ...						
Motorcycles, ...						
Total motor vehicles, ...						
Persons entering via motor vehicles, ...	~~19,606~~ 19,606	~~147,357~~ 147,457	29,758	114,659	~~32,698~~ 32.798	~~28.58~~ .60
Persons entering via other private transportation, ...	345	1,940	602	2,025	-85	-4.19
Total persons entering via private transportation, . .	~~19,951~~ 19,951	~~149,297~~ 149,397	30,360	116,684	32,613	27.95
OTHER TRANSPORTATION:						
Persons entering via ~~stages~~ hotel, .	336	4,681	882	2,773	1908	68.80
Persons entering via trains, .						
Persons entering otherwise, . .						
Total other transportation, .	336	4,681	882	2,773	1908	68.80
GRAND TOTAL ALL VISITORS, . .	~~20,187~~ 20287	~~152,978~~ 154,078	31,182	119,457	42,521	35.59

	This Year	Last Year	Increase	
			Number	Percent
Automobiles in public camps during month, ...				
Campers in public camps during month, ...				

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10-215
(August 1933).

UNITED STATES
DEPARTMENT OF THE INTERIOR
Office of National Parks,
Buildings and Reservations

.....Hawaii..... National Park

R E P O R T O F N O N-A P P O I N T E D P E R S O N N E L
(TEMPORARY)

Changes outside the District of Columbia for the month of ....JUN....1934 19.....

Total at beginning of month	Additions	Separations	Net Gain or loss (a)	Total at ending of month
2	18	11	7	9
9	8	10	- 2	7

(a) If loss, indicate by minus sign.

(1 Female Employee)

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10-158

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF AUTHORIZED PROJECTS

.....Hawaii..... National Park for the Month of .....June 1934.....

Description of Projects	Percent Constructed To Date	Percent Constructed This Month	Percent Constructed Last Month	Probable Date of Completion
FP 102.8 Parapet Lookouts, Kilauea Iki, etc.	96 97	1 1	0 1	
FP 311.14 Fire-Equipment Storehouse and Garage	40	35 0	20 35	
FP 312.14 Building Reconditioning for Elimination of Fire Hazards	2	0	0	

(Work on last two projects held up due to strike on coast which has prevented shipment of materials.)

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10-159
(May, 1931)

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF PERSONNEL

Hawaii National Park for the Month of June 1934

	This Month		This Month Last Year	
	Appointed	Non-Appointed	Appointed	Non-Appointed
Number of employees beginning of month	16 19	2 9	17 17	3 45
Number of additions	3 1	18 8	0 0	9 9
Total	19 20	20 17	17 17	12 54
Number of separations	0 2	11 10	0 0	8 9
Number of employees close of month	19 18	9 7	17 12	4 45
Number of promotions during month	0 0	0 0	0 0	0 0
Aggregate amount of annual leave taken	10 6	0 0	0 11	0 0
Aggregate amount of sick leave taken	0 4	0 0	0 3	0 6
Aggregate amount of ~~leave~~ furlough without pay	0 0	0 0	1 0	0 0

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10-160

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF PARK REVENUES

Hawaii National Park for the Month of June 1934

	This Year	Last Year
Park revenue on hand beginning of month,	0.00	0.00
Received,	25.00	0.00
Total,	25.00	0.00
Remitted,	25.00	0.00
On hand close of month,	0.00	0.00

Park revenues received this year to date,	500.00
Park revenues received last year to date,	1807.00
~~Increase~~ Decrease,	1307.00
Per cent of ~~increase~~ decrease,	72.3 %

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10-161

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF SALES OF PUBLICATIONS

	Number	Value
GOVERNMENT PUBLICATIONS:		
On hand beginning of month,	~~872~~ 940	~~134.85~~ 193.85
Received during month, 000	~~80~~ 000	~~69.50~~ 00.00
Total,	~~952~~ 940	~~204.35~~ 193.85
Sold during month, 20	~~13~~ 20	~~10.50~~ 7.85 7.85
On hand at close of month,	~~940~~ 920	~~193.85~~ 186.00
NON-GOVERNMENT PUBLICATIONS:		
On hand beginning of month,		
Received during month,		
Total,		
Sold during month,		
On hand at close of month,		
Cash on hand beginning of month,	10.22	19.82
Sales during month,	10.50	7.85
Total,	20.72	27.67
Remitted during month,	3.40	12.66
Balance,	17.30	15.01

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STATISTICAL REPORT NO. 8

FINANCE AND ACCOUNTS.

JUNE, 1934

SYMBOL	APPROPRIATION	ALLOTTED	EXPENDED & OBLIGATED	BALANCE
44415.3	Salaries and Expenses, Hawaii National Park, 1934	31,392.56	30,054.10	1,338.45
44406.3	Forest Protection and Fire Prevention, Nat'l Park Service, 1934	520.00	511.30	8.70
4X436.3	Roads & Trails, Nat'l Park Service	4,382.85	3,070.70	1,312.15
4X436	Roads & Trails, Na'l Park, no year	21,862.49	21,862.49	0.00
4-03/5640.8	NIR., Interior, Nat'l Parks, Roads and Trails, 1933-'35:	490,000.00	472,324.05	17,675.95
4-03/5640.14	NIR., Interior, National Parks, Buildings & Reservations 1933-35	11,250.00	7,673.11	3,576.89

Hawaii National Park,
Hawaii

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The Volcano Letter

No. 410—Monthly U. S. Geological Survey, Hawaii National Park APRIL 1934

KILAUEA REPORT FOR APRIL 1934

Including weekly press reports 1159 to 1162, April 1 to April 29, midnight.

Section of Volcanology, U. S. Geological Survey
T. A. Jaggar, Volcanologist in Charge

Volcanology

No significant changes have been observed, in the craters of Kilauea and Mauna Loa during April, which suggest any immediate activity of lava. In Halemaumau pit of Kilauea volcano, a small fall of rocks at the northwest wall occurred 8:40 a. m. April 11, another at northeast wall 8:30 a. m. April 12, trickle slides moved down the northwest buttress inside the pit at 9:18 a. m. April 21, again at 10:15 a. m. northeast, and at 10:38 a. m. stronger at the top of the northwest buttress; dust arose again at 1:15 p. m. April 25 a northwestern slide again occurred, at 10:12 a. m.

The thirty-two rim crack points marked, around the edges of Halemaumau, for weekly measurement with steel tape, showed the following weekly changes as measured Saturday forenoons:—

April 8. 7 opened, 7 closed, aggregate result zero.
April 15. 5 opened, 6 closed, aggregate closing 1.0 mm.
April 22. 12 opened, 1 closed, aggregate opening 7.5 mm.
April 29. 12 opened, 4 closed, aggregate opening 5.5 mm.

For Mauna Loa, Ranger R. F. Lueck was in Mokuaweoweo crater April 29 for six hours. He visited the cones at the center of eruption of December last. He is familiar with this center from previous visits (Volcano Letter, January, 1934). Where at this center during his January visit he could smell sulphur strongly, there was now in April no more blue fume nor odor at the December vents. The 1914 cone, however, west of the rifts of 1933 in the bottom of the greater crater, was making blue and yellow fumes, as before. Lueck reported that a cone six miles down from the summit along the northeast rift belt of the volcano was steaming from its crater. This cone lies east of the National Park trail below the usual steaming places, and no steam had been noticed there on previous trips.

T.A.J.

Earthquakes

TABLE

Number of minutes of tremor; numbers of very feeble, feeble, and slight earthquakes; teleseisms or distant earthquakes; and local seismicity index as described in Volcano Letter 371.

Week ending	tr.	v. f.	f.	sl.	tel.	seis.
April 8	15	4	0	0	0	5.75
April 15	25	5	2	1	1	12.75
April 22	18	1	0	0	0	5.00
April 29	18	2	0	0	0	5.50

The following local earthquakes were located.

A very feeble shock at sea on the Kilauea east rift, at 5:46 p. m. April 3. Lat. 19° 40'N. Long. 154° 37'W.

A very feeble shock a short distance north of Kilauea crater at 7:34 p. m. April 6. Lat 19° 28'N. Long. 155° 14'W.

At 2:06 a. m. April 9, a moderate earthquake felt in Kohala, felt lightly in Hilo and in Maui. It recorded as very feeble at the observatory and was located at the north end of the island Lat. 20° 09'N. Long. 155° 53'W.

At 8:21 a. m. April 9, a second shock in central Kohala. It was less widely felt, but recorded as feeble at the observatory; Lat. 20° 06'N. Long. 155° 43'W.

A very feeble shock at 2:38 a. m. April 11, 12 mi. at sea, S by E of Cape Kumukahi, Lat. 19° 16'N. Long. 154° 40'W.

A very feeble shock at 0:01 a. m. April 12 was located in Kilauea crater Lat. 19° 24.8'N. Long. 155° 16.5'W.

A feeble shock at 9:14 a. m. April 14 was located 10 miles north of Mokuaweoweo, Lat. 19° 37.5'N. Long. 155° 37'W.

A slight earthquake at 7:51 p. m. April 14, was felt in Olaa and Hilo. It was located 10 miles at sea on the east rift, Lat. 19° 37.5'N. Long. 154° 43'W.

A very feeble shock was felt in Hawaii National Park at 10:25 p. m. April 15. It was located 3 miles SE of the Volcano House, Lat. 19° 24.5'N. Long. 155° 14'W.

A very feeble shock at 1:06 a. m. April 24 was located near Waiohinu near the south end of the island, Lat. 19° 02'N. Long. 155° 38'W.

The teleseism was partly recorded, the records showing first or P wave only, beginning at 11:57:10 a. m. April 15.

Microseismic ground motion was normal April 4, 9, 11, 12, 13, 14, 15, 18, 20, 21, 26, 27, and 28, and subnormal the remainder of the month.

A.E.J.

Tilting of the Ground.

In the Table of Tilt below, the second column shows the net tilt by weeks, as computed from the seismograms at the Kilauea Observatory, which is on the northeast rim of Kilauea crater 2.2 miles from Halemaumau.

The third column shows the algebraic sum of the readings at three clinoscope cellars around Halemaumau pit, reduced each to its radial direction, outward away from, and inward in the direction of, the center of Halemaumau.

The Table represents the tipping of the ground, in seconds of arc, in the direction given.

At the Observatory, a northeast reading is away from the crater, a southwest reading is in the direction of the crater.

At the Observatory the total accumulated tilt in the year April 29, 1933 to April 29, 1934 is 5.3" N. and 2.1" E.

TABLE OF TILT

Date	Observatory	Halemaumau
Apr. 2 to Apr. 8	0.8" SW by S	3" towards
Apr. 9 to Apr. 15	0.6" SW by S	2" from
Apr. 16 to Apr. 22	0.3" E by S	8" from
Apr. 23 to Apr. 29	0.3" West	1" towards

A.E.J.

DOCUMENT CAPTURED AS RECEIVED

The Volcano Letter

No. 411—Monthly U. S. Geological Survey, Hawaii National Park MAY, 1934

KILAUEA REPORT FOR MAY 1934

Including weekly press reports 1163 to 1167 April 29 to June 3, midnight.

Section of Volcanology, U. S. Geological Survey
T. A. Jaggar, Volcanologist in Charge

Volcanology

Slides in Halemaumau pit of Kilauea crater occurred as fol'ows:—a thin dust cloud rose high and straight at northeast side 3:20 p. m. May 3; trickle slides at northeast wall 9:20 a. m. May 8, and thereafter during the day; the strongish earthquake of 10:09 a. m. May 10 left fresh red fragments on lower northwest talus, and there was a break in the wall just above. On May 11 fragments trickled down the northwestern wall as shown by the noise in that region at 9:05 and 9:12 a. m. The earthquakes of 3:23 and 3:25 p. m. May 13 were followed by a slide at Halemaumau at 3:38 p. m. leaving scars at top of west and north wall.

On May 14 at 8:20 a. m. with notably still air and rainy weather, Halemaumau showed vapor rising from the southeast and west walls, from the southwest talus, in voluminous jets up the south talus, at the wall about the southwest rift tunnels, and all along the upper rim cracks, east and west, outside of the pit.

In contrast to this, vapor was notably absent up and down the walls and taluses north and northeast, and no vapor jets whatever rose from the lava floor of the pit, nor from the 1932 cone at the southwest margin of the floor. The walls of the pit were dark red with moisture. This vapor distribution seems to indicate that the release of atmospheric moisture from underground is entirely outside the lava plug.

On May 20 it was noticed, that the tension cracks in the 1932 floor of Halemaumau all radiate from the region of the southwest cone. These include the border cracks, which are notably absent around the northern sides of the floor. The effect is as though strain of uplift were in progress under the 1932 cone. Yet for the last ten months 59% of the tilting at the three tilt cellars around Halemaumau has been inward, measured in seconds, reduced to radii from the center of the pit. The tension cracks are rather a relic of 1932, than anything related to present stress.

Weekly measurement of opening and closing of thirty-two rim crack points around the edges of Halemaumau, showed the following changes Saturday forenoons:—

May 5. 10 opened, 4 closed, aggregate opening 3.5 mm.
May 12. 8 opened, 3 closed, aggregate opening 4.5 mm.
May 19. 5 opened, 13 closed, aggregate closing 4.5 mm.
May 26. 4 opened, 7 closed, aggregate closing 3.0 mm.
June 2, 14 opened, 3 closed, aggregate opening 7.0 mm.

T.A.J.

Earthquakes

TABLE

Number of minutes of tremor; numbers of very feeble, feeble, slight, and moderate earthquakes; teleseisms or distant earthquakes; and local seismicity index as described in Volcano Letter 371.

Week ending	tr.	v. f.	f.	sl.	mod.	tel.	se's
May 6	21	4	0	0	0	1	7.75
May 13	21	3	2	1	1	0	14.75
May 20	11	1	0	0	0	1	3.25
May 27	5	1	0	0	0	0	1.75
June 3	18	1	0	0	0	0	5.00

A tremor at 1:07 p. m. April 30, recorded at both Hilo and Observatory stations, was located about 55 statute miles east of Cape Kumukahi (east point of Hawaii) Lat. 19° 32'N. Long. 153° 59'W.

A very feeble shock at 8 p. m. May 9, was 10 miles deep under Mauna Loa, Lat. 19° 30'N. Long. 155° 30'W.

A moderate to strong quake began at 10:09:05 a. m. May 10 on the Observatory seismograms and was followed by aftershocks at 10:39 a. m. and at 0:34 p. m. The main shock was described at Hakalau as being very strong leading to flight from houses. Honomu and North Kohala reported it as very sharp, and sharp. Hookena and Kapapala reported it moderate, Holualoa and Puuwaawaa as small. Honokaa thought it rather strong. Hilo had objects fall and old paint crack off ceilings, there was some alarm. It was reported felt on the island of Maui. It dismantled some seismographs on Hawaii. The location found was 17 miles deep under the NE section of Mauna Loa. Lat. 19° 38'N. Long. 155° 23'W.

The first aftershock at 10:39 a. m. was felt in Hakalau, it was located 27 miles deep under the SE section of Mauna Loa. Lat. 19° 27'N. Long. 155° 26'W. It registered as very feeble at the Observatory.

The second aftershock at 0:34 p. m. recorded as feeble, was from the shore line of Hawaii to the south of Kilauea, Lat 19° 15'N. Long. 155° 18'W., and probably 4 miles deep. It was reported felt very slightly at Kilauea and Hilo.

Two small quakes were well recorded on the Kona seismograph at 7 p. m. on May 10 and at 11:20 p. m. May 11, but were not well recorded elsewhere.

A slight quake was felt at Kilauea, Hilo and Honokaa at 3:23 p. m. May 13. It was located 14 miles deep on the rift dividing Mauna Loa and Kilauea at Lat. 19° 22.5'N. Long. 155° 22.5'W. It was followed by an aftershock, felt in Kilauea and Hilo, at 3:25 p. m. It was about 2 miles deep under the SW section of Mauna Loa, Lat. 19° 13'N Long. 155° 39'W.

A very feeble shock at 6:30 p. m. May 15 may have occurred under the Mauna Loa SW rift.

Ten very small shocks (tremors and very feeble) occurred under the Kilauea crater during the five weeks covered here.

A small record of a teleseism began at 6:13:56 p. m. May 3, a second began at 11:50:25 a. m. May 14. Both were located by the U. S. Coast and Geodetic Survey. The first Lat. 61°N. Long. 148°W. near Prince William Sound, Alaska; the second Lat. 59°N. 150°W. near Kenai Peninsula, Alaska.

Microseismic motion of the ground was subnormal most of the five weeks, normal intensity was reached only on May 10 and 12.

A.E.J.

Tilting of the Ground.

In the Table of Tilt below, the second column shows the net tilt by weeks, as computed from the seismograms at the Kilauea Observatory, which is on the northeast rim of Kilauea crater 2.2 miles from Halemaumau.

The third column shows the algebraic sum of the readings at three clinoscope cellars around Halemaumau pit, reduced each to its radial direction, outward away from, and inward in the direction of, the center of Halemaumau.

The Table represents the tipping of the ground, in seconds of arc, in the direction given.

At the Observatory, a northeast reading is away from the crater, a southwest reading is in the direction of the crater.

At the Observatory the total accumulated tilt in the year June 3, 1933 to June 3, 1934 is 1.8" E and 4.5" N.

TABLE OF TILT

Date	Observatory	Halemaumau
Apr. 30 to May 6	1.3" NE by N	2" towards
May 7 to May 13	0.4" NW by W	4" towards
May 14 to May 20	1.5" SW	1" towards
May 21 to May 27	0.1" S	4" from
May 28 to June 3	0.5" SE by S	2" towards

A.E.J.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

June 9, 1934

MEMORANDUM FOR THE PRESS

By Edward G. Wingate

Edward G. Wingate,
Superintendent.

HAWAII NATIONAL PARK, HAWAII, JUNE _____. The Secretary of the Interior, has designated 1934 as, "A National Park Year." Attention is being directed to the National Park System through advertising by Steamship and Railway Companies, Magazine articles and articles in the Public Press. The people are being urged to spend their vacations in one or another or several of the different National Parks and by such travel to take a part in the Recovery Program. With so much emphasis being placed on the National Park System it seems an appropriate time to take stock

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and determine what the value of the National Parks is to the people of the United States and to the communities immediately surrounding the Parks.

On August 25, 1916 the act creating the National Park Service was passed by the Congress of the United States. In this act the purpose of the National Parks is defined, "The service thus established shall promote and regulate the use of the Federal areas known as national parks, monuments, and reservations hereinafter specified by such means and measures as comform to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." Thus it is seen that the fundamental purpose in the minds of those who created this National Park service was conservation and protection. Also they are for the recreation and enjoyment of all the people. Each Park in the system and each new Park admitted must measure up to certain standards. They must be outstanding and beautiful examples of the natural features which they represent. There is little similarity among the several parks, each is different.

About the same time that the National Park Service was created the Hawaii National Park was established and in 1922 the active administration of the Kilauea and Mauna Loa sections by the Park Service began. Since that date the Hawaii National Park has been greatly developed. New areas have been added and new roads and trails constructed. But with all this developement what does the park mean to the people of the Hawaiian Islands? What place does the park fill in this community?

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First of all perhaps, it offers to the people of the Islands the spiritual value of an area set apart from exploitation, an area wherein as far as possible is preserved in its natural state the most inspiring portion of these Hawaiian Islands. As time goes on and our civilization continues to advance and more and more of our country is developed and exploited these areas will increasingly become in the fullest sence sanctuaries. Today there are in the different Parks certain areas which are designated as sacred and in the not so distant future the people of this country will come to consider all of the land within the parks sacred. It is in this fundamental policy that the National Parks are of greatest value to the people.

But, besides this spiritual value of the Parks to the people they very definitely are a commercial asset to the communities surrounding them. In this latter aspect also is Hawaii National Park of value to the Hawaiian community. To the end that this community and its visitor, the tourist, may derive the greatest benefit from a visit to the Park and its Volcanoes. The Federal Government has in the last 12 years spent $1,051,353 in new roads and trails. Buildings for shelter and comfort as well as quarters for the permanent staff have been erected. A museum of Volcanic products is maintained. These structures were built at a cost of $64,735 and almost all of this money has been expended in the surrounding community. Permanently stationed in the Park is a staff of 17 employees whose annual salaries amounting to $30,000 are largely expended in the Islands. To this extent is the Park a commercial asset to the community.

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Again as facilities are developed and the attractions of this Park become better known it is of further commercial importance to the community in that it draws visitors who leave money in the form of payments for hotel accomodations, store purchases, taxi rentals, souvenirs, etc. Of the 25,000 tourists who come to Hawaii each year it is certain that a number of them are attracted to the islands by the appeal of visiting these Volcanoes and knowing that the National Park Service with all that it stands for is here to care for and to serve them.

Through the Bureau of Public Roads, the National Park Service has been a leader in road construction in these Islands. Super elevation on curves was not known in the Islands until the Park Service reconstructed the Rim Road to Halemaumau. Landscaping work called for in Park Road contracts is meeting with such favorable comments from the Public that it will soon become a part of all road building in the Territory. It has also shown the way in stone masonry construction.

Road building in the Park has kept an average of 187 men employed during the last six months. The National Park provided employment through civil works projects for an average of thirty men for five winter months expending $12,000 for this purpose, all of which was spent in this community. The Civilian Conservation Corps in Hawaii National Park engaged in various projects including forest protection, road and trail work, planting, fencing, etc., is giving employment to 217 men during a six months period and if funds are allotted will continue for an additional six months. Almost the entire allotment of $121,000 is being spent in this community and a like sum is expected for the second enrollment period.

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CORRECTION

THE PRECEDING DOCUMENT(S) HAS BEEN REPHOTOGRAPHED TO ASSURE LEGIBILITY
SEE FRAME(S)
IMMEDIATELY FOLLOWING

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The Volcano Letter

No. 411—Monthly U. S. Geological Survey, Hawaii National Park MAY, 1934

KILAUEA REPORT FOR MAY 1934

Including weekly press reports 1163 to 1167 April 29 to June 3, midnight.

Section of Volcanology, U. S. Geological Survey
T. A. Jaggar, Volcanologist in Charge

Volcanology

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On May 14 at 8:20 a. m. with notably still air and rainy weather, Halemaumau showed vapor rising from the southeast and west walls, from the southwest talus, in voluminous jets up the south talus, at the wall about the southwest rift tunnels, and all along the upper rim cracks, east and west, outside of the pit.

In contrast to this, vapor was notably absent up and down the walls and taluses north and northeast, and no vapor jets whatever rose from the lava floor of the pit, nor from the 1932 cone at the southwest marg'n of the floor. The walls of the pit were dark red with moisture. This vapor distribution seems to indicate that the release of atmospheric moisture from underground is entirely outside the lava plug.

On May 20 it was noticed, that the tension cracks in the 1932 floor of Halemaumau all radiate from the region of the southwest cone. These include the border cracks, which are notably absent around the northern sides of the floor. The effect is as though strain of uplift were in progress under the 1932 cone. Yet for the last ten months 59% of the tilting at the three tilt cellars around Halemaumau has been inward, measured in seconds, reduced to radii from the center of the pit. The tension cracks are rather a relic of 1932, than anything related to present stress.

Weekly measurement of opening and closing of thirty-two rim crack points around the edges of Halemaumau, showed the following changes Saturday forenoons:—

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T.A.J.

Earthquakes

TABLE

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Week ending	tr.	v. f.	f.	sl.	mod.	tel.	se's
May 6	21	4	0	0	0	1	7.75
May 13	21	3	2	1	1	0	14.75
May 20	11	1	0	0	0	1	3.25
May 27	5	1	0	0	0	0	1.75
June 3	18	1	0	0	0	0	5.00

A tremor at 1:07 p. m. April 30, recorded at both Hilo and Observatory stations, was located about 55 statute miles east of Cape Kumukahi (east point of Hawaii) Lat. 19° 32'N. Long. 153° 59'W.

A very feeble shock at 8 p. m. May 9, was 10 miles deep under Mauna Loa, Lat. 19° 30'N. Long. 155° 30'W.

A moderate to strong quake began at 10:09:05 a. m. May 10 on the Observatory seismograms and was followed by aftershocks at 10:39 a. m. and at 0:34 p. m. The main shock was described at Hakalau as being very strong leading to flight from houses. Honomu and North Kohala reported it as very sharp, and sharp. Hookena and Kapapala reported it moderate, Holualoa and Puuwaawaa as small. Honokaa thought it rather strong. Hilo had objects fall and old paint crack off ceilings, there was some alarm. It was reported felt on the island of Maui. It dismantled some seismographs on Hawaii. The location found was 17 miles deep under the NE section of Mauna Loa. Lat. 19° 38'N. Long. 155° 23'W.

The first aftershock at 10:39 a. m. was felt in Hakalau, it was located 27 miles deep under the SE section of Mauna Loa. Lat. 19° 27'N. Long. 155° 26'W. It registered as very feeble at the Observatory.

The second aftershock at 0:34 p. m. recorded as feeble, was from the shore line of Hawaii to the south of Kilauea, Lat 19° 15'N. Long. 155° 18'W., and probably 4 miles deep. It was reported felt very slightly at Kilauea and Hilo.

Two small quakes were well recorded on the Kona seismograph at 7 p. m. on May 10 and at 11:20 p. m. May 11, but were not well recorded elsewhere.

A slight quake was felt at Kilauea, Hilo and Honokaa at 3:23 p. m. May 13. It was located 14 miles deep on the rift dividing Mauna Loa and Kilauea at Lat. 19° 22.5'N. Long. 155° 22.5'W. It was followed by an aftershock, felt in Kilauea and Hilo, at 3:25 p. m. It was about 2 miles deep under the SW section of Mauna Loa, Lat. 19° 13'N Long. 155° 39'W.

A very feeble shock at 6:30 p. m. May 15 may have occurred under the Mauna Loa SW rift.

Ten very small shocks (tremors and very feeble) occurred under the Kilauea crater during the five weeks covered here.

A small record of a teleseism began at 6:13:56 p. m. May 3, a second began at 11:50:25 a. m. May 14. Both were located by the U. S. Coast and Geodetic Survey. The first Lat. 61°N. Long. 148°W. near Prince William Sound, Alaska; the second Lat. 59°N. 150°W. near Kenai Peninsula, Alaska.

Microseismic motion of the ground was subnormal most of the five weeks, normal intensity was reached only on May 10 and 12.

A.E.J.

Tilting of the Ground.

In the Table of Tilt below, the second column shows the net tilt by weeks, as computed from the seismograms at the Kilauea Observatory, which is on the northeast rim of Kilauea crater 2.2 miles from Halemaumau.

The third column shows the algebraic sum of the readings at three clinoscope cellars around Halemaumau pit, reduced each to its radial direction, outward away from, and inward in the direction of, the center of Halemaumau.

The Table represents the tipping of the ground, in seconds of arc, in the direction given.

At the Observatory, a northeast reading is away from the crater, a southwest reading is in the direction of the crater.

At the Observatory the total accumulated tilt in the year June 3, 1933 to June 3, 1934 is 1.8" E and 4.5" N.

TABLE OF TILT

Date	Observatory	Halemaumau
Apr. 30 to May 6	1.3" NE by N	2" towards
May 7 to May 13	0.4" NW by W	4" towards
May 14 to May 20	1.5" SW	1" towards
May 21 to May 27	0.1" S	4" from
May 28 to June 3	0.5" SE by S	2" towards

A.E.J.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

June 9, 1934

MEMORANDUM FOR THE PRESS

By Edward G. Wingate

Edward G. Wingate,
Superintendent.

HAWAII NATIONAL PARK, HAWAII, JUNE _____. The Secretary of the Interior, has designated 1934 as, "A National Park Year." Attention is being directed to the National Park System through advertising by Steamship and Railway Companies, Magazine articles and articles in the Public Press. The people are being urged to spend their vacations in one or another or several of the different National Parks and by such travel to take a part in the Recovery Program. With so much emphasis being placed on the National Park System it seems an appropriate time to take stock

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and determine what the value of the National Parks is to the people of the United States and to the communities immediately surrounding the Parks.

On August 25, 1916 the act creating the National Park Service was passed by the Congress of the United States. In this act the purpose of the National Parks is defined, "The service thus established shall promote and regulate the use of the Federal areas known as national parks, monuments, and reservations hereinafter specified by such means and measures as comform to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." Thus it is seen that the fundamental purpose in the minds of those who created this National Park service was conservation and protection. Also they are for the recreation and enjoyment of all the people. Each Park in the system and each new Park admitted must measure up to certain standards. They must be outstanding and beautiful examples of the natural features which they represent. There is little similarity among the several parks, each is different.

About the same time that the National Park Service was created the Hawaii National Park was established and in 1922 the active administration of the Kilauea and Mauna Loa sections by the Park Service began. Since that date the Hawaii National Park has been greatly developed. New areas have been added and new roads and trails constructed. But with all this developement what does the park mean to the people of the Hawaiian Islands? What place does the park fill in this community?

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First of all perhaps, it offers to the people of the islands the spiritual value of an area set apart from exploitation, an area wherein as far as possible is preserved in its natural state the most inspiring portion of these Hawaiian Islands. As time goes on and our civilization continues to advance and more and more of our country is developed and exploited these areas will increasingly become in the fullest sense sanctuaries. Today there are in the different Parks certain areas which are designated as secred and in the not to distent future the people of this country will come to consider all of the land within the parks secred. It is in this fundamental policy that the National Parks are of greatest value to the people.

But, besides this spirtual value of the Parks to the people they very definitely are a commercial asset to the communities surrounding them. In this latter aspect also is Hawaii National Park of value to the Hawaiian community. To the end that this community and its visitor, the tourist, may derive the greatest benefit from a visit to the Park and its Volcanoes. The Federal Government has in the last 12 years spent $1,051,353 in new roads and trails. Buildings for shelter and comfort as well as quarters for the permanent staff have been erected. A museum of Volcanic products is maintained. These structures were built at a cost of $64,735 and almost all of this money has been expended in the surrounding community. Permanently stationed in the Park is a staff of 17 employees whose annual salaries amounting to $30,000 are largely expended in the islands. To this extent is the Park a commercial asset to the community.

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Again as facilities are developed and the attractions of this Park become better known it is of further commercial importance to the community in that it draws visitors who leave money in the form of payments for hotel accomodations, store purchases, taxi rentals, souvenirs, etc. Of the 25,000 tourists who come to Hawaii each year it is certain that a number of them are attracted to the islands by the appeal of visiting these Volcanoes and knowing that the National Park Service with all that it stands for is here to care for and to serve them.

Through the Bureau of Public Roads, the National Park Service has been a leader in road construction in these Islands. Super elevation on curves was not known in the Islands until the Park Service reconstructed the Rim Road to Halemaumau. Landscaping work called for in Park Road contracts is meeting with such favorable comments from the Public that it will soon become a part of all road building in the Territory. It has also shown the way in stone masonry construction.

Road building in the Park has kept an average of 187 men employed during the last six months. The National Park provided employment through civil works projects for an average of thirty men for five winter months expending $12,000 for this purpose, all of which was spent in this community. The Civilian Conservation Corps in Hawaii National Park engaged in various projects including forest protection, road and trail work, planting, fencing, etc., is giving employment to 217 men during a six months period and if funds are allotted will continue for an additional six months. Almost the entire allotment of $131,000 is being spent in this community and a like sum is expected for the second enrollment period.

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Through the Civilian Conservation Corps it has reached into almost every community on the Island of Hawaii and every race spreading the material as well as the spiritual benefits of this work over the entire Island. To the 200 enrolled boys it is giving healthful work, discipline, education and recreation, and to their families a substantial material benefit through the monthly allotment check.

The National Park also cooperates with the University of Hawaii by assisting with instructors and facilities during the summer school session held each year for the past four years at Kilauea. Through the regular school year the Park Naturalist has conducted a University extension course in the public schools.

In protection to property the National Park has been of service. Three forest fires all threatening valuable grazing lands have been fought by Park personnel cooperating with other agencies. It has also assisted in fighting fires in residences outside Park boundaries. It has searched for lost people and assists in eradicating that great pest, the wild goat, through goat drives both within and without the Park boundaries.

" The Hawaii National Park provides for the visitor the services of an organization dedicated to preserving in its natural state, from Vandalism and Commercial ism, from the ravages of fire and the inroads of insects or disease, the area under its control.

It provides and Educational Service with trained men to answer questions about the natural phenomena; trees, flowers, etc., and to point out the interesting features in the Park and tell something about them so that the visitor may see more and more thoroughly understand and enjoy his visit to this interesting area."

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

June 15, 1934.

MEMORANDUM FOR THE PRESS - IMMEDIATE RELEASE

By

Edward G. Wingate,
Superintendent.

HAWAII NATIONAL PARK, HAWAII, JUNE _____. (Special.) Registration for the University of Hawaii summer school to be held at the Volcano will take place June 18 at the National Park Administration Building. This summer's session will be the fourth to be held at the Volcano. The seven x courses of instruction give students a wider choice of subjects than at any of the previous sessions. The indications are that the courses will attract a large number of students from this island, as well as from other islands.

As a special feature of the six-weeks summer school, the National Park and the University of Hawaii will cooperate in giving a series of evening lecture and entertainment programs. The programs will be ~~kkk~~ held on Wednesday evening of each week at 8 o'clock at the Volcano House. They have been arranged particularly for the local people. The public is invited to attend.

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The first of the series of lectures will be held on Wednesday evening, June 20. Dr. Paul S. Bachman, Professor of Political Science at the University of Hawaii, will talk on International Affairs. Dr. Bachman is widely known in the field of political science. He recently returned from Europe, where he studied the political problems of the European countries. Dr. Bachman has some startling things to say about various aspects of international problems. The community is fortunate in having an opportunity to hear Dr. Bachman talk on International Affairs.

Students registering at the summer session will have an opportunity of taking courses in Contemporary European Civilization and Problems of the Pacific under Dr. Bachman.

On June 27, Mrs. Violet L. Chester, Instructor in English at the University of Hawaii, will give a very entertaining program of readings. Those who have had the opportunity of hearing Mrs. Chester are enthusiastic over her dramatic ability.

The following week, Dr. Francis E. Peterson, Director of the Volcano Section of the summer school, will talk on the subject, "We Move in New Directions." In arranging for this number, Dr. Peterson said, "I should warn you I shall probably make certain statements with which my audience will not agree." Dr. Peterson is eager to have his audience feel free to question his statements.

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Other numbers on the evenings program will include an illustrated lecture on insects by Mr. Otto H. Swezey, Consulting Entomologist for the H. S. P. A. Mr. Theodore H. Ehsa, Director of Health Education, Department of Public Instruction, Territory of Hawaii, will talk on Public Health. Mr. Austin E. Jones, Seismologist, Kilauea Volcano Observatory, will talk on Seismology. The final number of the series will be an illustrated lecture on Volcanoes, by Dr. T. A. Jaggar, Volcanologist, Kilauea Volcano Observatory. Messrs. Swezey, Ehsa, Jones and Jaggar will be special instructors at the Volcano Section of the University of Hawaii summer school. John E. Doerr, Jr., Park Naturalist, has arranged and will be in charge of the evening programs.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
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HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

June 20, 1934.

GENERAL OFFICE ORDER NO. 28

SUBJECT: NOTIFICATION OF CHANGES IN WHEREABOUTS OF EMPLOYEES

1. In order to facilitate and speed the assembling of the staff for any emergency that may arise, everyone is instructed to keep the switchboard operator posted at all times of his whereabouts during office hours.

2. After office hours, the Acting Chief Ranger should be notified if a member of the staff intends to leave his quarters for any protracted time.

3. When the Acting Chief Ranger intends to leave the Park, he will appoint another ranger temporarily in charge and inform the Superintendent of his intentions.

4. This order does not apply to employees residing outside of park boundaries, except during working hours.

Edward G. Wingate,
Superintendent.

DISTRIBUTION:

Staff,	1 each
Director,	1
Monthly Report,	7

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HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

June 22, 1934

MEMORANDUM FOR THE PRESS IMMEDIATE RELEASE

By Edward G. Wingate

Edward G. Wingate
Superintendent

HAWAII NATIONAL PARK, HAWAII, JUNE _____. The second of a series of evening lectures and entertainments sponsored by the National Park in cooperation with the University of Hawaii summer school will be held at the Volcano House, Wednesday, June 27 at 8 o'clock. Mrs. Violet L. Chester, Instructor in English, University of Hawaii, will read a three act play which was a popular success on Broadway last season.

Those who have had an opportunity to hear Mrs. Chester are enthusiastic about her ability as a dramatic reader. Her program of reading will be one of the outstanding entertainment numbers of the series of evening programs being held each Wednesday at the Volcano House during the six-week session of the summer school. The public is invited to attend.

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HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

June 30, 1934

MEMORANDUM FOR THE PRESS IMMEDIATE RELEASE

By

Edward C. Wingate,
Superintendent.

HAWAII NATIONAL PARK, HAWAII, JUNE _____. (Special) On Tuesday evening at 8 o'clock, Dr. Francis E. Peterson, Director of the Volcano Section of the University of Hawaii Summer School, will give a public lecture at the Volcano House. His subject will be, "We Move in New Directions." Dr. Peterson has indicated that some people may not agree that we are moving in the new directions which he will point out. Following the lecture the audience will have the opportunity of asking the speaker questions.

This lecture will be the third of a series of evening programs sponsored by the National Park Service in cooperation with the University of Hawaii. Those who have attended the two programs given since the opening of the summer session at the Volcano have been enthusiastic over the stimulating educational and entertaining quality of the programs.

With the exception of Dr. Petersons' lectures at the Volcano House

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on Tuesday evening, July 3, all future evening programs during the duration of the summer school will be held on Wednesday evenings. The public is invited to attend.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

May 9, 1934.

The Director,
National Park Service,
Washington, D. C.

Dear Mr. Director:

Following is the administrative report for the Hawaii National Park for the month of May, 1934:

000 General

010 A rather strong earthquake, occurring on May 10 beginning at 10:09 a.m., created widespread interest through the Territory of Hawaii because an eruption of Kilauea Volcano is long overdue and expected at any time. Although no serious damage was done, kitchen ware and other articles fell, and plaster was dislodged from ceilings in Hilo. The shock was felt generally on the Island of Hawaii, strongest on the east side. It was also reported felt on Mount Tantalus, back of Honolulu on the Island of Oahu. It was followed by two aftershocks, both felt, at 10:39 a.m. and at 12:34 p.m.

A brief comment of interest was published the next day by the editor of the Hilo Tribune-Herald, as follows:

> "Hawaii has an odd way of greeting natural phenomena. Had a series of earthquakes shaken the Pacific Coast such as it did Hilo yesterday, there would have been great apprehension, fear and trembling. In Hilo, however, after the first moment of surprise, everyone had a big grin on his or her fact. There was no fear. No trembling. No apprehension.
>
> "Everyone felt the temblors presaged the return of Madam Pele . . . and when the madame decides to pay us a visit it is but natural that we feel happy. Let those who are not familiar with Hawaii's temblors and earthquakes believe we are sitting on the edge of disaster. We know we are anxious to welcome the return of lava. If the quakes or lava should unexpectedly prove disastrous, Hilo has prepared its emergency plans to cope with the situation.
>
> "Madame Pele, we are waiting your arrival!"

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The shock was severe enough in Hilo to cause some alarm. It cracked the ceiling at the county building in several places, showering the offices, and at the Navy Radio Station a small child was thrown to the floor and the radio towers rocked. According to the Volcano Observatory, the probable location of origin was deep under the Mauna Loa northeast rift zone 22 miles from Kilauea.

Rangers working on the Chain of Craters Road observed three slides in one of the craters.

020 General weather conditions

There was more rain and less sunshine in May than in the preceding months of the year. There were 8 cloudy days, 20 partly cloudy, and 3 clear days. The total precipitation was 7.73 inches, which compares with 5.74 inches for April. The total to date is 31.02 inches, compared with 63.12 for the same period last year and a normal of 45.37 inches.

An interesting feature of the rain in the vicinity of Kilauea is shown in the fact that 5.93 inches fell at the CCC camp during the month. It is also interesting to note that 2 inches fell on the Kau Desert, southwest of Kilauea Crater, on May 29, while the rainfall at the Volcano Observatory (park headquarters area) recorded for the same period was only 0.63 inch. Considerable damage to road shoulders and ditches on the new Halemaumau-Uwekahuna road was caused on that date, as shown in the pictures attached.

100 Administration

110 Status of work

No filing has been accomplished during the month due to extra work caused by regular and special reports, rearrangement of office space, and a great volume of routine work and correspondence. Other work is up to date.

120 Park inspections

121 By the Superintendent

Inspections were made of the Halemaumau-Uwekahuna-Bird Park road three times during the month; of the fire equipment storehouse and garage under construction, of the CCC camp, and of the Volcano House premises, in addition to routine inspection of projects and office work.

122 By Special Field Representative

Landscape Architect Sager was in the Kilauea Section supervising landscape work of the Civilian Conservation Corps, except from May 11 to 14, when he was in the Haleakala Section to inspect the road under construction to the summit of the mountain.

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130 Finance and Accounts

A detailed statement showing the status of park appropriations is attached as Statistical Report No. 8.

150 Equipment and Supplies

The following equipment was received for the office during the month:

2 card index sections, 4 by 6 drawers, each one-drawer high.
1 " " section, 3 " 5 drawer, one-drawer high.
1 Legal blank " 18 drawers, three drawers wide by six drawers high.
1 plan section, four drawers, one drawer wide by four drawers high.
2 sectional bookcases, with disappearing glass doors, with top and base.
10 "Ranger Special" single water bags, complete with hand pumps, five-gallon size.

On May 26 approval was received by radio for the purchase locally of a truck for use on Maui, trading in pick-up No. 1136, now assigned for use in the Haleakala Section.

170 Plans, Maps, and Surveys

Ranger Christ made a study of the Volcano House buildings, gardens, etc., with a view toward reducing the leased area to conform to park regulations.

180 Circulars, Placards, Publicity Bulletins, etc.

Attached are staff and press memoranda, office forms mimeographed for the use of the ECW office, and a number of pictures. The Volcano Letter was not issued for the month, but will be combined with the following month for the sake of economy in printing.

200 Maintenance, Improvement, and New Construction

210 Maintenance

Among routine maintenance at the park for the month was the pumping of a total of 54,000 gallons of water from the reservoir and distributing it as follows:

CCC Camp,	24,000
High Tank,	22,000
Lava Tube Toilets,	1,000
Superintendent's residence,	2,000
New lawns,	5,000
	54,000

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There was also completion of painting at the residence of the Park Naturalist and at the Administration Building, renovation of bachelor quarters Nos. 9 and 10, cleaning three times of the toilets at the Thurston Lava Tube, cleaning twice of gutters of residences, repairing and painting of the toilets at Makaopuhi Crater, repairing of automotive equipment, operation of warehouse and gasoline-oil shed, and repairs to road drag, road grader, air pump, saddles, and water pump.

A great deal of maintenance will be required on the recently completed Halemaumau-Uwekahuna-Bird Park road due to the damage done by rains. It will be possible to do a great deal of repairing with the help of the CCC boys and some park funds. Rock-lined ditches are being built as a part of the repair work. A ditch has been cut through the old road which at one of the gulches served as a dam, and the water was forced to run back out and over the new road.

220 Improvements

Improvements included miscellaneous painting, raising the bed of the fireplace at the Administation Building to make a smaller opening and thus eliminate smoking, road work by the CCC boys, etc.

230 New Construction

Construction of the new fire equipment storehouse and garage is not progressing rapidly because concrete work had to be stopped due to the strike of longshoremen on the Pacific Coast, which held up a shipment of steel windows. Concrete footings and walls to the height of six feet were poured.

300 Activities of Other Agencies in the Park

350 Donations and Accessions of All Kinds

Capt. W. L. Murray, Hilo representative of the Matson Navigation Company, donated a quantity of lumber for use in constructing a tourist shelter at the quarry site on the main road, near the junction with the Bird Park road. The site is known locally as the old prison camp, where prisoners were encamped when working on the main road many years ago. It is planned to develop this site as a camping and picnic ground and to erect a water tank, inasmuch as the main public camp ground is now a part of the CCC camp grounds. The new site offers an ideal arrangement as it is screened from the main road, easy of access, and beautifully situated. Captain Murray is one of several habitual users of the public camp grounds, and on another occasion donated lumber for use in making tables and other accessories for outdoor use.

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400 Flora, Fauna and Natural Phenomena

410 Ranger, Naturalist and Guide Service

Rangers continued the packing of materials to the summit of Mauna Loa for use in completing the construction of the Hui o Pele rest house. There remains now the making of the concrete floor and installation of furnishings. A water tank was erected at Panahi Crater on the Chain of Craters Road.

There were 15 lectures to 827 persons at the Uwekahuna Museum, and other lectures at the CCC camp, on board the USS San Francisco, at the Thurston Lava Tube, and at the extension course in Hilo; total, 29 lectures to 1,712 persons.

The total museum attendance was 954; total contacts, 413 by the rangers; 2,818 by the park naturalist.

There were 16 auto caravans with 47 cars and 582 in attendance.

480 Natural Phenomena

Of interest concerning the volcanology of Mauna Loa is the report by Mr. E. F. Lusck, ECW foreman, who, with William L. Ewaliko, also an ECW foreman, visited Mokuaweoweo on April 29 and was at the cones of 1933. He is familiar with this center of activity from several previous visits. Where during his January visit he could smell sulphur strongly, there was now no more blue fume or odor at the December vents. The 1914 cone, however, as before, was making blue and yellow fumes. A cone east of the National Park trail six miles down from the summit was seen to be steaming from its crater, where no steam had been noticed on previous trips.

Crack measurements were continued by the Volcano Observatory at the Halemaumau rim fissures. Although there were constant changes, there was nothing unusual.

Dr. Jaggar's Kilauea Report for the week ending May 13 states that, "There were 28 local seismic disturbances. The rather strong quake beginning 10:09:05 a.m. May 10 had two aftershocks, one at 10:39 a.m., reported at Hakalau as felt generally, but not felt at Kilauea, and one at 12:34 p.m., felt very slightly at Kilauea and at Hilo. Hakalau described a moderate shock one minute before the main shock, the latter being very strong, leading to flight from houses. Honomu and North Kohala reported it as very sharp. Hookena in South Kona reported it as moderate; Holualoa and Puuwawaa, as small. Honokaa thought it rather strong. Hilo had objects fall and old paint crack off ceilings; there was some alarm. It is remarkable that Kapapala thought it moderate and South Kau did not report it at all. The probable location of origin is deep under the Mauna Loa northeast rift zone 22 miles from Kilauea. The 12:34 shock indicated origin 13 miles distant, and the one at 10:39 a.m., 26 miles, respectively feeble and very feeble at Kilauea."

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Kilauea has been more than usually quiet following the shocks.

Earthquakes recorded were as follows:

Tremors,	58
Very Feeble,	8
Feeble,	1
Moderate,	4
Distant,	2

Microseismic motion was generally light, while tilting of the ground by weeks was NE by E, SW by W, N by E, and SW by W.

500 Use of Park Facilities by the Public

510 Increase or decrease in travel

An earnest attempt has been made to get a more accurate check on the actual number of visitors to Hawaii National Park than that indicated by the traffic counter at the Hilo entrance by checking, for two weeks, the traffic of the personal and official cars used by the park staff, the Volcano House, Kilauea Military Camp, Navy Health and Recreation Camp, Geological Survey, etc., and a formula has been devised in order to obtain what is believed at present to be a figure closer to the actual number of visitors, including through traffic. A set of figures revised for the current travel year will be submitted shortly.

520 Conditions which affect travel

According to a news item in the Honolulu Advertiser on May 2, travel to the Territory of Hawaii during the first four months of 1934 has registered a 60 per cent increase over the same period last year. The statistics were those compiled by the Hawaii Tourist Bureau. It is regrettable that due to the high cost of transportation to the outside islands from Honolulu so few potential visitors see more than the Island of Oahu, where they land and where they depart. Only the more ambitious and financially able persons get outside of Honolulu on their visits to Hawaii.

530 Visitors

Mr. and Mrs. J. L. Taylor, of Honolulu, early in the month attempted a three-weeks bicycle trip, with their three-year-old son, Jackie, around the Island of Hawaii. This family has received a great deal of publicity due to their bicycle activities on the Island of Oahu, where Mr. Taylor is store manager for Benson & Smith, druggists, Honolulu. They have tow specially constructed bicycles, both with side cars, one for carrying the boy and the other for camping equipment and supplies.

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Because of the long, thirty-mile up-grade to the park from Hilo, they came by bus on their arrival by steamer, on May 16, and camped that night at the shelter in Bird Park, the only location which could be offered them where there was a water supply. Their plan was to make the trip, covering some 275 miles, in stages of about 25 miles a day. The trip was interrupted by a broken wheel at Hookena, Kona, about halfway around the island, and the balance of the journey was made by automobile.

The Taylors are two of several who took up the bicycle fad a few years ago, but who found the exercise so beneficial that they have continued it. When Junior arrived, the problem of transporting him was met by building a sidecar.

May 6, 232 of a passenger list of 297 persons from the Hamburg-American liner Resolute, on an around-the-world cruise, came to the park. The ship continued that night direct for San Francisco.
May 12, 207 boys and leaders of the YMCA, Hilo, and Knighthood Clubs, visited the Kilauea Military Camp and were given special aggention.
May 13, 10 Hawaii National Guard officers took a hike around the park.
May 19, 51 pupils of the Hakalau eighth grade school visited.
May 23-28, USS San Francisco, battle cruiser, put in at Hilo on a shake-down cruise. The crew was divided into groups which spent two or three days each in the park, staying at the Kilauea Military Camp. Entertainment in Hilo was provided for the officers and men by the Hilo Chamber of Commerce. Park Naturalist Doerr gave an illustrated lecture on board the ship the evening of her arrival. This vessel is a sister ship to the USS Indianapolis, on which Secretary of the Navy Claude A. Swanson visited the park last October.
May 26-27, the newsboys of the Hilo Tribune-Herald held an outing, staying at Camp Westervelt, the YMCA cottage a short distance outside the park boundary on the Hilo road.
May 26, Mr. Charles E. Skinner, of Pittsburgh; was given special attention. He is a retired official of Westinghouse Research Laboratories.

600 Protection

630 Accidents

On the evening of Sunday, May 13, Mrs. W. J. Stevens, while riding on the Hilo-Volcano road in the vicinity of Mountain View with her husband, Camp Superintendent for the park CCC camp, suffered a serious gash in her neck in a collision with a car driven by Pedro Fernandes, of Pahala. Mrs. Stevens was given first-aid treatment at the hospital of the Kilauea Military Camp, and then taken to the Hilo Memorial Hospital, where she was confined for about two weeks. Fernandes agreed to settle for damages.

640 Destruction of predatory animals

Predatory animals destroyed during the month included 31 wild pigs and 48 wild goats.

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900 Miscellaneous

ECW

Speakers at the Civilian Conservation Corps camp during the month were as follows:

May 6, Clyde E. Crawford, Superintendent, Hilo High School.
May 8, Rev. H. H. Corey, Hilo; travel talk on Japan.
May 13, Father Everest, of Puna.
May 14, H. V. Lucas, YMCA secretary.
May 20, Park Naturalist Doerr.
May 24, Father Everest.
May 27, Mr. Lucas.

Summer School

Plans are going forward for the annual Kilauea Summer School to be held in the park. The session this year will be in charge of Dr. Francis Z. Peterson, Supervisor of In-Service Education for the University of Hawaii. It will open on June 18 and continue through July 27, a period of six weeks. Seven courses will be offered, each giving residence credit toward a degree on the same basis as courses given on the campus in Honolulu. The courses are as follows:

Problems of Educational Method, by Dr. Peterson.
Diction and Vocal Technique, by Mrs. Violet L. Chester.
Forest Entomology, by Mr. Otto H. Swezey.
Geology of Kilauea Volcano, by Dr. T.A.Jaggar and Mr. A.E.Jones.
Principles of Health Education and School Hygiene, Theo.H.Rhea.
Contemporary European Civilization, by Dr. Paul S. Bachman.
Problems of the Pacific, Dr. Bachman.

The Volcano House has made a special rate of $90 per person for room and board for the six-week session.

As a special feature, the Naturalist Division and the instructors will cooperate in giving a series of six public lectures, one evening lecture a week, during the session. The general public will be invited to attend the lectures, which will be held in the lobby of the Volcano House. The subjects will be on the aspects of the instructor's field of work. The lectures should attract an appreciable number of people to visit the park.

President's Visit

According to recent news items, President Roosevelt will reach Hawaii on July 14 aboard the cruiser Houston and will spend five days in the Territory. He will first visit the Island of Hawaii and this park; and has expressed a desire to do some deep sea fishing off the Kona Coast, on the west side, which has developed considerable fame for good fishing. He expects to visit all the islands, but may go ashore again only at Honolulu. His itinerary then takes him to San Francisco, where he will cross the continent to Washington by train.

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His visit is anticipated by the people of Hawaii with a great deal of pleasure and interest, and the newspapers have carried a number of items concerning it. The items indicate that the plans for the visit are well in hand.

1936 Estimates

Instructions regarding preparation of the 1936 estimates were received on May 23 with the request that they be prepared and submitted by the first of June.

Change in Commanders at Kilauea Military Camp

On Sunday evening, May 13, the members of the staff and their families and the residents of the park community were invited to be the guests of the management of the Kilauea Volcano House at a dinner honoring Captain and Mrs. Vaine Archer and their daughter, Miss Elizabeth Archer, on the eve of their departure from the park following a period of residence covering more than three years. Captain Archer is succeeded in command of the Kilauea Military Camp by Captain L. C. Boineau. Official relations with Captain Archer have been unusually cordial and beneficial. After completing his tour of duty in the Territory, he will take an extended vacation on the mainland, and in September will be in charge of the ROTC at Clemson College, South Carolina.

Very respectfully,

Edward G. Wingate

Edward G. Wingate,
Superintendent.

rh

HAWAII NATIONAL PARK
HAWAII

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Form No. 1009—Met'l. U. S. Department of Agriculture, Weather Bureau.

COOPERATIVE OBSERVERS' METEOROLOGICAL RECORD:

Month of May, 1954 ; *Station,* Volc. Observatory ; *County,* Hawaii

State, ; *Latitude,* ; *Longitude,* ; *Time used on this form,* ; *Hour of Observation,*

DATE.	TEMPERATURE.				PRECIPITATION.					PREVAILING WIND DIRECTION.	CHARACTER OF DAY, SUNRISE TO SUNSET.	‡MISCELLANEOUS PHENOMENA.
	MAXIMUM.	MINIMUM.	RANGE.	*SET MAX.	TIME OF BEGINNING.	TIME OF ENDING.	†AMOUNT.	Humid.	Type of Wind			
	1	2	3	4	5	6	7	8	9	10	11	
1	68	51	17	57			.07	92	MOD	NE	PC	
2	69	51	18	56			.01	93	Lt	NE	Pc	
3	67	55	12	59			.01	93	Lt	NE	PC	
4	69	53	16	61			.08	89	MOD	ENE	CLEAR	
5	66	55	11	58			.04	94	MOD	NE	PC	
6	67	55	12	61			.46	92	MOD	NE	PC	
7	70	56	14	63			.17	88	Lt	NE	PC	
8	73	54	19	64			.02	81	MOD	NE	CLear	
9	72	60	12	69			.01	79	Lt	E	PC	
10	64	58	6	61			.52	89	Lt	N E	CLOUDY	
11	68	56	12	59			.16	89	MOD	NE	"	
12	64	57	7	60			.37	89	Lt	NE	"	
13	66	55	11	63			.04	89	MOD	"	PC	
14	69	57	12	61			.39	91	Lt	"	CLOUDY	
15	70	56	14	63			1.00	88	MOD	"	PC	
16	65	57	8	59			.45	92	Lt	"	CLOUDY	
17	69	52	17	60			.04	88	MOD	"	PC	
18	70	54	16	66			.06	90	Lt	"	CLOUDY	Thunderstorm
19	72	54	18	64			2.34	87	"	SW	"	
20	74	54	20	68			.02	85	"	"	PC	
21	75	56	19	67			.01	88	"	NE	"	
22	72	55	17	64			.01	86	MOD	"	"	
23	73	58	15	65			.03	90	"	"	"	
24	67	57	10	62			.02	93	"	"	CLOUDY	
25	73	57	16	62			.14	94	Lt	"	PC	
26	71	59	12	62			.11	94	"	"	"	
27	72	56	16	63			.24	84	"	"	CLEAR	
28	74	55	19	69			T	81	"	"	PC	
29	75	55	20	69			.10	80	"	"	"	
30	71	55	16	67			.28	87	"	SW	"	
31												
SUM	2167	1720	447	1949			7.73	2746				
MEAN	69.9	55.5	14.4	62.9			.25	88.6				

*Reading of maximum thermometer immediately after setting.
†Including rain, hail, sleet, and melted snow.
‡Thunderstorms, halos, auroras, etc.

(IN TRIPLICATE.) See cover for instructions.

9—213 GOVERNMENT PRINTING OFFICE

, *Cooperative Observer.*

Post-Office Address,

MONTHLY SUMMARY.

TEMPERATURE.

Mean maximum, 69.9

Mean minimum, 55.5

Mean, 62.7

Maximum, 75 ; date, 29

Minimum, 51 ; date, 1.2

Greatest daily range, 20 ; "29, 29

PRECIPITATION.

Total, 7.73 inches.

Greatest in 24 hours, 2.34 ; date, 19

SNOW.

Total snowfall, inches; on ground 15th, inches;

at end of month, inches.

NUMBER OF DAYS—

With .01 inch or more precipitation, 30

Clear, 3 ; partly cloudy, 20 ; cloudy, 8

DATES OF—

Killing frost,

Thunderstorms, 18

Hail { Light, Moderate, Heavy,

Sleet,

Auroras,

REMARKS:

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10-157
(July, 1929)

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

TRAVEL REPORT

Hawaii National Park for the month of May 1934

	This Month	This Travel Year To Date	This Month Last Year	Last Travel Year To Date	Increase for Travel Year	
					Number	Percent
PRIVATE TRANSPORTATION:						
Cars first entry,						
Cars reentry,						
Motorcycles,						
Total motor vehicles,						
Persons entering via motor vehicles,	16,852	127,851	15,314	84,901	42,950	50.59
Persons entering via other private transportation,	293	1,595	192	1,423	172	12.09
Total persons entering via private transportation,	17,145	129,446	15,506	86,324	43,122	49.95
OTHER TRANSPORTATION:						
Persons entering via ~~stages~~ hotel xxxxx,	610	4,345	282	1,951	2,394	122.70
Persons entering via trains,						
Persons entering otherwise,						
Total other transportation,	610	4,345	282	1,951	2,394	122.70
GRAND TOTAL ALL VISITORS,	17,755	133,791	15,788	88,275	45,516	51.56

	This Year	Last Year	Increase	
			Number	Percent
Automobiles in public camps during month,				
Campers in public camps during month,				

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10-158

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF AUTHORIZED PROJECTS

.....Hawaii..... National Park for the Month of ....May 1934.....

Description of Projects	Percent Constructed To Date	Percent Constructed This Month	Percent Constructed Last Month	Probable Date of Completion
✓FP 102.8 Parapet Lookouts, Kilauea Iki, etc.	96	1	0	
FP 162.14 Comfort Stations (2) Thurston Lava Tube	100	5	0	
✓FP 311.14 Fire-Equipment Storehouse and Garage	40 ~~30~~	35 ~~15~~	20 ~~5~~	
✓FP 312.14 Building Reconditioning for Elimination of Fire Hazards	2	0	0	

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10-159
(May, 1931)

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF PERSONNEL

.....Hawaii..... National Park for the Month of ....May..1934.....

	This Month		This Month Last Year	
	Appointed	Non-Appointed	Appointed	Non-Appointed
Number of employees beginning of month	16	3	15	3
Number of additions	0	3	2	0
Total	16	6	17	3
Number of separations	0	4	0	0
Number of employees close of month	16	2	17	3
Number of promotions during month	0	0	0	0
Aggregate amount of annual leave taken	0	0	0	0
Aggregate amount of sick leave taken	0	0	0	0
Aggregate amount of furlough without pay	0	0	3	0

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10-160

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF PARK REVENUES

.....Hawaii..... National Park for the Month of ....May 1934.....

	This Year	Last Year
Park revenue on hand beginning of month, ...	0.00	0.00
Received, ...	125.00	125.00
Total, ...	125.00	125.00
Remitted, ...	125.00	125.00
On hand close of month, ...	0.00	0.00
Park revenues received this year to date, ...	475.00	
Park revenues received last year to date, ...	958.39	
Increase, Decrease	483.39	
Per cent of increase, decrease	50.44	

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10-161

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF SALES OF PUBLICATIONS

	Number	Value
GOVERNMENT PUBLICATIONS:		
On hand beginning of month,	878	138.45
Received during month,	0	0.00
Total,	878	138.45
Sold during month,	6	3.60
On hand at close of month,	872	134.85

NON-GOVERNMENT PUBLICATIONS:	
On hand beginning of month,	
Received during month,	
Total,	
Sold during month,	
On hand at close of month,	

Cash on hand beginning of month,	16.47
Sales during month,	3.60
Total,	20.07
Remitted during month,	9.85
Balance,	10.22

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STATISTICAL REPORT NO. 8

FINANCE AND ACCOUNTS

MAY, 1934

Symbol	Appropriations	Allotted	Expended & Obligated	Balance
44415.3	Hawaii National Park, 1934	31,392.55	27,906.49	3,486.06
44406.3	Forest Protection & Fire Prevention, 1934	520.00	511.30	8.70
4XA36.3	Roads & Trails, Office of Nat'l Parks, Bldgs & Reservations	4,382.85	3,070.70	1,312.15
4-03/5640.8	N.I.R., Interior, National Parks, Roads & Trails, 1933-'35:	490,000.00	472,326.18	17,673.82
4-03/5640.14	N.I.R., Interior, National Parks, Buildings & Reservations	11,250.00	7,603.21	3,646.79
4X436	Roads & Trails, National Parks,	21,862.49	21,862.49	0.00

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

Office of National Parks,
Buildings and Reservations.

May 5, 1934

MEMORANDUM FOR STAFF

SUBJECT: FURNISHING QUARTERS AT GOVERNMENT EXPENSE

For the information and guidance of the permanent employees of Hawaii National Park, only such carpentry work will be done in the various houses as will constitute permanent, fixed improvements to the quarters. This memorandum is issued only to make clear the position of this office in regard to work done in the various residences under the construction that whatever work is done in one house should if wanted be done in all. This is ~~intended~~ intended to clear up any misunderstanding of previous interpretation of the Government's responsibility.

Edward G. Wingate,
Superintendent.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

May 15, 1934

MEMORANDUM FOR THE PRESS

BY Edward G. Fingate

Edward G. Fingate,
Superintendent

HAWAII NATIONAL PARK, HAWAII, MAY ____. Improvements being made by the Civilian Conservation Boys in Hawaii National Park have brought much favorable comment.

The old road from Halemaumau to the Kau road via Uwekahuna abandoned because of the new highway, has been obliterated. Likewise many scars from early road construction between the Volcano House and Halemaumau have been obliterated by filling over with soil and the planting of tree ferns.

The morning glory pest in Bird Park, which had attained so dense a growth as to endanger the life of small trees, is being eradicated.

The fence around Bird Park has been badly in need of repair, and one crew of boys is now engaged in rebuilding this fence. Since the prevention of cattle grazing in Bird Park several years ago, there is an abundance of new growth in evidence which is gratifying to all those concerned with the preservation of these fine trees, some of which are now rare.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

The fire hazard is materially being reduced by the removal of dead masses of the false staghorn fern, or Uluhe, from along the highways. The importance of fire prevention was demonstrated by the fire which destroyed the cottage of Francis K. Apua located about one mile north of the Hilo-Volcano Road at 28 miles and about two miles from park headquarters. This fire so quickly consumed the buildings that although park rangers reached the scene long before destruction was complete, there was no chance of saving anything.

The steep and ragged cut slopes along the highways have been flattened and rounded, thus reducing erosion and road maintenance, as well as giving vegetation an opportunity to become stabilized. The banks have been seeded and if rains continue they will soon take on a mantle of green. This method of road slope treatment has been so successful from both the economic and aesthetic standpoint that it is now standard practice in all the mainland national parks and national forests.

Credit for these various improvements is due largely to Landscape Architect Merel S. Sager, who is technical supervisor of the work. Mr. Sager's training and varied experience in different mainland parks is proving of great value to Hawaii National Park and plans which have been carried out under his direction are establishing a mark for similar work in the community to aim at.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

May 20, 1934.

SPECIAL OFFICE ORDER NO. 6

SUBJECT: TRAFFIC COUNT OF PERSONAL AND OFFICIAL PARK CARS

In order to facilitate a check on the traffic figures as registered on the counter at the park entrance, it is requested that the members of the staff of Hawaii National Park and their families keep a personal record of both official and private trips which are registered on the counter during the two weeks beginning Sunday, May 20. The figures are to be turned in to the Chief Clerk.

Edward G. Wingate.
Superintendent.

DISTRIBUTION:

Park staff,	1 each
Bulletin Board,	1
Warehouse,	1
Director,	1

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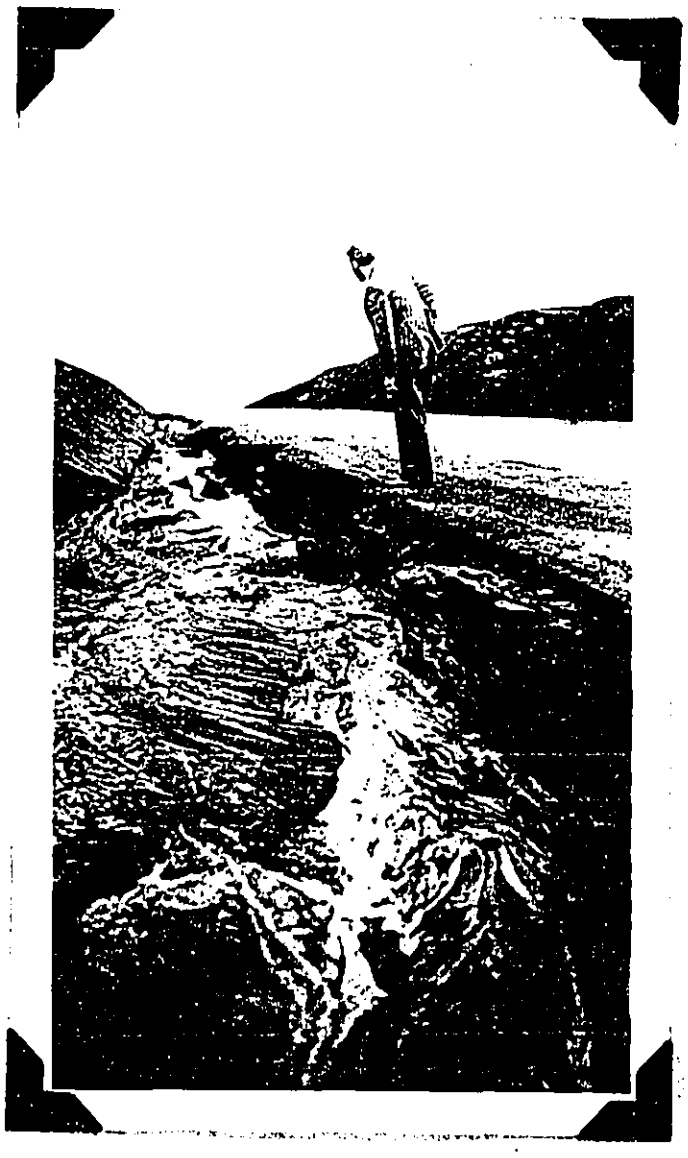

Two views indicating deep erosion from a recent rain on the new Halemaumau-Uwekahuna-Bird Park road at southwest rim of Kilauea Crater.

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Two views showing extent of erosion on Desert Hill, on the Halemaumau-Uwekahuna-Bird Park road, following a rain of not more than two inches on May 29, 1934.

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DAILY WATER REPORT DATE

TANKS	INCHES		GALLONS
Garage 1			
Garage 2			
Bunk House 1			
Bunk House 2			
Recreation 1			
Recreation 2			
Mess Hall 1			
Mess Hall 2			
Auto Camp 1			
Auto Camp 2			
Cottages			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

Water Received Yesterday

Rain Gauge Reading

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CCC DAILY DISPENSARY REPORT

Date_____, _____

_____A.M. _____P.M.

No. of men given treatment_____

No. of men sent to work _____

Assigned to light work
Confined to bed
To Hilo for treatment
No. of men on sick list

Sleeping in	No.	Name of Patient	Cause	Dr. Phillips Notified	Remarks

Signed_____
Dispensary clerk

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ACCIDENT REPORT

Date_____

Time_____

Name of the injured_____

Address of the injured_____

Reported to dispensary at_____(am. pm.) _____

By _____

The injury occurred while_____

in the following manner_____

_____

_____

Nature of injury_____

_____

Names of witnesses to injury:

_____

_____

_____

Reported to Dr. Phillips at_____

_____

Treatment prescribed by Dr. Phillips_____

_____

_____

_____

Signed_____

Dispensary clerk

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

Office of National Parks,
Buildings and Reservations.

May 10, 1934.

The Director,
National Park Service,
Washington, D. C.

Dear Mr. Director:

The following is the administrative report for the month of April 1934:

000 General

The month of April was an interesting month in Hawaii National Park for several reasons, most important of which was the good will tour, sponsored by the Hawaii Tourist Bureau, of the Island of Hawaii, held April 14-15 in conjunction with the ceremony opening the new road in the Kilauea Section of the park, running from the fire pit Halemaumau around the west rim of Kilauea, past the Uwekahuna Museum, thence crossing the around-the-island road to Bird Park. About 40 representative men and women from Honolulu, Maui, and Kauai accompanied Mr. George Armitage, Executive Secretary of the Hawaii Tourist Bureau, to this island and were met at the steamer by a delgation of Chamber of Commerce and other organizations of the Island of Hawaii on the morning of the 14th. The Superintendent, together with Park Naturalist Doerr and Camp Director Bertram G. Rivenburgh, of the Civilian Conservation Corps, accompanied the party on the tour of the island. Various points of scenic interest were visited on the way, all of the cars stopping at Honokaa, where an entertainment was provided by the Honokaa Civic Club. The party then proceeded to Waimea, where luncheon was had at the Waimea Hotel. Motion pictures were taken, and the party proceeded to Kailua and spent the night at the Kona Inn. An Hawaiian entertainment was provided by the Kona Civic Club, and a dance followed. During the dinner talks were given by Mr. Armitage, the Superintendent of the Park, Mr. Stanley C. Kennedy, President and General Manager of the Inter-Island Steam Navigation Co., and others.

Early Sunday morning, the party left for the National Park, where at 12 o'clock at the Halemaumau end of the new road the opening ceremony was held. This was a brief ceremony, consisting merely of the cutting of a beautiful wreath 24 feet long of Ohia blossoms which had been twined with leaves of Maile and stretched across the road. This wreath, about six inches in diamter, was made by Mrs. Peter Lee, one of the old time residents of the Volcano District and a descendent of ancient Hawaiian royalty on the Island of Kauai. Numerous photographs were taken of the various officials, representatives, etc. after which the Superintendent officially opened the road by breaking the wreath stretched across it. The cars,

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carrying 289 persons, then proceeded over the new road to the Volcano House, where a luncheon was had. During the luncheon music was furnished by the orchestra from the CCC camp.

At luncheon the Superintendent introduced as speaker of the day Mr. Leslie W. Branch, President of the Hilo Chamber of Commerce. Mr. Geroge Armitage was also called upon for a short talk, and several other introductions were made.

The party then proceeded to Hilo, where the majority of them took the boat back to Honolulu, a few remaining over for the Inter-Island radio broadcast sponsored by the Hawaii Tourist Bureau over Station KGU.

Landscape Architect Merel S. Sager represented the National Park in a short address as part of the program.

The most important thing observed on the trip with these various representative people of the islands was the generally expressed desire for more thorough cooperation among the various islands and interests. Expressions of appreciation of the hospitality received on this island have been continuously received by various people on this island who entered into the entertainment of the visitors. The park here sincerely hopes that this good will so whole-heartedly expressed will be kept alive for many years to come.

Later in the month the Hawaii Tourist Bureau sponsored a similar good will tour of the Island of Maui, with an automobile and horseback trip to the summit of Haleakala as the main attraction. The Superintendent, together with Ranger J. A. Peck, flew over to Maui on April 25 and met with members of the National Park Committee of the Maui Chamber of Commerce, which had been preparing for the entertainment of the visitors on April 27, 28, and 29. Park Naturalist Doerr arrived on Maui April 26, and together with Ranger Peck accompanied the party to the summit of Haleakala. A night was spent in the rest house at the summit. All of the party except the two park representatives then returned to Wailuku, where special entertainment was provided for them. Park Naturalist Doerr and Ranger Peck remained at the summit and descended into the crater, camping there on April 29 and 30, making notes on the condition of trails, points of interest, archeological features, etc.

The Superintendent returned to the National Park headquarters on April 28, being unable to stay longer than to welcome the visitors to the Haleakala Section of the National Park.

About the same number of visitors accompanied Mr. Armitage on this tour of Maui as were with him on the tour of Hawaii.

HAWAII NATIONAL PARK
HAWAII

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Emergency Conservation Work

An average of 160 men were released to the Camp Superintendent for field work during the month of April. Work was continued on the reduction of fire hazards, general clean-up other than fire prevention, eradication of exotic plants, landscaping, including sloping and rounding of shoulders, soil preparation, and some seeding. Very satisfactory progress was made on the sloping of road shoulders, and this project was about 70 per cent complete at the end of the month.

Under instructions from this office, Camp Director Gertram G. Rivenburgh left for Honolulu on April 26, returning to the park on May 2. While in Honolulu he conferred with Mr. J. W. Lloyd, finance officer of the Territorial portion of ECW, in particular explaining the nature of the narrative report, also ECW-7 reports. He visited their 200-man camp at Schofield Barracks.

The following is taken from his report:

"The camp at Schofield is housed in buildings which were already there. They have water piped to the area and are relieved of the supervision and disinfecting, etc., of dry latrines. The proximity of the camp to Schofield Barracks permits them to purchase daily from the commissary at Army prices and they do not need large storage or refrigeration capacity. The post operates a very fine theater, to which the boys have access at a price of 20 cents each; also there are track meets, games of various kinds, wrestling and boxing bouts which the boys are allowed to attend. Probably for these reasons, the camp itself has not needed to develop its inner resources for recreation and entertainments, the latter especially, to the extent that the Hawaii National Park CCC has done. The enrollees at Schofield are all from Honolulu. I was impressed at the scarcity of Hawaiian and part-Hawaiian boys.

"The doctor's record since the camp was started was interesting. They have had little or no sickness. Of course, they had the usual number of men laid off for a day after the second innoculation for typhoid. Likewise some colds and digestive upsets on account of the change of living conditions upon enrollment. There have been no operative cases, no epidemics of contagious or infectious diseases, and no serious accidents. It was suggested that our open latrines, with presence of flies, etc., may operate to our detriment. While I do not agree, we will increase our efforts with the latrine detail to reduce this hazard to a minimum.

"Altogether I feel that our method of selection of the enrollees was fairer and more nearly meets the fundamental idea behind the original idea; namely, a wider distribution both geographically and racially of the benefits to the boy and his dependents.

HAWAII NATIONAL PARK
HAWAII

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"Further, I am convinced that the very isolation of our camp is a good thing in that means of entertainment and recreation will be developed from within and the boys will be brought in closer contact in competitive games, and thus develop in them the ability to get along together and learn to be good losers; in short it will fit them better for the competition necessary to live after the camp is finished.

"Another thing I might mention is that our environment is such that a boy may study and read to his benefit without the distraction that is ever present with a group of 10,000 or more men just over the fence."

The report from Dr. Clyde L. Phillips, Camp Surgeon, states that so far as the general health of the boys is concerned, he believes there has been a very satisfactory improvement in the general physical condition and health of all the boys in camp. He further states, "Most of the enrollees came from poor families where proper food had been lacking for a long period of time. The result is that a comparison of the weights on admission and at the present time show a ten per cent gain in weight for the whole camp, with individual gains of from two to twenty pounds per man. The men have become hardened to the colder climate and are better fitted to do heavy work than on admission." Serious illness has been at a minimum, though an unfortunate outbreak of mumps has kept an average of six men in an isolation ward during the month. So far there have been no complications. There have been four cases of acute appendicitis among the enrolled boys. Operations were performed, and two of the men are again at work. All men who leave the camp on week ends are inspected physically the following Friday, the purpose of the examination being to protect against venereal disease. So far none has been found. The Camp Surgeon also reports that recommendations made at an earlier date concerning the kitchen and refrigeration rooms have been carried out.

HAWAII NATIONAL PARK
HAWAII

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020 General weather conditions

Weather has been considerably wetter than in preceding months, although it has been mostly fog and mist without heavy precipitation. Rainfall for the month totaled 5.74 inches, which compares with 15.16 inches for a year ago and a normal of 9.37 inches. Rainfall to date is 23.29 inches. The maximum temperature for the month was 73, the minimum 40, while the average daily range was only 13.73 degrees. Full details are given on Weather Bureau form attached.

On April 12 a sleet sleet storm was reported by telephone from the halfway house on Mauna Loa to be in progress in an area from about 8,000 feet elevation to some point above the halfway house at 10,000 feet. The temperature at the time was 22 degrees at the rest house, and snow was about two inches deep.

100 Administration

110 Status of work

Work is current, except some office work including filing, which is going farther behind at present due to lack of receipt of folders ordered many months ago and which has been the subject of radio messages.

120 Park inspections

121 Superintendent

The Superintendent made customary park inspections and inspections of the CCC camp and work done by the CCC boys. In addition to a trip to the Haleakala Section for official contacts and inspection of the new road, he attended meetings of the Tourist Committee and Aloha Entertainment Committee of the Hilo Chamber of Commerce on April 2. At these meetings plans for entertaining the visitors on several large around-the-world boats, which were scheduled to arrive in Hilo during the month, were discussed; also the possibility of a new hotel in Hilo. The committees also covered the proposition of the Chamber and local firms paying the expenses of a man to make personal contacts with the visitors in Honolulu on their arrival and bring to their attention the attractions of the Island of Hawaii.

122 Special field representative

Landscape Architect Merel S. Sager was in the park, inspecting and supervising work of the CCC, revising plans of the utility area buildings, locating position of fire equipment storehouse and garage, and working on the Master Plans, until April 22, when he went to Maui for an inspection of the Haleakala Section, conference with the National Park Committee of the Maui Chamber of Commerce; and later he went to Honolulu for conferences with Bureau of Public Roads officials and others, returning to headquarters in the Kilauea Section on May 2.

130 Finance and accounts

A detailed statement showing the status of park appropriations is attached as Statistical Report No. 8.

HAWAII NATIONAL PARK
HAWAII

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130 Finance and accounts

A detailed statement showing the status of park appropriations is attached as Statistical Report No. 8.

150 Equipment and supplies

On April 27, three sections of three-draw filing cabinets were received. On the 30th the park received eight 2½-gallon soda-and-acid fire extinguishers and 12 one-quart fire extinguishers. A Holmes projector was received by the naturalist division, relieving a critical condition caused by inadequate, old equipment.

180 Circulars, placards, publicity bulletins, etc.

Attached are copies of a staff order, the Volcano Letter,and pictures of park activities.

200 Maintenance, improvement and new construction

210 Maintenance

There was the usual maintenance of motor equipment, comfort stations, quarters, etc., and operation of warehouse.

220 Improvements

Park improvements consisted mainly of the work done by the CCC boys, covered in the first part of this report.

230 New construction

The work on the new Halemaumau-Uwekahuna-Bird Park road was completed at the beginning of the month, and final inspection was made on April 4 by E. S. Wheeler, Principal Highway Engineer, Bureau of Public Roads; Nathan Gordon, Resident Engineer, B.P.R.; Landscape Architect Sager, and the Superintendent. Mr. Gordon left for Honolulu on the 18th to finish reports, after which he was to go to San Francisco.

More materials were transported to the summit of Mauna Loa for use in completing the Hui o Pele rest house, which has been located on a wide ledge within the north pit of Mokuaweoweo Crater. The construction job has progressed very satisfactorily in view of the very difficult conditions of high altitude and cold. A picture of the structure as it appeared at the end of the month is attached. Stone work is to be added.

260 Landscape work

A CWA man assisted in weeding, etc., around the administration building until all CWA projects came to an end in the park on April 27.

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400 Flora, fauna and natural phenomena

410 Ranger, naturalist and guide service

Ranger duties were largely supervision of CWA crews, packing supplies to Mauna Loa summit, inspection of forest conditions, painting signs and traffic lines, conducting several large groups of visitors, patrolling, general maintenance, etc.

Park Naturalist Doerr was on the Island of Maui April 27 to May 2, and during his absence Ranger T. W. Barnett was in charge of naturalist activities. In company with Ranger Peck he made a two-day camping trip through Haleakala Crater on foot as an adjunct to a trip to the summit on a good will tour sponsored by the Hawaii Tourist Bureau.

During the month there were 12 lectures at Uwekahuna to 522 persons, with a total museum attendance of 674. There were 6 field trips, 109 in attendance; 7 auto caravans with 18 cars and 121 persons in attendance, 22 lectures to 844 persons, and 1,748 total contacts.

480 Natural phenomena

Due to the work of constructing the Hui o Pele rest house on the summit of Mauna Loa, there have been several reports from rangers and workmen regarding conditions in the summit crater of that volcano. There was some increase of fuming activity at the 1933 cones, but no other visible activity.

Measurement of rim cracks at Halemaumau have indicated no important changes. Thirty-two of these are carefully measured once each week. A number of small slides were noticed during the month in the fire pit, and one occurred on April 13 on the outer crater wall south of Uwekahuna. The daily observation of Halemaumau has shown little change and few objects in motion. The blue sulphur fume is now rarely seen, although there are yellow sulphurous and whitish saline patches at the borders of the lava floor of January 1932. These are not centers of vapor. The vaporing places are correlated with wall fissures which extend beneath the talus slopes, or else are miscellaneous cracks out in the middle of the pit floor.

Seismic disturbances were registered as follows:

Tremors,		78
Very feeble	Earthquakes,	8
Feeble	"	3
Slight	"	1
Distant	"	1

Microseismic motion varied from light to moderate. Tilting of the ground was slight and variable in direction.

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500 Use of park facilities by the public

510 Increase or decrease in travel

Total travel for the month was 34,761, making 281,668 for the travel year to date, or an increase of 288.56 per cent over a year ago. A number of special events contributed to the increase in travel. On the 9th the SS Lurline brought 325 visitors, on the 15th there were 289 at the opening of the new road, and on the 29th 95 Masons of Kilauea Lodge No. 330 held their annual outing in the park. On the 21st the HMS Empress of Britain, with a passenger list of 459, was scheduled for a visit, but due to heavy seas the vessel remained outside the breakwater and refused to allow the transfer of passengers to small boats. This ship was on her third trip around the world, and visited Hilo twice before. She is too big to go up to the local docks. After picking up some of her passengers who flew over from Honolulu, she got under way about 1 p.m. for San Francisco.

530 Visitors

On April 3, Hon. Montague B. T. Paske-Smith, British Consul at Honolulu, was taken on a tour of the park by the Superintendent while making a brief visit to this island. It was his first trip to the Island of Hawaii.

April 6, Admiral H. E. Yarnell, Commander Wayne Todd, and three other ranking Navy officers, of Pearl Harbor, were guests of Mr. George Lycurgus at a luncheon at the Volcano House, with Dr. T. A. Jaggar, Lieutenant W. J. Stevens of the Navy Health and Recreation Camp, and the Superintendent. After lunch the Admiral left on a trip around the island.

April 9, Commander and Mrs. Knefler McGinnis, en route to the mainland from Honolulu via Hilo, were the Superintendent's guests at the Volcano House for lunch, together with Dr. and Mrs. Jaggar and Landscape Architect Sager. Commander McGinnis was in charge of the flight of six Navy planes from San Francisco to Honolulu last January.

April 9, Her Grace, the Dutchess of Northumberland, and twin daughters, were visitors.

600 Protection

640 Destruction of predatory animals

There were 22 wild pigs and 41 wild goats killed during the month. ✓

900 Miscellaneous

Civil Works. Civil works employees were on furlough during the first week of April awaiting the arrival of funds, except the chief clerk, who worked on reports and miscellaneous clerical matters. Twelve men reported for work April 12 and were assigned to the job of improving the Mauna Iki trail. Painting of park buildings was completed, and all jobs in the park under the CWA ended at the close of April 27.

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Kalapana Road

A news item on April 6 stated that the County of Hawaii was unable to building the road from the Chain of Craters terminus to Kalapana because the funds originally allotted were diverted to other projects.

Mauna Loa Trail

The Honolulu Advertiser of April 8 carried items stating that the Director favored a good trail to the summit of Mauna Loa, the information having been received through Delegate McCandless in Washington. Considerable attention was given to the statement in that issue, first in a news item and then in an editorial headed, "Back the Mauna Loa Trail."

Electric Light Service Contract

Approval was received by radio of the contract of the Hilo Electric Light Co. to extend its lines to within park boundaries and furnish electric current for light, heat, and power. The completion of this extension from Olaa Mill, eight miles out of Hilo, 21 miles into the National Park will be one of the greatest benefits possible to the volcano community, and particularly the National Park. The inadequate service furnished by the worn out plant at the Volcano House will, we hope, soon be replaced with an up-to-date service capable of caring for all future expansion as well as immediate needs. The Park is fortunate that island people with community interests at heart now have control of the Hilo Electric Light Co., as the mainland interests previously in control were not interested in the expansion. Some loose ends are yet to be cleared up by the Company before the project gets under way, and it is hoped that the sugar bill recently passed by Congress will not seriously curtail production by the Olaa Sugar Co. It was the decision on the part of the management of this company to install electric lights in their upper camps along the Volcano Road which made sufficient revenue possible to warrant the Hilo Electric Light Co. making the extension.

Kilauea Military Camp

Editorials in the Hilo Tribune-Herald April 6 and 22 express the hope that the Governor of Hawaii on his trip to Washington may be able to make an impression regarding the desire of the people to retain the Kilauea Military Camp in Hawaii National Park. On the 25th and 26th a news item and editorial published Delegate McCandless' remarks expressing a desire to work through the Director of the National Park Service and the Secretary of the Interior before taking the matter of transfer of the Kilauea Military Camp site to the War Department to Congress. It appears that local people who have the interests of the park at heart have been able to exert enough pressure on the editor of the Hilo Tribune-Herald to the end that his unwarranted statements, in his general line of sniping attack against the park concerning inter-departmental jealousy, etc., have been eliminated from all the articles appearing this month.

Visit of President of the United States

There has been considerable notice given in the Territorial press to rumors of a visit to Hawaii by the President. If, as we earnestly hope,

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President Roosevelt is able to make the trip, it will be the first time that a President of the United States has visited the Territory of Hawaii while in office. Warren G. Harding once visited Honolulu; this was in 1913 shortly after he had been elected United States Senator from Ohio.

Very respectfully,

Edward G. Wingate,
Superintendent.

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10-157
(July, 1929)

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

TRAVEL REPORT

.....HAWAII..... National Park for the month of .....APRIL, 1934.....

	This Month	This Travel Year To Date	This Month Last Year	Last Travel Year To Date	Increase for Travel Year	
					Number	Percent
PRIVATE TRANSPORTATION:						
Cars first entry, ...						
Cars reentry, ...						
Motorcycles, ...						
Total motor vehicles, ...						
Persons entering via motor vehicles, ...	34,141	275,728	13182 (127,857)	69,587	206,141	296.26
Persons entering via other private transportation, ...	235	1,595	155	1,231	364	29.57
Total persons entering via private transportation, . . .	34,376	277,323	13337	70,818	206,505	291.69
OTHER TRANSPORTATION:						
Persons entering via ~~hotels~~ hotel, .	385	4,345	664	1,669	2,676	160.34
Persons entering via trains, .						
Persons entering otherwise, . .						
Total other transportation, .	385	4,345	664	1,669	2,676	160.34
GRAND TOTAL ALL VISITORS, . . .	34,761	281,668	14001 (133,791)	72,487	209,181	288.56

	This Year	Last Year	Increase	
			Number	Percent
Automobiles in public camps during month, ...				
Campers in public camps during month, ...				

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10-158 DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF AUTHORIZED PROJECTS

.....Hawaii..... National Park for the Month of ...April 1934.....

Description of Projects	Percent Constructed To Date	Percent Constructed This Month	Percent Constructed Last Month	Probable Date of Completion
~~Roads~~				
FP 101.8 Puu Huluhulu Trail	100	0	2	
FP 102.8 Parapet Lookouts, Kilauea Iki, etc.	95	0	20	
FP 162.14 Comfort Stations (2) Lava Tube	95	0	0	
FP 311.14 Fire-Equipment Storehouse and Garage	5	5	0	
FP 312.14 Building Reconditioning for Elimination of Fire Hazards	2	0	2	

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10-159
(May, 1931)

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF PERSONNEL

.....Hawaii..... National Park for the Month of .....April 1934.....

	This Month		This Month Last Year	
	Appointed	Non-Appointed	Appointed	Non-Appointed
Number of employees beginning of month	16	5 3	15	5
Number of additions	0	3 3	0	3
Total	16	8 6	15	8
Number of separations	0	5 4	0	5
Number of employees close of month	16	3 2	15	3
Number of promotions during month	0	0	0	0
Aggregate amount of annual leave taken	0	0	0	0
Aggregate amount of sick leave taken	13	0	6	0
Aggregate amount of leave without pay	0	0	2	0

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10-160

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF PARK REVENUES

.....Hawaii.... National Park for the Month of .....April 1934.....

	This Year	Last Year
Park revenue on hand beginning of month,	0.00	0.00
Received, 125	0.00	26.00
Total,	0.00	26.00
Remitted, 125	0.00	26.00
On hand close of month,	0.00	0.00

Park revenues received this year to date,	350.00
Park revenues received last year to date,	833.39
Increase, Decrease	483.39
Per cent of increase,	58.03

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10-161

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF SALES OF PUBLICATIONS

April 1934

	Number	Value	
GOVERNMENT PUBLICATIONS:			
On hand beginning of month,	862	128.00	
Received during month,	0	0.00	
Total,	862	128.00	
Sold during month,	16	10.45	3.60
On hand at close of month,	878	138.45	
NON-GOVERNMENT PUBLICATIONS:			
On hand beginning of month,			
Received during month,			
Total,			
Sold during month,			
On hand at close of month,			
Cash on hand beginning of month,	12.72		
Sales during month,	10.45		
Total,	23.17		
Remitted during month,	6.70		9.85
Balance,	16.47		10.22

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STATISTICAL REPORT NO. 8

FINANCE AND ACCOUNTS

April, 1934

Symbol	Appropriation	Allotted	Expended & Obligated	Balance
44415.3	Salaries and Expenses, Office of Nat'l Parks, Mdgs & Reservations, 1934	31,392.55	27,265.54	4,127.01
44406.3	Forest Protection and Fire Prevention, (N. P. B. & R.) 1934	520.00	510.68	9.32
4X436.3	Roads & Trails, Office of N.P.B. & R.	4,382.85	3,070.70	1,312.15
4X436	Roads & Trails, Natl Park Service	21,862.49	21,862.49	0.00
4-03/5640.8	NIR, Interior, Natl Parks, Roads and Trails, 1933-'35:	480,000.00	465,864.62	14,135.38
4-03/5640.14	NIR, Interior, Natl Parks, Bldgs and Reservations, 1933-'35:	11,250.00	6,602.63	4,647.37

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Form No. 1009—Met'l.

U. S. Department of Agriculture, Weather Bureau.

COOPERATIVE OBSERVERS' METEOROLOGICAL RECORD:

Month of April, 1934; *Station,* Volcano Observatory; *County,* _____

Hour of Observation, _____

State, _____; *Latitude,* _____; *Longitude,* _____; *Time used on this form,* _____

DATE.	TEMPERATURE. Maximum.	Minimum.	Range.	*Set Max.	PRECIPITATION. Time of Beginning.	Time of Ending.	†Amount.	Hum. Snowfall, in inches.	Wind Depth of Snow on Ground at Time of Observation.	Prevailing Wind Direction.	Character of Day, Sunrise to Sunset.	‡Miscellaneous Phenomena.
	1	2	3	4	5	6	7	8	9	10	11	
1	66	50	16	56			11	93	Lt	Var	PC	
2	67	52	15	57			T	92	Mod	NE	"	
3	66	49	17	60			10	85	Lt	"	"	
4	58	51	7	55			03	85	"	"	"	
5	59	49	10	57			03	87	Mod	"	"	
6	65	51	14	56			04	87	Lt	"	"	
7	65	50	15	55			03	90	Mod	"	"	
8	65	52	13	59			T	85	Lt	W	"	
9	64	51	13	54			45	88	"	E	Cloudy	
10	65	48	17	53			02	80	"	SW	PC	
11	68	49	19	57			03	72	"	"	"	
12	66	52	14	57			42	89	"	NE	"	
13	67	52	15	65			03	79	"	S	Cloudy	
14	64	54	10	58			74	89	"	NE	"	
15	59	40	19	54			07	87	"	"	"	
16	64	46	18	58			05	86	"	"	Clear	
17	65	50	15	53			T	91	Mod	"	PC	
18	55	51	4	55			01	88	"	"	Cloudy	
19	62	48	14									
20	62	53	9	55			07	94	Mod	NE	Cloudy	
21	68	51	17	59			17	91	"	"	PC	
22	68	56	12	61			94	87	Lt	SW	Cloudy	
23	64	57	7	60			26	93	"	"	"	
24	67	56	11	61			42	89	"	NE	"	Thunder pm
25	69	56	13	62			30	92	"	"	"	Lt snow on Mauna Loa
26	73	56	17	61			88	89	"	S	PC	
27	70	56	14	63			27	90	"	NE	"	Very Lt snow M. L.
28	65	53	12	57			05	90	"	"	Cloudy	
29	67	54	13	59			09	90	"	"	"	
30	66	54	12	59			13	90	Mod	"	PC	
31												
Sum	1959	1547	412	1676			5.74	2548				
Mean	6530	5156	13.73	57.79			.19	87.89				

*Reading of maximum thermometer immediately after setting.
†Including rain, hail, sleet, and melted snow.
‡Thunderstorms, halos, auroras, etc.

_____, *Cooperative Observer.*

(IN TRIPLICATE.) See cover for instructions.

Post-Office Address, _____

HAWAII NATIONAL PARK

MONTHLY SUMMARY.

TEMPERATURE.

Mean maximum, 65.30

Mean minimum, 51.56

Mean, 58.43

Maximum, 73; date, 26

Minimum, 40; date, 15

Greatest daily range, 19; date, 11,15

PRECIPITATION.

Total, 5.74 inches.

Greatest in 24 hours, .94; date, 22

SNOW.

Total snowfall, _____ inches; on ground 15th, _____ inches;

at end of month, _____ inches.

NUMBER OF DAYS—

With .01 inch or more precipitation, 25

Clear, 1; partly cloudy, 16; cloudy, 12

DATES OF—

Killing frost, _____

Thunderstorms, 24

Hail { Light, _____ Moderate, _____ Heavy, _____

Sleet, _____

Auroras, _____

REMARKS:

Record overlooked on 19th. Data shown was obtained from thermograph.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

April 25, 1934

GENERAL OFFICE ORDER NO. 27

SUBJECT: SELF-INSPECTION REPORTS FOR REDUCTION OF FIRE HAZARD

In compliance with Washington Office Order No. 261, regarding self-inspection reports for reduction of fire hazards in buildings, the Chief Ranger and one assistant will inspect all buildings in this park during the first two weeks of each quarter, beginning April 1, July 1, October 1, and January 1. The first inspection will be made immediately.

Edward G. Wingate,
Superintendent

DISTRIBUTION:

Superintendent	1
Chief Clerk	1
Park Naturalist	1
Acting Chief Ranger	1
Bulletin Board	1
Files	2
Director	1
Monthly Report	7
	15

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The Volcano Letter

No. 409—Monthly U. S. Geological Survey, Hawaii National Park MARCH, 1934

KILAUEA REPORT FOR MARCH, 1934

Including weekly press reports 1155 to 1158, March 4 to April 1, midnight.

Section of Volcanology, U. S. Geological Survey
T. A. Jaggar, Volcanologist in Charge

Volcanology

There has been no lava activity on the surface of the Mauna Loa—Kilauea volcanic system of the island Hawaii during the month of March. The summit crater of Mauna Loa, Mokuaweoweo, which was spouting basaltic lava December 2 to 18, 1933, has been under observation, as the National Park force are preparing a rest house or camp on the northern r'm of the crater. The rangers report that the blue sulphur fume, at the source cone of December inside the main Mokuaweoweo floor towards the south, has definitely increased, the last visit being noon March 23.

On the Kilauea east rift, or Chain of Craters, there was a rumor of noises heard by workmen the afternoon of March 24 in the direction of Makaopuhi pit. There were a few tremors recorded on the seismograms of the Kilauea station at about the same time. The field was examined by A. E. Jones March 28, and inspection of the Chain of Craters revealed no sign of recent slides.

Small slides in Halemaumau pit of Kilauea Crater occurred as follows:— At 8:42 a. m. March 13, at the northeast wall, started perhaps by strong and gusty northeast wind. At 1:25 p. m. March 19, making dust rise at the west. During the forenoon of March 24, at 10:56 a. m. at the north corner of the pit. On April 1 at 10:24 a. m. at the north corner, and fresh dust lay on the talus at the northeast corner.

The thirty-two rim crack points around the edges of Halemaumau for weekly measurement of opening or closing, yielded the following changes when measured on Saturday forenoons:—

March 10. 5 opened, 2 closed, aggregate opening 1.5 mm.
March 17. 6 opened, 6 closed, aggregate opening 2 mm.
March 24. 3 opened, 1 closed, aggregate opening 1.5 mm.
March 31. 7 opened, 0 closed, aggregate opening 3.5 mm.

T.A.J.

Earthquakes

TABLE

Number of minutes of tremor; and numbers of very feeble earthquakes; teleseisms or distant earthquakes; and local seismicity index as described in Volcano Letter 371.

Week ending	tr.	v. f.	tel.	seis.
March 11	48	2	1	13.00
March 18	35	2	2	9.75
March 25	33	2	1	9.25
April 1	19	5	0	7.25

The following very feeble shocks were located, none was reported felt.

One 0:34 a. m. March 10, 9 miles at sea off Cape Kumukahi. Lat 19° 37.5' N. Long. 155° 43' W.

One 1:56 a. m. March 10, under a fault scarp 2 miles SE of Ainahou. Lat 19° 19' N. Long. 155° 11' W.

One 5:09 p. m. March 11, 2 miles east of Kalalua crater on the Kilauea east rift. Lat. 19° 25' N. Long. 155° 03' W.

One 11:40 a. m. March 13, under SE edge of Kilauea Iki crater. Lat. 19° 25' N. Long. 155° 15' W.

One 8:09 p. m. March 18 under SE edge of Kilauea crater. Lat. 19° 24.5' N. Long. 155° 16' W.

One 3:01 a. m. March 24, between Makaopuhi crater and the cliff to the south. Lat 19° 20' N. Long. 155° 10' W.

One 4:11 a. m. March 29, on the Mauna Loa SW rift, 10 miles at sea. Lat. 18° 58' N. Long. 155° 55' W.

One 1:46 p. m. March 30, north of Pauahi crater on the Kilauea east rift. Lat. 19° 23'N. Long. 155° 13' W.

The records of the teleseisms were poor, usually preliminary waves followed by L waves.

One began at 1:27:07 a. m. March 5.

One began at 4:43:40 a. m. March 12, reported by press in Utah, Wyoming and Idaho.

One began at 2:51:14 a. m. March 13.

One began at 1:43:47 a. m. March 24 with secondary waves following at 1:51:11 a. m., estimated distance 3600 miles, located in Pacific Ocean near the Solomon Islands.

Microseisms were subnormal March 5, 6, 7, 8, 10, 11, 13, 14, 17, 18, 19, 20, 21, 22 and April 1.

Microseisms were abnormal March 25, 26, 27, 28, 29, and 30. They were normal or moderate during the rest of the period under consideration.

A.E.J.

Tilting of the Ground.

In the Table of Tilt below, the second column shows the net tilt by weeks, as computed from the seismograms at the Kilauea Observatory, which is on the northeast rim of Kilauea crater 2.2 miles from Halemaumau.

The third column shows the algebraic sum of the readings at three clinoscope cellars around Halemaumau pit, reduced each to its radial direction, outward away from, and inward in the direction of, the center of Halemaumau.

The Table represents the tipping of the ground, in seconds of arc, in the direction given.

At the Observatory, a northeast reading is away from the crater, a southwest reading is in the direction of the crater.

At the Observatory the total accumulated tilt in the year April 1, 1933 to April 1, 1934, is 1.8" east and 4.0" north.

TABLE OF TILT

Date	Observatory	Halemaumau
Mar. 5 to Mar 11	0.7" SSW	3" towards
Mar. 12 to Mar. 18	0.7" NE	14" towards
Mar. 19 to Mar 25	2 1" SW by S	4" from
Mar. 26 to Apr. 1	1.2" NE by E	16" towards

A.E.J.

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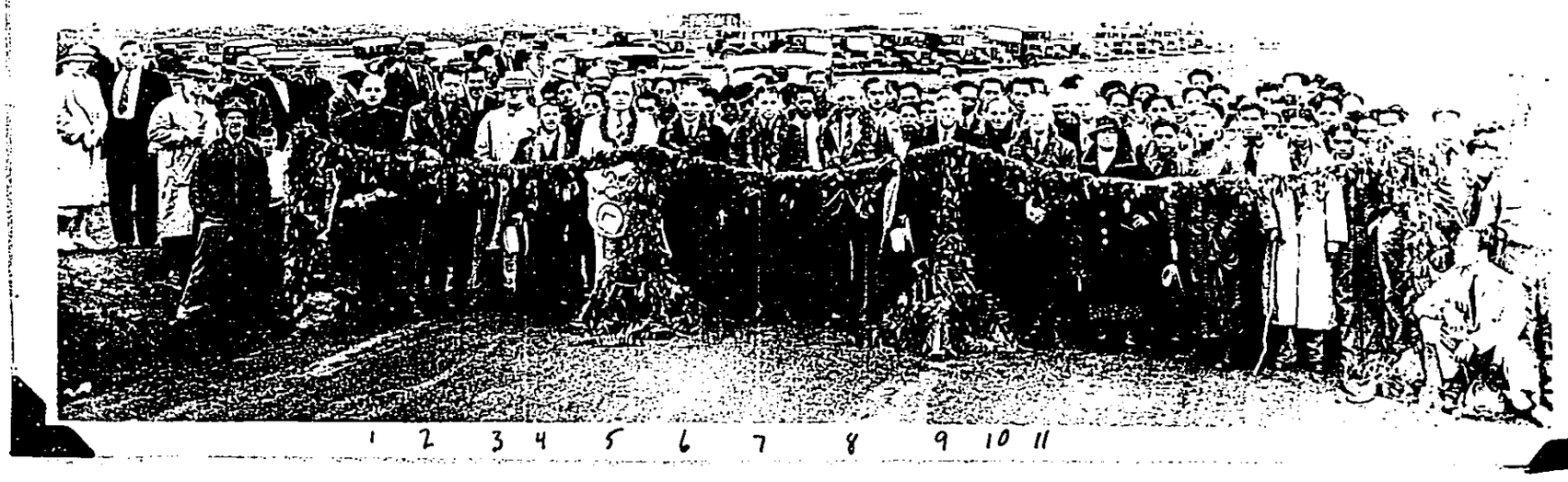

1 2 3 4 5 6 7 8 9 10 11

Group of officials and spectators at official opening of Halemaumau-Uwekahuna-Bird Park road on April 15. Numbers are as follows:

1. Chas. F. Loomis, Director, Institute of Pacific Relations, Honolulu.
2. John E. Doerr, Jr., Park Naturalist.
3. Hermann Bonrig, Manager, Albers Bros. Milling Co., Honolulu.
4. Nathan Gordon, Resident Engineer, Bureau of Public Roads.
5. Bertram G. Rivenburgh, Camp Director, CCC.
6. James Henderson, President, Hilo Electric Light Co.
7. Edward G. Wingate, Park Superintendent.
8. Samuel Spencer, Chairman Board of Supervisors, County of Hawaii.
9. Leslie W. Branch, Manager, Hawaii Telephone System, Hilo.
10. Louis S. Rothschild, Rothschild Repair Shop, Honolulu.
11. Merel S. Sager, ~~Landscape~~ Architect.

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Main road, before and after landscape
work by the C C C.

HAWAII NATIONAL PARK
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Views illustrating main road, near Hilo entrance, before and after landscaping by C C C.

HAWAII NATIONAL PARK

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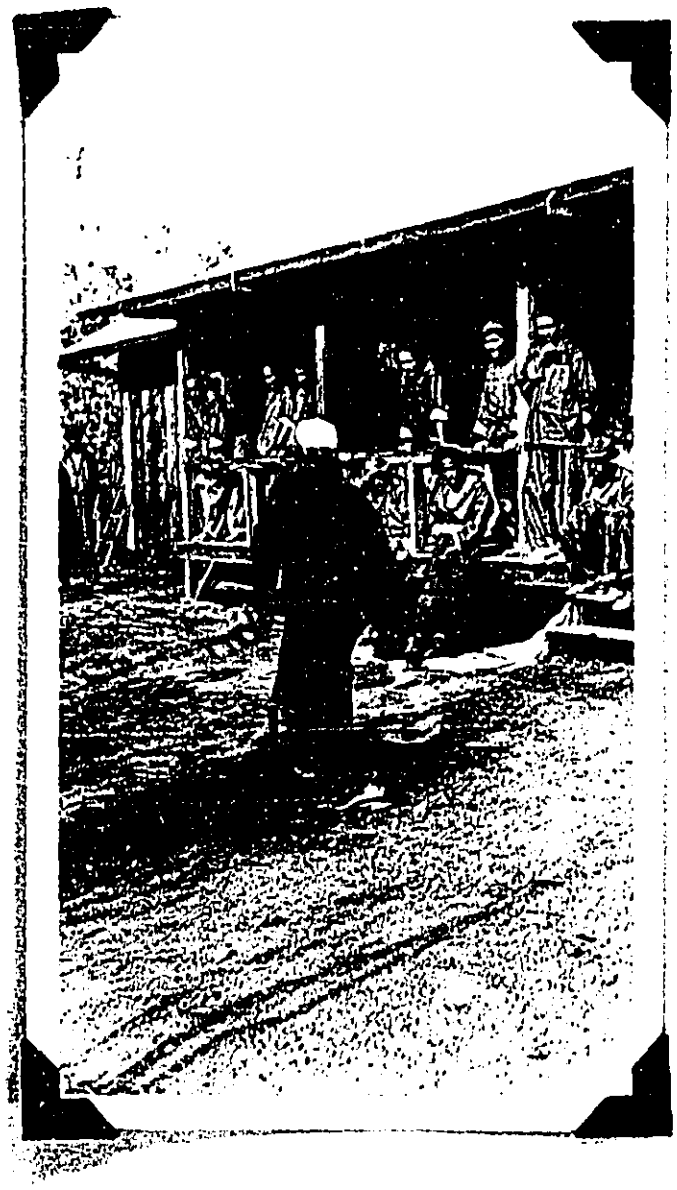

Mr. James Henderson, President, Hilo Electric Light Co., pitching horseshoes at CCC camp.

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Members of the Chamber of Commerce National Park Committee at inspection of CCC camp. Left to right: Peter Arioli, Manager, Hilo Photo Supply; Bertram G. Rivenburgh, Camp Director; James Henderson, President, Hilo Electric Light Co.; Edward G. Wingate, Superintendent; Merel S. Sager, Landscape Architect; C. W. Bowman, Jr., Assistant Treasurer, First Trust Co. of Hilo; Frank J. Harlocker, Manager, C. Brewer & Co., Hilo.

HAWAII NATIONAL PARK
HAWAII

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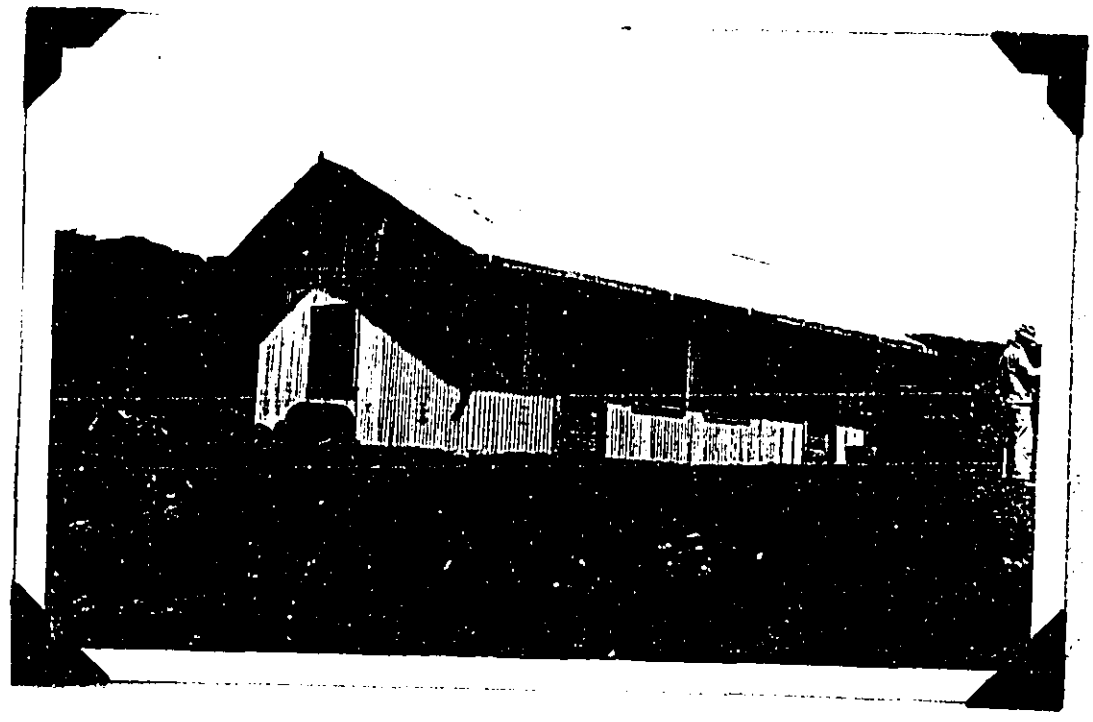

Hui-o-Pele Rest house, summit of Mauna Loa,
near completion.

HAWAII NATIONAL PARK
HAWAII

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Upper: CCA crew beginning construction of short link to connect old and new Bird Park Roads to give access to Bird Park entrance.
Below: The completed job.

HAWAII NATIONAL PARK

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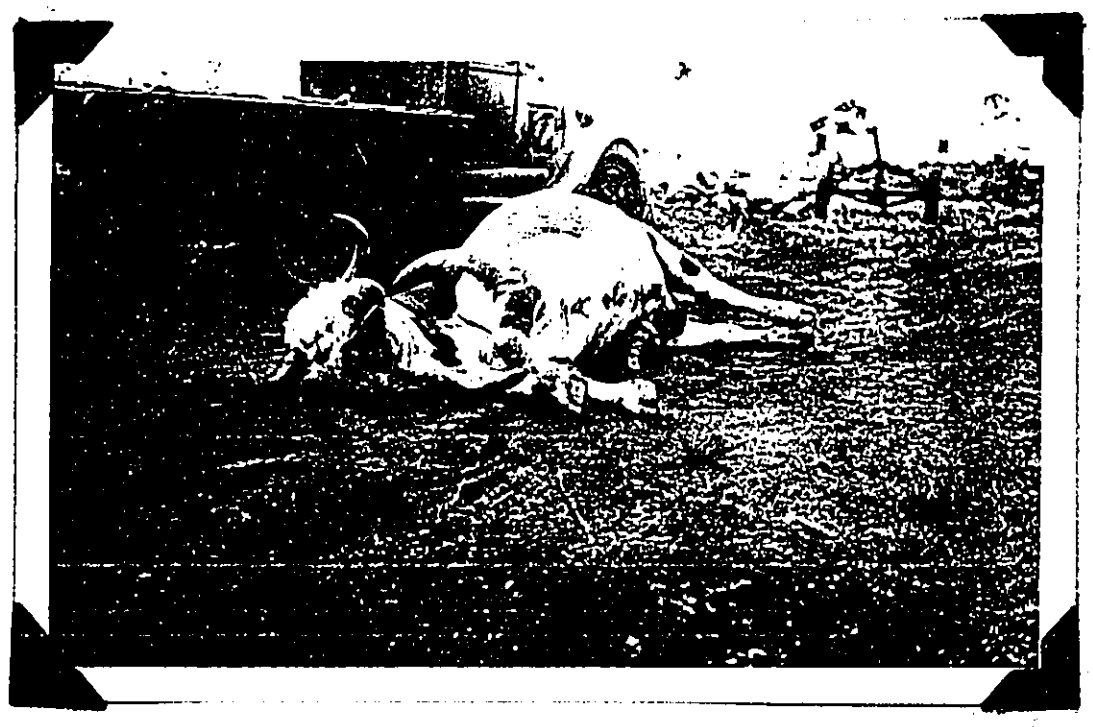

Bull owned by Keauhou Ranch killed in collision with car owned by Clifton Smith.
The animal was one of two struck at night on the main road near Uwekahuna Bird Park road junction.

HAWAII NATIONAL PARK
[illegible]

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Plymouth sedan owned by Arthur Smith
damaged by collision with two bulls.

HAWAII NATIONAL PARK
HAWAII

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

Office of National Parks,
Buildings and Reservations.

April 7, 1934.

The Director,
National Park Service,
Washington, D. C.

Dear Mr. Director:

Administrative Report
for March, 1934

Perhaps the most interesting development during the month was a new attitude assumed by the various Honolulu advertising agencies and one of the steamship companies. Instead of heretofore concentrating their advertising on the attractions of Honolulu alone, they are now commencing a campaign to advertise the scenic beauty of all of the islands. The Hawaii Tourist Bureau is arranging good will tours for each of the islands, the tour of the Island of Hawaii being arranged to coincide with the celebration to be held on April 15 formally opening the newly completed Halemaumau-Uwekahuna-Bird Park Road in the Kilauea Section of this park. Later in the month a tour of the Island of Maui with a trip to the summit of Haleakala is planned.

It is hoped that these good will tours together with the new advertising will not only result in tourists and visitors spending more time in Hawaii, but also result in local residents spending their own vacations on one or another of the islands. Perhaps Hawaii is going to give itself a new deal, and instead of continuing the petty jealousies of the past get together in a spirit of sympathetic understanding with the full knowledge that no one spot in Hawaii should command alone the attentions of the visitors. Each island has its own peculiar charm which it is hoped the visitor will have full opportunity to discover. We are looking forward with interest to the results of this new policy, and are doing what we can to be of assistance.

020 General weather conditions

Weather conditions were generally favorable through the month. The rainfall totaled 3.91 inches, compared with 12.81 inches a year ago. The total rainfall to date is 17.55 inches.

Due to lack of sufficient rainfall in the district where the CCC camp is located, it has been necessary to carry water from the park reservoir.

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100 Administration

110 Status of work

All work is current, except filing. One of the CCC boys who is a high school graduate with some filing experience has been assigned to assist the office staff in making folders and filing correspondence appropriately marked, and excellent progress is being made in installing the system of filing compiled and inaugurated by former Superintendent Leavitt, and which he was compelled to leave before a satisfactory start had been made. There is a great deal of filing to be done as all the old records must be gone over and classified.

120 Park inspections

121 Superintendent

The Superintendent returned March 1 from an inspection trip to the Haleakala Section for noting work on the road under construction there and to attend a meeting of the Maui Chamber of Commerce for formulating plans for a celebration of the opening of the new road on its completion about one year hence.

Other inspections made by the Superintendent were as follows: Twice weekly of the CCC camp, regular inspections of the work by the CCC in rounding and sloping of shoulders, etc.; and two inspections of the Halemaumau, Uwekahuna-Bird Park Road.

122 Special field representative

Assistant Landscape Architect Merel S. Sager remained at Kilauea headquarters throughout the month supervising work at the CCC camp and the landscaping work of the CCC. He also worked on the Master Plans for 1934 and made various drawings and tracings of buildings planned for the park.

130 Finance and accounts

A detailed statement showing the status of park appropriations is attached as Statistical Report No. 8.

140 Labor situation

The unemployment situation created by cessation of CWA projects now appears to be relieved by the establishment of the FERA to take place soon in the Territory of Hawaii.

150 Equipment and supplies

The seven Chevrolet trucks for the ECW were finally received on March 23 after a delay of about one month for various reasons. They were put into service on the 26th and show promise of giving excellent service. They are all convertible dump trucks. The boys selected as drivers have so far taken particular pride in their equipment and have taken excellent care of the trucks.

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160 Status of alienated lands

The matter of adding the foot-print area near Mauna Iki and of taking out the curve in the road at the Kau Road halfway house was the subject of correspondence with Territorial officials during the month. There now remains an agreement to be made with the manager of Kapapala Ranch, lessee of the land affected by the proposed addition, as to the final location of the new boundary, which will then be surveyed by an engineer of the Territorial Survey.

170 Plans, maps and surveys

Plans were drawn by Landscape Architect Sager for building chimneys on employees quarters in accordance with fire prevention requirements.

180 Circulars, placards, publicity bulletins, etc.

Attached are press memoranda issued during the month, the Volcano Letter, and other items of interest to park administration.

200 Maintenance, improvement and new construction

210 Maintenance

There was the usual maintenance of cars, trucks and other motor equipment, dressing, marking, and repairing of tools, making of signs, blacksmith and plumbing work, and operation of warehouse, most of which was done by the senior laborer (mechanic).

220 Improvements

Sloping of roadsides of the CCC began during the month. Due to the great amount of road construction and paving of roads during recent years, all our roadsides presented a very raw and unsightly appearance. Where there had been blasting, the sides were particularly ragged. The CCC boys began this work in places close to their camp, due to lack of transportation facilities. With the arrival of trucks, gangs have been spread to various sections, and the work done has been very highly satisfactory. There is no doubt that we are particularly fortunate in this regard in having Mr. Sager assigned to the park for an extended period while so much work of this character is being carried on.

Camp construction was completed early in the month. The last man to be enrolled came in on March 30.

CWA crews completed painting of all buildings in the residential area, including roofs and some interiors; a tennis court was graded behind the Volcano House, there was a great deal of roadside clean-up and destruction of exotic vegetation, further work of cleaning up Bird Park was accomplished, and assistance was given Public Works employees in quarrying and laying stone for parapet walls. They also widened the utility area road, the Volcano House parking areas, and improved the Hilina Pali road and the lower Mauna Loa trail.

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230 New construction

Project NR-4, Halemaumau-Uwekahuna-Bird Park road was 98 per cent complete at the close of the month, and the contractor began moving his equipment off the job.

The Hilo Chamber of Commerce gave publicity to plans for a celebration of the opening of this road on April 14 and 15.

Pack trains for conveying materials for use in constructing the Hui o Pele rest house on the summit of Mauna Loa began their work on March 9. Neighboring ranches and the Hawaiian Agricultural Company at Pahala again came to our assistance by providing a number of mules.

The job of transporting the rest house materials to the summit is no easy task. Supplies have to be taken by truck over a rough ranch road to Six Tanks, there packed onto animals and taken 12 miles to the rest house at 10,000 feet elevation, and from there taken over a very difficult lava trail to the summit, about 10 miles farther and more than 3,000 feet higher. Extremely cold and windy weather have added to other hazards. The temperature registered 12 degrees below zero Fahrenheit at the Red Hill rest house on March 13.

Due to the bare mountain top being wholly exposed to the winds, the shelter will be placed inside the north pit crater of Mokuaweoweo, providing a fairly sheltered location, and a trail will be built into it which will safely accommodate animals. Carpenters will be sent to the top in April to begin actual construction, and the work will be pushed to completion.

300 Activities of other agencies in the park

310 Public service contractor

Mr. George Lycurgus, manager of the Kilauea Volcano House, while on a trip to Honolulu met by chance a Mr. Henry T. Brockelman, of Worcester, Massachusetts, who with his wife was visiting Hawaii on a round-trip transportation bought at their home city. It was stated by Mr. Lycurgus that after reaching Honolulu Mr. Brockelman went to the offices of the Inter-Island Steam Navigation Co. for reservations for the trip to Hilo and was told that his ticket would have to be changed to include the trip around the island, instead of to the park. He thought this strange, but learned that everyone else did the same, so thought it was all right or something would be done about it. When he bought his ticket from the Worcester agent of the Boston and Albany Railroad, it was with the distinct understanding that he would spend a day and a night in the Hawaii National Park.

This matter was the subject of a request for investigation by your office in order to verify charges that the Inter-Island Steam Navigation Co. is exercising restraint of trade in ignoring or changing applications for transportation to the Volcano House only.

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320 Cooperating Government agencies

The officials of the Kilauea Military Camp, whose lease expires in the fall of 1936, appear to have appealed to the Hilo Chamber of Commerce and the press to obtain influence with a view to having the Interior Department renew the lease, despite a ruling of the Secretary that he is without authority to do so. The editor of the Hilo Tribune-Herald has taken a chip-on-the shoulder attitude and in a series of editorials has given the impression that the Camp and the Park are antagonistic to each other. The impression was graciously corrected by the commanding officer, Captain Waine Archer, in a letter to the press dated March 12.

It is easy to understand why the people of Hilo and the Island of Hawaii desire to have the lease renewed and the camp remain in the park as the camp means a clear profit of a hundred to a hundred a fifty thousand dollars a year, but the attitude taken by the editor of the Tribune-Herald is unfortunate. He has made several misstatements of fact, and shows almost a complete misunderstanding of the situation, and indicates a desire to call it a "fight" to obtain renewal of the lease. He ignored an invitation to call at the park and discuss the matter, and in an hour-and-a-half interview in his office showed no willingness to feel friendly. In fact, he stated that he did not care who or what he hurt in his campaign to keep the camps where they are. He was only recently transferred to his present position from a place on the staff of the Honolulu Star-Bulletin, and may not be aware of the fine cooperation that has existed for some years between the Military and Navy Camps and the Hawaii National Park as he was here a number of years ago when relations were somewhat strained.

The Superintendent spent considerable time in interviewing various local people, and found that while all were desirous that some way should be found to keep the camps on this island, none of them expressed anything other than a friendly feeling for the Park Service. Several stated that they had personally complained to the editor about the attitude he had adopted in his editorials.

Copies of some of the published articles and correspondence are attached.

330 Cooperating non-Government agencies

On the Superintendent's invitation, a meeting of the National Park Committee of the Chamber of Commerce was held at a luncheon at the Volcano House on March 31. The following committee members were present:

James Henderson, Chairman; Manager, Hilo Electric Light Co.
F. J. Harlocker, Manager, C.Brewer & Co., Hilo Branch.
Peter Arioli, Manager, Photo Supply Company, Hilo.
C. W. Bowman, Jr., Ass't Treasurer, First Trust Co., Hilo.
George Lycurgus, Manager, Kilauea Volcano House.
Edward G. Wingate, Superintendent, Hawaii National Park.

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There was an informal discussion of various matters pertaining to National Parks, more particularly the contemplated opening of the Uwekahuna Bluff road and the proposed round-the-island tour of members of the Hawaii Tourist Bureau. It was decided to have the opening ceremony begin at 11:30 a.m. Sunday, April 15, with luncheon at the Volcano House at 12:30. Mr. Wingate will officiate at the road opening, and Mr. Samual Spencer, Chairman, County of Hawaii Board of Supervisors, will speak at the luncheon. Mrs. Peter Lee had kindly offered to make a flower lei which would be stretched across the road, and the first car through would break the lei, officially dedicating the road.

After the luncheon, the Superintendent escorted the party to the CCC camp and over the new road.

400 Flora, fauna and natural phenomena

410 Ranger, naturalist and guide service

The rangers continued supervision of CWA crews, maintenance of telephone and electric systems, wiring at the CCC camp and on the phone line to Bird Park, painting and placing signs, etc. Rangers also had charge of transporting the materials to Mauna Loa summit for construction of the Hui o Pele rest house. A number of large groups of visitors were given special attention.

420 Museum service

Naturalist activities and operation of the Uwekahuna Museum were largely carried on during the month by Ranger Theodore Barnett, as Park Naturalist Doerr underwent an appendicitis operation and was therefore incapacitated until the 19th, when he resumed his office duties, but did not take full part in field work until a few days later.

Museum attendance was 723, with 15 lectures to 559 persons. There were 8 field trips with 63 in attendance, and 18 auto caravans with 55 cars and 405 persons. The total contacts was 1,750.

480 Natural phenomena

A great deal of publicity was given a talk by Dr. T. A. Jaggar in Honolulu at the annual meeting of the Hawaiian Volcano Research Association, which contained prediction of a lava flow from Mauna Loa within two years, the location to be probably on the northeast side of the mountain and in the direction of Hilo. There was considerable press comment, all in support of the professor and his work.

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A few small slides occurred at Halemaumau, and crack measurements indicated motion of rim segments in small amounts. Rangers visiting the summit of Mauna Loa transporting materials for the summit rest house reported that blue fume had definitely increased at the December vents.

Following is a summary of seismic registration by weeks:

Week ending March 11, 50 local, 1 distant earthquakes. Microseismic motion light; tilting of the ground at the Observatory moderate south by west.

Week ending March 18: 37 local, 2 distant earthquakes. The latter were recordings from the shocks in Utah, distance to origin 3,750 statute miles. Microseismic motion varied between moderate and light; tilting of the ground moderate to the northeast.

Week ending March 25: 35 local, 1 distant, earthquakes. Microseismic motion began light and increased to strong; tilting was moderate southwest.

Week ending April 1: 24 local earthquakes. Microseismic motion declined to light; tilting was slight southeast by south.

500 Use of park facilities by the public

510 Increase or decrease in travel

Travel records indicate a total of 12,294 cars and 40,497 people visiting the park. The total for the travel year to date is 246,907, an increase of 314.61 per cent. These figures represent compilations from records of the traffic counter installed last July, which records through traffic as well as local; and of the visitors at the Volcano House and the Kilauea Military Camp. As these figures do not indicate the true situation, two additional traffic counters have been ordered which will be placed on the roads to Halemaumau via the headquarters road and via Uwekahuna.

530 Visitors

On March 10, Mrs. S. M. Singleton, of Chicago, the mother of Mrs. Wingate, arrived for an indefinite visit.

On March 17 there were about 30 pupils in a group from Honomu School, who were given special attention.

On the 31st, a number of cars and trucks suddenly came into the park bearing about 200 boys, members of the Future Farmers of America, who came without warning and in a very wet condition from the rain. Rangers were hurriedly assigned to care for them in every way possible. The FFA held a convention in Hilo, and the boys were delegates from all parts of the Territory.

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A group of about 125 Boy Scouts spent the whole of Easter week encamped at the Kilauea Military Camp. The park staff took great interest and assisted by conducting hikes and lectures on the stars, and participating in an indoor base ball game.

640 Destruction of predatory animals

There were 24 wild goats and 15 wild pigs destroyed. One pig hunter, William Pacheco, brought into the office as of interest the foot of the largest boar he had ever seen while hunting, which he got on the Napau Trail near the eastern boundary. He carried no gun, but depended on his dogs, which were badly cut up during the fight, which lasted 1½ hours on March 8. The animal was estimated to weigh about 250 pounds.

900 Miscellaneous

On Sunday, March 25, Dr. T. A. Jaggar addressed the CCC boys, and on the following Sunday Postmaster Chilson of Hilo was speaker. It is planned to continue these Sunday morning talks by prominent local residents throughout the duration of the camp. Dr. Jaggar's address was warmly received by the boys.

Gilbert W. Lee, head foreman at the CCC camp, underwent an operation for appendicitis on March 1. He returned to duty on the 19th.

On March 5 there was a hearing at the park following airing of a complaint of CWA workers in the park that they were given poor food at the Volcano House. There was one occasion when most of the men were ill from the effects of one meal, but it is not believed that there was justification for a general complaint about the food, which had been inspected and eaten by members of the ranger staff on frequent occasions.

CWA personnel was cut at the rate of four men per week throughout the month, leaving 16 employed at the end of the month. These were concentrated on Bird Park work as practically all other projects authorized were completed prior to that time.

The regular pay roll of CWA workers was cut, without prior notice, by the Territorial Administrator's office in Honolulu effective March 12, and caused considerable misunderstanding. The rate for unskilled laborers was cut from 45 cents to 35 cents per hour. The Administrator at Honolulu further requested a cut in working time in the park and submitted a schedule, but on protest by the Superintendent this was not required.

CWA employees were placed on furlough during the first week of April.

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The Hilo Federal Business Association held its regular quarterly meeting March 2 at the Federal building in Hilo. Superintendent Wingate, who is vice president, presided in the absence of Captain Waine Archer, president.

Publication was given March 9 by the County Clerk at Hilo to a letter he received from the Director of Federal Projects summing up the reasons why the National Park Service considered building of the Mauna Loa road inadvisable at this time. A copy is attached to this report.

Publication was given by the park in the local press that the name, "National Park Service," had been restored in place of the cumbersome title, "Office of National Parks, Buildings, and Reservations," on receipt of official notice to that effect from Washington. The change has met with hearty approval.

Considerable publicity was given in the press of Hawaii of the Secretary's plan to call 1934 a National Park Year. Most of the broadcasts on the subject, due to the difference in time, occur too early in the day to be given attention in Hawaii.

The Maui Chamber of Commerce plans to make a big event of the opening of the road to the summit of Haleakala, and has employed a full time publicity man to keep the matter before the public. As a consequence, a great many items have been printed in island papers with reference to the matter. Their slogan, an ambitious one, is, "Bring the World to Maui." A number of schemes have been planned for publicity, one of them an excursion to the summit by Chamber members on March 17 and 18 with a view to selecting a possible site for the location of an observatory which they hope the National Park Service will build. Another excursion is planned in May in which the Hawaii Tourist Bureau will cooperate.

A daughter, Beverly Randolph Wingate, was born at the Hilo Memorial Hospital on March 27 to Superintendent and Mrs. Wingate. She was winner by two days of a rance in which her rival was the daughter of Mr. and Mrs. Bertram G. Rivenburgh. Mr. Rivenburgh is Camp Director of ECW in the park.

Very respectfully,

Edward G. Wingate

Edward G. Wingate,
Superintendent.

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Form No. 1009—Met'l.

U. S. Department of Agriculture, Weather Bureau.

COOPERATIVE OBSERVERS' METEOROLOGICAL RECORD:

Month of March 1934, 192 ; *Station,* Volcano Obsy. ; *County,* _____

State, _____; *Latitude,* _____; *Longitude,* _____; *Time used on this form,* _____ *Hour of Observation,* _____

DATE.	TEMPERATURE.				PRECIPITATION.					PREVAILING WIND DIRECTION.	CHARACTER OF DAY, SUNRISE TO SUNSET.	‡MISCELLANEOUS PHENOMENA.
	MAXIMUM.	MINIMUM.	RANGE.	*SET MAX.	TIME OF BEGINNING.	TIME OF ENDING.	†AMOUNT.	SNOWFALL IN INCHES.	DEPTH OF SNOW ON GROUND AT TIME OF OBSERVATION.			
	1	2	3	4	5	6	7	8	9	10	11	
1	72	53	19	69			T	89	Mod.	NE	PC	
2	72	51	21	63			T	81	Ltl	"	"	
3	69	53	16	66			T	88	Lt.	"	"	
4	61	52	9	58			T	87	Mod.	S	"	
5	70	32	18	61			11	84	Mild.	So.	"	
6	66	55	10	60			46	91	Lt.	NE	"	
7	68	55	13	68			70	83	Lt.	S-SE	"	
8	70	54	16	59			07	83	Mild	SE	"	
9	71	52	19	62			01	75	Lt.	"	"	
10	69	53	16	63			41	86	Lt.	"	"	
11	68	52	16	63			18	86	Lt.	"	"	
12	67	59	8	61			02	62	Fresh	"	Clear	
13	66	55	10	57			T	89	Fresh	"	Clear	
14	63	50	13	53			T	91	Fresh	"	Fair	
15	68	49	19	55			04	84	Lt.	"	Bright	
16	67	50	17	55			16	88	Fresh	"	Clear	
17	6[illegible]	53	11	54			08	94	Mod.	"	Clear	
18	67	50	17	54			02	91	Mod.	"	Cloudy	
19	69	50	18	56			07	89	Lt.	"	Clear	
20	70	51	19	66			08	86	Fresh	"	Cloudy	
21	71	51	20	58			22	79	Lt.	"	Clear	
22	71	51	20	61			T	83	Lt.	SW	Clear	
23	71	53	18	59			T	84	Lt.	SW	Clear	
24	64	56	8	61			12	82	Fresh	WSW	Cloudy	
25	64	53	11	57			45	88	Lt.	SW.NE	PC	
26												
27												
28												
29												
30												
31												
SUM												
MEAN												

*Reading of maximum thermometer immediately after setting.
†Including rain, hail, sleet, and melted snow.
‡Thunderstorms, halos, auroras, etc.

(IN TRIPLICATE.) See cover for instructions.

_____, *Cooperative Observer.*

Post-Office Address, _____

8—213 GOVERNMENT PRINTING OFFICE

MONTHLY SUMMARY.

TEMPERATURE.

Mean maximum, 67

Mean minimum, 52

Mean, 59.67

Maximum, 72; date, 1-2

Minimum, 47; date, 30-31

Greatest daily range, 21 " 2

PRECIPITATION.

Total, 12.61 inches.

Greatest in 24 hours, 49; date, _____

SNOW.

Total snowfall, _____ inches; on ground 15th, _____ inches;

at end of month, _____ inches.

NUMBER OF DAYS—

With .01 inch or more precipitation, _____

Clear, _____; partly cloudy, _____; cloudy, _____

DATES OF—

Killing frost, _____

Thunderstorms, _____

Hail { Light, _____ Moderate, _____ Heavy, _____

Sleet, _____

Auroras, _____

REMARKS:

_____

_____

_____

_____

_____

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Month of ..... *192* ; *Station,* ..... ; *County,* .....

Hour of Observation, ...

State, ... ; *Latitude,* ..... ; *Longitude,* ..... ; *Time used on this form;* .....

DATE.	TEMPERATURE.				PRECIPITATION.					Prevailing Wind Direction.	Character of Day, Sunrise to Sunset.	‡ Miscellaneous Phenomena.
	Maximum.	Minimum.	Range.	*Set Max.	Time of Beginning.	Time of Ending.	†Amount.	Snowfall, in Inches.	Depth of Snow on Ground at Time of Observation.			
	1	2	3	4	5	6	7	8	9	10	11	
1	72	53	19	60			T	89	Mod.	NE	PC	
2	72	51	21	63			T	81	Lt.	"	"	
3	69	53	16	56			T	88	Lt.	"	"	
4	61	52	9	58			T	87	Mod.	"	"	
5	70	52	18	61			11	84	Mild	So.	"	
6	66	56	10	60			46	91	Lt.	NE	"	
7	68	55	13	58			70	82	Lt.	S-SW	"	
8	70	54	16	59			07	83	Mild	SW	"	
9	71	52	19	62			01	75	Lt.	"	"	
10	69	53	16	63			41	86	Lt.	"	"	
11	68	52	16	63			18	86	Lt.	"	"	
12	67	59	08	61			02	62	Fresh	"	Clear	
13	65	55	10	57			T	89	Fresh	"	Clear	
14	63	50	13	53			T	91	Fresh	"	Fair	
15	68	49	19	55			04	84	Lt.	"	Bright	
16	67	50	17	56			18	88	Fresh	"	Clear	
17	63	52	11	54			08	94	Mod	"	Clear	
18	67	50	17	54			02	91	Mod.	"	Cloudy	
19	68	50	18	56			07	88	Lt.	"	Clear	
20	70	51	19	66			08	86	Fresh	"	Cloudy	
21	71	51	20	53			22	79	Lt.	"	Clear	
22	71	51	20	61			T	83	Lt.	SW	Clear	
23	71	53	18	59			T	84	Lt.	SE	Clear	
24	64	56	8	61			12	82	Fresh	WSW	Cloudy	
25	64	53	11	57			45	88	Lt.	SW.NE	PC	
26	67	50	17	62			32	73	Lt.	W-SW	Clear	
27	68	52	16	57			14	90	Lt.	NE	Cloudy	
28	67	51	16	60			02	90	Lt.	NE	Clear	
29	62	54	08	56			03	91	Fresh	NE	Cloudy	
30	56	47	9	52			18	83	Lt.	NE	Clear	
31	66	47	19	54			02	79	Lt.	NE	Clear	
Sum	2081	1614	467	1811			391	2627				
Mean	6712	5220	1506	5742			1261	8474				

*Reading of maximum thermometer immediately after setting.
†Including rain, hail, sleet, and melted snow.
‡Thunderstorms, halos, auroras, etc.

(IN TRIPLICATE.) See cover for instructions.

8—213

..... *Cooperative Observer.*

Post-Office Address, ...

MONTHLY SUMMARY.

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Mean minimum, 52.20

Mean, 59.67

Maximum, 72 ; date, 1-2

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Total, 12.61 inches.

Greatest in 24 hours, 49 ; date, ...

SNOW.

Total snowfall, ... inches; on ground 15th, ... inches;

at end of month, ... inches.

NUMBER OF DAYS—

With .01 inch or more precipitation, 23

Clear, 11 ; partly cloudy, 11 ; cloudy, 6

DATES OF—

Killing frost, ...

Thunderstorms, ...

Hail { Light, ... Moderate, ... Heavy, ...

Sleet, ...

Auroras, ...

REMARKS:

.....

.....

.....

.....

.....

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10-157
(July, 1929)

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

TRAVEL REPORT

.....Hawaii..... National Park for the month of .March 1934.....

	This Month	This Travel Year To Date	This Month Last Year	Last Travel Year To Date	Increase for Travel Year	
					Number	Percent
PRIVATE TRANSPORTATION:						
Cars first entry, ...						
Cars reentry, ...						
Motorcycles, ...						
Total motor vehicles, ...						
Persons entering via motor vehicles, ...	39,867	241,587	12,086	56,405	185,182	328.30
Persons entering via other private transportation, ...	292	1,360	226	1,076	1,284	26.39
Total persons entering via private transportation, . . .	40,159	242,947	12,312	57,481	185,466	322.65
OTHER TRANSPORTATION:						
Persons entering via ~~stages~~ hotel, .	338	3960	505	2,070	1,890	91.30
Persons entering via trains, .						
Persons entering otherwise, . .						
Total other transportation, .	338	3,960	505	2,070	1,890	91.30
GRAND TOTAL ALL VISITORS, . . .	40,497	246,907	12,817	59,551	187,356	314.61

	This Year	Last Year	Increase	
			Number	Percent
Automobiles in public camps during month, ...				
Campers in public camps during month, ...				

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10-158

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF AUTHORIZED PROJECTS

.....Hawaii..... National Park for the Month of .....March 1934.....

Description of Projects	Percent Constructed To Date	Percent Constructed This Month	Percent Constructed Last Month	Probable Date of Completion
507.13 Road repair over earthquake crack	100	15	0	
FP 101.8 Puu Huluhulu Trail	100	2	0	
FP 102.8 Parapet Lookouts, Kilauea Iki, etc.	95	20	25	
FP 163.14 Comfort Stations (2) Lava Tube	95	0	10	
FP 312.14 Building Reconditioning for Elimination of Fire Hazards	2	0	0	
FP 311.14 Fire equipment Storehouse & Garage	5			

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10-159
(May, 1931)

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF PERSONNEL

.....Hawaii..... National Park for the Month of .....March 1934.....

	This Month		This Month Last Year	
	Appointed	Non-Appointed	Appointed	Non-Appointed
Number of employees beginning of month	16	7 5	15	5
Number of additions	0	3 5	0	1
Total	16	10 5	15	6
Number of separations	0	5 5	0	1
Number of employees close of month	16	5 3	15	5
Number of promotions during month	0	0	0	0
Aggregate amount of annual leave taken	0	0	0	0
Aggregate amount of sick leave taken	13 18½	0	0	0
Aggregate amount of leave without pay	0	0	6½	0

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10-160

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF PARK REVENUES

Hawaii National Park for the Month of March 1934

	This Year	Last Year
Park revenue on hand beginning of month,	0.00	0.00
Received,	75.00	25.00
Total,	75.00	25.00
Remitted,	75.00	25.00
On hand close of month,	0.00	0.00

Park revenues received this year to date,	350.00
Park revenues received last year to date,	807.39
~~xxxxxxxx~~ Decrease Increase,	457.39
Per cent of increase,	56.65

5463
833.39 | 483.39 | 500
416695
666950
666712
23860

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10-161

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF SALES OF PUBLICATIONS

	Number	Value
GOVERNMENT PUBLICATIONS:		
On hand beginning of month,	869	134.70
Received during month,	0	0.00
Total,	869	134.70
Sold during month,	7	6.70
On hand at close of month,	862	128.00
NON-GOVERNMENT PUBLICATIONS:		
On hand beginning of month,		
Received during month,		
Total,		
Sold during month,		
On hand at close of month,		
Cash on hand beginning of month,		7.87
Sales during month,		6.70
Total,		14.57
Remitted during month,		1.85
Balance,		12.72

HAWAII NATIONAL PARK
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STATISTICAL REPORT NO. 8

FINANCE AND ACCOUNTS

March 1934

Symbol	Appropriation	Allotted	Expended & Obligated	Balance
44415.3	Salaries and Expenses, Hawaii National Park, 1934 - - - - - - -	$31,392.55	$26,517.81	$4,874.74
44406.3	Forest Protection and Fire Prevention National Park Service - - - - - - - -	520.00	212.22	307.78
4X436.3	Roads and Trails, National Park Service -	4,382.85	3,070.70	1,312.15
4X436	Roads and Trails, National Park, no year-	21,862.49	21,862.49	0.00
4-03/5640.8	NIR., Interior, National Parks, Roads and Trails, 1933-35 - - - - - - - - - -	480,000.00	465,597.57	14,402.43
4-03/5640.14	NIR., Interior, National Park Service, 1933-35 - - - - - - - - - - - - - - - -	11,250.00	6,367.65	4,882.35

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Parapet wall under construction on around-the-island road near Sulphur Banks.

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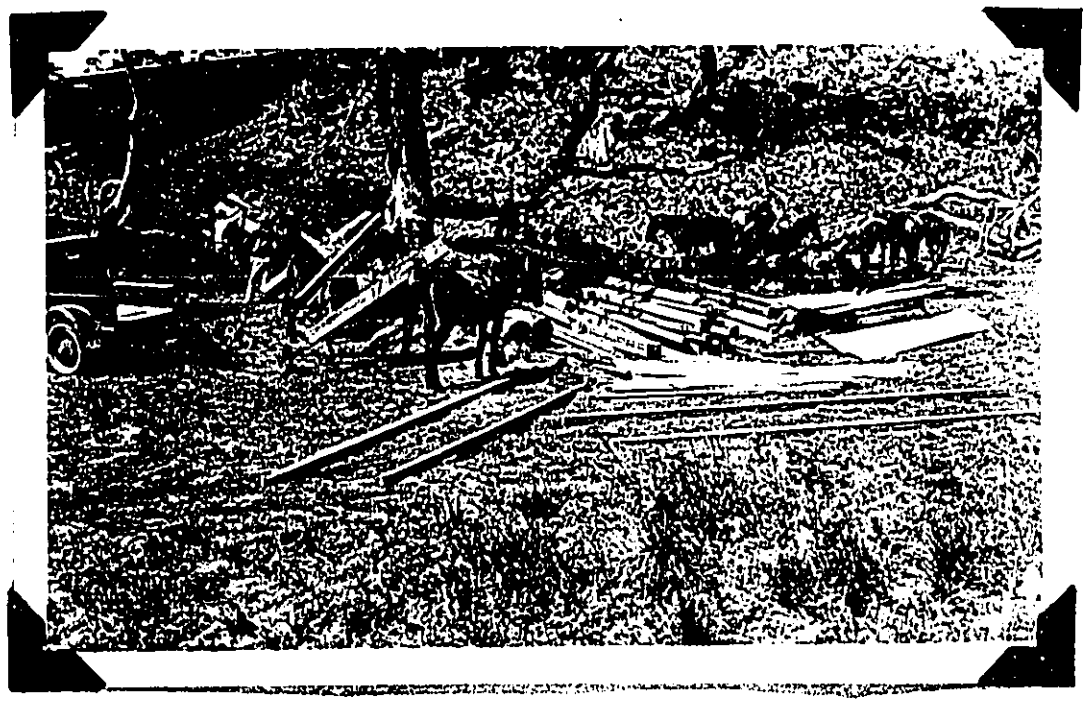
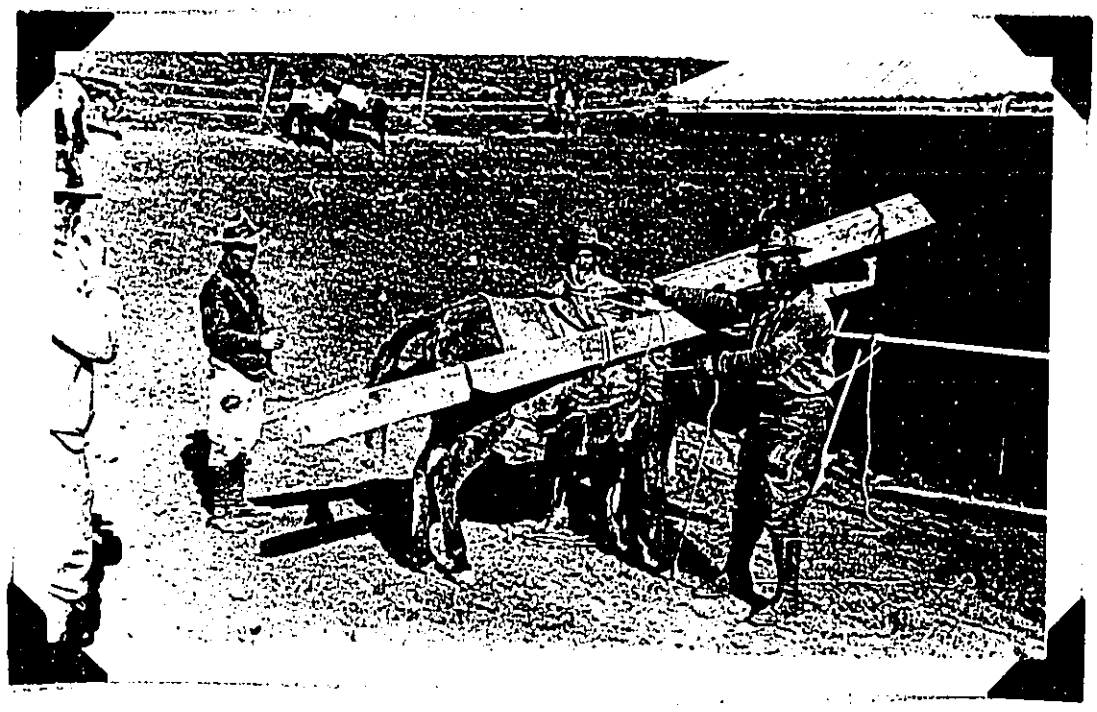


Packing animals at Six Tanks with materials to be use in constructing Hui o Pele shelter at summit of Mauna Loa.



Unpacking animals on arrival at Puu Ulaula (Red Hill) rest house, elevation 10,000 feet.

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Pack train on upper Mauna Loa trail.

Elevation, 11,000 feet. There were 18 animals.

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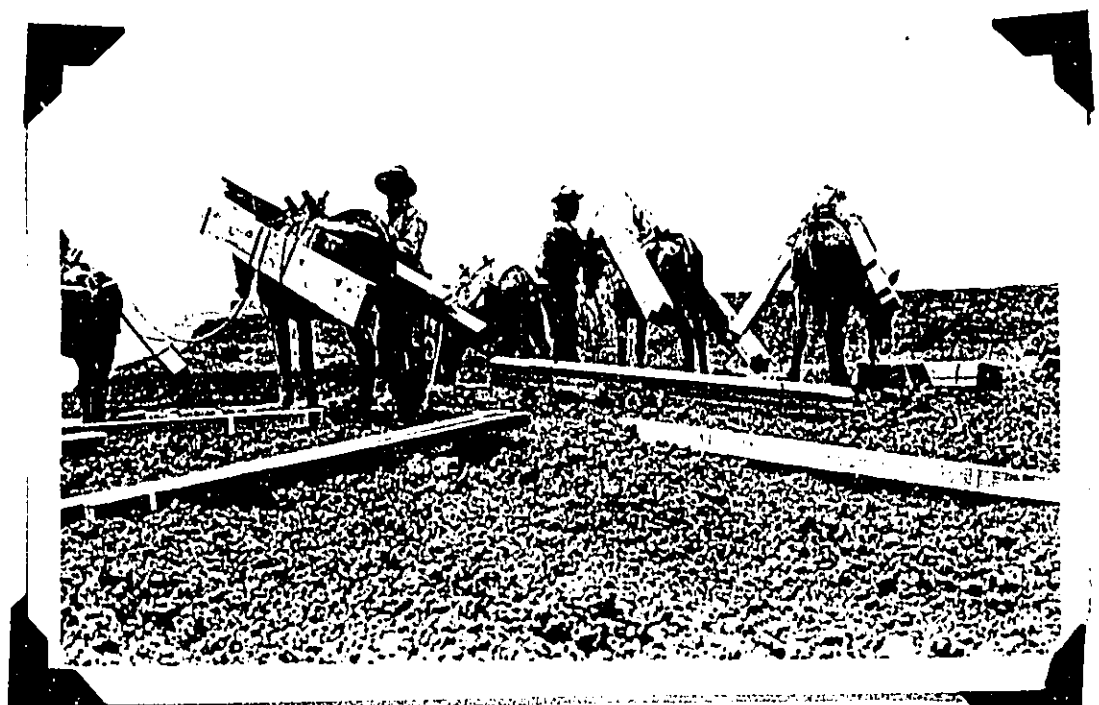
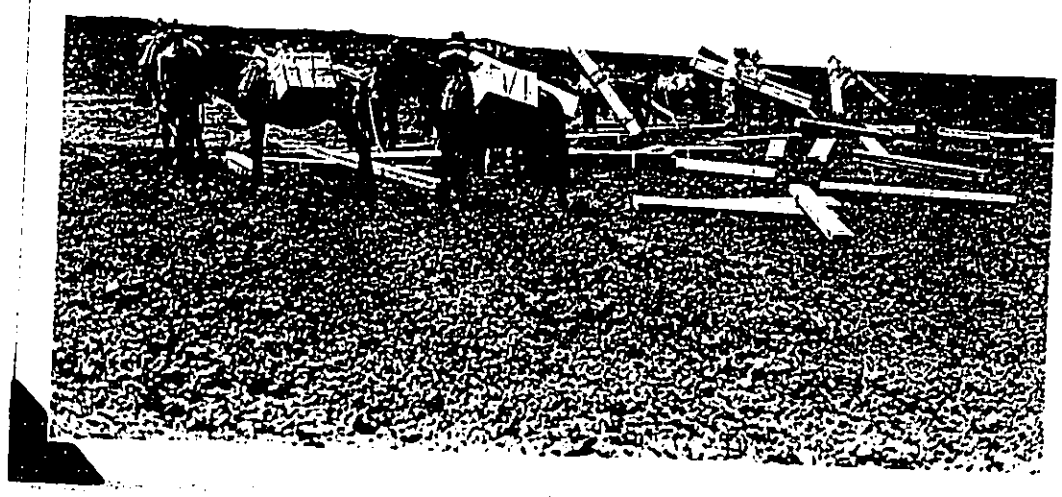


Unpacking animals at the summit of Maun a Loa. The shelter will be built in the north pit crater of Mokuaweoweo, which shows in the background, as it offers greater protection than the barren top of the mountain. A trail for animals will be built into the crater.



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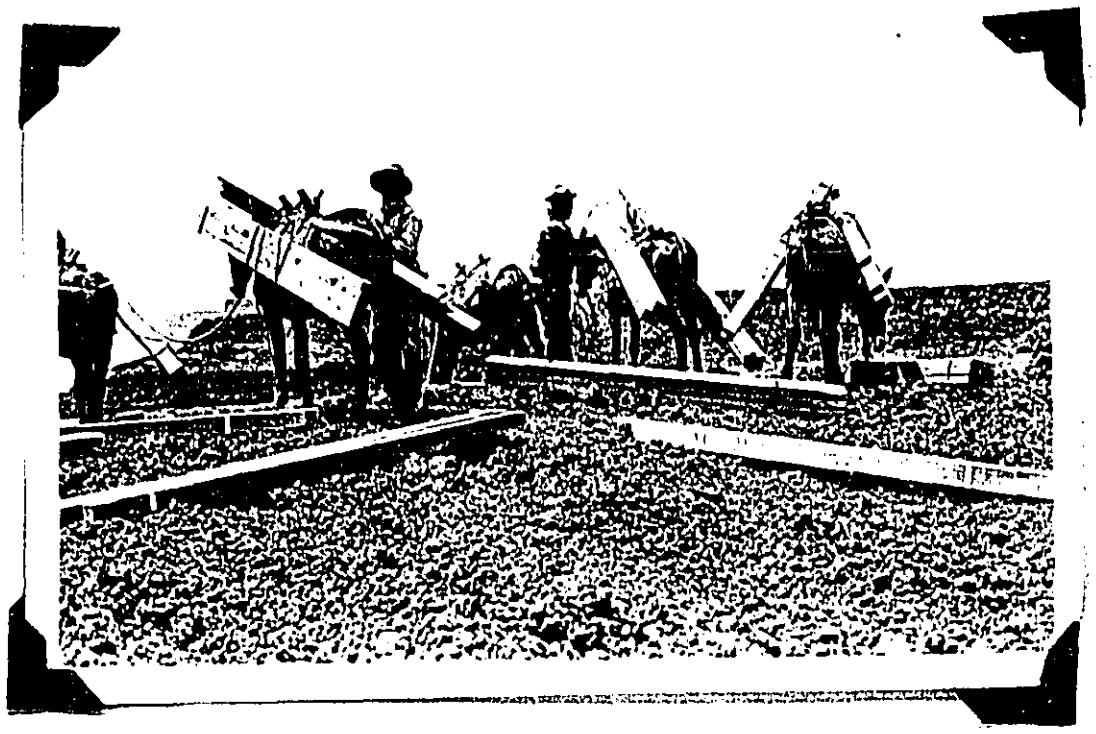
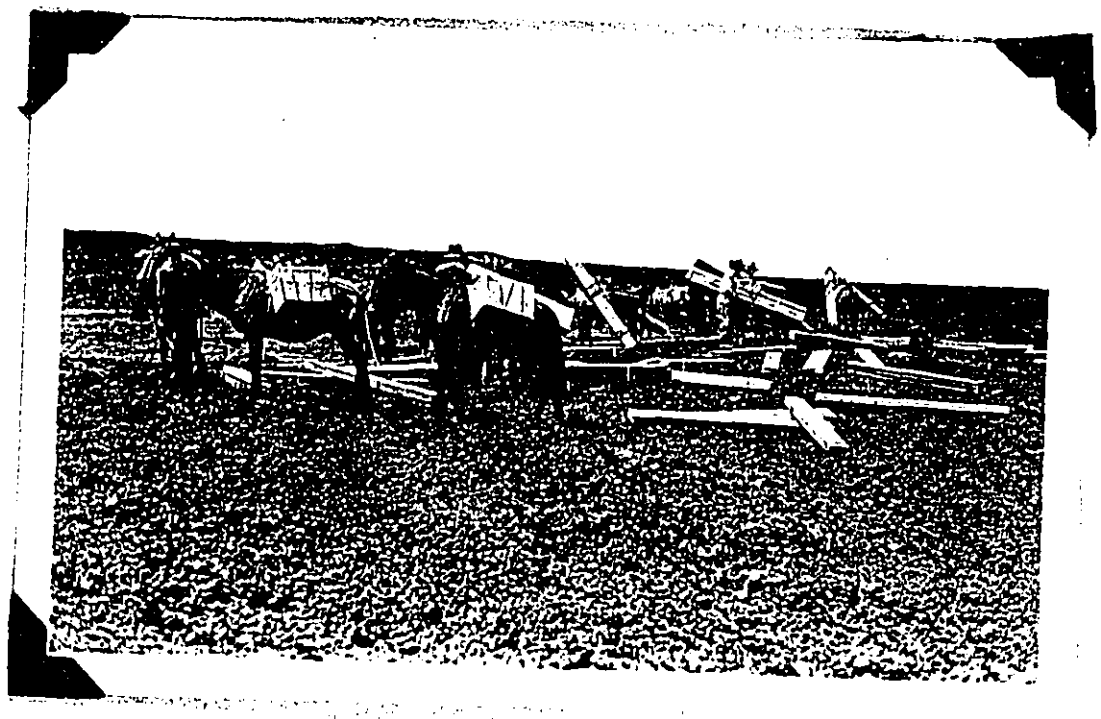


Unpacking animals at the summit of Maun a Loa. The shelter will be built in the north pit crater of Mokuaweoweo, which shows in the background, as it offers greater protection than the barren top of the mountain. A trail for animals will be built into the crater.



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Inspectio n of enrollee s at CCC camp.

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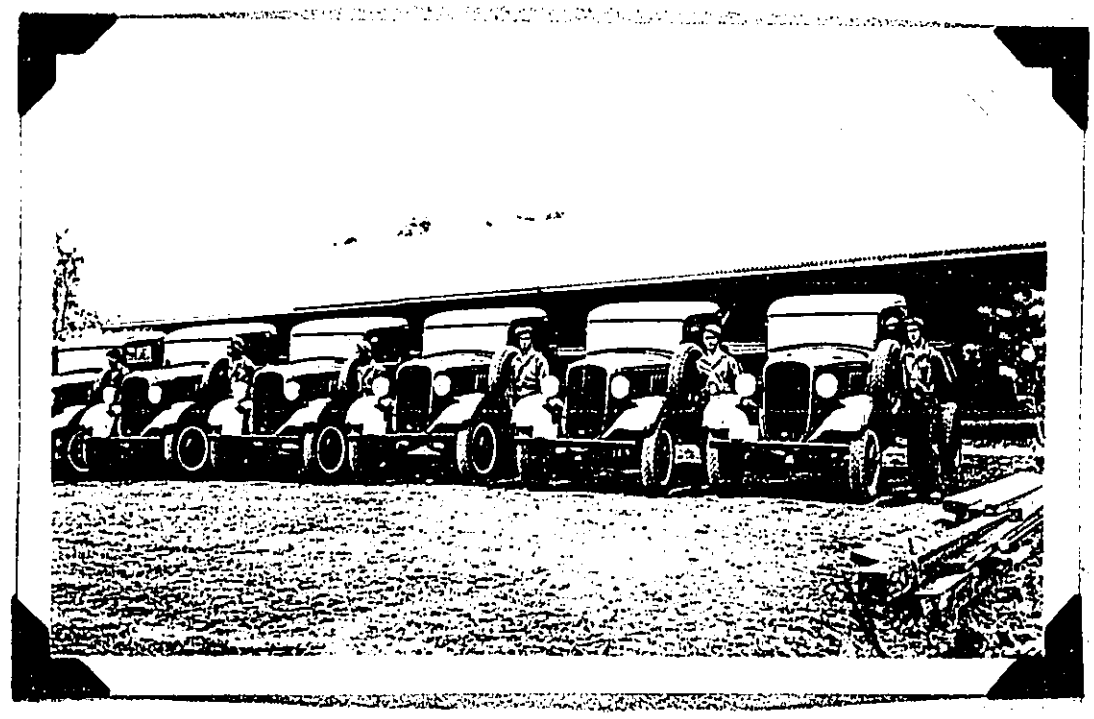

Truck inspection at CCC camp.

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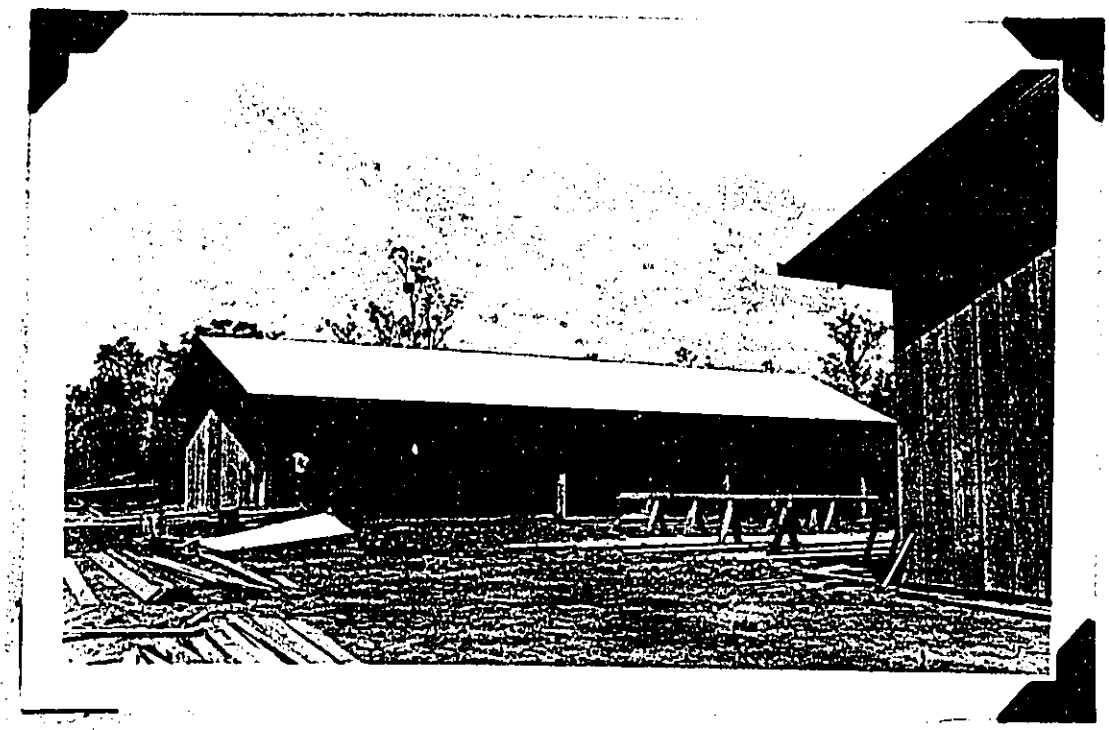
Garage and storage sheds at CCC camp, before and after completion



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HONOLULU ADVERTISER MARCH 6, 1934

Editorial

COME AND SEE US, MR. SECRETARY

A suggestion is made ina public statement by Harold L. Ickes, secretary of the interior, that 1934 be designated as the "National Park Year." The Secretary deplores the fact that so few Americans know the treasures they possess in these parks and their allied areas, state parks and national forests, and he believes the tide of travel should be turned toward them. He cites the prevailing rates of foreign exchange as a sound argument for travelers seeing their own country first, because their money will go much farther at home than abroad, thus reversing conditions that have existed in recent years.

Attention is called in his statement to the fact that the national parks contain the finest scenery to be found anywhere and he pays special tribute to the Yellowstone, the Grand Canyon, Glacier, Rainier, Yosemite and Sequoia parks. He reminds the country country that one of our most important resources are the historic areas of the eastern section of the country which he calls "cradles of our present day development and culture"; with particular reference to the Colonial National Monument, which is within a short distance of Washington and which includes Jamestown Island, Williamsburg, Yorktown and other battlefields of the Revolution and the Rebellion.

Mr. Ickes points out that, in addition to the great personal benefit to be gained by visiting scenic and historic places of the Nation, the expenditure of money for such travel would be a definite aid toward the Administration's recovery program vacationing public but, as usual, while making individual reference to practically all the other national parks and monuments, the Secretary ignores Hawaii and her great volcanic wonderland. Just why Hawaii National Park does not rate inclusion in his list, is difficult to understand. It is regrettable that we should so often be left out in the cold like a foundling on the doorstep.

It becomes increasingly evident taht every effort should be made to induce Secretary Ickes to come to Hawaii for a look around. That would complete his education in the matter of the Nation's scenic and other attraction.

HAWAII NATIONAL PARK
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DEPARTMENT OF THE INTERIOR

MEMORANDUM FOR THE PRESS

MAR 7 1934

FOR RELEASE ON RECEIPT.

In line with his policy to make 1934 a national park year, Secretary of The Interior Harold L. Ickes announced today that a series of nine weekly radio bradcasts on national park subjects would be given during March and April over the blue network of the NationalBroadcasting Company. The boradcasts, beginning March 3 with a talk by the Secretary, willcontinue each Saturday at 10:00 p.m., eastern standard time.

About 13 minutes will be devoted to each park talk, the remainder of the half-hour program being given over to music by the Marine Band, through the cooperation of Acting Secretary of the Navy Henry L. Roosevelt and Major General Ben H. Fuller, Commandant of the Marine Corps.

The schedule of talks is as follows:

March 10, Arno B. Cammerer, Director, Office of National Parks, Buildings, and Reservations, "Greater Opportunities for public service in national park work, with special reference to eastern areas."

March 17, Dr. H. C. Bryant, Assistant Director of Office of National Parks, in charge of research and educational activities, "How Education Entertains in the National Parks." Interviewed by Assistant Director Tolson.

March 24, Col. John R. White, Superintendent of Sequoia National Park and of Death Valley, "Far Western National Parks."

March 31, Mrs Franklin D. Roosevelt, "National and State Parks offer ideal vacation areas for family use."

April 7, Assistant Director Wirth of Office of National Parks and Herbert Evison, Supervisor, State Park Emergency Conservation Work, in dialogue on"Use and Growth of State Parks."

April 14, Horace M.Albright, formerly Director of National Park Service, "Reminiscences of Parks and People."

April 21, Assistant Secretary of the Interior Oscar L. Chapman, "The Indian Neighbors of the National Parks."

April 28, Associate Director A. E. Demaray, Office of National Parks, Buildings, and Reservations, "Behind the Scenes -- or What Makes the National Park Wheels Go 'Round."

HAWAII NATIONAL PARK

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April 28, Associate Director A. E. Demaray, Office of National Parks, Buildings and Reservations, "Behind the Scenes -- or What Makes the National Par Wheels Go 'Round."

In making this announcement, Secretary Ickes emphasized the fact that railroad passenger fares had recently been cut from 16 percent to as much as 44 percent throughout the western territory. In addition, special low summer rates will be offered, and the elimination of the surcharge in Pullmans in the same territory has reduced sleeping car charges by one-third.

These economical rates to the western parks, combined with the unfavorable foreign exchange basis, should appeal to many travelers who formerly found it advantageous from a monetary standpoint to travel abroad.

P. N. 81345

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HILO TRIBUNE HERALD
March 12,1934

Driving through Hawaii National Park Sunday afternoon we were again impressed with the wonderful development in that area during the past few years.

We commented upon it several times in an enthusiastic vein. But all our enthusiasm was drenched with cold water when we drove to the side of the pit only to rediscover the formal, curbed and cemented parking area set aside amid the steaming cracks and volcanic grandeur.

It was like picking a beautiful flower, holding it close to breathe in its fragrance and having a bee pop out to nestle on the end of your nose.

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Hawaii National Park
March 26, 1934

DEPARTMENT OF THE INTERIOR:

MEMORANDUM FOR THE PRESS: FOR RELEASE MARCH 9:

Restoration of thename "National Park Service" to the bureau recently known as the Office of National Parks, Buildings, and Reservations, has just been announced by Secretary of the Interior Harold L. Ickes. Legislation changing the name was carried in the Interior Department appropriations act for 1935, signed by President Roosevelt on March 2.

The National Park Service, established by Act of Congress August 25, 1916, to correlate Federal park administration, through President Roosevelt's consolidation of June 10, 1933, became the Office of National Parks, Buildings and Reservations. The new name was cumbersome to use, and in addition public reaction was all in favor of the title "National Park Service," which throughout the country had come to stand for the highest conservation ideals and enthusiastic public service.

HAWAII NATIONAL PARK
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Editorial from Honolulu Advertiser, March 2 9, 1934

DR. JAGGAR ON MAUNA LOA

The address delivered on Monday night before the Hawaiian Volcano Research association by Dr. Thomas A. Jaggar in which he predicated a major eruption of Mauna Loa within a comparatively short time provides food for grave thought although it was not the utterance of an alarmist. The eminent volcanologist is not given to loose talk calculated to "scare" the public. What he has to say is prompted by long years of scientific study and observation. He speaks with authority.

So when he tells us to prepare for serious responsibilities in connection with disturbances at the great mountain's craters, it may be set down that there is need for being on the alert. He has reason to believe that the next lava flow will be towards Hilo, with possible widespread destruction of life and property, and he gives what seem to the layman to be valid reasons for that conclusion.

It therefore behooves the people of the Territory, and particularly of the Big Island, to become "volcano conscious" Dr. Jaggar suggests certain precautionary measures that should be given immediate attention. Chief among his recommendations is the early construction of a road, even a very rough one, to the summit of Mauna Loa to enable speedy transportation of men and materials in case of need, also to

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facilitate the work of science by making the summit more readily accessible.

It will be recalled that the original suggestion of such a highway came from the late Lorrin A. Thurston with whom it was a favorite project. He emphasized its importance as an attraction to residents and tourists, but he was not unmindful of the advantage it would be to the research work of the volcanologists.

Everything possible should be done to impress upon the minds of the national park authorities at Washington the importance of such a road, and in this effort Hilo and the island of Hawaii should take the lead. Money for such construction does not seem available at the present time, but eventually it will be made accessible if enough "steam" is put into the campaign.

HAWAII NATIONAL PARK
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(Editorial from Hilo Tribune-Herald, March 31, 1934)

WE LIVE IN FEAR

Dr. Thomas Jaggar predicts that Mauna Loa should erupt again within a couple of years and possible within the next six months. He also reports, and backs up his statement by scientific research, that the next flow from Mauna Loa will be on the Hilo side of the great mountain.

To those who are not familiar with Hawaii such statements by an eminent scientist might lead one to believe that the people of this island would live henceforth in fear and trembling.

We do live in fear here from day to day because of our volcanoes. We cant deny it. But the fear we all have is that the volcanoes might decide to close up shop and become dormant. That would be a calamity for this island.

We stand ready to greet Madame Pele whenever she decides to pay us a visit. The sooner the better. She gives us a grand display of fireworks far superior even to the political fireworks with which we shall be entertained this fall.

Even politicians can't compete with Pele.

HAWAII NATIONAL PARK
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The Volcano Letter

No. 408—Monthly U. S. Geological Survey, Hawaii National Park FEBRUARY 1934

KILAUEA REPORT FOR FEBRUARY, 1934

Including weekly press reports 1150 to 1154, January 29 to March 4, midnight

Section of Volcanology, U. S. Geological Survey
T. A. Jaggar, Volcanologist in Charge

Volcanology

Kilauea and Mauna Loa continue without volcanic outflow of any kind: the last activity was lava gushing in the summit crater of Mauna Loa December 2 to December 18, 1933. The feeble sulphur fuming at yellow patches about the border of the lava floor of Halemaumau pit in Kilauea crater has almost ceased. Small slides in the pit were observed during the casual visits, at the west 2:30 p. m. February 4, at the southwest 10 a. m. February 5, east and northwest about 10 a. m. February 6, northeast the forenoon of February 12.

Thirty-two rim crack points around Halemaumau, showed weekly change in opening of cracks as follows:—
February 3. 11 opened, 1 closed, aggregate opening 6.5 mm.
February 10. 10 opened, 1 closed, aggregate opening 9.5 mm.
February 17. 3 opened, 7 closed, aggregate closing 3 mm.
February 24. 5 opened, 3 closed, aggregate opening 2 mm.
March 3. 7 opened, 5 closed, aggregate opening 1 mm.

T.A.J.

Earthquakes

TABLE

Number of minutes of tremor; numbers of very feeble, feeble, and slight earthquakes; teleseisms or distant earthquakes; and local seismicity index as described in Volcano Letter 371.

Week ending	tr.	v. f.	f.	sl.	tel.	seis.
February 4	100	4	1	0	1	28.00
February 11	106	2	0	1	0	29.50
February 18	41	2	1	0	1	12.75
February 25	36	3	1	1	1	13.50
March 4	74	3	0	1	0	22.00

The following earthquakes were located.

A feeble earthquake 3:14 a. m. January 30 was not reported felt. It originated 7 mi. SE of Mokuaweoweo, the summit crater of Mauna Loa, lat. 19° 24.5'N long. 155° 32' W. Two very feeble shocks 10:53 and 11:01 a. m. the same day, were close to or in Kilauea crater. A very feeble shock 2:29 p. m. February 1 originated 5 mi. west of Wood Valley, 19 ° 13'N, 155° 34.5'W. A very feeble shock 1:54 a. m. February 2 was in Kilauea crater. The Pit seismograph was disconnected for repairs during the month.

A slight earthquake was felt sharply at Kapapala ranch at 9:59 a. m. February 9. It was reported felt in Hookena, Hawaii National Park and Waikii. It was located 5 mi. SW of Wood Valley 19° 13'N, 155° 33'W. A feeble shock occurred 8:14 a. m. February 15 near or in Kilauea crater. A slight earthquake was felt sharply 3 mi. east of the observatory at 2:20 a. m. February 19. It was located a mile farther east, 19° 25'N, 155° 12.5'W. A feeble shock was felt at Kilauea crater, Hakalau and Honokaa at 5:31 p. m. February 24. The location was half way between Mauna Kea and Hualalai, 19° 46'N, 155° 42'W. and 11 mi. deep.

A very feeble shock occurred close to Kilauea crater 2:45 p. m. February 26. A slight shock was felt generally on the island of Hawaii at 10:22 p. m. March 1. It was reported from Kilauea Navy Camp, Kona, Pahala, Honomu, Hilo and Waikii. It was located 5 mi. north of Mokuaweoweo 19° 33'N, 155° 35'W.

Swarms of tremors, earthquakes barely enough to record, were noted on the following days. A swarm of 47 tremors was recorded between 8 and 11 a. m. Feb. 2. On the forenoons of Feb. 5, 6, 7 and 8 some were recorded together with suggestions of many other very faint tremors too small to be certain of. A swarm of 28 tremors was recorded during the middle of the day of Feb. 28.

A small teleseism began recording at 11:43:01 p. m. Jan. 30. The preliminary waves only were recorded. A small fragmentary record of a teleseism was obtained beginning at 5:41:51 p. m. Feb. 13. A fair record of a teleseism began recording at 8.03:30 p. m. Feb. 23, other waves began at 8:11:19 and 8:20:56. The maximum waves came at 8:22:19 p. m. It appeared to be 3,800 statute miles away.

The microseisms were normal Jan. 29, Feb. 1, 2, 3, 5, 9, 10, 18, 20, 21, 25. Mar. 1 & 4, they were strong or abnormal Feb. 11 and Mar. 2, they were subnormal during the rest of the period under consideration.

A.E.J.

Tilting of the ground

In the Table of Tilt below, the first column shows the net tilt by weeks, as computed from seismograms at the Kilauea Observatory, which is on the northeast rim of Kilauea crater 2.2 miles from Halemaumau.

The second column shows the algebraic sum of the readings at three clinoscope cellars around Halemaumau pit, reduced each to its radial direction, outward away from, and inward in the direction of, the center of Halemaumau.

The Table represents the tipping of the ground, in seconds of arc, in the direction given.

At the Observatory, a northeast reading is away from the crater, a southwest reading is in the direction of the crater.

At the Observatory the total accumulated tilt in the year since March 1, 1933 to March 1, 1934 is 2.7" west and 3.8" north.

TABLE OF TILT

Date	Observatory	Halemaumau
Jan. 29 – Feb. 4	1.2" NE by E	17.0" from.
Feb. 5 – Feb. 11	2.3" SW by S	25.0" from.
Feb. 12 – Feb. 18	2.1" SW by W	10.0" from.
Feb. 19 – Feb. 25	0.8" SW by W	23.0" towards.
Feb. 26 – Mar. 4	1.0" S by W	00.0"

The pit tilt figures are somewhat unreliable, for during the period Feb. 2 to 25, a concrete ceiling was put in. The clinoscope was temporarily disconnected and though the connections were not changed, it is unlikely that it was replaced in the same position that it would have reached if undisturbed.

The temporary timbering in the clinoscope chamber must have had a large effect also. The figures are tentative. It is notable that the tilt away from the pit started January 19, 1934 with a net of 17" at the end of January, so that the net tilt away from the pit of 29" for the February interval may not be all artificial.

Correction. Tilt Jan. 1–7 should read 4" inwards, not 15" inwards.

A.E.J.

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THE COMING LAVA FLOW

Our Most Serious Responsibility

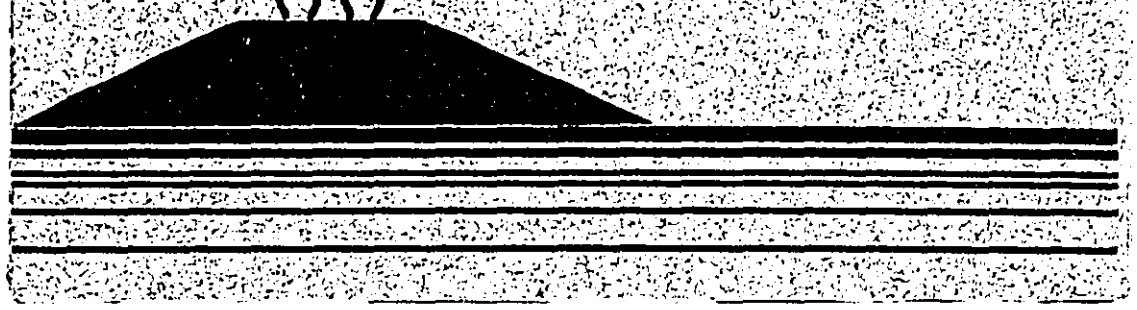
AN ADDRESS BY

DR. THOMAS A. JAGGAR

MARCH 26, 1934

GIVEN BEFORE THE

HAWAIIAN VOLCANO RESEARCH ASSOCIATION



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(Reprint from THE HONOLULU ADVERTISER, March 27, 1934)

Jaggar Predicts Mauna Loa Will Erupt In 2 Years

Volcanologist Believes Activity May Come in Six Months

URGES ROAD TO TOP

Records Indicate Flow Will Be on Hilo Side; Urges Safeguards

An eruption of Mauna Loa may be expected within the next two years and there is every possibility an eruption may occur within the next six months, Dr. Thomas A. Jaggar, volcanologist, said in a lecture given Monday evening at the annual meeting of the Hawaiian Volcano Research association at the Library of Hawaii.

Dr. Jaggar said the records of 66 years of volcano research work indicate there is every possibility the next flow from Mauna Loa may be towards Hilo. He stressed the need for constant preparation in order to safeguard life and property.

URGES VOLCANO ROAD

Construction of a road to the top of Mauna Loa, leading from the Kilauea observatory, was urged as one means of aiding in the scientific study of volcanology on the Mainland. The road to the summit should be constructed as soon as possible, no matter how rough, Dr. Jaggar said. He also said adequate funds should be made available for scientific work.

Dr. Jaggar's lecture in full follows:

Mauna Loa at its summit crater has recently made a spectacular lava gushing December 2-18, 1933. This 17 days of summit activity should be followed by an outflow over somebody's land within a period of from 16 to 37 months.

This expectancy is the serious responsibility which rests on the shoulders of the Hawaiian Volcano Research association. The words are not "the most serious lava flow in history." They are "serious responsibility." It is serious if we take our 22 years of volcano observing seriously, because we are called upon to make good, to make the forecast as careful as possible, and to advise the community soberly and preparedly.

There is no call for fear. There is every appeal for an intellectual and practical victory over nature. Prediction and resulting preparation are what exhibit science at her best.

WHAT ARE THE FACTS ABOUT THE PAST OF MAUNA LOA?

There are listed 23 summit crater eruptions of Mauna Loa, in 90 years, between 1843 and 1933. This is without counting some small summit effusions which may have gone unrecorded.

Between 1832 and 1899 there were nine NORTHERN and EASTERN flank outflows, with one source as low as 8500 feet elevation on this 14,000-foot mountain, namely 1852.

Between 1868 and 1926 there were

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eight SOUTHERN and WESTERN flows, with one source as low as 3500 feet elevation in 1868, and one below sea-level in 1877.

The districts invaded by Mauna Loa have been NORTH KONA, SOUTH KONA, KAU, SOUTH HILO, NORTH HILO INLAND, HAMAKUA INLAND, and even SOUTH KOHALA was touched by the prehistoric but recent Keamuku flow west of Humuula. The very voluminous 1843 flow at the same place might well have found its way to South Kohala. Puna and North Kohala are the only districts of the Island not visited by fiery lavas from Mauna Loa sources, and Puna has been abundantly invaded by flows from Kilauea volcano.

WHAT ARE THE INTERVALS BETWEEN CRATER ERUPTIONS AND OUTFLOWS?

There are two classes of Mauna Loa eruptions, those at or near the summit crater lasting days, weeks or months, and followed by a major lava flow, usually some years later; and secondly, those at or near the summit, but not necessarily in the crater, often making small preliminary flows on the upper rifts, always lasting only a few minutes, hours or days, and then followed immediately by an outflow from a vent farther down the mountain. This second class is the SOME YEARS LATER group of the first class.

In other words, all great lava flows are preceded immediately by high-level gushing, and some are preceded by a summit crater eruption a few years before which announces that a flow is coming; but this preliminary summit crater outbreak may announce that a GROUP OF SUCCESSIVE OUTFLOWS is coming.

In like manner, all eruptions exclusively in the summit crater, like our recent display of December, 1933, are followed eventually in a few years by one or more low level outflows with their immediately accompanying summit gushings; but it is possible for such summit crater eruptions of the preliminary class to follow one another in a GROUP OF SUCCESSIVE SUMMIT CRATER ERUPTIONS, before the mountain breaks to emit an outflow lower down.

Applying these facts of history to December, 1933, for discovering what is to follow, we may expect either one or more additional summit crater extrusions, or one or more lava flow eruptions.

I. ERUPTIONS WHOLLY AT THE SUMMIT CRATER

Year	Duration	Interval	Next Succeeding Outflow
1832	3 wks	10½ yrs	1843
1849	3 wks	2 yrs	1851
1865-66	4 mths	2 yrs	1868
1870	2 wks	7 yrs	1877
1872	2 mths	5 yrs	1877
1873	10 mths	4 yrs	1877
1874	10 mths	3 yrs	1877
1875	2 mths	2 yrs	1877
1876	1 wk	1 yr	1877
1880*	6 days	6 mths	1880†
1892	3 days	7 yrs	1899
1896	15 days	3 yrs	1899
1903	9 wks	4 yrs	1907
1914	6 wks	2 yrs	1916
1933	17 days	?	?

*May; †November.

II. FLANK OUTFLOW ERUPTIONS WITH NEAR-SUMMIT BEGINNINGS

Year	Interval between near summit start and outflow	Elevation of flow source
1843	7 days	10,000 feet
1851	minutes	13,000 feet
1852	3 days	8,500 feet
1855	hours	11,000 feet
1859	minutes	11,000 feet
1868	10 days	3,500 feet
1877	10 days	submarine 180 ft. below s.l.
1880*	5 days	10,500 feet
1887	2 days	6,250 feet
1899	5 days	10,800 feet
1907	4 hrs	6,500 feet
1916	3 days	7,300 feet
1919	3 days	7,600 feet
1926	minutes	13,000 feet
1926	3 days	8,000 feet

*November.

SUMMARY OF FREQUENCY FOR MAUNA LOA ERUPTIONS

There were 30 summit or near-summit events on Mauna Loa between 1832 and 1933, within the period of 101 years. As all the lava outflows begin with a near-summit outburst, this number includes all the Mauna Loa eruptions recorded in the white man's occupancy of Hawaii.

There was probably an average of just as many Mauna Loa eruptions in the eighteenth century and the first quarter of the nineteenth, but the icy wastes of the high mountains were too remote to interest Hawaiians. Lava flows lower down were taken as a matter of course and were not recorded. White explorers like Captain Cook and Vancouver did not usually happen to arrive at eruptive dates. Captain Cook apparently never heard of Kilauea and records Mauna Loa as extinct.

WHAT ARE THE AVERAGE INTERVALS FOR MAUNA LOA?

The average is one outbreak in three and a third years near the Mauna Loa summit. There are 14 flows between 1843 and 1926, in the period of 83 years, averaging one outflow from the flank of Mauna Loa, as perceived by man, either above sea-level or close to sea-level under water, every six years for an average. It must be rememberd that commonest interval is by no means identical with the average interval. Reviewing:

SUMMIT AVERAGE, 3 1-3 YEARS
FLOW AVERAGE, 6 YEARS.

There were probably several submarine outflows under deep water, not perceptible to man, but indicated by extraordinary crater collapses, like those at Kilauea in 1790, 1894 and 1924. The reason for thinking this is that observed outflows close above sea-level caused similar collapses, as in 1823, 1840 and 1868. The submarine outflow in Kealakekua bay in 1877, made very slight impression on mankind, but as it drained Mauna Loa of lava after seven years of summit activity, it may have been one of the greatest lava flows of history, down that cold, dark, wet slope, tipping away steeply 12,000 feet off Kona. The crater collapses of Mauna Loa have gone unnoticed, as nobody lives there. There is plenty of room in this globe for it to do colossally big things without informing mankind, until such time as it occurs to man to distribute and live in numerous observatories of the earth.

The frequency and continuity of lava activity at Kilauea have been even greater than on Mauna Loa, and there have been contributions within 200 years from Hualalai and Haleakala volcanoes, but this discussion is concerned only with Mauna Loa.

HOW THE LAVA BREAKS THE DOME

With summit eruptions of Mauna Loa every 3 1-3 years, and outflows every 6 years, it appears to be nearly twice as easy for the lava and gas to squirt through the summit vents, as to break the flank of the great dome. We have to think of the expanding gas-charged paste swelling the mountain all the time through hundreds of thousands of years, dammed back by its own accumulations which have built the mountain. An eruption is determined by the yielding of the heap to a never-ending force.

The breaking of the flank ranges from 180 feet below sea-level, to elevations on Kilauea mountain 700 feet (1840), on Hualalai mountain 1500 feet (1801), and on Mauna Loa slopes approximately 3,000, 8,000, 10,000, 11,000 and 13,000 feet above sea-level for the statistics of only one century.

WHAT CLASS WAS THE RECENT ERUPTION IN?

The outbreak in Mokuaweoweo crater of Mauna Loa volcano in December, 1933, was not in the Class II of the second list, where the outflow follows the summit gushing by a few hours or days. No outflow has appeared. Therefore, the flow is yet to come, and when it comes it will begin at the top.

This concentrates interest in the first list, where the summit eruptions lasted from six days to ten months, and were followed each by one or

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several flows of the second list, after repose intervals of from six months to ten and a half years.

By analogy the 1933 outbreak lasted 17 days; other eruptions of one to three weeks at the summit were those of 1832, 1849, 1870, 1876, 1880 and 1896. Imagining 1933 to be like one of these, let us see what happened:

SAMPLES OF ERUPTIONS LIKE THE 1933 OUTBREAK

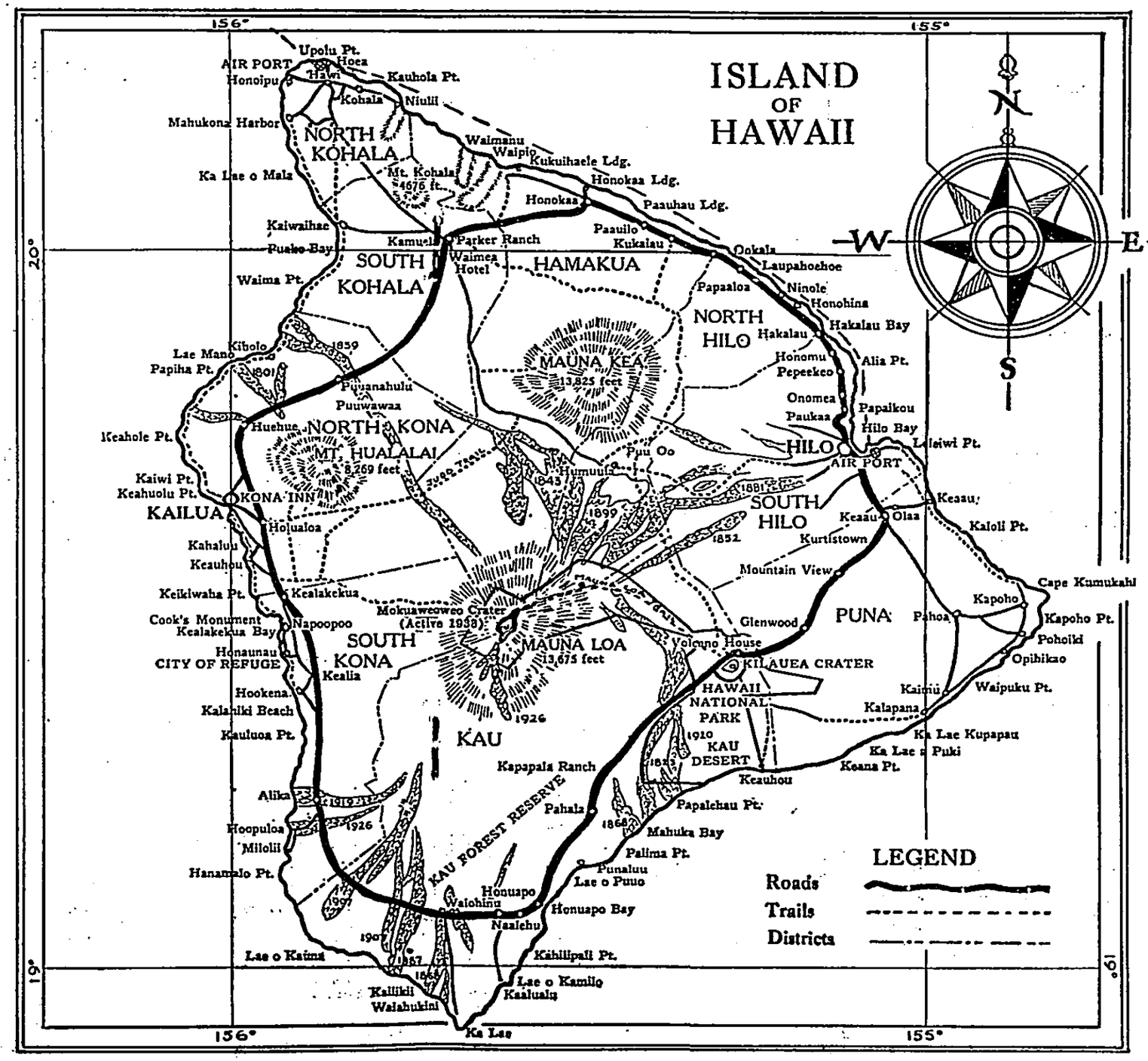
After 1832, June, at the summit, the interval was 10½ years to January, 1843. The flow poured for more than six weeks, largely pahoehoe as mapped today, filling the Mauna Loa-Mauna Kea saddle, flowing north and northwest 14 miles, starting at an elevation of 10,000 feet.

After 1849, May, at the summit, the interval was two years and two months to August, 1851. The flow poured only four days, pahoehoe lava above and aa lava below. It went towards Honaunau, very high up on Mauna Loa, moving due west eight and a half miles, starting from the southern pits of Mokuaweoweo at an elevation of 13,000 feet.

After 1870, January at the summit, "steam and smoke," introducing seven years of summit activities, the interval was seven years to February, 1877. The other summit gushings lasted two months in 1872, 10 months in 1873, 10 months in 1874, 2 months in 1875, one week in 1876 and 10 days in 1877 just before the outflow. What was seen of the flow lasted only half a day. It was frothy lumps of hot pahoehoe under the sea in Kealakekua bay in 30 fathoms of water a half mile off Keei. The pieces bubbled up and floated while hot and were collected. No one knows how far the flow went under the sea, nor how long it may have pushed onward under its water-chilled skin.

After 1876, February, the interval was one year to the Kona submarine flow February, 1877.

After 1880, May, the interval was six months to the flow of Nov. 5, 1880. The flow poured for nine months in several branches, aa at first, pahoehoe afterwards. A first aa flow went to Ohaikea in Kapapala, 11½ miles, after four days of preliminary upland flowing. Then aa flows



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went towards Mauna Kea and towards Hilo. Always the vent lavas were pahoehoe, changing to aa a short distance away by stirring. Finally the source pahoehoe overrode the previous flows and pushed its way to Hilo town. The length of the flow was 30 miles. It stopped in August, 1881, in the outskirts of Waiakea, one mile from the city center (August 10). The source was on the northeast rift of Mauna Loa at an elevation of 10,500 feet. The lower extremity of the flow is about 100 feet above sea-level.

After 1896, April, the interval was 3 years 2 months to July 1, 1899. The flow poured ten to fifteen miles northeast for 26 days, starting at elevation 10,800 feet on the northeast rift of Mauna Loa. It headed for the upper Wailuku drainage back of Hilo. but did not reach it. It was aa at first over most of its course, but pahoehoe as mapped, in a final stream, eight miles long. One account states that an early branch headed towards Kau, as in the case of 1880.

IS THE PRESENT TIME LIKE 1870-1877?

The 1870-1872 time was critical for comparison with 1933, if it should happen that 1933 is the prelude to a new shift of flow sources, from the southern vents of the last thirty years, to northern vents in the near future.

Seismic happenings now in 1934, and the location of earthquakes under the mountain at the north in 1933, point to activity under the northeast rift of Mauna Loa. The progressive higher elevations of flow sources in 1868, 1887, 1907, 1916, 1919, 1926 and 1933, all on the southwest rift, point strongly to the probability, that the cracking open of vents will cross the summit to the northern rifts. For the 1933 eruption, though mostly in Mokuaweoweo crater, began along southern cracks, just outside the crater and where the 1926 eruption left off.

If we make this expected shift a basis for comparison with the 1870s, there may come numerous summit crater eruptions for some years. Thereafter the northern flank will split open. Compound eruptions, involving numerous events, for Mauna Loa, have occurred not only in the seventies, but also in the fifties, the eighties, the nineties and after 1914. Something similar is to be expected at present, as the combination 1926-1933 is already compound, and not yet finished. There is an eleven-year cycle following the profound crisis of 1924, which has been discussed elsewhere (Thrum's Annual 1932) for the Kilauea-Mauna Loa volcanic system.

HOW CAN WE USE AVERAGE INTERVALS?

The average interval, between summit eruption and outflow, for these six selected occasions that resembled 1933 in duration, was 4.1 years. The average interval for all the summit eruptions of the first list was 3.8 years. The range between longest and shortest intervals for all, was from one-half year to ten and a half years. If we leave out the exceptionally long intervals of 1832, 1870 and 1892, we get an average interval of 2.6 years, and a range from one-half year to five years. The Mauna Loa average for all flows and the cycle ending in 1935 makes two years after 1933 a probable limit of time within which the next event should come.

The National Park rangers right now report increasing fumes of sulphur at the summit crater vents of last December. Earthquakes have almost ceased under the southern half of Mauna Loa, where until recently they were most abundant. The suggestion of a coming flow on the Hilo side is inescapable. Let us summarize the probabilities:

SUMMARY OF THE EXPECTATIONS

1. A lava flow from Mauna Loa, or else another summit eruption, is expected within two years.

2. If it is a lava flow, the history of sixty-six years indicates sealing of the southwest rift, and coming outbreak at the north.

3. The resulting flow may push in any direction between North Kona and Kilauea. A likely direction is towards Hilo.

4. The change from Kau flows to Hilo flows is likely to be accompanied by a severe earthquake. This is what happened when the change was from Hilo flows to Kau flows in the terrific earthquake of 1868.

5. Severe earthquakes on the northern Mauna Loa rifts have already begun, at Hualalai, in the autumn of 1929.

6. Opening of the northeast rift of Mauna Loa after its repose and solidification for thirty-five years may make a world-shaking earthquake, for the whole east side of the island Hawaii, just before the outflow starts. The earthquake of 1868 was felt all the way to the island Kauai, and strongly felt.

RESPONSIBILITY FOR THE PROTECTION OF PROPERTY

To point out these probabilities is not to set dates for the events. To fail to point them out would be to suppress truth.

Hilo knows all these things, is completely organized to meet them, and has been instructed about the relief committees of Napier, Long Beach and Sakurajima. A statement of the Mauna Loa problem for the Hilo Chamber of Commerce appeared in Volcano Letter No. 338.

New Zealand, California and Japan have taught us lessons in earthquake insurance. With us the local government, the National Park administration, the National Guard, the American Legion, the Coast Guard, the Navy and the Army all know what they will be called upon to do. On December 11, 1933, the superintendent of Hawaii National Park called a meeting of an emergency committee of these organizations in Hilo to discuss Mauna Loa, and it was done quietly and efficiently. Honolulu is also organized.

The Volcano Observatory at Kilauea was founded in 1911 under the Whitney Fund of the Massachusetts Institute of Technology, with these words: "To be conducted with a view to the protection of human life and property."

That charge was accepted by the Hawaiian Volcano Research Association. A fire department, which in dry weather with high winds did not take special precautions, would neglect its duty.

This address definitely announces, that volcano dwellers in Hawaii should now take precautions, for Mauna Loa has definitely mobilized and declared war.

WHAT PRECAUTIONS CAN BE TAKEN?

The answer is as follows:

1. The northeast slope of Mauna Loa must be made accessible. The roadway proposed should be built at once, no matter how roughly. It should extend from the top of the mountain to Kilauea.

2. The Hawaiian Volcano Research Association should increase from 180 to 1000 members and patrons. Government funds for the Observatory have been cut 83 per cent since 1932. Twenty thousand dollars are needed when the lava flow comes, which might be this summer, if 1880 is repeated.

3. The staff is now two scientists, and not even a typist. With a suitable staff, The Hawaiian Volcano Observatory can resume its scientific publication, which amounted to 3500 pages prior to 1932. It can keep the community properly informed. It can organize more volunteer observers to report small earth movements. It can patrol Mauna Loa with more expeditions. It can man an observatory on Mauna Loa when the rough road is built. It can organize preliminary plans for volunteer assistance by airplane services and other public relief, and prepare special maps. It can improve everything it is doing now in concentrating on Mauna Loa, if it has the requisite man-power. You cannot make war without money and men. The patrolling of an area as large as Mauna Loa is not a small job.

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4. The actual details of how a northern Mauna Loa flow will lap up Hilo's water supply, as it has done it in the past, is set forth on page 3, Volcano Letter 338, under the title "Preparedness Against Disaster."

5. Japan has had her Earthquake Investigation Committee, and does not hush up anything. The most important precaution to be taken we may copy from Japan. It is to face the situation, and not cry about bad advertising, and cry of wolf, and fear of scaring tourists. Tourists come from Los Angeles and Santa Barbara and San Francisco, and they know the game, and that Hawaii is not half so dangerous as their own homeland.

6. Hawaii's Best Advertisement. A foreseen Mauna Loa flow can be made the best advertisement Hawaii has ever had. The headlines will read "Hawaii meets lava flow with complete preparation." "First time in history when mankind has been prepared." "Everybody in Hawaii rejoices and goes to the flow." "Everyone in Hawaii a member of Volcano Association." "Hawaiian lava flow scares nobody."

GET TOGETHER AND BACK UP THE VOLCANO OBSERVATORY

The introduction said: "There is every appeal for an intellectual and practical Victory over Nature."

If every firm, engineer, officer, doctor, teacher and home-maker, if every business man will turn to and join the association now, if those who can't afford it will take an interest and get behind the Observatory at Kilauea, if every educated person will help and not kick, then this Territory can laugh at the fiery fountains and make them an asset. They may gush and bubble as inflammably as they choose, and we shall rub our hands with glee. Our engineers and aviators and bombers will rejoice at the opportunity to show their prowess. And finally, a program of generalship will be laid down, with advice from all experts, which can be carried out as an object lesson to the world. The Volcano Observatory cannot do it, but we can unite and do it, using the motto of volcanology, "Be always ready, and never hysterical."

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From "Paradise of the Pacific" Vol. 46, No. 2. February, 1934, Honolulu p. 5.

History of Mauna Loa

By T. A. Jaggar,
Director Volcano Observatory, Hawaii National Park

THE volcano Mauna Loa is a rounded dome 13,680 feet high. The summit is at the top of the highest cliff on the west side of the summit crater Mokuaweoweo. The mountain is a flat-topped lava dome with long gentle slopes extending twenty to fifty miles from summit to sea.

Mokuaweoweo, the central crater depression, is 2½ miles long by 1¾ miles wide, an elongate oval sink much like Kilauea; at each end there is a subordinate cauldron extending the whole depression to a length of nearly 4 miles. The cliffs are 300 feet high on the east and 600 feet high on the west. The southern pit was 400 feet deep before the recent erupton, which partly filled it; it is nearly a circle a half-mile across. The nothern embayment is a shallow depression only 50 feet deep three quarters by one-half mile in dimensions, with a roundish pit at its eastern corner a fifth of a mile across and 80 feet deep. The axis of the whole crater system trends northeast by north, in line with the big cracks extending to the southwest.

These cracks have sent out flows all the way down to a place in Kau twenty five miles away. Such were the flows of 1868, 1887, 1907, 1916, 1919 and 1926. On the north goes another set of cracks for twelve miles. Out of these cracks come outflows, some of which threatened Hilo, in 1843, 1852, 1855, 1859, 1881 and 1899. This balance in a century of six flows north and six flows south makes it interesting to guess where the next flow will be. All the recent ones have been south, and it may be the Hilo side's turn almost any year.

The Intervals Before Outflows

The eruption of December 2, 1933, was wholly in the summit crater. It was an ordinary Mokuaweoweo eruption much like those of 1896, 1903 and 1914. The 1896 eruption was preliminary to the north flow of 1899; the 1903 outbreak preceded the south flow of 1907; and the 1914 gushing on top anticipated a series of southern outflows 1916, 1919 and 1926.

There have been other cases of summit eruptions followed by flows after years of waiting in 1849 and 1865: the first led to eight years of northern outflows after 27 months interval. The second led to a rather violent southern outflow after 27 months interval. If we are interested in intervals of quiet, one of which may follow the recent outbreak and lead to a flow, experience from the above summit eruptions gives us 16, 37, 37, 27 and 27 months to choose from in five different cases. (See chart). The average is an interval of quiet of two years and five months.

In all the cases where the outflow has *immediately* followed a summit eruption, the latter has lasted only a few days. Therefore the last eruption of Mauna Loa entered the class of prolonged summit eruptions.

If you ask the question, have there been any such *not* followed by outflow eventually, we have on record only the short December display of summit fire in 1892 and the exceptional summit eruptions of 1870 to 1877. Probably the 1892 episode was an abortive beginning of the summit outbreak of 1896: Kilauea became enormously active and relieved the pressure.

The 1870 Climax

The 1870 affair did lead to eventual outflow, but was altogether different. For seven years there was Mokuaweoweo fire off and on, with eighteen months of it continuous in 1873-74. Nothing like that has ever been recorded for Mokuaweoweo in any other eruptive period. It died away as it had begun, with occasional spoutings, from 1875 to 1877.

The climax was also exceptional. On February 14, 1877, smoke shot up from somewhere on the flat top of the mountain, reported by W. L. Green as *not in the summit crater*, accompanied by brilliantly glowing lava.

National Park party at the six tanks starting up Mauna Loa the day of the outbreak, December 2, 1933, at 2 p. m.
—Photo by T. A. Jaggar

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This smoke rose by measurement 16,000 feet above its vent, shooting up 5000 feet in less than a minute. According to Coan it remained active for ten days. Then glowing cracks opened in the Kona forest, and a submarine outflow in Kealakekua bay off Keei made the water boil so that blocks of hot pumice floated up.

Apparently the lava of the summit crater had lowered along Kona cracks below sea-level. Perhaps it was the influx of water that made the extraordinary high vapor blasts. Possibly this was one of the occasions when blocks of rock were thrown out at Mauna Loa: there are such blocks scattered about the summit.

Photograph of steam-blast eruption of Kilauea, 1924.

Chart of Mauna Loa Eruptions

The accompanying chart is of interest to any one who wants to get a comprehensive view. The summit has had more outbreaks than any of the slopes. Six different slopes have had outflows. Six summit outbreaks have produced flank outflows immediately in a few days. Six summit outbreak periods, of longer duration, including the seven years after 1870, have led to flows eventually. The locations of the summit outflows of 1832 and 1877 are doubtful. There have been six flows to the north, and six to the south. Mauna Loa appears to go by sixes, you will say. But anyway, the balance north and south leaves the choice even, for north side or south side, if the present eruption is to produce a river of lava in a year or two. And the chance of its being one of those two sides is as ten to one compared with the less frequented slopes.

Hualalai Volcano

A word should be said about the big volcano Hualalai off to the northwest of Mauna Loa. This peak, about 8000 feet high, was sending flows to the seashore of north Kona about 1800 and 1801. It lies on a rift headed straight for Mauna Loa, and a line of cones on this rift

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makes the backbone of Hualalai. In 1929 a series of thousands of earthquakes in September, October and November, some of them severe, centered under this volcano. The scientific data indicated the underground lava had shifted from its recent home under the south end of Mauna Loa, and was agitating for escape under Hualalai.

We may add the 1800-1801 flows of Hualalai to our list as products in a sense of a northern Mauna Loa crack. The 1929 disturbances put this ground under suspicion of a coming flow, and add weight to the preference for a forecast that the next outflow will be northward. This preference is added to by the fact that the south slope of Mauna Loa has become seismically quiet. This condition is quite as new and extraordinary for Kau, as the 1929 earthquakes were new and unusual for North Kona. Therefore Mauna Loa may with great probability make a lava outflow to the north within a few years. The choice lies between Hilo direction, Mauna Kea direction, northwest like 1859, or out through the west end of Hualalai into the ocean. The way which the lava selects will depend on the path of least resistance; in other words, what rift will break open most easily when the internal lava starts to bulge and split the rock of these heavy mountains.

Sequence of Alternation on the Rifts

There are sequences shown on our chart indicating that Mauna Loa in a half-century of eruptions clogs the cracks on one side of the mountain, say at the north. Then it is

MAUNA LOA ERUPTIONS

NE slope	N slope	NW slope	SUMMIT	E slope	W slope	SW slope
1852	1843	1859	1843 1 wk	1832 ?	1851	1868
1855			1849 3 wks	1877 ?	1877 ocean	1887
1880-81			1865-66 4 mos	1881		1907
1899			1868 short			1916
			1870 2 wks			1919
			1872 few wks			1926
			1873 Jan. short			
			1873-74 18 mos			
			1875 Jan. 1 mo			
			1875 Aug. 1 wk			
			1876 Feb. short			
			1877 10 days			
			1880 May short			
			1880 Nov. short			
			1887 Jan. short			
			1892 Dec. short			
			1896 Apr. 2 wks			
			1899 July 4 days			
			1903 2 mos			
			1907 Jan. short			
			1914 Nov. 6 wks			
			1919 short			
			1926 short			
			1933 17 days			

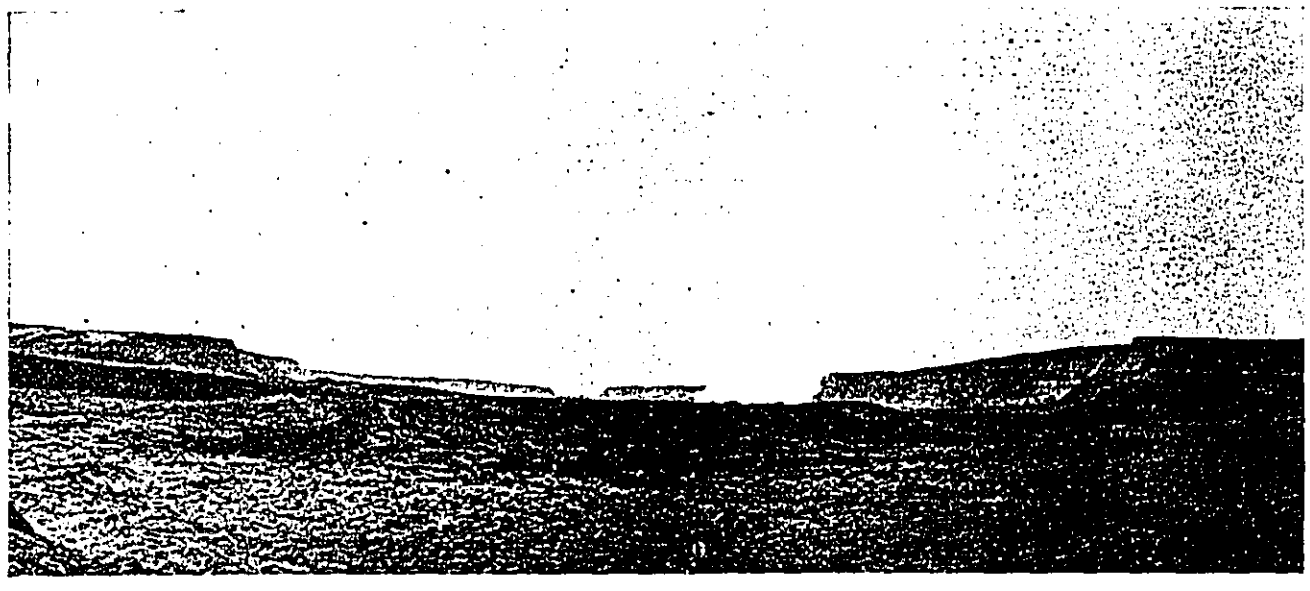
Underlined means followed imm'y by outflow

SUMMIT ERUPTIONS PRECEDING OUTFLOWS

SUMMIT	INTERVAL	OUTFLOWS
1849	27 mos	1851-52-55-59
1865	27 mos	1868
1892-96	37 mos	1899
1903	37 mos	1907
1914	16 mos	1916-19-26

STATISTICS

1832 to 1899—6 North, 3 East flows
1868 to 1926—6 South, 2 West flows
1800 to 1850—No Southwest flows
1851 to 1900—Alternate flows N and S viz;
1851—S and W
1852-55-59—N
1868-77—S and W
1881—N and E
1887—S
1899—N
1900 to 1933 there were not any northeast flows.



Mokuaweoweo from the north December 3, 1933—Photo by T. A. Jaggar

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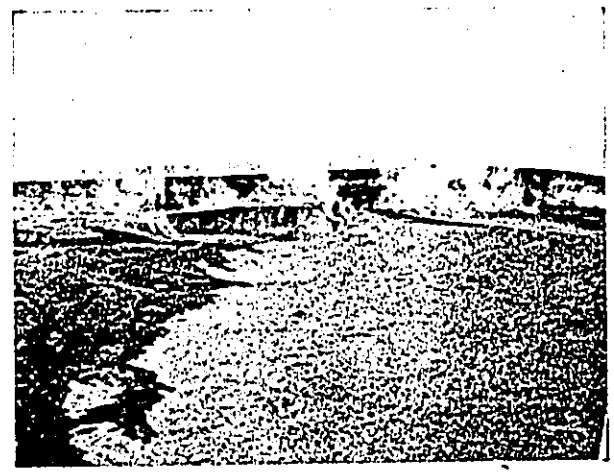
easier to break open the opposite belt of southwest cracks for sixty or seventy years, beginning perhaps by summit activity and by alternating between north and south for thirty years. Just this happened in the nineteenth century as shown in our table of statistics. Between 1832 and 1899 there were the six northern flows, between 1868 and 1926 there were the six southern flows: and the two sets alternated between 1868 and 1899. It was in this period of alternation that the remarkable summit crater activity occurred between 1870 and 1877. We are now living in a time nearly eight years after the last southern outflow, the Hoopuloa extrusion of 1926. The evidence of outflow vents higher and higher on the southwest rift belt is striking. The elevations of the vents were:

1868	5600	feet for the outflow
1887	6500	feet for the outflow
1907	8500	feet for the outflow
1916	11000	feet for first outflow
1919	12600	feet for first outflow
1926	13000	feet for first outflow
1933	13300	feet for first outflow

In the first three, there were "bright lights" at the summit preceding the lower outbreaks; but in the last four we have approximate mappings of the high gushings and they have certainly progressed to higher sources each time. The half-solidified, incandescent lava remaining in the subterranean cracks is tough and unbreakable; a new rupture selects brittle old ground which has cooled off. The present 1933 fracture illustrates this; a few score feet east of it are the sealed cracks of 1903 and 1926; immediately west of it is the sealed crack of 1914; it broke its own cracks in between these on both the rim and the bottom of Mokuaweoweo.

Eruption of 1933

The eruption of 1933 began with a very slight offset almost where the 1926 summit crack left off. The cracks in the ground opened and vomited up lava a quarter-mile west of the 1926 crack at the 13000-foot contour a mile south of Mokuaweoweo. The lava cascaded into a small pit Lua Hohonu. Then another crack in the higher upland nearer the big crater opened farther west, and parallel to the first, and lava cascaded into the South Pit of Mokuaweoweo. The crack split itself onward for a mile inside the big crater floor, and on December 2nd, fifty fountains were gushing up, some of them five hundred feet high, and torrents of golden melt were cascading through the gap into the south pit, and eastward over the floor of the larger cauldron. Within a day the number of fountains had dwindled to only five or six, all inside the crater, and cones had begun to pile up around them, made of sloppings of solidifying lava froth. The first day is the time to see a Mauna Loa eruption at its greatest fiery display, and the airplanes this year made such inspection possible. The gushing of the outside cracks to the south ceased within twenty-four hours. Apparently they had completed the job, begun in 1868, of gluing up the great southern rift. If this eruption could have broken it open and let out the lava, low down to the southward at Puu o Keokeo, it had ample expansive force

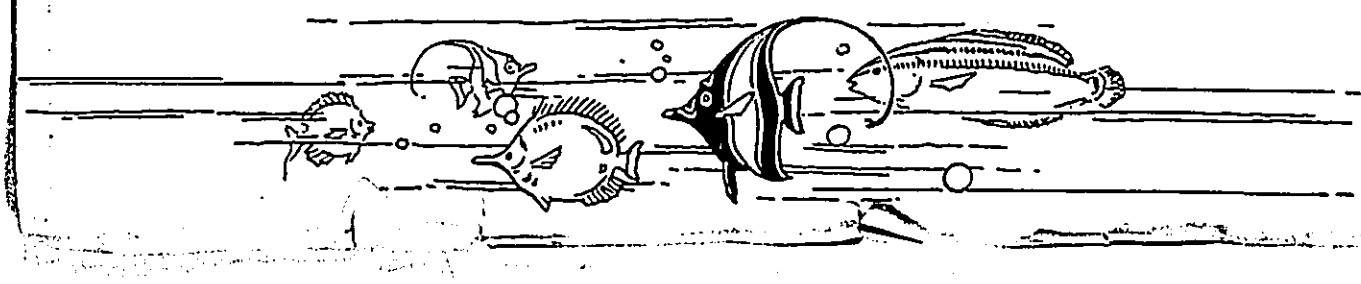


Outbreak of Mauna Loa Summit crater December 2, 1933, at 11 a. m., showing the cascades of lava into the southern pits and fountains in the main crater.—Photo by Hilo Photo Supply Co.

as in 1916, 1919 and 1926, and it was definitely in the cracks at the top of the same rift. But the rift held.

The Basis for Prediction

By analogy with 1868, it looks as though the underground lava fluid were ready to cross the mountain, but to the north instead of to the south. By analogy with 1870, it may have several eruptions in Mokuaweoweo. By analogy with 1881, 1887 and thereafter it may make outflows alternating both north and south, as it wrenches the mountain with groaning and travail, and finds the brittle places in the shell of the great turtle-back along the deep zones of breakage. And lastly, by analogy with 1801, it may possibly find an outlet at Hualalai within the next three years. As for Kilauea and Halemaumau, the hot lava there is always ready to display itself.



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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

Office of National Parks,
Buildings and Reservations.

March 8, 1934.

The Director,
Office of National Parks, Buildings and Reservations,
Washington, D. C.

Dear Mr. Director:

The following is the administrative report of Hawaii National Park for the month of February 1934:

000 General

010 Emergency Conservation Work

The task of getting the ECW camp established in Hawaii National Park has received setbacks because of (1) inability to get cooking ranges and (2) delay in delivery of seven trucks ordered from the mainland. The stoves were first ordered from the Army Quartermaster at Honolulu, as we had information to the effect that there were surplus ranges at that point, but about one week after the order was placed, a radiogram was received with notification that there were no ranges available. This meant ordering from the mainland and consequent further delay, and then the SS Manulani, on which the new ranges were placed, dropped a propeller blade at sea and had to put back into San Francisco. The SS Maui then took the stoves aboard with all other freight that it could load from the SS Manulani. The seven trucks were delivered to the dock for shipment aboard the Maui, but because of the accident to the Manulani they could not be taken. The last report indicates that the trucks will leave San Francisco on March 14.

Camp construction, consisting of two bunk houses accommodating 60 men each, one mess hall for 220 men, with refrigerating room and cooling unit, electric light plant and complete wiring for all buildings to reduce danger from fires, bath house, latrine, two garages, and installation of double-deck bunks in 12 cottages rented from the Volcano House, as well as outfitting dispensary, commenced on January 24 and continued throughout February. The camp was about 85 per cent complete at the end of the month. Certain repairs are needed to existing toilets to put them in sanitary condition. As a nucleus for the ECW camp, the existing buildings at the Kilauea Summer Camp were rented from the Volcano House. They consist of 12 cottages, each of which has a small connected water tank of 500 gallons capacity, and a central dining hall with rooms for storage. This dining hall was too small to accommodate 200 men at one meal, but it serves exceptionally well as a recreation hall. It also had two large 15,000-gallon water tanks connected. The rental of this camp at $200 a month is well below the cost of constructing equal facili-

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ties and, most important, provided an immediate supply of water which is highly valued this year as the usual rainy season has been lacking. In fact, both January and February have been exceptionally dry.

The enrollment and examination of the boys began the last week in February, and will continue as facilities are made available.

All physical examinations are given by the Camp Surgeon, Dr. Clyde L. Phillips, and he has reported very favorably on the physical condition shown by the first group of enrollees.

Visiting hours in the camp have been established on Saturday afternoons and all day Sundays. During the remainder of the week permits must be had from the Park Superintendent's office.

The Camp Superintendent, Mr. W. J. Stephens, is in charge of all field work, receiving his instructions from Camp Director B. G. Rivenburgh after conferring with the Park Superintendent, Landscape Architect, and Park Naturalist. Constant field supervision is given by Landscape Architect Sager.

Civil Works

The work done by the Civil Works crews has been a great boon to the park. Projects accomplished as of February 28 include Volcano House parking area, house painting residential section, widening and grading residential-utility area road.

On February 14 instructions were received from your office to reduce the number of workers 11 per cent per week so as to terminate all projects within 10 weeks. The instructions stated that work must be confined to Federal lands and concentrated on projects already started and to leave them in satisfactory condition so as to safeguard work already accomplished. The message further stated that a return to the original schedule was anticipated, also an allotment of funds through the State CWA specifically for the completion of Federal projects, including expenditures other than labor.

Miscellaneous

Two excursion steamers visited Hilo, bringing hundreds of visitors to the park. One, the City of Los Angeles, was on a Pacific cruise, and the other, the Arandora Star, was on a cruise from London to Honolulu. Details are given under 530.

020 General Weather Conditions

Rainfall for February amounted to 4.63 inches, comparing with 11.38 inches a year ago. Maximum and minimum temperatures were 73 and 45 degrees, respectively. Details are given on official Weather Bureau form attached.

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Weather has been excellent and rainfall none too ample. The CCC camp is in a slightly drier section of the park than the headquarters area, so we have been anxious for rain to fill the new tanks with water, but inasmuch as there was a good supply in the tanks already there, no shortage is threatened.

100 Administration

110 Status of Work

Thanks to the CWA, the status of outside projects is satisfactory. We have been able to speed up the building of parapet walls through the use of CWA employees.

Much delay has occurred in office procedure through inability to carry out the filing scheme projected by former Superintendent Leavitt because of nonreceipt of angle-tab folders. A supply has now been received. Other office work is kept up to date through the strenuous efforts of the employees, who are required to put in constant overtime. This unusual amount of overtime has been occasioned by the great amount of office work involved in getting the ECW program under way. New clerks had to be broken in and bid specifications prepared for materials, camp equipment, cothing, food supplies, medical supplies, etc. The Preliminary Estimates for 1936 were completed the first part of February and mailed on the 14th.

120 Park Inspections

121 Superintendent

The Superintendent made an official trip to Honolulu February 14 to confer with the Army Finance Officer, Fort Shafter, and with Territorial officials regarding ECW matters; and with Principal Highway Engineer E. S. Wheeler, of the Bureau of Public Roads, regarding use of engineering funds for completion of project NR-4.

A trip was made to Maui via airplane February 27 to attend a Chamber of Commerce meeting, at which plans were formulated for a grand opening celebration of the Haleakala Road when it is completed about the end of the year. At this meeting the Superintendent was elected an honorary member of the Chamber of Commerce of Maui.

A fine editorial in connection with the plans for celebration was carried by the Honolulu Star-Bulletin on February 6 commending the spirit of the Maui people in their endeavor to bring to the attention of the people of Hawaii and visiting tourists the sights to be seen on Maui and the beauty of Haleakala Crater.

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While on Maui the Superintendent accompanied Camp Director Penhallow, of the Territorial ECW project on that island, on an inspection of the camp at Keanae. The Superintendent was particularly impressed with the fine, sympathetic understanding of the ECW shown by Mr. Penhallow and of National Park aims and ideals. They had just begun camp construction, and no field work was in progress.

The Superintendent also inspected progress on the Haleakala road project NR-7, in company with the contractor, Mr. E. E. Black. It was noted that improvement in head-wall construction had taken place since the inspection by Landscape Architect Sager. In the evening, the Superintendent had dinner with Road Engineering and Mrs. H. L. Handley, and was joined later by Dr. and Mrs. Howard Powers, of the Geological Survey.

Contacts were made with the following Maui people: Mr. Stafford Austin, President, Maui Chamber of Commerce; Mr. E. J. Walsh, Manager, Grand Hotel; William Crosby, Territorial Forester; H. B. Penhallow, Camp Director, Territorial ECW; W. H. Engle, Bank of Hawaii; C. D. Lufkin, A. G. Martinsen, J. H. Foss, John T. Moir, Judge D. H. Case, Superintendent of Public Schools F. E. Skinner.

Aside from the road opening celebration, these people all were most interested in having a ranger station on that island.

All work projects in the park were inspected.

On February 3-4 the Superintendent made a trip to Kalapana at the request of Father Everest, Catholic Priest, to talk to the people. The Superintendent's talk was written and translated into Hawaiian as the people of Kalapana are almost entirely natives.

122 Special Field Representative

Assistant Landscape Architect Merel S. Sager was engaged in his duties throughout the month in the park, and was at the Kilauea headquarters except for a trip to the Haleakala Section February 12 to 16 to inspect progress on the road under construction there.

125 Other Governmental Officers

Assistant District Attorney Willson C. Moore, of Honolulu, arrived February 9 by airplane to inspect certain records in the park files concerning a former ranger who has placed a claim against the Government.

130 Finance and Accounts

A detailed statement showing the status of park appropriations is attached as Statistical Report No. 8.

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140 Labor Situation

It is feared that the employees being let off from the CWA at the rate of about four per week will not be able to find employment elsewhere. We are advised that the Territorial CWA is not in a position to take on additional workers, but is endeavoring to cut working hours and rates of pay in order to continue employment for its crews for as long as available funds permit.

150 Equipment and Supplies

A copy of the film, "Volcanoes," for use in the park naturalist's lectures at the Uwekahuna Museum, was received, replacing the worn out film on the same subject.

For the ECW one Ford station wagon was received February 3 and one Ford dump truck on February 5. Bids for these and three other ECW trucks were opened on the 3d, but because of the high prices of the local dealers the order for four dump trucks placed by the San Francisco office was increased to seven. A typwriter stand and typist's chair were also received.

170 Plans, Maps and Surveys

Landscape Architect Sager prepared plans for additions to quarters No. 13, Ranger Williams, and quarters No. 15, Park Naturalist. He also began plans for the Haleakala ranger station development.

180 Circulars, Placards, Publicity Bulletins, etc.

Attached are copies of the Volcano Letter, press memoranda, pictures, etc., concerning activities in the park.

200 Maintenance, Improvement and New Construction

210 Maintenance

The usual maintenance of roads and trails and other park property was carried on during the month. Maintenance of automotive and other equipment was materially aided by the assignment of a CWA employee to Mechanic Fischer.

200 Improvements

Improvements by CWA crews on projects previously reported were continued.

230 New Construction

Public Works Project 102.8, Parapet Walls, was carried forward with satisfactory progress. Landscape Architect Sager, in his report for the month, states that the quality of masonry as now constructed is not exceeded by any other park.

260 Landscape Work

Work began by the CCC on sloping shoulders, under the supervision of Mr. Sager. Attention is invited to two of the pictures attached.

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300 Activities of Other Agencies in the Park

317 Status of Authorized Projects of Contractors

Project NR-4, Halemaumau-Bird Park road, was 78 per cent complete at the close of the month, and Project NR-7, Haleakala Road, approximately 24 per cent.

Due to unforeseen construction difficulties involving a shortage of fines and failure of specifications to provide certain items necessary to properly complete Project NR-4, an attempt to get additional funds was made. This has so far been without result. The only alternative is to transfer funds from Project NR-7 by eliminating certain items amounting to $20,000. It is hoped that funds can be provided from other park road projects to complete these two roads as specified. With these two projects completed, only the Mauna Loa road remains of the projects submitted in the National Park Road Program for Hawaii.

400 Flora, Fauna and Natural Phenomena

410 Ranger, Naturalist and Guide Service

Rangers carried on the usual routine duties such as caring for visitors, notably passengers from the steamers City of Los Angeles and Arandora Star; painting and placing signs, maintaining water, sewer and electric systems, superintending CWA crews, etc.

A list of eligibles to fill vacant Position No. 5 was requested.

420 Museum Service

Museum attendance was 986. There were 16 museum lectures to 763 persons and a total of 30 lectures by the Park naturalist to 1,261.

480 Natural Phenomena

There was a total of 257 seismic disturbances registered at the Volcano Observatory, classified as follows: 257 tremors, 11 very feeble earthquakes, 2 feeble, 3 slight, and 1 distant shock. Microseismic motion was exceedingly variable. Tilting of the ground was mainly southwest.

Following repairs consisting of concrete ceiling replacing wall board lining, etc., the Halemaumau seismograph station was reestablished. This is one of three stations located close to the rim of Halemaumau.

The volcanoes Kilauea and Mauna Loa remain without apparent change. On occasions when the sun is back of fuming areas on Mauna Loa, as viewed from Kilauea, the illumination of fume particles from behind makes them gleam and brings them into view by transmitted light, where in reflected light such fume does not show at all. This has been repeatedly demonstrated at Kilauea, where very faint blue fume comes into view in the afternoon over Halemaumau, not visible in the morning. In the same way, Mauna Loa in summer time shows gleaming steam jets on its northeast slope, when the sun is far north, and these are not seen in winter time, and are only seen when the sun is in the west; that is, back of the mountain from the observer.

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500 Use of Park Facilities by the Public

510 Increase or Decrease in Travel

Total travel for February was 38,498, compared with 13,755 for a year ago. The increase for the travel year to date was 341 per cent.

530 Visitors

On February 11 a group of 17 members of the Blue Triangle Club of the Y.W.C.A., under the direction of Miss Louise McConn, Assistant Secretary, visited the park.

On February 16 the S.S. City of Los Angeles, of the Matson-Lassco Line, docked at Hilo on its return from a cruise in the South Pacific Ocean, bringing 235 visitors to Hawaii National Park.

On February 24, Mr. Otis Skinner, noted actor, was a visitor. While here he purchased Hui o Pele membership certificate No. 15106.

On the 24th and 25th, the Newsboys Club of the Hilo Tribune-Herald were park visitors, remaining over night in a cottage outside the park.

On the 26th, the R.M.S. Arandora Star, of the Blue Star Line, London, visited Hilo on an Hawaiian cruise, bringing about 200 visitors to the park.

600 Protection

640 Destruction of Predatory Animals

There were 29 wild goats and 15 wild pigs killed.

900 Miscellaneous

On February 9 Lieutenant C. G. Stevens relieved Lieutenant H. S. Leon as officer in charge at the Navy Health and Recreation Camp.

Articles are appearing from time to time in the public press regarding the expiration of the lease of the Kilauea Military Camp. An editorial appeared in the Honolulu Advertiser of February 7 arguing the value of the Kilauea Military Camp to the Island of Hawaii and the park, as well as to the Army visitors, as a means of furnishing complete change of climate and an interesting place to visit. On the 23rd an editorial appeared in the Hilo Tribune-Herald along the same lines, entitled, "Slash through the Red Tape". Other editorials of a similar nature have since appeared.

On the 16th a member of the cruise of the SS City of Los Angeles visiting the park was reported to have lost a valuable gold watch. A search was made of

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all places visited by the tourists on this day, but the watch was not found. However, another gold watch was found by Ranger Williams, who conducted the search, at one of the lookouts on the Chain of Craters road. Ownership has not yet been established.

On the 25th Park Naturalist John E. Doerr, Jr., reported to the Hilo Memorial Hospital for an operation for appendicitis. The operation was performed February 27. Mr. Doerr will be away from his work for three or four weeks. During his absence Ranger T. W. Barnett is carrying on naturalist activities.

The Honolulu Advertiser of February 25 carried a very interesting article entitled, "Hawaii National Park", a copy of which is attached.

During the month the Superintendent was elected an honorary member of the Maui Chamber of Commerce. He was also invited to become a member of the Executive Committee of the Y.M.C.A. of the island of Hawaii, of which he was already a member of the Advisory Council. The President of the Hilo Chamber of Commerce appointed the Superintendent to serve on the following committees of the Chamber of Commerce, of which he is an active member; - Aloha, Entertainment, and Tourist.

Very respectfully yours,

Edward G. Wingate,
Superintendent.

Inclosures.

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Form No. 1009—Mot'l.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU

COOPERATIVE OBSERVERS' METEROLOGICAL RECORD:

Month of February 1934, *193* ; *Station,* Volcano Observatory *County,* .....

Hour of Observation, ...

State, ...; *Latitude,* .....; *Longitude,* .....; *Time used on this form,* .....

DATE	TEMPERATURE				PRECIPITATION					PREVAILING WIND DIRECTION	CHARACTER OF DAY, SUNRISE TO SUNSET	‡ MISCELLANEOUS PHENOMENA
	MAXIMUM	MINIMUM	RANGE	*SET MAX.	TIME OF BEGINNING	TIME OF ENDING	†AMOUNT	SNOWFALL, IN INCHES	DEPTH OF SNOW ON GROUND AT TIME OF OBSERVATION			
	1	2	3	4	5	6	7	8	9	10	11	
1	59	54	3	63			14	93	Str.	NE	P.C.	
2	60	47	13	52			40	84	"	"	"	
3	61	47	17	58			02	78	"	"	"	
4	65	46	20	52			T	91	Lt.	"	"	
5	65	48	17	55			03	85	"	"	"	
6	65	45	20	56			05	86	"	"	Clear	
7	65	46	20	55			T	84	"	SW	P.C.	
8	63	51	12	56			T	85	Str.	"	"	
9	69	50	19	60			02	72	Lt.	W	"	
10	69	52	17	57			02	90	"	SW	"	
11	68	54	14	59			01	96	"	NE	"	
12	69	54	15	60			01	87	"	SW	"	
13	68	52	16	59			04	88	"	"	"	
14	64	49	15	57			42	82	"	W	"	
15	68	47	21	57			T	78	"	"	"	
16	70	50	20	60			T	78	Mod.	SW	"	
17	69	52	17	59			T	82	"	"	"	
18	69	50	19	59			⅝	59	"	"	"	
19	73	51	22	64			T	80	Lt.	NE	"	
20	66	54	12	58			05	94	"	"	"	
21	60	54	6	57			2.59	93	"	"	"	6A.M. Halemaumau thick steam
22	66	53	13	55			73	90	"	"	"	
23	69	49	20	59			03	77	"	SW	"	
24	72	51	21	63			01	73	"	NE	"	
25	69	50	19	63			04	86	"	SW	"	
26	71	54	17	56			01	85	"	"	"	
27	69	51	18	61			01	71	"	"	"	
28	72	60	12	63			T	82	"	"	"	
29												
30												
31												
SUM.	1873	1419	454	1633			4.63	2319				
MEAN.	67	50	16	59			.16	83				

*Reading of maximum thermometer immediately after setting.
†Including rain, hail, sleet, and melted snow.
‡Thunderstorms, halos, auroras, etc.

(IN TRIPLICATE) See cover for instructions.

8—253
U. S. GOVERNMENT PRINTING OFFICE: 1930

....., *Cooperative Observer.*

Post Office Address, ...

MONTHLY SUMMARY

TEMPERATURE

Mean maximum, 67

Mean minimum, 50

Mean, 58.5

Maximum, 73 ; date, 19

Minimum, 45 ; date, 3, 6, 7

Greatest daily range, 23 - 19th

PRECIPITATION

Total, 4.63; inches ..... ; greatest in 24 hours 2.59

Date, 2/21/34

SNOW

Total snowfall, ... inches

On ground 15th, ... inches

At end of month, ... inches

NUMBER OF DAYS—

With .01 inch or more precipitation, 19

Clear, 1 ; partly cloudy, 27

Cloudy, ...

DATES OF—

Fog { Light, ...
Dense, ...

Killing frost, ...

Thunderstorms, ...

Hail { Light, ...
Moderate, ...
Heavy, ...

Sleet, ...

Auroras, ...

REMARKS:

A little snow was on Mauna Kea throughout the month.
Steam thick at Halemaumau 6A.M. 21st after a night of rain

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10-157
(July, 1929)

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

TRAVEL REPORT

.....Hawaii..... National Park for the month of .....February 1934.....

	This Month	This Travel Year To Date	This Month Last Year	Last Travel Year To Date	Increase for Travel Year	
					Number	Percent
PRIVATE TRANSPORTATION:						
Cars first entry, ...						
Cars reentry, ...						
Motorcycles, ...						
Total motor vehicles, ...						
Persons entering via motor vehicles, ...	37286	201,720	13,309	44,319	157,401	3.55
Persons entering via other private transportation, ...	200	1,068	111	850	218	.25
Total persons entering via private transportation, . . .	37486	202,788	13,420	45,169	157,619	3.48
OTHER TRANSPORTATION:						
Persons entering via ~~stages~~ hotel, .	1012	3,622	335	1,565	2,057	1.31
Persons entering via trains, .						
Persons entering otherwise, . .						
Total other transportation, .	1012	3,622	335	1,565	2,057	1.31
GRAND TOTAL ALL VISITORS, . . .	38498	206,410	13,755	46,734	159,676	3.41

	This Year	Last Year	Increase	
			Number	Percent
Automobiles in public camps during month, ...				
Campers in public camps during month, ...				

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10-158

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF AUTHORIZED PROJECTS

Hawaii National Park for the Month of February 1934

Description of Projects	Percent Constructed To Date	Percent Constructed This Month	Percent Constructed Last Month	Probable Date of Completion
507.13 Road repair over eathquake crack	85 ✓	0	0	
FP 101.8 Pum Huluhulu Trail	98 ✓	0	0	
FP 102.8 Parapet Lookouts Kilauea Iki, etc.	75 95	25	30	
FP 161.14 Employees Qrs. (1)	100	0	2	
FP 162.14 Comfort Stations (2) Lava Tube	95	10	85	

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10-215
(August 1933)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Office of National Parks,
Buildings and Reservations

.....Hawaii..... National Park

R E P O R T O F N O N-A P P O I N T E D P E R S O N N E L
(TEMPORARY)

Changes outside the District of Columbia for the month of .February..... 1934.....

Total at beginning of month	Additions	Separations	Net Gain or loss (a)	Total at ending of month
11	0	4	4	7

(a) If loss, indicate by minus sign.

Note: No employees dismissed by reason of (a) reduced appropriations, or (b) retirement.

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10-159
(May, 1931)

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF PERSONNEL

HAWAII National Park for the Month of FEBRUARY 1934

	This Month		This Month Last Year	
	Appointed	Non-Appointed	Appointed	Non-Appointed
Number of employees beginning of month	16	11	15	7
Number of additions	0	0	0	0
Total	16	11	15	7
Number of separations	0	4	0	2
Number of employees close of month	16	7	15	5
Number of promotions during month	0	0	0	0
Aggregate amount of annual leave taken	0	0	0	0
Aggregate amount of sick leave taken	3	0	0	0
Aggregate amount of leave without pay	0	0	(furlough) 12	0

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10-160

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF PARK REVENUES

Hawaii National Park for the Month of February 1934

	This Year	Last Year
Park revenue on hand beginning of month,	0	0
Received,	0	24.91
Total,	0	24.91
Remitted,	0	24.91
On hand close of month,	0	0.00

Park revenues received this year to date,		275.00
Park revenues received last year to date,		782.39
Increase,	Decrease	507.39
Per cent of Increase,		.64%

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10-161

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF SALES OF PUBLICATIONS

HAWAII NATIONAL PARK - FEBRUARY 1934

	Number	Value	
GOVERNMENT PUBLICATIONS:			
On hand beginning of month,	874	$136.85	
Received during month,	0		
Total,	874	136.85	
Sold during month,	5 7	2.15	6.70
On hand at close of month,	869	134.70	
NON-GOVERNMENT PUBLICATIONS:			
On hand beginning of month,			
Received during month,			
Total,			
Sold during month,			
On hand at close of month,			
Cash on hand beginning of month,		$18.63	7.87
Sales during month,		2.15	6.70
Total,		20.78	14.57
Remitted during month,		12.91	1.85
Balance,		$7.87	12.72

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STATISTICAL REPORT NUMBER 8

FINANCE AND ACCOUNTS

February 1934

Symbol	Appropriation	Allotted	Expended & Obligated	Balance
44415.3	Salaries and Expenses, Hawaii National Park, 1934 - - - - - - - -	$31,392.55	$26,646.55	$4,746.00
44406.3	Forest Protection and Fire Prevention Office of N.P.B. & R. - - - - - - - - - - -	520.00	144.72	375.28
4X436.3	Roads & Trails, Office of N.P.B.& R. - - -	4,382.85	3,282.07	1,100.78
44415 —	Hawaii National Park, 1934 - - - - - - -	2,297.45	2,297.45	0.00
4X436	Roads & Trails, Nat'l. Park; no year - - -	21,862.49	21,862.49	0.00
42/3415 —	Hawaii Nat'l. Park, 1932-33 - - - - - - -	49,350.00	49,319.43	30.57
4-03/5640.8	NIR., Interior, Nat'l. Parks, Roads & Trails, 1933-35 - - - - - - - - - - - - - - -	480,000.00	465,229.82	14,770.18
4-03/5640/14	NIR., Interior, Nat'l. Parks, Buildings & Reservations, 1933-35 - - - - - - - -	11,250.00	6,144.38	5,105.62

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Parapet Walls : - Upper, Thurston Lava Tube

Lower, Waldron Ledge

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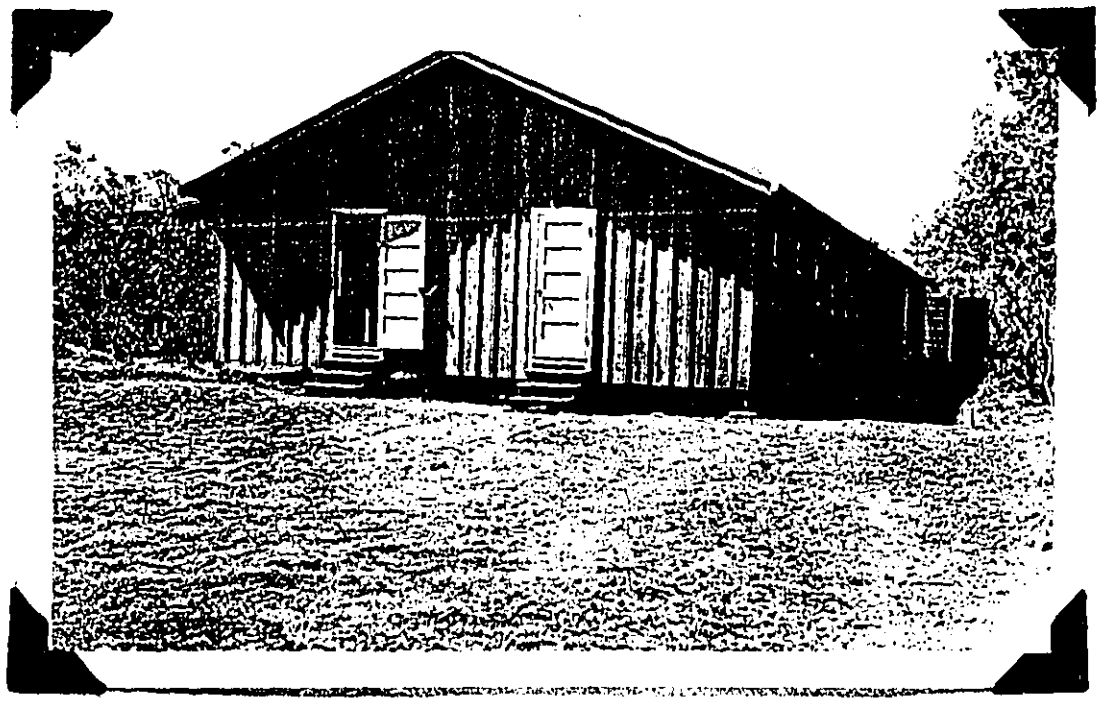

Mess Hall - CCC Camp.

Shovel working in road cut - Haleakala project.

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CCC Men Sloping Shoulders on Park Roads

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Parking areas at Volcano House, extended
and graded by Civil Works employees.

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Excavation for cesspool at CCC camp showing bed of thread-lace scoria at a depth of about five feet. Edge at right has caved in.

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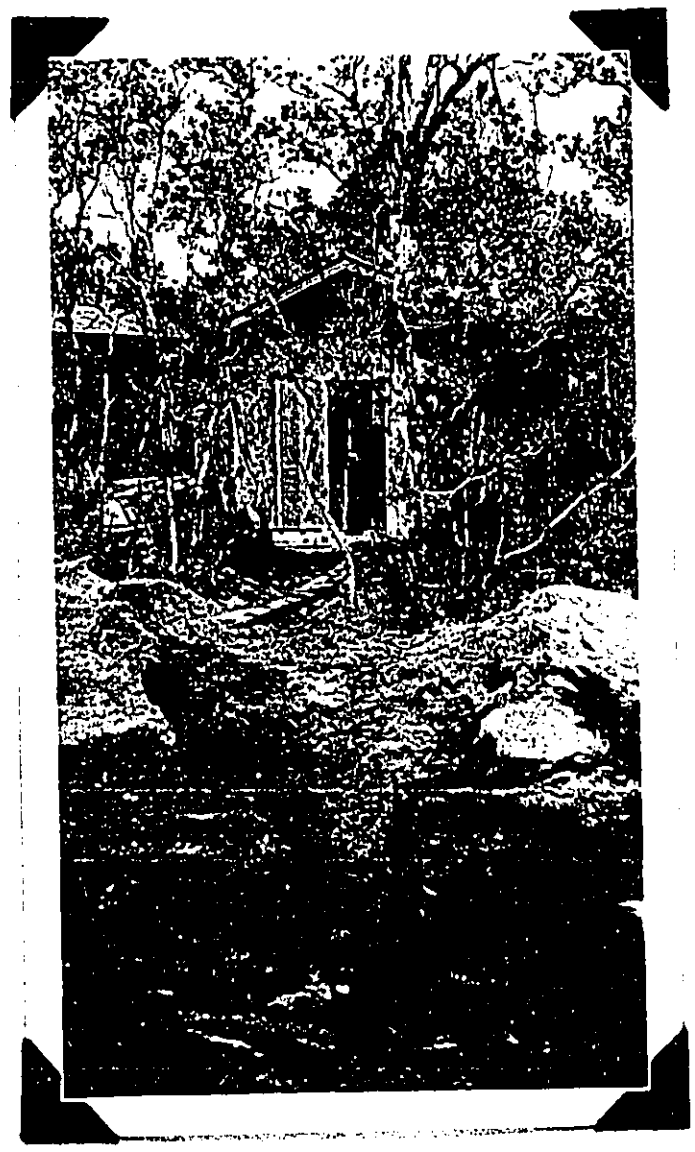

Wash room at CCC camp, and excavation for cesspool in foreground.

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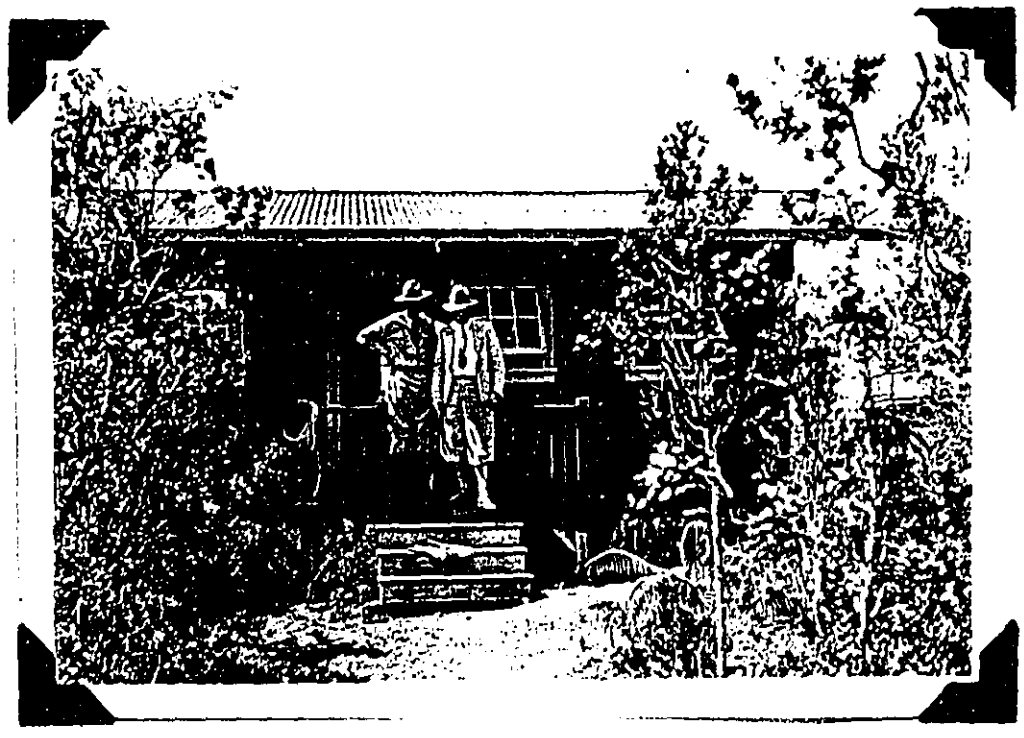

Cottages at Kilauea Summer Camp converted for the use of the Civilian Conservation Corps. Upper, office and officers (left to right), Assistant Director Wright, Camp Superintendent Stephens, and Director Rivenburgh. Lower, dispensary.

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Exerpt from

THE HONOLULU ADVERTISER

Sunday morning, February 25, 1934

**** ****

HAWAII NATIONAL PARK

And Its Volcanoes - Mauna Loa, Kilauea and Haleakala One of the most Interesting Parks in the world.

* * *

Our winter tourist season is at its height. The hotels are teeming with travelers, and our visitors are asking questions. Some have heard of Hawaii National park, and they are now wanting to know how to get there. Part of it is on the Island of Hawaii, and part on Maui.

For the information of those who may be interested and who have not as yet consulted the hotel officials, steamship agents or airway officials, we submit the following taken from a report on Hawaii National Park recently issued in Washington by the department of the interior;

Hawaii National park, in the Territory of Hawaii, was created by act of Congress Aug. 1, 1916, and placed under the control of the National Park service of the department of the interior. It is unique in that it consists of two separate tracts of land lying on different islands.

The Kilauea-Mauna Loa area in located on the Island of Hawaii, and the Haleakala section is on the Island of Maui. The total area of the park is 245 square miles. Of this 219 square miles are in the Kilauea-Mauna Loa section and 26 in the Haleakala area.

Kilauea Volcano

The park was created to conserve the most representative areas of volcanic interest in the United States. Its craters, active and dormant, are among the most important in the entire world, and even the active ones may be visited with perfect safety.

The most spectacularq portion of the park is that including the volcano of Kilauea, usually the most active.

The park is also noted for its luxuriant tropical vegetation, which forms a striking contrast to the volcanic craters and barren lava flows. Gorgeous tree ferns, sandalwood and Koa, or Hawaiian mahogany, vie with the flowering ohia trees in making the park forests unusually interesting to the visitor.

Bird park, also known as Kipuka Puaulu, is an interesting feature of

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the Kilauea area. This kipuka or oasis has escaped encircling lava flows, and its rich black soil supports a marvelous variety of vegetation. As many as 40 species of trees grow here. This favored spot of 56 acres is the haunt of many beautiful and rare native birds.

Thirty-eight miles of highway lie within the Kilauea section. The main roads are paved. One of the roads leads to the very brink of Halemaumau the fire pit, a fact that establishes Kilauea as the most convenient and popular volcano in the world.

From the Kilauea section to the summit crater of Mauna Loa and return is a distance of about 75 miles, and the trip can be made in three days, either riding or hiking. It is customary to leave the hotel at Kilauea on horseback in the morning, riding about 25 miles over the lava to the rest house set in a cinder cone called Puu Ulaula, or Red Hill, at the 10,000-foot elevation. The night is spend here and next day a 25-mile walk or ride to the top and back is made. The second night is spent at the rest house and next day the return to Kilauea is made.

On the journey the air is rare and cool, the view superb and unrestricted for miles around. Wild goats are encountered on the trip. Beautiful lava specimens, with the sparkle of gold and sliver and varicolored brilliants, may be seen on the way.

Haleakala Section

The Haleakala section on the Island of Maui contains one of the largest volcanoes in the world, within the crater of which could be placed an entire city. It was last active in the eighteenth century.

The crater covers an area of 19 square miles and has a circumference of 21 miles. In places it is several thousand feet deep. Inside the crater are hundreds of cinder cones and lava flows, and at the southeast and northwest sections of the crater wall there are low gaps out of which great rivers of lava once poured. Near each gap is a beautiful meadow, with plenty of grass, mamani and sandalwood trees, which furnish shade for camping parties.

The play of light and shadow in the old burned out crater as the sunlight appears and floods the depths is impressive beyond words. At sunset also the views are superb.

The crater is also the home of the rare silbersword plant. It is a large spherical herb with leaves gleaming like polished silver. Only once in a lifetime does it produce a magnificent flower cluster, two or three feet high. After the seeds have matured the entire plant dies.

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HAWAII NATIONAL PARK
HAWAII

FEB 1 1934

[illegible]

President Roosevelt's Emergency work in the interest of conservation is awakening a public consciousness of landscape values that may prove the beginning of a new chapter in American civic history, according to Arno B. Cammerer, head of the Office of National Parks, Buildings and Reservations. In discussing this phase of the reforestation program with Robert Fechner, Director of Emergency Conservation Work, Mr. Cammerer said that many instances of reawakened interest in landscape values had come to him from the 300 camps in National and state parks operated under his supervision. He mentioned specifically the Richmond Battlefield State Park in Virginia where the entire community is cooperating with the C. C. C. camp in its clean-up work. An unsightly shack that blocked the view from the highway of a distant trench line was removed by its owner, and a farmer whose property is adjacent to old Fort Harrison, occupied by both Confederate and Union troops during the attacks on the capital of the Confederacy, removed fence to assist in the plan for roadside beautification in that area. Not to be outdone by his white neighbors, a colored farmer who raises his own pork chops moved his gig pen to a location out of sight of the road.

2-1-34

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The Volcano Letter

No. 407—Monthly U. S. Geological Survey, Hawaii National Park JANUARY, 1934

KILAUEA REPORT FOR JANUARY, 1934

Including weekly press reports 1146 to 1149, December 31 to January 28, midnight.

Section of Volcanology, U. S. Geological Survey
T. A. Jaggar, Volcanologist in Charge

Volcanology:—Kilauea

The first week in January, 1934 Halemaumau remained quiet as before. The second week the pit showed the effects of heavy rainfall after drought. The rainfall readings for twenty-four hours preceding, at 8 a. m. were 1.37 inch January 10, 0.87 inch on January 11, 1.40 inch on January 12, and 0.29 inch on January 13, measured at Kilauea Observatory on the northeast rim of Kilauea crater. The heavy rains began the night before January 10. As seen from the west bluff of Kilauea, a dense vapor cloud appeared to be rolling out of Halemaumau pit. The actual fact was that the cloud was condensing on top in the air above the pit. The entire lava bottom was perfectly clear with no steam whatever except the usual slight vaporing from cracks under the south talus. The wind blew lightly from the northeast and the condensation of ordinary rain moisture began above the northeast edge of the pit. The big cumulus cloud above was probably assisted by nucleation from sulphur dioxide rising at the bottom solfataras. The heat from the pit made an updraft which drew in the wet air from the sides. The phenomenon showed how deceptive a so-called "steaming crater" might be anywhere on a wet day, where the observer was not in a position to look inside. This is the position of many sea-captains observing an island volcano "steaming". On a sunny day the crater in question would be clear, but the reports of two successive vessels would be for the volcano "active" and "inactive", when in fact there was no difference except the moisture in the air.

On January 11 there was the same cloud, the interior of the pit was clear, it was raining steadily. Now there were tails of steamy vapor in a horseshoe of cracks in the floor of Halemaumau SE, NE and NW where the prolonged rain had penetrated deeply to the hot region. There was clear air for eight hundred feet above the vapor jets, which had no evident relation to the cloud above the pit. The southwest inner cone, of December 1931, was not steaming. The next day January 12, with less rain, the vapor tails on the floor had stopped, and the cloud above the pit as a whole, was thin and stringy. There was drizzle, and a bright clearing sky.

On January 14 some stones were heard dribbling down the northwest inner slopes of Halemaumau. Fresh fallen rocks at the foot of the northeast talus were observed January 18. Small slides occurred later in the day, and fresh sliding occurred the morning of January 24, leaving a piece broken out of the northwestern end of the "Canoe" sill under the north corner of the pit. In the afternoon of the same day while the pit was vaporing from more heavy rains, rocks were heard falling at the north wall. Blue fume was apparent in the darkened corners of the pit in sun-shadow January 26. It is noteworthy at this time, however, that the yellow sulphur patches in Halemaumau do not show fume jets or hot air disturbance detectable with field glass, and they are not the places which steam at times of rainfall.

Weekly rim crack points, 37 in number, around the Halemaumau border, were measured for change in opening of cracks as follows:—

January 6, 1934. 7 points opened, 2 closed, summation 3 millimeters opening.

January 13, 12 points opened, 1 closed, summation 7 millimeters opening.

January 20, 3 points opened, 9 closed, summation 3 millimeters closing.

January 27, 5 points opened, 2 closed, summation 1.5 millimeters opening.

The summation of January 20 was unusual: opening by this amount is common.

Volcanology:—Mauna Loa

There were numerous thunder showers over Mauna Loa the third week in January, with calm weather preceding, and light snow fell on Mauna Loa and Mauna Kea. The recent lava eruptions in Mokuaweoweo crater, it will be remembered, were from December 2 to 17, 1933, followed by marked rain cumulus condensations due to convection on certain days. These upright clouds are still seen occasionally, especially when moisture from melting snow is present.

Ranger R. F. Lueck, National Park Service, and T. Generozza, U. S. Army, spent the night January 6 to 7 in Mokuaweoweo crater at the cone center of the December activity. Arriving at the North Bay 1:30 p. m. January 6, Lueck reports the fume had decreased in ten days 75 percent. They crossed the crater floor southward. Lueck kindly prepared the following *report*:—"*We came to the* new floor flow, which had turned west to follow the channel between the 1903 and 1914 cones. The new lava was smooth pahoehoe, broken up at the edges, where it was in contact with the old lava."

"We crossed it, the heat was quite noticeable, and this became more pronounced as we neared the base of the new cones. We finally reached them and there found a place on the fresh lava, where we thought we could spend the night in comfort and safety. Our ideas were suddenly changed, when, at 5:45 p. m. we felt a distinct shock, and at 5:48 another, of less intensity. As there was not much choice of a more suitable location, we stayed where we were."

"After we had crawled into our sleeping bags, we heard a series of rumbles, and occasional sharp cracks, which seemed to originate directly under us. The rumbling was not continuous, but came at intervals of three or four minutes. After about two hours of this, we began to think of a lot of places we would rather be than just here. At 8 p. m. we felt a shock more severe than any we had felt before, so we proceeded to leave that particular spot, as fast as our legs would carry us in the night, across the pumice beds and rough lava. We got to the edge of the new flow to the north of us, and decided to make the best of the situation, making our beds a second time, in a deposit of new warm pumice. During the night we noted several more light shocks, but none was severe enough to cause great alarm. At daylight we packed our belongings, and left for the return trip."

T.A.J.

Earthquakes

TABLE

Number of minutes of tremor; numbers of very feeble, feeble, and slight earthquakes; teleseisms or distant earthquakes; and local seismicity index as described in Volcano Letter 371.

Week ending 1934	tr.	v. f.	f.	sl.	tel.	seis.
January 7	26	4	0	0	0	8.50
January 14	52	1	0	2	1	17.50
January 21	31	0	1	0	0	8.75
January 28	24	5	0	0	0	8.50

The following earthquakes were located:

A very feeble shock was felt 11:22 p. m. January 2, 1934, at Honomu, Waikii, and Kilauea. It was located under the peak of Mauna Kea, 19° 50′ N, 155° 27.5′ W, at a shallow depth, probably being above sea level.

A very feeble shock at 8:06 p. m. January 6, approximate origin 21 miles away, was probably the sharp quake reported by Lueck at Mokuaweoweo.

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January 7 two very feeble quakes were recorded 15 minutes apart. The first 3 miles deep under the pit seismograph station; the other was shallow about two miles SW of Kilauea Crater in the SW rift zone.

A slight earthquake was felt 1:59 a. m. January 9 at Hookena, Kapapala, Pahala, and Kilauea. It was located under the Mauna Loa SW rift 19° 12.5′ N, 155° 44.0′ W and shallow in depth.

A slight earthquake was felt generally in Hawaii at 1:35 p. m. January 13. It was located under the sea bottom 19° 11′ N, 155° 11′ W, possibly 10 miles deep.

A tremor originated at a shallow depth about a mile SW of Kilauea crater January 16. It was recorded on the Uwekahuna and Pit seismographs and was in almost the same place as the one located November 30, 1933.

Two shocks felt at Honomu January 17 and 21 were not recorded at Kilauea. The former recorded at the Hilo seismograph station with indicated distance to origin 10 miles.

A feeble shock, not reported felt, was recorded at 9:37 p. m. January 19. It was located on the Kilauea SW rift, under the 1823 lava flow 19° 14′ N, 155° 25.5′ W.

A very feeble shock was recorded January 25. The best location found for it was four miles deep under the Kamakaia Hills on the Kilauea SW rift, about 10 miles SW of the crater.

The teleseism was one of the destructive Indian earthquakes, near Patna in the Ganges basin. It began on the record 10:31:44 p. m. January 14. In all six groups of waves were recognized, the last group beginning at 11:02:33 p. m. The waves were not large in amplitude.

Microseisms: Subnormal January, 1, 2, 12, 16, 17, 18, 19, 21, 23, 24, 25, 26, 27; normal January 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 20, 22, 28.

A.E.J.

Tilting of the ground

In the Table of Tilt below, the first column shows the net tilt by weeks as computed from seismograms at the Kilauea Observatory, which is on the northeast rim of Kilauea crater, 2.2 miles from Halemaumau.

The second column shows the algebraic sum of the readings at three clinoscope cellars around Halemaumau pit, reduced each to its radial direction, outward away from, and inward in the direction of, the center of Halemaumau.

The Table represents the tipping of the ground, in seconds of arc, in the direction given.

At the Observatory, a northeast reading is away from the crater, a southwest reading is in the direction of the crater.

At the Observatory the total accumulated tilt in the year since January 1, 1933, is 1.9″ west and 1.1″ north, or 2.2″ NW by W.

TABLE OF TILT

Date	Observatory	Halemaumau
Jan. 1 – Jan. 7	1.82″ ESE	15.0″ inwards
Jan. 8 – Jan. 14	1.59″ S by E	11.0″ inwards
Jan. 15 – Jan. 21	0.12″ W	2.0″ outwards
Jan. 22 – Jan. 28	2.38″ SW	15.0″ outwards

A.E.J.

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PHYSICAL EXAMINATION
CIVILIAN CONSERVATION CORPS
HAWAII NATIONAL PARK

Enrollee _____

Eyes _____ Hair _____ Complexion _____ Height _____ Weight ____
Girth of chest (at nipples): At expiration _____; inspiration _____ in.
General examination (physique, skin, head, chest, abdomen, extremities, etc.)

_____

_____

General surgical conditions (including hernia, hemorrhoids, varicose veins, and state of abdominal wall and viscera) _____

_____

Organs of locomotion (including bones, joints, muscles, and tendons)

_____

_____

Genito-urinary system _____

Vision: Right eye _____ Left eye _____ Eye conditions _____

Hearing: Right ear _____ Left ear _____ Ear, nose, and throat conditions _____

Teeth (strike out those that are missing; circle those that may be restored)

	Right	Left
Upper	8 7 6 5 4 3 2 1	1 2 3 4 5 6 7 8
Lower	8 7 6 5 4 3 2 1	1 2 3 4 5 6 7 8

Mouth and gums _____

Cardio-vascular system (including functioning of kidneys) _____

_____

Lungs _____

Neuro-psychiatric examination _____

Remarks _____

_____

_____

Examined by _____

Date _____ Camp Surgeon.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

Dear Sir:

Please report on _____ for enrollment in the Civilian Conservation Corps. You will be given medical examination here.

Very truly yours,

B G Rivenburgh

B. G. Rivenburgh,
Director E.C.W.

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THE TERRITORY OF HAWAII)
COUNTY OF HAWAII)
HAWAII NATIONAL PARK, HAWAII)

In the performance of Contract N o. _____, dated _____

Purchase Order No. _____, dated _____

Delivery Order No. _____, dated _____

for furnishing _____, I (we) and each of my (our) sub-contractors, if any, have complied strictly with all the provisions of the applicable approved code of fair competition for the trade or industry or subdivision thereof concerned or, if there be no approved code of fair competition for the trade or industry or subdivision thereof concerned, then with the provisions of the President's Reemployment Agreement promulgated under authority of Section 4 (a) of the National Industrial Recovery Act, and all supplies furnished under such contract have been produced in strict compliance with such code or agreement, as the case may be.

_____

_____

Subscribed and sworn to before me this _____ day of _____ 193_

_____

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EMERGENCY CONSERVATION WORK FINANCE OFFICE

HAWAII NATIONAL PARK, HAWAII

In order that this office may comply with recent instructions of the War Department in reference to Purchasing of Supplies or Services, certificate indicated below must be made by the vendor, and filed with the voucher covering such purchase. The certificate may be furnished as a separate document or may be placed on the invoice.

It is requested that the attached invoices be certified accordingly and returned to this office so that payment may be expedited.

* *

"It is hereby certified that in the execution of this order or contract I (or we) have complied with all provisions of the applicable code of fair competition for the trade or industry or subdivision thereof concerned approved under authority of the National Industrial Recovery Act, approved June 16, 1933 (Public No. 67, 73rd Congress), or if there be no approved code of fair competition for the trade or industry or subdivision thereof concerned, then with the provisions of the President's Reemployment Agreement promulgated under authority of Section 4 (a) of that Act or any amendment thereof.

I (or we) further certify that where the supplies furnished were not mined, produced, or manufactured in the United States, the special or general code of fair practice has been complied with on that portion of the order or contract executed by me (or us) within the United States.

It is hereby warranted that all un-manufactured articles, materials or supplies furnished under this agreement have been mined or produced in the United States, and that all manufactured articles, materials, or supplies have been manufactured in the United States from articles, materials, or supplies mined, produced, or manufactured in the United States, except as noted below or otherwise indicated herein.

I certify that the above bill is correct and just, and that payment therefor has NOT been received."

* *

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1934

Item	Article	Price
1.	Apples, No. 2½ tin	_____
2.	Apples, No. 10 "	_____
3.	Apples, Evap.5lb. "	_____
4.	Apple butter, No 10 "	_____
5.	Applesauce, 20-oz. "	_____
6.	Apricots, No. 2½ "	_____
7.	Apricots, No. 10 "	_____
8.	Apricots, Evap. lb.	_____
9.	Asparagus tips, No.1 "	_____
10.	Asparagus, No. 2½ tin	_____
11.	Bacon, lb.	_____
12.	Beans, white Navy, lb.	_____
13.	Beans, red kidney, lb.	_____
14.	Beans, lima, dried, lb.	_____
15.	Beef, corned,2-lb. tin	_____
16.	Baking Powder, No.1 "	_____
17.	Baking Powder, No.5 "	_____
18.	Blackberries, No. 2 "	_____
19.	Blackberries, No.10 "	_____
20.	Blueberries, No. 2 tin	_____
21.	Bread, white, small loaf	_____
22.	Bread, white, large "	_____
23.	Butter, lb.	_____
24.	Biscuits, pilot, lb.	_____
25.	Cinnamon, ground ¼ lb.	_____
26.	Cinnamon sticks, pkg.	_____
27.	Cloves, ground, ¼ lb.	_____
28.	Cheese, full cream,lb.	_____
29.	Cherries, No. 2½ tin	_____
30.	Chocolate, plain, lb.	_____
31.	Chocolate, vanilla,lb. sweet	_____
32.	Clams, whole, 5 oz.tin	_____
33.	Cocoa, ½ lb. tin	_____
34.	Cocoa, 5 lb. tin	_____
35.	Catsup, Tomato, No. 10 tin	_____
36.	Corn, sweet, No.2 tin	_____
37.	Corn, whole kernel No.2 tin	_____
38.	Cornmeal, yellow, lb.	_____
39.	Crackers, graham, lb.	_____
40.	Crackers, salty, lb.	_____
41.	Crackers, soda, lb.	_____
42.	Dressing,mayonnaise,qt.	_____
43.	Eggs,island, fresh,case	_____
44.	Eggs, California, case	_____
45.	Extract,lemon, 8oz.	_____
46.	Extract, vanilla, 8oz.	_____
47.	Flour, family, lb.	

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48. Flour, pancake, lb. _____
49. Grapefruit, juice, 10oz.tin ____
50. Ginger, ground, ½ lb. _____
51. Ham, whole, lb. _____
52. Honey, 12 oz. bottle _____
53. Jam, assorted, No.2 tin _____
54. Coffee, Kona,roasted & ground _____
55. Cream of Wheat, pkg. _____
56. Lard substitute, lb. _____
57. Macaroni, 20 lb. box _____
58. Milk, evap. tall, tin _____
59. Mincemeat, 1 lb. tin _____
60. Molasses, 37 oz. _____
61. Mustard, prepared,8oz.jar _____
62. Mustard, dry, lb. _____
63. Nutmeg, ground, 4 oz. _____
64. Oil, cooking, 5 gal. _____
65. Oats, rolled, lb. _____
66. Olives, ripe, 9 oz. tin _____
67. Paprika, 2 oz. _____
68. Peaches, No. 2½ tin _____
69. Peaches, No. 10 tin _____
70. Peaches, evaporated, lb. _____
71. Peanut butter, lb. _____
72. Pears, No. 2½ tin _____
73. Pears, No. 10 tin _____
74. Jello, assorted, pkg. _____
75. Pineapple juice _____
76. Peas, dry, split, lb. _____
77. Peas, green, No. 2 tin _____
78. Pepper, black, ¼ lb. _____
79. Pepper, cayenne, 4 oz. _____
80. Pickles, cucumber,keg,gal. ____
81. Plums, No. 10 tin _____
82. Poi, fresh, lb. _____
83. Prunes, dried, lb. _____
84. Pumpkin, No. 2½ tin _____
85. Raisins, seedless, pkg. _____
86. Raisins, seedless, lb. _____
87. Rice, 100 lb. bag _____
88. Salt, table, lb. _____
89. Salt, Hawaiian, lb. _____
90. Spaghetti, lb. _____
91. Sardines, tin _____
92. Salmon, salt _____
93. Salad, fruit, No. 2 tin _____
94. Sauerkraut, No. 10 tin _____
95. Shrimp, dried, lb. _____
96. Shrimp, No. 10 tin _____
97. Syrup, corn, qt _____
98. Soda, baking, lb. _____
99. Sugar, white, granulated, lb. _____

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100. Sugar, powdered, 1 lb. pkg. _____

101. Tapioca, 1 lb. pkg. _____

102. Tea, lb. _____

103. Tomatoes, No. 2½ tin _____

104. Tomato juice _____

105. Vinegar, cider, gal. _____

106. Potatoes, Irish, lb. _____

107. Potatoes, Sweet, lb. _____

108. Onions, dry, lb. _____

109. Cabbage, lb. _____

110. Carrots, without tops, lb. _____

111. Beets, " " lb. _____

112. Turnips " " lb. _____

113. Beans, string, lb. _____

114. Tomatoes, fresh, lb. _____

115. Pineapples, fresh, lb. _____

116. Peppers, green, lb. _____

117. Peppers, red, lb. _____

118. Beans, lima, fresh, lb. _____

119. Beef, island, whole or sides, lean, (at slaughter house) lb. ___

120. Beef, island, whole or sides, lean, (delivered) lb. _____

121. Beef, island, fat, whole or sides (at slaughter house) lb. ___

122. Beef, island, fat, whole or sides (delivered) lb. _____

123. Pork, domestic, lb. _____

124. Mutton, Island, lb. _____

125. Mutton, imported, lb. _____

126. Veal, island, lb. (slaughter house) _____

127. Veal, island (delivered) _____

128. Chicken, island, dressed drawn, stewing, lb. _____

129. Chicken, island, dressed drawn, roasting, lb. _____

130. Lamb, imported, lb. _____

131. Lamb, island, lb. _____

132. Fish, fresh, lb.

Aku _____

Mahimahi _____

Ono _____

Opelu _____

Uhu _____

Akule _____

Kala _____

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

February 8, 1934.

The Director,
Office of National Parks, Buildings and Reservations,
Washington, D. C.

Dear Mr. Director:

Following is the administrative report for Hawaii National Park for the month of January 1934:

000 General

010 Matters of Importance

The outstanding event of the month was the beginning of Emergency Conservation Work in Hawaii National Park with an appropriation of $121,373. Actual start was made with the appointment, on January 16, of Howard H. Wright, of Hilo, as Assistant Director and Quartermaster. Mr. Wright's experience in the Navy fits him admirably for this position. On January 17, Bertram G. Rivenburgh, of Honolulu, was appointed Director. Mr. Rivenburgh, who is a former Commissioner of Public Lands of the Territory of Hawaii, was active at the time the Hawaii National Park was established by act of Congress, and was the first representative of the Department in Hawaii.

An achievement to which the people of Hawaii attach great importance was the successful flight of six Navy planes from San Francisco on January 10 and 11. When information was received, from the Navy Radio Station, Hilo, of the landing of the planes at Pearl Harbor at 12:35 p.m. the 11th, the Superintendent sent a message of congratulations to Lieut. Comdr. Knefler McGinnis, who was in charge of the flight, extending a cordial invitation to visit Hawaii National Park. Commander McGinnis later visited the park in company with Admiral A. W. Johnson, when the Navy had a number of sea and air craft in Hilo waters on maneuvers. A few days ago the press published an item indicating that Commander McGinnis had been ordered to report to Washington for duty in the Bureau of Aeronautics.

On January 10, the Kilauea Military Camp surgeon, who had been examining the CWA workers in Hawaii National Park, reported that two of the men were suspected of having leprosy. The Public Health officer was called, and after further examination one of the men was released and the other was sent to Honolulu for observation.

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020 General Weather Conditions

The total rainfall for January was 9.01 inches, greatly relieving the long dry spell of six months and replenishing depleted water supplies. This figure compares with 16.29 inches for January 1933 and 12.29 inches normal. The greatest in 24 hours was 1.40 inches on January 12.

The maximum temperature was 72 degrees on January 1 and the minimum 46 degrees January 30, and the mean for the month was 59.26 degrees. The greatest daily range was 24 degrees on the 30th.

On January 31 a cumulus convection cloud was noted during the early morning over Halemaumau. Although this phenomena is common during eruptions or at other times when heat rises from the fire pit, it has not been observed frequently in recent months.

Snow fell on Mauna Loa and Mauna Kea and remained during the first few days of the month.

100 Administration

110 Status of Work

All work is up to date, except filing. The Superintendent and the Chief Clerk are required to work every night and Sundays and holidays to keep up with the volume of work and to keep informed of instructions that come with every mail.

120 Park Inspections

121 Superintendent

The Superintendent, accompanied by Acting Chief Ranger Christ and Laborer Henry Kini as packer-guide, made a three-day trip January 3 to 5 to the summit of Mauna Loa for the purpose of locating a site for the Hui o Pele rest house. On the 8th, 9th, and 10th, a trip around the island was made with Ranger Christ and Landscape Architect Sager for the purpose of inspecting Federal aid road projects and making contacts with local residents.

122 Special Field Representative

Assistant Landscape Architect Merel S. Sager, of the San Francisco office, who has been in the park since October, returned to Kilauea headquarters on January 5 from an inspection trip to the Haleakala Section. His services are proving valuable in guiding the work of the road contractor, E. E. Black, Ltd., the projects under the Civil Works and Public Works programs, and Emergency Conservation Work.

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125 Other Governmental Officer

Pierce Williams, field representative of the Civil Works Administration, was sent to Hawaii to stabilize the CWA programs in the Territory, arriving in Honolulu from the mainland January 3. In company with H. A. Mountain, CW Administrator for Hawaii, he arrived at Hilo by airplane on January 12 and spent the night at the Volcano House. Conferences were had with these officers on the 12th and 13th.

130 Finance and Accounts

A detailed statement showing the status of park appropriations is attached as Statistical Report No. 8.

140 Labor Situation

When it became known that there was to be a 200-man CCC camp in the park, a number of persons expressed the opinion that there would be some difficulty in obtaining that number of young men. Events have since proved that there are that number and many more young men eligible as enrollees, at present hanging around the homes or the streets and unable to do anything for their own betterment. It is inspiring to observe the eager young men filling out their applications.

There are several road jobs in the city of Hilo which are employing large numbers of men both under County of Hawaii and CWA programs.

150 Equipment and Supplies

The CWA program in Hawaii National Park required the hiring of an additional dump truck during the month. There are now three rented trucks working with the park trucks.

For the ECW office there were received three desks, two typewriters and stands, and one typist's chair.

180 Circulars, Placards, Publicity Bulletins, etc.

Attached are copies of circulars issued by the park and the ECW officers, the Volcano Letter, Nature Notes, and press memoranda. There are also a number of pictures showing various park projects under way or completed.

200 Maintenance, Improvement and New Construction

210 Maintenance

The usual maintenance of roads and trails and other park property was carried on during the month. The mechanic put in 149 hours on maintenance of gasoline engines and automotive equipment.

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820 Improvements

There were a number of improvements, representing largely work done by CWA crews. Probably the most important of these was the widening to 20 feet of the utility area road, making it wide enough for two-way traffic for its entire length. The main road between the Hilo entrance and park headquarters was cleared of dead fern fronds and tree branches, and of exotics, including the hardy blackberries. A very dense thicket of blackberry vines at the Hilo entrance was cleared away (see pictures). The parking area at the Volcano House was enlarged and leveled. Because of the closed-in location of the Volcano House, there has always been a shortage of parking space heretofore during times such as visits of around-the-world vessels or dances.

230 New Construction

Construction was begun on the comfort station at the Thurston Lava Tube on January 10, and at the close of the month the work was 85 per cent complete. Construction was also begun on the ECW mess hall and two bunk houses, and rapid progress was made. At the close of the month the construction work at the ECW camp was 35 per cent complete.

260 Landscape Work

A CWA worker has been assisting Laborer Kauhi in the care of grounds at administration headquarters.

300 Activities of Other Agencies in the Park

310 Public Service Contractors

314 Complaints

There have been occasional complaints on the part of the CWA workers boarded at the Volcano House regarding the character of meals served them. The park staff have kept close watch on this matter, however, and results have been satisfactory.

317 Status of Authorized Projects of Contractors

Project NR-4, Halemaumau-Uwekahuna-Bird Park road was 34.8 per cent complete at the close of the month; Project NR-7, Haleakala Road was 13.3 per cent complete. Both jobs are making very satisfactory progress and weather conditions have not materially hampered. There were a few days at Uwekahuna when the workmen labored through hard rains.

400 Flora, Fauna and Natural Phenomena

410 Ranger, Naturalist and Guide Service

The rangers during the month carried on regular routine jobs of maintaining telephone and electric lines, water and sewer systems, roads and trails, giving service to the public, filling in on office duty and the switchboard (a CWA clerk is regularly assigned to this duty, but is off week-ends), etc. In addition rangers were placed in charge of various CWA crews working in the park.

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The Park Naturalist made one field trip (to Mauna Iki and the 1790 foot-prints) with 7 in attendance, conducted 12 auto caravans with 30 cars and 347 in attendance, and gave 19 lectures with 824 in attendance. The total contacts made was 1,905.

420 Museum Service

Museum attendance was 727, with 12 lectures and 567 attending the lectures.

480 Natural Phenomena

A visit to the summit of Mauna Loa, and a night spent in the crater, by Temporary Ranger R. P. Lueck and a companion, on January 6, 19 days after active, visible, lava movement, disclosed that there was still considerable adjustment going on. The men spent the night at the very center of the activity and experienced a number of earth shocks, one of them, about 8 p.m., being larger than the others and strong enough to register as a very feeble shock at the Volcano Observatory with indicated distance to origin 21 miles. In addition to the numerous shocks there was rumbling which so disturbed the men that, after two hours of darkness, they moved as rapidly as they could, being without flashlights, to the edge of the new lava, and made their beds in a deposit of warm pumice.

During the night there were several more light shocks, but none severe enough to cause undue alarm. At daylight they packed and climbed out of the crater for the return trip down the trail. They reached headquarters late in the evening.

There was little or no change at Halemaumau throughout the month. Crack measurements showed no unusual opening or closing of rim fissures.

Following heavy rains, a heavy vapor cloud, as seen January 10 from the west bluff of Kilauea Crater, appeared to be rolling out of Halemaumau pit, and the casual observer not visiting the pit would have said the pit was steaming violently after the rain. When the pit was visited a short time later, the same cloud was rolling off from the top, and the entire lava bottom was perfectly clear with no steam whatever. There was the usual slight vapor at the south talus. The wind was blowing lightly from the northeast, making a reverse eddy at the south and inside the pit. The condensation of ordinary rain moisture sent up a big cumulus cloud, beginning at the northeast edge. Probably this condensation was assisted by nucleation from sulphur gas rising in the pit. Also the heat of the pit made an updraft which drew in the wet air from the sides. The whole phenomenon showed how deceptive a steaming crater (so-called) anywhere might be on a wet day.

The next day had the same cloud. The pit was clear, rain was falling steadily, and there were tails of steamy vapor in a horse shoe coming up cracks in the floor where the rain had penetrated deeply to the hot region. These steam jets had no evident relation to the cloud outside above the pit as a whole; there was clear air for 800 feet above them.

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Seismic disturbances were recorded as follows: 196 tremors, 13 very feeble shocks, 26 feeble, and 2 slight shocks. In addition, there were three distant earthquakes, one of which beginning 10:31:44 p.m. January 14 probably being the disastrous one near Patna in the Ganges basin of India.

Microseismic motion was light to normal during the first week of the month, normal during the second week, and subnormal thereafter. Tilting of the ground by weeks was slight SSE, moderate SE by E, slight S, moderate SW and NE.

There were numerous thunder showers over Mauna Loa during the week ending January 21, and light snow on that mountain and on Mauna Kea.

490 Miscellaneous

The third extension course conducted by the Park Naturalist for the University of Hawaii was completed during the month. Registration for a spring semester course in Historical Geology was held on January 30. At present only 10 students have registered. There is a possibility that a few others will register at the next meeting of the class. Up until this school year, a territorial law made it necessary for teachers in the public schools to earn a certain number of credits per year. Extension courses were naturally more popular while the law was in effect than during the present year.

500 Use of Park Facilities by the Public

510 Increase in Travel

The travel records show an increase of 134,933 visitors this travel year to date, or 409.49 per cent.

530 Visitors

The Misses Alice Booth and Claudia Cranston, of New York City. The MissBooth is make-up editor of Good Housekeeping Magazine, while Miss Cranston is a staff writer. There was sufficient time during their stay to give them a tour of the park and a trip to Mauna Iki and the 1790 footprints in the Kau Desert. With Dr. Jaggar, they were luncheon guests of the Superintendent one day.

On January 30, Lieut. Comdr. Knefler McGinnis, who commanded the flight of six Navy plans from San Francisco to Honolulu, visited in company with Admiral A. W. Johnson. While their craft were in Hilo waters, a dinner was given in their honor by the people of Hilo at the Hilo Yacht Club which the Superintendent attended.

Mr. Chauncy J. Hamlin, President of the Buffalo Society of Natural Sciences, was one of about 200 persons who visited the park January 31, passengers from the RMS Franconia, on a cruise around the world.

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January 31, Miss Maurine Watkins, play-writer, of Hollywood; member of the cruise of the RMS Franconia.

A number of prominent people visited the park as passengers from this ship. Among them were Commander and Mrs. C. J. T. Bradshaw, Devon, England. Commander Bradshaw is a retired officer of the Royal Navy; and Mrs. James Oliver Curwood, Owosso, Michigan.

On the same date 108 Navy men visited, on shore leave from a group of Navy craft which were in Hilo waters on maneuvers.

600 Protection

640 Destruction of Predatory Animals

There were 39 wild goats and 20 wild pigs destroyed during January.

900 Miscellaneous

Civil Works

L. W. Branch, chairman of the Civil Works Administration program for the Island of Hawaii, announced in the local press of January 2 that $400,000 was available for the Territory of Hawaii, of which $200,000 was for the Island of Hawaii. He further announced that this would be increased to $850,000 within a few weeks. The allotment to Hawaii National Park for the period ending February 15, 1934, was $10,073.50.

In Honolulu, CWA funds were directed to control of disease sources such as fighting mosquitoes and exterminating rats. In Hilo, these funds will aid in building a much needed sewer system.

On January 1, Hawaii National Park had 46 CWA workers, while at the end of the month there were 44.

Emergency Conservation Work

In a letter from the Director dated January 27, we were advised that the establishment of the ECW program for Hawaii National Park and the Territorial portion of the project were made two separate programs, with Superintendent Wingate having authority for the park portion comparable to that possessed by Governor Lawrence M. Judd for the Territorial portion of the total Hawaii program. The letter further stated that due to the fact that Hawaii was so far removed from Washington, discretionary power concerning the ECW activity in this park was being granted to the Superintendent, and that any other arrangement would be conducive to excessive delays and would materially reduce the efficiency of the ECW administration.

Quoting further from this letter: "You have a unique opportunity in the case of this camp, since you have complete jurisdiction over the administration and business management, as well as the work activity, with the Army participating only to the extent of disbursing and account of funds

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through the Finance Officer, U. S. Army, Fort Shafter, T. H. This office will watch with a great deal of interest the relative efficiency displayed by a camp operating under the total supervision of a park superintendent as compared to the normal ECW camp prevailing here in the States, where the housing, discipline, recreation, and feeding and clothing of the men are handled through the Army organization."

The ECW camp in Hawaii National Park is the most remote camp of this kind, being 1,500 miles farther from Washington, D. C., than Mt. McKinley.

Miscellaneous

On January 30 the news was received of the appointment by President Roosevelt of Judge J. B. Poindexter, of Honolulu, as Governor of Hawaii. Thus ends the long controversy over the selection of a Democratic governor for Hawaii. Judge Poindexter is held in high esteem in the Territory. The Superintendent sent a radio message congratulating him on his appointment and expressing the wish that good health and happiness would attend his administration. The appointment will take effect as soon as Congressional approval is obtained.

Presidential authority was received by radio January 3 to fill park ranger position formerly occupied by Everett Brumaghim. No action has been taken toward filling this position, awaiting receipt of register of eligibles from the Civil Service Commission, Washington.

On January 5, Captain L. C. Boineau relieved Lieutenant Paul K. Porch as Adjutant of the Kilauea Military Camp. Captain Boineau will succeed Captain Waine Archer as Commanding Officer of the camp in July, when the latter will be ordered to the mainland.

On January 7 the Hilo YWCA announced that Mrs. John E. Doerr, Jr., wife of the Park Naturalist, would conduct a class in interior decorating during the spring semester. Mrs. Doerr instructed an extension course under the University of Hawaii in the fall.

At the close of the month work was begun on assembling data for the 1936 Preliminary Estimates.

An incident of interest occurred on January 8 when Mr. Bernard E. Smith while visiting the park office was called by telephone from New York City by Mr. Gene Tunney. Mr. Smith had just registered when the call came in, so that Office Ranger K. J. Williams was able to call Mr. Smith to the phone. As Mr. Smith suggested at the time, this was the first trans-Pacific-transcontinental telephone call handled in the park. Mr. Smith, a retired business man from New York, was visiting the park with his wife and two children, escorted by Mr. Earl Thacker, a leading business man of Honolulu.

Very respectfully,

Edward G. Wingate,
Superintendent.

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Form No. 1009—Met'l.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU

COOPERATIVE OBSERVERS' METEROLOGICAL RECORD:

Month of January, *193 -* ; *Station,* Volcano Observatory.; *County,* Kau

Hour of Observation,

State, Hawaii; *Latitude,* ; *Longitude,* ; *Time used on this form,*

DATE	TEMPERATURE				PRECIPITATION				Wind		CHARACTER OF DAY, SUNRISE TO SUNSET	‡ MISCELLANEOUS PHENOMENA
	MAXIMUM	MINIMUM	RANGE	*SET MAX.	TIME OF BEGINNING	TIME OF ENDING	†AMOUNT	Rainfall, in inches	DEPTH OF SNOW ON GROUND AT TIME OF OBSERVATION	PREVAILING WIND DIRECTION		
	1	2	3	4	5	6	7	8	9	10	11	
1	72	51	21	63			T.	80	--	--	P.C.	
2	71	54	17	58			07	87	Lt.	N.E.	"	Lt. snow M. Kea
3	71	54	17	59			37	94	"	"	"	
4	71	54	17	69			01	69	"	"	"	
5	66	52	14	60			T	90	Mod.	"	"	
6	70	50	20	61			01	80	"	"	Clear	
7	66	52	14	57			T	90	"	"	P.C.	
8	67	51	16	57			T	84	Str.	"	Clear	
9	68	51	17	56			0	90	Mod.	"	P.C.	
10	61	56	5	57			1.37	94	Lt.	"	Cloudy	
11	62	566	6	58			87	94	"	"	"	
12	58	56	2	57			1.40	97	"	"	"	
13	63	52	11	53			.29	94	Mod.	"	P.C.	
14	62	54	8	57			.90	97	"	"	"	
15	66	52	14	55			.11	91	Lt.	"	P.C.	
16	63	52	11	59			.03	93	"	"	"	
17	65	47	18	55			.10	81	"	"	"	
18	61	51	10	58			.03	89	"	"	Cloudy	
19	61	49	12	57			.57	89	"	"	P.C.	
20	68	52	16	58			.18	90	"	"	"	
21	67	50	17	57			.08	86	"	N.W.	"	
22	69	51	18	57			.16	91	"	N.E.	"	
23	68	50	18	57			.04	85	"	W.	"	
24	65	55	10	59			.25	98	Mod.	N.E.	Cloudy	
25	62	55	7	58			1.26	94	Lt.	S.W.	"	
26	67	54	13	56			.64	86	"	"	P.C.	
27	67	55	12	59			.05	98	"	"	"	
28	69	53	16	62			.16	87	"	N.E	"	
29	70	51	19	60			T	86	"	S.W.	"	
30	70	46	24	59			T	75	"	"	"	
31	67	55	12	60			.06	78	"	"	"	Convection cloud over pit.
SUM.	2053	1621	432	1806			9.01	2727				
MEAN.	66	52	13.94	58			.29	87.97				

*Reading of maximum thermometer immediately after setting.
†Including rain, hail, sleet, and melted snow.
‡Thunderstorms, halos, auroras, etc.

(IN TRIPLICATE) See cover for instructions.

8—253
U. S. GOVERNMENT PRINTING OFFICE: 1930

..., *Cooperative Observer.*

Post Office Address, ...

MONTHLY SUMMARY

TEMPERATURE

Mean maximum, 66.23

Mean minimum, 52.29

Mean, 59.26

Maximum, 72; date, 1

Minimum, 46; date, 30

Greatest daily range, 24 - 30th

PRECIPITATION

Total 9.01; inches 1.40; greatest in 24 hours

Date, 12th

SNOW

Total snowfall, ... inches

On ground 15th, ... inches

At end of month, ... inches

NUMBER OF DAYS—

With .01 inch or more precipitation, 24

Clear, 2; partly cloudy, 23

Cloudy, 6

DATES OF—

Fog { Light, ...
Dense, ...

Killing frost, ...

Thunderstorms, On Mauna Loa, 20,21,22

Hail { Light, ...
Moderate, ...
Heavy, ...

Sleet, ...

Auroras, ...

REMARKS:

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10-157
(July, 1929)

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

TRAVEL REPORT

.....Hawaii..... National Park for the month of ...January 1934.....

	This Month	This Travel Year To Date	This Month Last Year	Last Travel Year To Date	Increase for Travel Year	
					Number	Percent
PRIVATE TRANSPORTATION:						
Cars first entry, ...						
Cars reentry, ...						
Motorcycles, ...						
Total motor vehicles, ...						
Persons entering via motor vehicles, ...	40643	164,434	9,476	31,010	133,424	430.22
Persons entering via other private transportation, ...	228	868	95	739	129	17.46
Total persons entering via private transportation, . .	40,871	165,302	9,571	31,749	133,553	420.65
OTHER TRANSPORTATION:						
Persons entering via hotel cars, .	398	2,610	499	1,230	1,380	112.11
Persons entering via trains, .						
Persons entering otherwise, . .						
Total other transportation, .	398	2,610	499	1,230	1,380	112.11
GRAND TOTAL ALL VISITORS, . .	41,269	167,912	10,070	32,979	134,933	409.49

	This Year	Last Year	Increase	
			Number	Percent
Automobiles in public camps during month, ...				
Campers in public camps during month, ...				

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10-158

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF AUTHORIZED PROJECTS

Hawaii National Park for the Month of January 1934

Description of Projects		Percent Constructed To Date	Percent Constructed This Month	Percent Constructed Last Month	Probable Date of Completion
507.13	Road repair over earthquake crack	85	0	0	
FP 101.8	Puu Huluhulu Trail	98	0	0	
FP 102.8	Parapet Lookouts, Kilauea Iki, etc.	50	30	10	
FP 161.14	Employees Quarters (1)	100	2	13	
FP 162.14	Comfort Stations (2) Lava Tube,	85	85	0	

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10-215
(August 1933)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Office of National Parks,
Buildings and Reservations

.....Hawaii..... National Park

R E P O R T O F N O N-A P P O I N T E D P E R S O N N E L
(TEMPORARY)

Changes outside the District of Columbia for the month of ..January..... 1934.....

Total at beginning of month	Additions	Separations	Net Gain or loss (a)	Total at ending of month
7	5	1	4	11
No dismissals by reason of (a) reduced appropriations or (b) retirement.				

(a) If loss, indicate by minus sign.

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10-159
(May, 1931)

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATUS OF PERSONNEL

Hawaii National Park for the Month of January 1934

	This Month		This Month Last Year	
	Appointed	Non-Appointed	Appointed	Non-Appointed
Number of employees beginning of month	16	7	15	6
Number of additions	0	5	0	1
Total	16	12	15	7
Number of separations	0	1	0	0
Number of employees close of month	16	11	15	7
Number of promotions during month	0	0	0	0
Aggregate amount of annual leave taken	0	0	0	0
Aggregate amount of sick leave taken	0	0	3	0
Aggregate amount of leave without pay	0	0	0	8

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10-160

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF PARK REVENUES

Hawaii National Park for the Month of January 1934

	This Year	Last Year
Park revenue on hand beginning of month,	0.00	0.00
Received,	25.00	109.65
Total,	25.00	109.65
Remitted,	25.00	109.65
On hand close of month,	0.00	0.00

Park revenues received this year to date,	$275.00	
Park revenues received last year to date,	757.48	
Increase, / / / / / / / / / Decrease	482.48	
Per cent of increase, do	~~482.48~~	63%

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10-161

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

REPORT OF SALES OF PUBLICATIONS

Jan 36

	Number	Value
GOVERNMENT PUBLICATIONS:		
On hand beginning of month,	904	$135.80
Received during month,	16	14.50
Total,	920	$150.30
Sold during month,	46	13.45
On hand at close of month,	874	$136.85

NON-GOVERNMENT PUBLICATIONS:		
On hand beginning of month,		
Received during month,		
Total,		
Sold during month,		
On hand at close of month,		

Cash on hand beginning of month,	$16.88	
Sales during month,	13.45	7.45
Total,	$30.33	24.33
Remitted during month,	5.70	5.70
Balance,	$24.63	18.63

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STATISTICAL REPORT NO. 8

FINANCE AND ACCOUNTS

January 1934

Symbol	Appropriation	Allotted	Expended & Obligated	Balance
44415.3	Salaries & Expenses, Hawaii National Park 1934	23,600.00	25,184.21	HE 1,584.21
44406.3	Forest Prot. and Fire Prevention, Office of N. P. B. & R. 1934	520.00	143.72	376.28
4X436.3	Roads & Trails, Office of N. P. B. & R.	4,382.85	3,282.07	1,100.78
44415	Hawaii National Park, 1934	2,859.72	2,859.72	0.00
4X436	Roads & Trails, Nat'l Park: no year	21,862.49	21,862.49	0.00
42/3415	Hawaii Nat'l Park, 1932-33	49,350.00	49,339.60	10.40
4-03/5640.8	NIR., Interior, Nat'l Parks, Roads & Trails, 1933-35	480,000.00	83,760.05	396,239.95
4-03/5640.14	NIR., Interior, Nat'l Parks, Buildings & Reservations 1933-35	11,250.00	5,695.26	5,554.74

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Hawaii National Park

NATURE NOTES

VOLUME THREE NUMBER THREE
1933
J.E.D.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF NATIONAL PARKS
BUILDINGS, AND RESERVATIONS

HAWAII NATIONAL PARK
NATURE NOTES

Volume III May - June, 1933 Number 3

Nature Notes from Hawaii National Park is a bimonthly pamphlet edited by the Park Naturalist, and distributed to those interested in the natural features of the park. Free copies may be obtained from the office of the Park Naturalist, address, Hawaii National Park, Hawaii. Anyone desiring to use or publish articles appearing in Nature Notes may do so. Please give credit to the author and pamphlet.

E. G. Wingate, Superintendent *John E. Doerr, Jr, Park Naturalist*

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Nene - The Hawaiian Goose

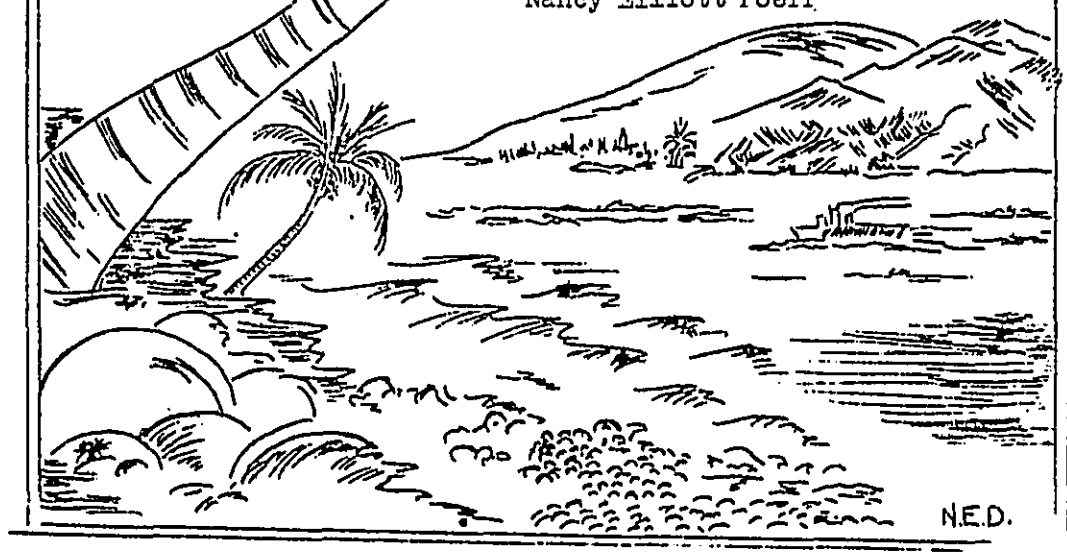
by John E. Doerr, Jr.

Rocks in Hawaii National Park - Volcanic Glass, A Common Rock

by John E. Doerr, Jr.

Credit for the diagrams on pages 23, 25, 27, and 37 is due

Nancy Elliott Doerr



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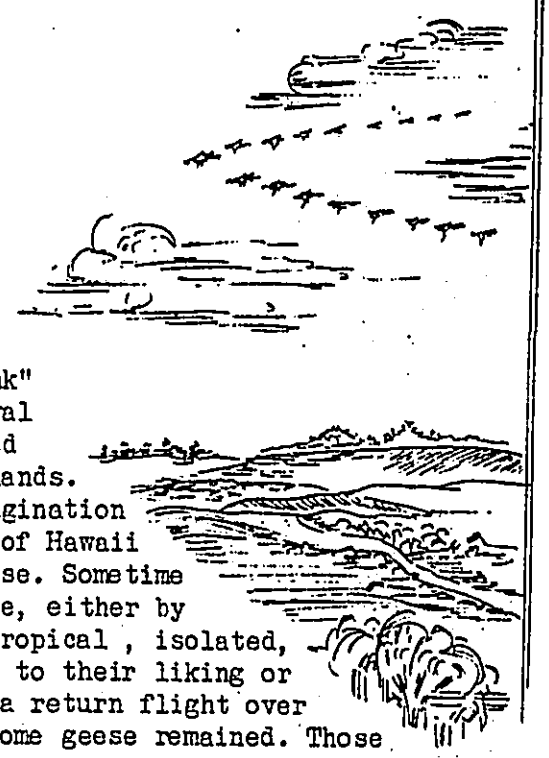
NENE
THE HAWAIIAN GOOSE



Introduction

Hawaii has seldom if ever experienced seeing the famous flying-wedge formation of a flock of geese. The "honk-honk-k'wonk" of the Canada Goose migrating southward across a fall sky or northward with the spring is not heard in Hawaii.(1) Perhaps - centuries ago - the "honk-honk-k'wonk" of geese did announce the fall arrival and the spring departure of feathered visitors along the shores of the islands. At least no great stretch of the imagination is required to visualize the shores of Hawaii as the winter feeding-ground for geese. Sometime in the distant past geese did migrate, either by instinct or accident, to these sub-tropical , isolated, oceanic islands. Finding the islands to their liking or else lacking the courage to attempt a return flight over thousands of miles of ocean water, some geese remained. Those that settled in the islands gave rise to a species of goose which is strictly Hawaiian, a goose which in some respects resembles the Canada Goose whose migration. up and down the Mississippi Valley is a sure sign of changing seasons.

Adjustment to a New Environment

When the stock of geese, from which the Hawaiian Geese developed, came to the islands, they were confronted with the problem of adjusting themselves to an environment where seasonal changes are not distinct. There is no reason to believe that the original geese could have reached Hawaii except by flying over the present expanse of ocean which separates these islands from continental land masses. To make such a flight they must have lived in close proximity to water, hence it seems logical to assume that the geese that settled in Hawaii chose the salt marshes along the coast as their first home. The uniformly warm climate of the salt marshes must have dulled their migratory instincts which had formerly caused them to migrate with the seasons. The "malahini" (stranger) geese

(1) Refer to the footnotes on Page 37.

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must have been somewhat confused when they discovered that summer is perpetual in Hawaii. They must have adapted themselves to the uniformity of climate along the coast until such a time when they had the courage to seek a cooler climate in the mountain region in the interiors of the islands.

The original geese were no doubt confronted with the problem of adjusting themselves to a food supply which offered few seasonal changes. The food in Hawaii was entirely different perhaps than anything they had previously experienced. Maybe the original geese ate the strange Hawaiian berries with the same degree of curiosity that people visiting Hawaii eat "poi", "limu", and "opihi".(2) Perhaps at first the geese did not like the food in Hawaii; however, they ate the food that nature had provided.

The geese very fortunately selected a new home sufficiently isolated so that their natural enemies could not reach them. No animals which prey on geese existed in the islands, hence the problem of adjustment was largely one of new food and geographic environment. The original geese - equipped by nature with a degree of wisdom and the ability to adjust themselves - wisely adapted themselves to the islands. As a result they thrived, giving rise to an interesting but not widely known species of goose, the "nene" or Hawaiian Goose.(3)

Description

The "nene" or Hawaiian Goose is not unlike the familiar Canada Goose (Branta canadensis) of North America, particularly in coloring. The mantle of feathers over the backs and wings of both birds is grayish-brown, the brown being more predomiant on the "nene". Both have gray breasts fading to white or soiled-white underneath black tail feathers. The barred appearance, due to the tips of the body feathers being white, is more pronounced on the "nene". The greatest difference in the coloring of the Canada Goose and the Hawaiian Goose is on the neck. The "nene" has a black head, the black extending a little below the eyes and two to five inches down the back of the neck. Except for two white patches below the eyes, the remainder of the neck is brownish-gray marked with distinct diagonal brown bars. The head and neck of the Canada Goose is black except for the pronounced white band extending from eye to eye below the head. The white patches below the eyes of the "nene" are not sufficiently defined to refer to them as a "white band" as in the case of the Canada Goose. The bills and feet of both species are black. Like all members of the goose family, the plumage of the male and female "nene" differ only slightly. The black on the head of the female extends somewhat farther down the throat and occupies a greater space below the eyes than on the male.

The "nene's" boat-like body is slightly more erect than that of the Canada Goose, due no doubt to the fact that the native goose of Hawaii has forsaken the usual water haunts of geese for the dry upper slopes of Hawaii's volcanic mountains. The "nene" average about 22 inches in length, being somewhat smaller than the Canada Goose but about the size of the Black Brant (Brenta nigricans). The "nene's" tail is about 6 inches long, its wing 14 to 15 inches. The middle toe with claw measures about 3.5 inches in length.

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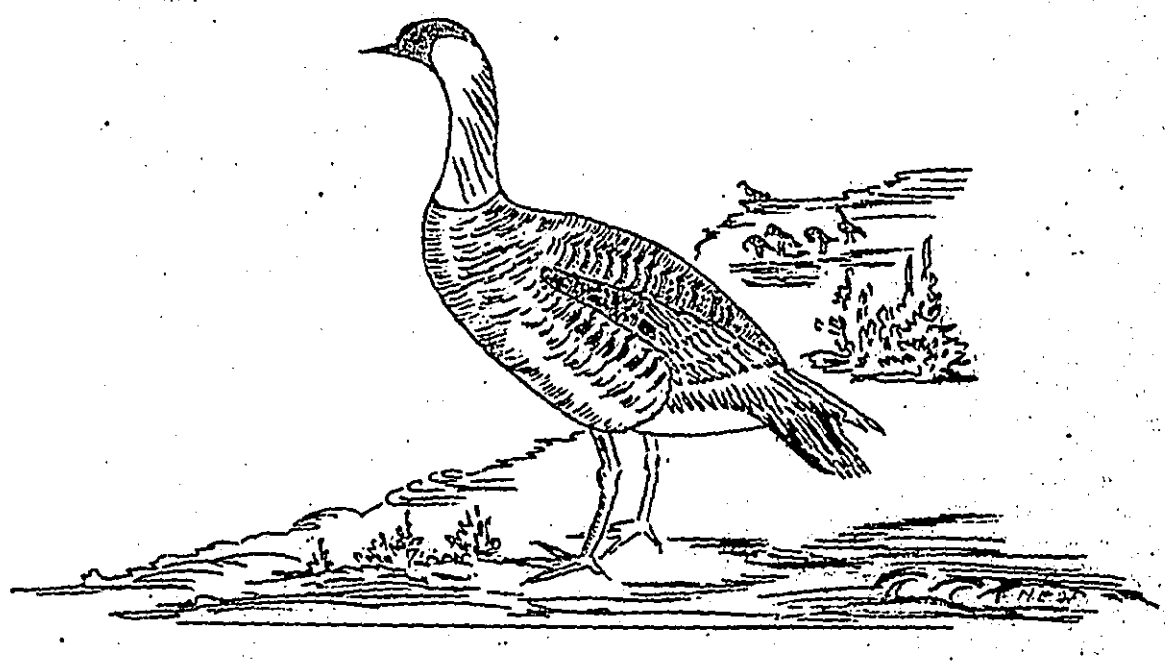
Habits

To all outward appearances the "nene" have all the physical features characteristic of members of the goose family; however, their habits are distinctly different, in fact so different that someone has described the "nene" as "strange birds". It would be logical to expect the "nene" - being geese - to frequent the seashore or bodies of water. Their relatives do, and their ancestors lived in close proximity to water. Instead of living near a body of water the "nene" are and have been since the earliest records, inhabitants of the dry or semi-arid mountain regions on the islands of Hawaii and Maui. They live at an elevation of from 5000 to 7000 feet, descending to lower regions during the winter months or when the food supply at high elevations becomes exhausted. In the mountain regions there are only occasional, small, shallow pools of rain water, too small to permit the "nene" to make use of their faculties for swimming; nevertheless, these mountain geese have webfeet like their relatives. In much of the area frequented by the Hawaiian Geese there is only a scant covering of scrubby vegetation on slightly disintegrated lava flows. H. W. Henshaw describes the "nene" in their natural habitat as follows. "The bird has lived so long amid its novel surroundings that it has become entirely weaned from the habits of its kind, and never enters water, but is in all essential respects a land goose". (4)



NENE ~ NESOCHEN SANDVICENSIS

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Reverend William Ellis, the English Missionary, gave one of the first written accounts of the "nene".(5) During his trip around the island of Hawaii in 1823, he heard reports concerning large flocks of wild geese that lived in the interior of the island. He actually saw two flocks of wild geese come down from the mountains and settle among the "ohelo" bushes (Vaccinium reticulatum) near the sulphur bank on the north rim of Kilauea Crater. From the reports and the experience of seeing the geese, Reverend Ellis concluded that there must be large ponds or lakes in the interior of the island to which the geese resort. His conclusion was logical but not correct. There were no ponds or lakes in the interior. He experienced seeing land geese that did not resort to bodies of water.

Equally surprising as the fact that the "nene" do not frequent bodies of water is the fact that they are not conspicuous as birds of flight. They fly near the ground and not over long distances. There is no evidence proving conclusively that the "nene" migrated even as far as from one island to another. The presence of the birds on the islands of Hawaii and Maui may have been brought about by the Hawaiian people sailing between the islands. There is no record that the "nene" inhabited the other islands of the group.

"Nene" build their nests on the ground among low bushes or in clumps of grass. A hollow pile of dirt or twigs lined with down plucked from the breasts of the old birds serves as a nest. Three is the usual number of eggs in a setting although at times as many as six have been reported. The eggs are creamy white and about the size of a common goose egg. During the month the goose is on the nest her mate the gander is quite a helper; he is not too proud to sit on the nest while his mate goes for food or a walk. If the goose wishes to leave the nest when the gander is not around to take her place, she covers her eggs with down for the double purpose of hiding them as well as keeping them warm. Once a goose and gander have paired off they will return to each other each mating season and to the same nest. Because the birds return to the same nest season after season it has been possible for persons to rob particular nests year after year.

With the arrival of spring -- the usual time for mating and nesting among birds - the "none" forget all about thoughts of love. The nesting season for "nene" begins in the late fall and may last until April or a little later. By spring the goslings, led around by the old birds during the period of molt, can take care of themselves, and the old birds with new feathers are ready to move to the mountains for the summer months. Though such is not the orthodox procedure among the other members of the goose family, it is the procedure - a wise one too - for a goose living in Hawaii.

"Nene" are easily domesticated. H. W. Henshaw, in his publication, "Birds of the Hawaiian Islands", mentions several places where the "none" have been domesticated and raised in confinement. (6) In 1833 a pair was given to the Zoological Society of London.(7) Since then a number of Hawaiian Geese have been raised in captivity in England.

At the present time Mr. Herbert Shipman has a flock of 28 "nene" at the Shipman ranch at Keaau, on the northeast coast of the island of Hawaii. The Shipman flock shows no desire to forsake their seacoast home for the mountain regions of the island. The flock is very tame. The birds are not at all concerned when a stranger walks within two feet of them. Unlike wild "none", they frequent the marsh land and pond. Two years ago a wild male Canada Goose came to the Shipman ranch at Keaau and joined the domesticated flock of "nene". To-day the Canada Goose and the "nene" live

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peacefully together as though they are one and the same species. Perhaps they are of a common stock. The congenial relationship that exists between the Canada Goose and the "nene", even during the mating season of the latter, does not indicate that the two species originated in widely separated places. Centuries of isolation in Hawaii could have brought about the slight difference in the markings and size of the two species.

The domesticated "nene" at the Hind ranch at Puu Waawaa in Kona seem perfectly content to enjoy their freedom, obtain food, and live in close proximity to the ranch buildings even though just a few miles away is the region which was once the favorite feeding-ground of numerous flocks of wild Hawaiian Geese. The "nene" at Puu Waawaa live at an elevation of approximately 2750 feet above sea level, in a region devoid of ponds of water. In addition to the domesticated flocks already mentioned, the Fish and Game Commission of the Territorial Board of Agriculture and Forestry have a flock of 18 "nene" at the game farm at Makapu, Oahu.(8) This flock was started from two pair in 1927.

Domesticated flocks show no concern at the approach of strangers. Recently a pair of "nene" feeding along the driveway at Puu Waawaa seemed only slightly curious about the clicking of a camera held within twelve feet of them. They stopped just long enough to strike what appeared to be a pose. Having their pictures taken is probably an almost everyday occurrence.

"Nene" become quite attached to certain people. They have been known to follow their owners on several occasions for a number of miles. These unique geese have a sense of loyalty not only to individual people but also to each other. If one bird of a flock is injured, the remainder will not leave their companion. Because of such loyalty entire flocks have been killed easily. Like the geese kept in the citedel of Rome to warn the Roman garrison of the approach of enemies, the wild "nene" were kept in captivity by Hawaiian families for the purpose of giving warning of the approach of strangers.

Food

The "nene's" food consists largely of berries and tender grasses. The "o-he-lo" berry (Vaccinium reticulatum) is a favorite with the Hawaiian Geese. The "ohelo" is recognized in Hawaii as a berry sacred to the Goddess Pele. It is related to and not unlike the common cranberry. The "o-he-lo pa-pa" (Fragaria chiloensis) a small but very delicious wild, white strawberry which grows on the islands of Hawaii and Maui between 4000 and 6000 feet elevation, is a much desired food during the late spring and summer months. Growing abundantly above 4000 feet is a creeping plant with shiny black berries. This particular plant, a member of the coffee family, is known in Hawaii by the modern name "le-po-ne-ne" (Coprosma ernodeoides), and by the older names, "pu-ne-ne" and "ku-kai-ne-ne". The"ne-ne" in each name is a reference to the Hawaiian Goose which eats the black fruit of the plant. The small, pithy, white and maroon colored berries of the "pu-ke-a-we" (Cyathodes Tameiameiae) or "Hawaiian Heather", and the small black berries of the "po-po-lo" (Solanum nodiflorum), a non-poisonous species of nightshade, are food for the "nene". The common sow thistle (Sonchus oleraceus) or "pu-a-le-le" is also a common food.

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"Nene" vs Man

One has no difficulty when seeing "nene" for the first time in recognizing them as geese. Although their habits and mode of living are different from all other wild geese, they have all the physical features which characterize them as geese. Maybe there is a reason why the "nene" have remained as recognizable members of the goose family. Perhaps they chose to retain the long neck, boat-like body, web-feet, and the wings of their kind - even though living in the semi-desolate mountain regions - because of some ancestorial pride in the form which nature gave them. If the "nene" have retained goose-like characteristics because of ancestorial pride, one might visualize somewhat of a parallel in the racial pride exemplified by man when he migrates to lands distant from his ancestorial home. Man - in the animal kingdom not a very distant relative of the goose - migrating to strange lands desires to retain the features characteristic of his ancestors. Perhaps the "nene" visualized a time when they might wish to forsake Hawaii for the usual haunts of other members of their "race". If so, maybe they retained faculties for swimming and flying to aid them in leaving Hawaii, had it become necessary for them to do so. Man migrating to distant lands makes some provision - in thought is not in action - for returning to the home from which he departs.

The few domesticated flocks of "nene", and occasional pairs reported in the mountains are all that are left of the once very numerous wild flocks of Hawaiian Geese. For centuries before the first exploring ship brought the rest of the world in contact with Hawaii, the "nene" were acclimated and living peacefully in regions seldom visited by the Hawaiian people. These birds had given up the water habits of their kind to live on the upper slopes of the volcanoes of the islands. Nature provided the geese with the ability to live in Hawaii as it was before the explorers and traders landed. Nature failed to provide the "nene" with the ability to adjust themselves to the rapid changes brought about by man desiring to develop the islands for profit.

Guns fired in Hawaii have slautered entire flocks hovering around in defense of injured companions. Cattle, introduced and permitted to run wild, must have done some damage to the nests of the birds; likewise herds of wild goats roaming over the mountain slopes. The mongoose, introduced to exterminate the rats in the inhabited sections, invaded the upland home of the "nene", plundered the nests and killed the goslings. For over forty years no wild "nene" have been reported on the island of Maui. Even after 1900, laws permitted the killing of "nene" between September 15 and February 1, the season for nesting and a time when the birds needed the most protection. (9) To-day, when "nene" are very very rare, there is no open season.

Perhaps it is nature's desire that each species shall live only for a small interval of time; if so, it seems that the "nene" are rapidly approaching the end of their alloted span of existence and soon their name will be added to the list of native birds that once inhabited the forests and mountains of Hawaii.

John E. Doerr, Jr.
Park Naturalist

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ROCKS IN HAWAII NATIONAL PARK

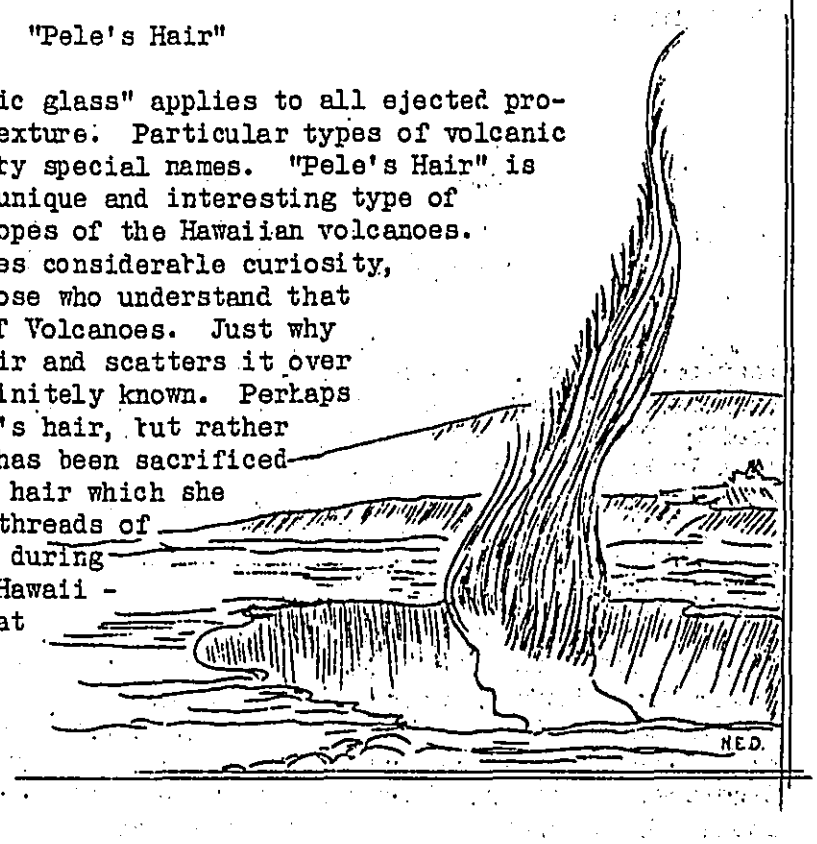
VOLCANIC GLASS - A COMMON ROCK

(Editor's Note - This is the third of a series of articles describing the common rocks in Hawaii National Park. For a description of "Basalt" and "Basalt Porphyry" refer to Nature Notes, Volume III, No. 1, and 2, 1933.)

Rocks that float on water, rocks that can be heated and held in one's hand without injury, rocks that resemble human hair, rocks that feel like wool fiber, and rocks that are shiny black attract more attention than all other volcanic products in Hawaii National Park. These unusual rocks with unique properties are classified as volcanic glass. In appearance volcanic glass is very different from all other rocks in the region, but from the standpoint of chemical composition there is no distinguishable difference. Volcanic glass is the result of very rapid solidification or "freezing" of ejected molten lava. Unlike other rocks which have crystalline or stony texture, this particular volcanic product is uncrystallized, having solidified so rapidly that mineral grains or crystals could not form. It has the luster and appearance - all the properties - of glass.

"Pele's Hair"

The term "volcanic glass" applies to all ejected products having glassy texture. Particular types of volcanic glass are recognized by special names. "Pele's Hair" is the name of the most unique and interesting type of glass found on the slopes of the Hawaiian volcanoes. The name itself arouses considerable curiosity, particularly among those who understand that Pele is the Goddess of Volcanoes. Just why Pele pulls out her hair and scatters it over the island is not definitely known. Perhaps it is really not Pele's hair, but rather the human hair which has been sacrificed to the Goddess, human hair which she has transformed into threads of glass. Nevertheless, during volcanic activity in Hawaii - that is when Pele is at home - many drops of molten lava are thrown into the air. As the drops rise from the



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fountains and the boiling lava lakes they draw or pull out thin, hair-like tails of liquid which solidify instantly to glassy threads of "Pele's Hair". These greenish yellow, hair-like fragments of volcanic glass may be carried by the wind for many miles. Ultimately they are deposited in cracks and on the lee side of knobs and hills. There are a number of places in the Kau Desert, southwest of Kilauea Crater, where "Pele's Hair" has accumulated to a depth of three inches; one known deposit is over fifteen inches thick.

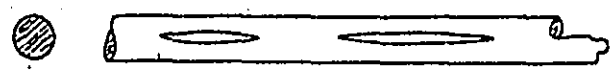

FIG. 1. LONGITUDINAL AND END VIEW OF A "HAIR" WITH INCLUSIONS

"Pele's Hair" is rock, drawn out to a glassy thread. It may be compared to a thread made by heating and pulling apart a glass rod. Unbroken threads of "Pele's Hair" are seldom found. It is not uncommon to find fragments 15 to 18 inches long. The longer "hairs" are flexible, the short ones very brittle. There is some variation in the texture or size of "hairs"; some have such a small diameter that

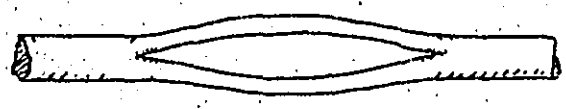

FIG. 2. NEEDLE-EYE HOLE

they can hardly be distinguished by the naked eye. An accumulation of the finer "hairs", usually dirty-yellow in color, is known as "Pele's Wool". The "wool" feels surprisingly springy and soft when pressed lightly between the fingers. Most of the glass threads have diameters comparable to human hair, some being slightly coarser than horsehair.

The minute detail of individual as well as a mat of "hairs" can be seen only under a microscope. The above sketches and those on the opposite page illustrate highly magnified fragments of "Pele's Hair". A microscopic examination of many "hairs" indicates that in general they are round and have smooth surfaces. The broken ends of threads are jagged. Many of the coarser or larger "hairs" are marked by two or more longitudinal grooves which suggest that the larger tails of liquid on drops tended to separate into several tails during the drawing-out process. In cross-section the outline of a grooved "hair" looks like a figure 8. Inside the transparent glass threads there

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are numerous, somewhat cigar-shaped, gaseous inclusions. The very pointed, cigar-shaped inclusions formed when bubbles of gas and vapor were drawn out in the tails of liquid lava. Even the smallest of "hairs" contain the inclusions. (Refer to Figure 1 on the opposite page.) There is evidence that some of the bubbles broke out on opposite sides of the liquid tails, resulting in needle-eye holes in the "hairs". Figure 2 is a sketch of a needle-eye hole. In a similar manner split "hairs"

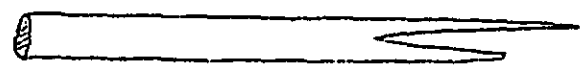

FIG. 3. SPLIT "HAIR"

have formed (Figure 3). Kidney-shaped, solidified drops, with glassy tails, as illustrated in Figure 4, are common. Some "hairs" are twisted like a cork-screw. In one specimen examined a cork-screw "hair" was twisted around and fused to a straight "hair." Some of the glass fibers are tied in knots. Occasionally the "hairs" are angular, the angles suggesting the collision of tails and drops or the crossing of tails during the process of rapid solidification.

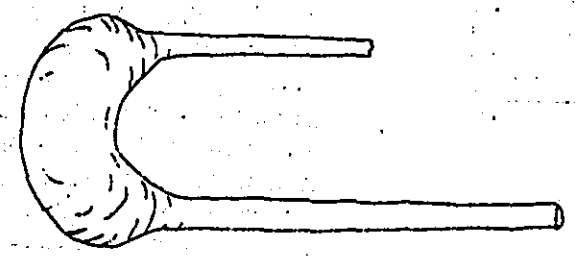

FIG. 4. KIDNEY-SHAPED DROP AND TAILS

Volcanic glass of the "Pele's Hair" type could, under favorable conditions, form at any volcano ejecting very liquid basaltic lava; however, students of the subject of volcanic products generally recognize that "Pele's Hair" is a type of volcanic glass which is formed in greatest abundance at the Hawaiian volcanoes. The temperature, viscosity and composition of the material ejected by the Hawaiian volcanoes are favorable for the production of "Pele's Hair", and too, Hawaii is the home of the Goddess Pele.

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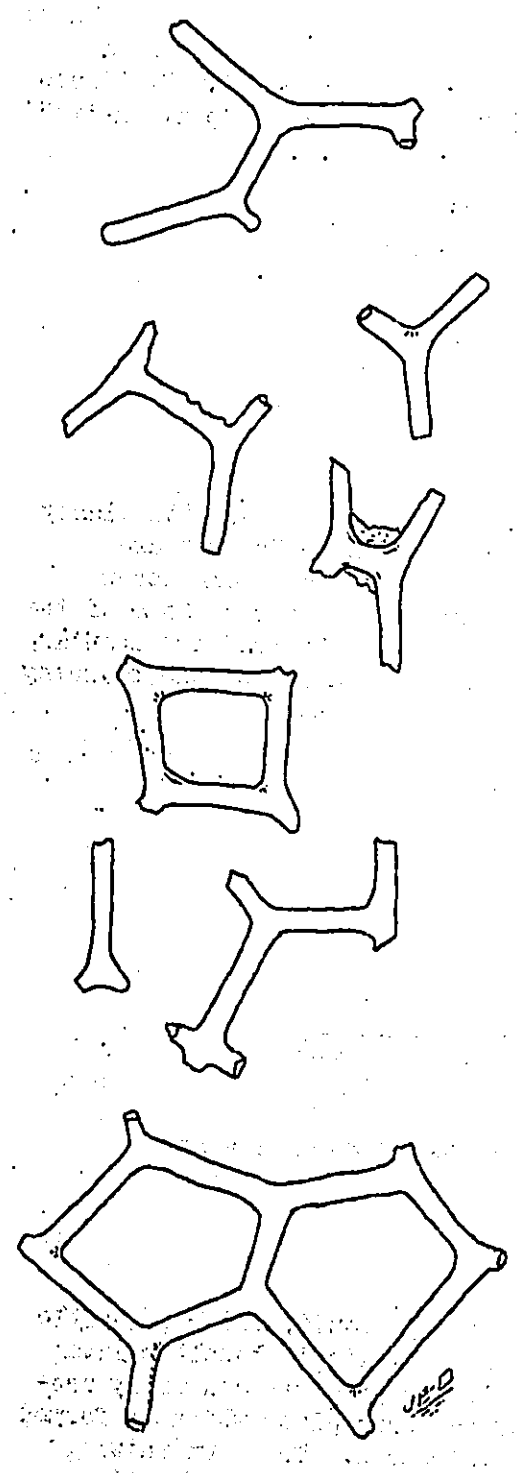

FIG. 5. FRAGMENTS OF POWDERED PUMICE HIGHLY MAGNIFIED.

Pumice

Pumice is a rock that will float on water. It is formed as the result of rapid solidification of lumps of molten lava thrown out by volcanoes. Like "Pele's Hair", pumice is a type of volcanic glass. During volcanic activity the fountains and boiling lava lakes eject a great quantity of lava as drops and lumps of red liquid containing bubbles of gas and water vapor. The drawing out and rapid solidification of the drops results in the formation of "Pele's Hair", as described above. The lumps of molten lava also solidify rapidly as they are hurled through the air, forming a light, spongy, rock froth called pumice.

A very high per cent of the volume of pumice formed at the Hawaiian volcanoes consists of minute vesicles or bubbles. The individual vesicles are, with a few exceptions, too small to be seen with the naked eye. Unlike the blocks of white or gray pumice-stone of commercial importance, the local pumice is dirty yellow and much more fragile. It can easily be crushed between the fingers. A double handful of pumice when crushed to a powder will just fill an ordinary thimble.

Powdered pumice consists of very small, transparent flakes and knotty, angular threads of glass. When highly magnified the glassy fragments appear to be shaped like twigs. The angular, glassy twigs are the broken frames of the polygonal panes of glass which formed windows in the vesicles. The broken panes are the flakes in powdered pumice. Figure 5 illustrates a number of highly magnified fragments of powdered pumice. Figure 6 on the opposite page is a sketch of a much enlarged fragment showing concave diamond-shaped glassy frames inclosing transparent panes of glass.

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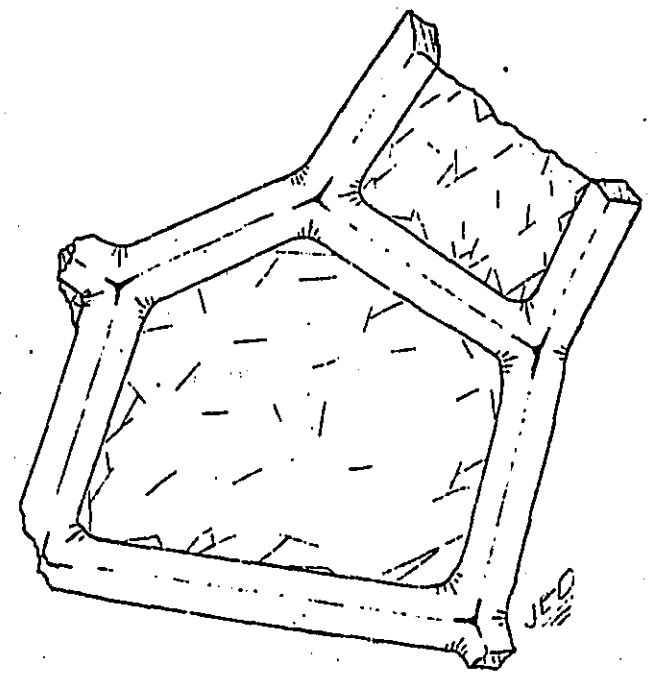

FIG. 6. FRAGMENT OF PUMICE SHOWING CONCAVE, DIAMOND-SHAPED, GLASSY FRAMES INCLOSING TRANSPARENT PANES OF GLASS. HIGHLY MAGNIFIED.

The most extensive bed of pumice in Hawaii National Park is in the area fringing the north rim of Kilauea Crater. The pumice occurs as a layer six to twenty inches thick. It rests on ancient lava flows and is covered by six inches to seven feet of rocky ash. The bed of pumice has been exposed in excavations around the north rim of the crater and in numerous cuts along the road between the park administration building and the Thurston Lava Tube. The date of the formation of this bed of pumice is not definitely known. The overlying rocky ash is thought to have been deposited during the 1790 eruption of Kilauea, an eruption that threw out great quantities of ash. Regardless of the age of the pumice, one may conclude that it was formed at a time when fountains in the north end of Kilauea Crater were ejecting lava. It has been estimated that 98 to 99 per cent of this particular bed of pumice consists of vesicles.(1) There are areas of pumice in the Kau Desert and around several of the cinder cones on Mauna Loa. Even though the local pumice is of no commercial value, it is interesting as volcanic glass because of its delicate vesicular structure and buoyant property.

(1) Dana, J. D., Characteristics of volcanoes, p. 163, 1890.

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Scoria

Similar to and formed in much the same manner as pumice is another type of volcanic glass called scoria. It differs from pumice mainly in respect to the size of vesicles. In pumice the vesicles are very minute; in scoria they are large, frequently being two or three inches in diameter. Scoria may be described as a cindery, spongy, or slag-like volcanic product. In Hawaii National Park scoria is generally dark in color. Shades of red and black are common. Black scoria with iridescent color is known locally as "rainbow lava". Many of the cinder cones on Kilauea and Mauna Loa are composed of scoria, as well as the upper surface of a number of lava flows.

Obsidian

Anyone interested in collecting arrow heads or who has visited Yellowstone National Park is familiar with obsidian. It is probably the most widely known type of volcanic glass. Because of its conchoidal or shell-like fracture, primitive peoples have prized it highly as material for making sharp, stone implements. Like other forms of volcanic glass, obsidian is the product of rapid solidification of lava in which there is little or no gas or vapor.

Of the four types of volcanic glass produced by the Hawaiian volcanoes, obsidian is the least common or abundant. The rapid solidification of the surface of some pahoehoe flows results in the formation of a crust, the surface or upper fraction of an inch of which is solid black glass or obsidian.

John E. Doorr, Jr.,
Park Naturalist.

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Footnotes

(1) Under the heading, "Accidental or Wide-ranging", Wm. A. Bryan in, "A Key to the Birds of the Hawaiian Group", Bishop Museum Press, Honolulu, 1901, p. 66, has listed the occurrence of the Lesser Snow Goose, Cackling Goose, and Black Brant in the Hawaiian Islands. To the above list of geese reported to have been seen in the islands, H. W. Henshaw in "Birds of the Hawaiian Islands", Honolulu, 1902, p. 108, adds the American White-fronted Goose, a single male specimen of which was shot on the island of Hawaii in 1891. Mr. Henshaw makes the following statement in regard to the appearance of the Canada Goose in Hawaii.

"During the winter months of 1900 - 1901 two separate flocks of Canada Geese made their appearance in Hilo Bay, and remained for a considerable period. In all there were upwards of fifteen reported. A number, possibly all, were killed at one time and another, but as I was unable to obtain a sight of a single individual I am unable to state which form of Canada Goose was represented by these birds."

(2) For the enlightenment of mainland readers of Nature Notes, "poi" is a thick paste-like food made principally of taro root; sweet potatoes and breadfruit are sometimes used. "Limu" is an eatable sea weed. "Opihi" is a species of small shell-fish.

(3) Nesochen sandvicensis

(4) Henshaw, W. H., Birds of the Hawaiian Islands, Honolulu, 1902, p. 104.

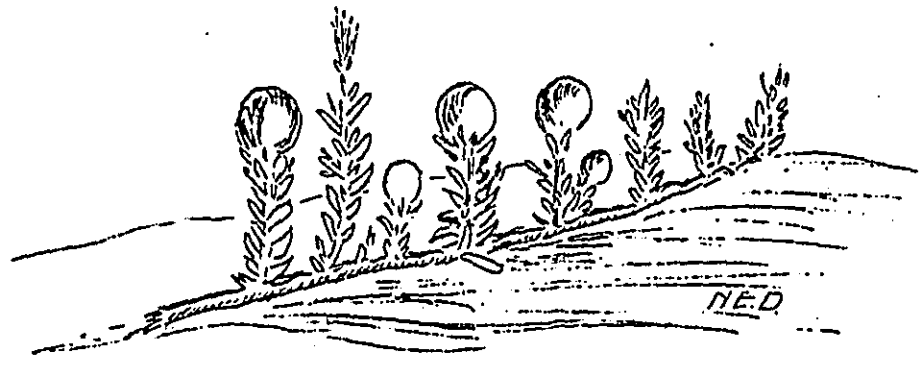
(5) Ellis, William, Journal of William Ellis, a narrative tour through Hawaii in 1823, Honolulu, 1917, p. 20, 180.

(6) Henshaw, W. H., p. 106.

(7) Wilson, Scott B., The Birds of the Hawaiian Islands, London, 1899.

(8) The Hawaiian Forester and Agriculturist, Honolulu, 1932, Vol. XXIX, No. 3, pp. 95-96.

(9) Henshaw, W. H., p. 105.



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The Volcano Letter

No. 406—Monthly U. S. Geological Survey. Hawaii National Park DECEMBER, 1933

KILAUEA REPORT FOR DECEMBER 1933

Including weekly press reports 1141 to 1145, November 26 to December 31, midnight.

Section of Volcanology, U. S. Geological Survey
T. A. Jaggar, Volcanologist in Charge

Volcanology:—Kilauea

As Mauna Loa broke out with lava eruption at the summit crater the early morning of December 2, Halemaumau pit in Kilauea crater was watched with special intentness throughout the month. Its bottom being sealed, with the lava plug of December—January 1931-32, this pit showed no sympathy with the Mauna Loa outbreak nor with the Mauna Loa cessation December 18.

In Halemaumau fresh debris lay on NE talus Nov. 27. The color of blue sulphur fume can be seen in sun-shadows. Two large newly fallen rocks were seen at the bottom under E wall December 16.

Weekly rim-crack measurements around the Halemaumau border were as follows:—

Dec. 2, 1933. Out of 32 points measured, 9 opened, 5 closed, aggregate opening 2.5 mm.
Dec. 9, 1933. Seven points opened, 5 closed, aggregate opening 1.5 m.
Dec. 16, 1933. Two points opened, 4 closed, aggregate a closing 1 mm.
Dec. 23, 1933. Eight points opened, 2 closed, aggregate opening 3.5 mm.
Dec. 30, 1933. Seven points opened, 8 closed aggregate opening ½ mm.

During the week ended December 17 levellings repeated on the old line on Kilauea floor near Halemaumau, and the horizontal angle from Observatory, measured twice across the pit, by Jones, revealed no unusual movement of the crater floor.

The minute motion of the ground measured instrumentally around Halemaumau and at the Observatory, by weeks, as shown in Earthquake and Tilt reports herewith, was as follows:—

		Obsy. Tr.	Seis.	Obsy. tilt	Hal. tilt
Week ending Nov. 26		56	15.50	1.9″ ENE	7.0″ inward
Week ending Dec. 3	(Mauna Loa eruption)	1393	360.00	1.5″ NW	15.8″ outward
Week ending Dec. 10	(Mauna Loa eruption)	345	86.00	0.3″ WSW	5.9″ inward
Week ending Dec. 17	(Mauna Loa eruption)	580	170.00	0.7″ SSW	0.0 zero
Week ending Dec. 24		20	6.50	1.1″ WNW	7.9″ inward
Week ending Dec. 31		34	12.50	1.2″ NNE	19.2″ inward

The number of minutes of tremor and accompanying local seismicity rose and fell with the Mauna Loa eruption 22 miles away. The Observatory tilt was strong and northerly or easterly (away from Kilauea crater), before and after the eruption, weaker and westerly during the eruption. The total tilt of the three clinoscope cellars around Halemaumau pit, outward away from the pit, or inward towards the pit, measured on the radial lines from the center of the pit, and disregarding other directions of tilting, yielded very interesting results. The aggregate tilting at the pit had been notably inward for many months. The week of the outbreak it was strongly outward as though the Kilauea floor swelled upward; after the outbreak it was more strongly inward, as though the sinking of the Kilauea floor followed the sinking back of the lava under Mauna Loa. This sequence is just what happened at Kilauea when the live lava in Halemaumau was visible during the Mauna Loa eruptions of 1914, 1916 and 1919.

Volcanology:—Mauna Loa

The summit crater Mokuaweoweo was split along the upper end of the southwest rift and vomited up lava at 5:43 a. m. December 2, 1933. The rift opened along a belt 1 5 miles long in the southwest part of the crater, the gash trending S. 27 W. from the inner basin across the south lunate platform, up the cliff to the outside country next the lava of 1851, on to the south for a half-mile about 500 feet west of the lip of the South Pit No. 1, then for a half-mile more offset 500 feet to the east, emerging from the west corner of this pit and continuing across the upland southwest to pour cascades of lava into both Pit No. 1 and the 2nd. Pit. (Lua Hohonu). The main activity of the eruption was inside the main Mokuaweoweo basin about 500 feet east of the cone of 1914.

The time of outbreak estimated is that shown by the beginning of continuous volcanic tremor at Kilauea seismographs. At 7 a. m. December 2 there were two dense white columns of vapor as seen from Kilauea Observatory about 2 miles apart, the northern one the denser and by angular measure inside Mokuaweoweo. At 9 a. m. there were 3 principal fume jets, the northern the greatest and highest, the two southern ones each double. At 7:30 p. m. the glowing columns were, in number, the northern triple and most brilliant, the middle one bright, the southern one faint. The division in three corresponded to the southern-pits gash, the south lunate gash, and the inner basin gash. The southern pits went out of action the first day. After the first two hours the fume column became blue and sulphurous (absinthe red in transmitted light). Pele's hair fell in small amounts at Hookena to leeward. At 11 a. m. December 2 there were lines of moderate fountains, 200 or more feet high, along each gash at its widest part, namely; the upland SW of South Pit No. 1; the lunate at the foot of the cliff NW of this pit, just inside Mokuaweoweo; and the inner basin east of 1924 cone. There were about 35 fountains in the basin and 20 each at the two other localities. The basin fountains concentrated to a smaller number about built-up cones. These basin vents poured lava both east and west. The eastern flows became the great feature, filling the northeastern and lowest part of Mokuaweoweo basin. The western ones obliterated the pit of 1914 which had been adjacent to the cone, and filled against the western cliff of the south lunate platform. The South Pit filled about 70 feet at the base of the new cascade which poured into it from the lunate platform. The main flow area covered about a square mile the second day, and the southern pits had received a square quarter-mile additional. The southernmost rift made big upland fountains the first day, the lava cascading strongly into the south side of South Pit No. 1, and weakly into Lua Hohonu. There was liquid flooding of silvery sheets of lava the first day, but the second day there were crusted floor flows, and flocculent skins on the scarlet torrents from the main line of about 17 conelets. On this day Dec. 3 the big fountain within a horse-shoe cone at the southwest cliff sent a festooned stream in a channel down to the South Pit over the ancient black lava cascade so well known here, and also over fresh streams of the previous day. This fountain was literally in the wall-crack of Mokuaweoweo, on the west side of the South Gap.

December 3 the main fountaining was at two cone centers in Mokuaweoweo basin, and at the southwest wall; the outside southwest cracks were steaming only. The flow lava was pahoehoe of which coin specimens were made. The cones were heaped with basaltic pumice, and Pele's hair lay to leeward. Milky blue fume cirrus lay in belts across the sky, sometimes southeast, sometimes north of Mauna Loa during the next few days. There was glow over the crater at night and fume by day. December 4 the southwest wall fountain stopped. December 5 the two central fountain groups were within throne-like cone heapings 100 to 200 feet high. The steam

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at the pit gashes to the southwest of Mokuaweoweo had ceased. The flows within Mokuaweoweo continued to spread north and east, against the east wall, and as far as the north lunate, and one flow had pushed west between the 1903 and 1914 cones. The eastern part of the cliff beneath the north side of the south lunate had been further obliterated by filling. A fan-like rush lava poured east from the throne-cones. This was the scene observed from air-planes day after day, the fountains of the northern cone dwindling to two small ones December 12. December 13 there was only one fountain, with occasional jets from other vents. With change of wind some Pele's hair fell along the northwest trail. The fume and glow as seen from Kilauea continued until December 17, becoming faint. Midnight December 17-18 the fountain was in action. It died down at 2 a. m. December 18, revived slightly after daylight, and thereafter went out of action. The area remained very hot and fuming with jarrings and rumbles.

The first echelon ruptures were at the top of the southwest rift of Mauna Loa, extending the action of that rift as observed in 1926, farther west and farther up, until this year's action centered in the crater itself. The eruption lasted 16 days, with no flank outbreak. Inquiry around the south end of the island December 6 revealed that the early morning earthquakes of the outbreak on December 2, felt in Hilo and Kona, were not felt at the south. The seismographic measurements show that most of the earthquakes originated to the north and east of Mauna Loa during the eruption, becoming deeper and mostly toward Kilauea at the end of the period.

If the splitting of the mountain crosses the crater and opens a flank rupture about 1936 or before, emitting lava flow, it may be along the Hilo rift, or the northwestern 1859 rift, or along the Hualalai rift. It happens that the earthquakes of December 2 this year 1933 were not felt at Puu Waawaa, where the 1929 quakes were strongest.

Toward the end of December, after summit snows about Christmas, there were hot convection puffs of rain cloud over the new lavas of the summit crater. These rose very rapidly and might easily have been mistaken for new eruption. The flows on the Mokuaweoweo floor were about ten feet high near their borders, with some breaking up of the pahoehoe surfaces, where they were pulled after congealing.

T.A.J.

Earthquakes

TABLE

Number of minutes of tremor; numbers of very feeble; feeble (I, R. F.); & slight (II, R. F.) earthquakes & local seismicity index as described in Volcano Letter 371.

Week ending	tr.	v. f.	f.	sl.	seis.
December 3	1,393	11	3	3	360.00
December 10	345	0	0	0	86.00
December 17	580	4	0	0	170.00
December 24	20	1	1	0	6.50
December 31	34	8	0	0	12.50

The approximate origins of the earthquakes that were well recorded at more than one seismograph station, follows—

Earthquakes Preceding Mauna Loa Eruption.

November 28, a very feeble shock, located under Kilauea crater.

November 30, a very feeble shock, located a mile SW of Kilauea crater.

December 1, a very feeble shock, located on the NE rift, near Mokuaweoweo, the summit crater of Mauna Loa.

Earthquakes correlated with the Mauna Loa outbreak, on December 2.

5:55 a. m. a slight shock, about II on the Rossi-Forel scale of intensity, felt with alarm at the rest house on Mauna Loa, located at the NE end of Mokuaweoweo crater, nine miles deep. The remainder of the group appear to be less deep.

5:56 a. m. a feeble shock, about I on the Rossi-Forel scale, located about seven statute miles NW of Mokuaweoweo crater.

5:58 a. m. a feeble shock, located about one mile NE of the N end of Mokuaweoweo crater.

6:01 a. m. a slight shock, felt with alarm at the rest house, located near west rim of Mokuaweoweo crater.

6:06 a. m. a slight shock, felt with alarm at the rest house, & felt lightly in Hilo by M. E. Campbell, located three miles NE of the N end of Mokuaweoweo crater.

6:08 a. m. a feeble shock, located near the west rim of Mokuaweoweo crater.

Immediately after the first unlocated shock at 5:42 a. m. Dec. 2 harmonic or continuous volcanic tremor began. In the past, eruptions have been accompanied by this type of ground movement. The period of 0.6 seconds (100 vibrations per minute) is fairly constant, while the amplitude is variable with the size of the eruption. The spells of tremor were noted approximately as follows;

date		time	duration minutes
Dec. 2	Beginning	5:43 a. m.	244
" 2	"	9:46 a. m.	590
" 2	"	6:40 p. m.	320
" 3	"	9:00 a. m.	209
" 8	"	8:30 p. m.	80
" 10	"	8 p. m.	240
" 11	"	0 a. m.	300
" 11	"	8 p. m.	100
" 12	"	0 a. m.	150
" 12	"	7 p. m.	90

The amplitude of the waves varied from 0.8 to 0.4 microns, smaller amplitudes become unnoticeable on the records. (1 micron=0.001 m. m.)

Earthquakes During the Eruption.

Dec. 2, 7:28 p. m. a very feeble shock, located under the slope of Mauna Loa about half way between the craters of Kilauea and Mokuaweoweo.

Dec. 3, a very feeble unlocated shock was felt by M. E. Campbell in Hilo. It appeared to be about five miles from the Hilo station.

Dec. 7, a tremor, reported felt in Naalehu by the Hutchinson Sugar Plantation, was located on the Mauna Loa SW rift near the source of the 1887 flow, seven miles up the mountain from the highway.

Dec. 12, a very feeble shock, located three miles west of Kilauea crater, four miles deep under Pali O Kaoiki, a fault between Mauna Loa and Kilauea.

Dec. 14, a very feeble shock, felt in the vicinity of Kilauea crater, located near the Mauna Loa rest house and 17 miles deep.

Earthquakes Following the Eruption.

Dec. 20, a very feeble shock, located half way up the east slope of Mauna Kea from Hakalau.

Dec. 20, a tremor; Dec. 27, 3:44 a. m. a very feeble shock felt lightly at Honomu: 3:56 a. m. a very feeble shock, felt sharply at Honomu, and 4:44 a. m. a very feeble shock felt lightly at Honomu. These four were located in a group under the SE slope of Mauna Kea, half way between Hilo & the summit.

Dec. 27, a very feeble shock, felt near Kilauea, located on the Mauna Loa NE rift half way between Hilo and the summit.

Dec. 30, a very feeble shock felt in Hilo by M. E. Campbell, located six miles SE of Mokuaweoweo and ten miles deep.

Dec. 31, a very feeble shock, located five miles at sea, south of Kilauea crater.

Microseisms. Light or subnormal; Dec. 1, 3, 18, 19, 31.
Moderate or normal; Nov. 27 to 30; Dec. 2, 4, to 13, 17, 20, 21, 27 to 30.
Strong or abnormal; Dec. 13 to 16; 22 to 26.

A.E.J.

Tilting of the ground

The Observatory column shows the net tilt in seconds of arc in the direction given, computed from seismograms. The second column shows the algebraic sum of clinoscope readings for the three cellars around Halemaumau. Each reading is reduced to its radial direction from or towards the pit. As the Observatory is on the northeast rim of the larger Kilauea crater, a southwest reading is towards the crater.

The total accumulated tilt at the Observatory in the year since December 31, 1932 is 1.1" North, and 2.9" West.

TABLE OF TILT

Date	Observatory	Halemaumau
Nov. 27 - Dec. 3	1.5" NW	15.8" from
Dec. 4 - Dec. 10	0.3" W. by S.	5.9" towards
Dec. 11 - Dec. 17	0.7" SSW	0.0
Dec. 18 - Dec. 24	1.1" WNW	7.9" towards
Dec. 25 - Dec. 31	1.2" NE by N	19.2" from

A.E.J.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII

OFFICE OF THE SUPERINTENDENT

January 27, 1934.

MEMORANDUM FOR THE PRESS
IMMEDIATE RELEASE

HAWAII NATIONAL PARK, Jan. ____. The Emergency Conservation Work within the Hawaii National Park is getting under way.

Edward G. Wingate, Superintendent of Hawaii National Park, who has charge of the expenditure of $121,273 for Emergency Conservation Work within the Hawaii National Park, has appointed B. G. Rivenburgh, from Honolulu, to Be Director. Mr. Rivenburgh, who is a former Commissioner of Public Lands of the Territory of Hawaii, was active at the time the Hawaii National Park was established by act of Congress, and was the first representative of the Department in Hawaii.

Howard M. Wright, of Hilo, has been appointed Assistant Director and Quartermaster. Mr. Wright's experience in the U. S. Navy fits him admirably to take charge of feeding and making the enrollees comfortable in camp.

The Kilauea Summer Camp has been leased from Mr. George Lycurgus, and is being used as a nucleus of a camp which will accommodate 175 boys when completed. Construction work on a kitchen and mess hall has already commenced, and will be followed by two bunk houses, bath house, garage, etc.

The applications are coming in rapidly, and there is no doubt that the requisite number of eligibles can be acquired.

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The boys between the ages of 18 and 25 will be selected from families who are needy and an endeavor will be made to distribute the benefits in all the districts and among the various races. They will be clothed, housed, and fed. They will also be given medical care and hospitalization when necessary. Recreation in various forms, games, hiking, etc., will be arranged. Instructive talks as well will be provided, and every effort will be made by the supervisory personnel to carry out the interest of the original act which created the Civilian Conservation Corps as in the continental United States and which has been so successful. The basic purpose behind the Emergency Conservation Work is essentially one of restoring confidence; of building men. This major objective has been recognized from the very start. Emphasis repeatedly has been placed upon it.

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UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE
Hawaii National Park
January 18, 1934

Your name has been submitted to us as a candidate for enrollment in the Civilian Conservation Corps.

Enclosed you will find a circular outlining the CCC activities, as well as an enrollment blank and return envelope. If you wish to have your name placed on the list for selection, execute the enclosed form and mail or deliver it to Mr. E. G. Wingate, Superintendent, Hawaii National Park. If you are selected, you will be duly notified and given instructions as to procedure.

We would advise that you execute the enrollment form immediately as the number of men selected will be limited to 150. Any additional information you may desire can be obtained from Superintendent Wingate or the undersigned.

Very truly yours,

Howard H Wright

Howard H. Wright,
Assistant Director, CCC.

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APPLICATION FORM

(Date) _____

Organization receiving application: Hawaii National Park

Address: Hawaii National Park, Hawaii

- - -

I hereby make application for enrollment, for the period of 6 months, in Federal emergency conservation work.

My name is _____

I am a citizen of the United States by birth; or I secured final naturalization papers on _____, at _____.

I was born at _____ (Place) _____ (County) _____ (State)

On _____ (Month) (Day) (Year)

My usual trade of occupation is _____

I have been unemployed since _____ (Month) (Year)

My education has been as follows:

I have been a member of the Boy Scouts with rank or position of _____.

The dependent relatives to whom I wish to allot parts of my cash allowance and the sums that I desire each one to receive are as follows:

Name _____ Relationship _____

Address _____ Amount _____

Name _____ Relationship _____

Address _____ Amount _____

I agree to abide faithfully by the rules and regulations governing the work and the camps in which I desire to be employed.

Signature _____

_____

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Eligibility

American citizens between the ages of 18 and 25 years, inclusive, who are physically fit and have dependents are eligible for enrollment in the Civilian Conservation Corps.

CCC Camp

(a) Those men who are selected will be ordered to report to the Camp being established in the Hawaii National Park. While in camp the men will be housed in comfortable barracks, clothed and fed. Medical attention and hospitilization will be furnished, as well as recreation and educational advantages. In addition to this, each man will be paid $30.00 a month. Advancement will be open to those men showing special aptitudes and abilities.

(b) Work will be done within the National Park area on approved projects under the supervision of Park authorities. Working hours will be a total of 40 hours a week, probably on a basis of eight hours a day for 5 days, leaving Saturdays and Sundays free for recreational activities within the camp or surrounding areas.

(c) Although there will be camp routine and certain necessary regulations in no sense will enrolled men be in the military service or subject to military training.

Enrollment

(a) Applicants will be required to fill out a regular application form and if selected will be given a physical examination. If found physically fit, they will be ordered to report at some definite recruiting station at which time enrollment papers will be executed for a period of 6 months. Upon completion of this, the men will be ordered to report to the camp, transportation being furnished if necessary.

(b) It is the desire of the Federal Government that a substantial portion of each man's wages be allotted to his dependents, such allotment to be paid direct to the dependents by the Disbursing Officer. In selecting men for enrollment, preference will be given to those men allotting the largest percentage of their wages to dependents.

Release from Corps Camp

Release can only be secured from proper authority, but it is understood that any man securing work of a permanent nature in industry will be immediately released from any obligation under the terms of his enrollment and allowed to accept such employment.

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DEPARTMENT OF THE INTERIOR

OFFICE OF NATIONAL PARKS, BUILDINGS AND RESERVATIONS

Temporary Enrollment for Emergency Conservation Work in Hawaii National Park

Hawaii National Park, Hawaii, _____.

_____
(Name of Enrollee)

Date of birth _____ Race _____

Legal residence _____

Previous Government service _____

You are hereby enrolled as a member of the Civilian Conservation Corps for six months in the Hawaii National Park effective _____.

Your compensation will be at the rate of $30.00 per month, of which $____ will be deducted monthly and paid to _____

_____

_____

In addition to compensation you will be fed, clothed, and housed, and issued certain articles of property of the United States Government for which you will be held financially responsible.

Very respectfully,

_____
B. G. Rivenburgh,
Director of Emergency Conservation Work.

I accept the enrollment and conditions mentioned above and authorize the allotment to _____.

(Signed) _____

(Over)

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OATH OF ENROLLMENT

I, _____, do solemnly swear (or affirm) that the information given above as to my status is correct. I agree to remain in the Civilian Conservation Corps for six months unless sooner released by proper authority, and that I will obey those in authority and observe all the rules and regulations thereof to the best of my ability and will accept such allowances as may be provided pursuant to law and regulations promulgated pursuant thereto. I understand and agree that any injury received or disease contracted by me while a member of the Civilian Conservation Corps cannot be made the basis of any claim against the Government, except such as I may be entitled to under the act of September 7, 1916 (39 Stat. 742) (an act to provide compensation for employees of the United States suffering injuries while in the performance of their duties, and for other purposes), and that I shall not be entitled to any allowances upon release from camp except transportation in kind to the place at which I was accepted for enrollment. I understand further that any articles issued to me by the United States Government for use while a member of the Civilian Conservation Corps are, and remain, property of the United States Government and that willful destruction, loss, sale, or disposal of such property renders me financially responsible for the cost thereof and liable to trial in the civil courts. I understand further that any infraction of the rules or regulations of the Civilian Conservation Corps renders me liable to expulsion therefrom. So help me God.

(Signed) _____

Approved _____

_____
Edward G. Wingate,
Superintendent,
Hawaii National Park.

(Over)

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
HAWAII NATIONAL PARK
HAWAII
Office of National Parks,
Buildings and Reservations.

OFFICE OF THE SUPERINTENDENT

January 29, 1934

MEMORANDUM

SUBJECT: VISITORS AT EMERGENCY CONSERVATION WORK CAMP

Only those persons having a permit signed by the Superintendent of Hawaii National Park will be allowed to visit in this camp.

The permanent staff of the Hawaii National Park is excepted in this regulation.

Edward G. Wingate,
Superintendent.

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Parapet wall on Crater Road, near Thurston Lava Tube.

Comfort station at Thurston Lava Tube.

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Intersection of around-the-island road and Short-cut Road showing appearance before and after removal of blackberry vines by CWA workers. This is at the Hilo entrance of the park.

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Two views of parking area at Volcano House showing work of enlarging and grading by CWA crew. Mauna Loa dome in background. Around-the-island road on the left.

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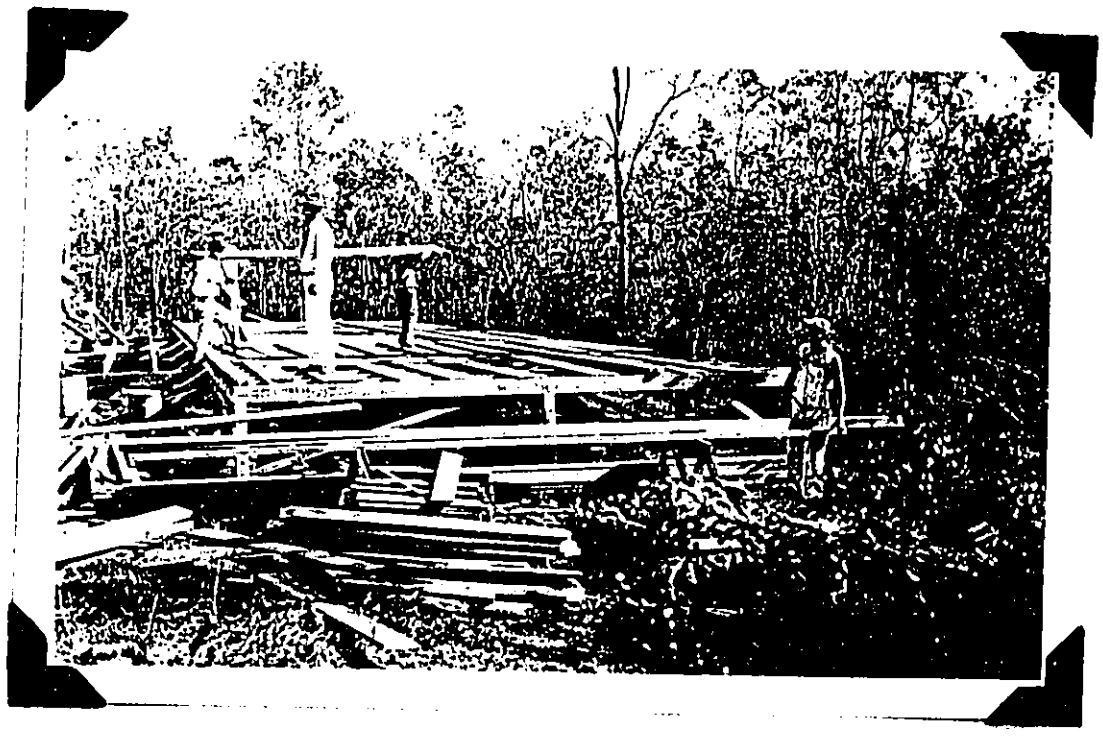

Two views during construction of bunk house, size 70 by 20 feet. Time interval between pictures about four days.

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ECW mess hall under construction.

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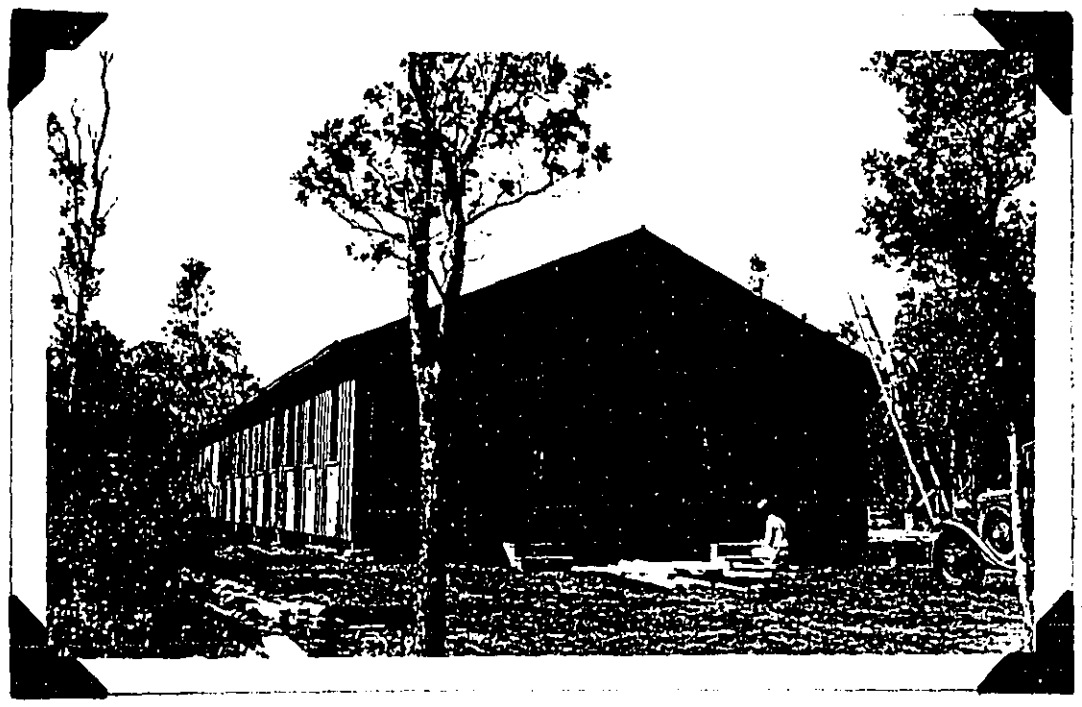

CCC mess hall, size 111 by 29½ feet.

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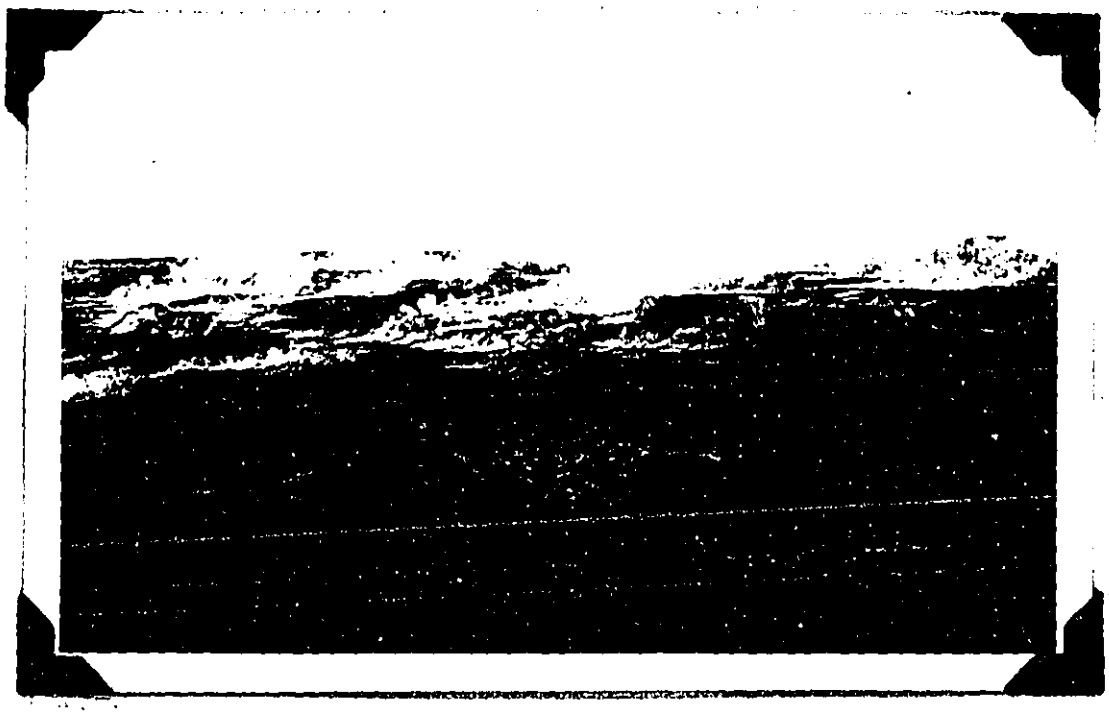

Early morning view of steam activity in Kilauea Crater. Looking west from ECW camp.

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Halemaumau-Uwekahuna road at southwest rim of Kilauea Crater, showing heavy fill and rock bank. Looking east.