Hawaiian Volcano Observatory Record Book 1912

This volume is one of a series of record books compiled by the Hawaiian Volcano Observatory (HVO) from 1912 through early 1966. The pages for this volume were transferred by HVO to the Bishop Museum, in Honolulu, Hawai‘i, in 1972 and are held at that institution (accession number 1972.265). In 2010, HVO entered a cooperative agreement with Bishop Museum to scan many of the record books in their repository. The scanning was done by HVO volunteer Frances Wong using a flat-bed scanner at a resolution equivalent to 600 dpi. The raw scans were then delivered to HVO volunteer Ben Gaddis, who processed each of the scanned pages by cropping and by adjusting the exposure and contrast using a photo editing program.

Some of the scanned pages were of inferior quality and were replaced with pages from an original record book housed in the rare book room of the U.S. Geological Survey Library at Reston, Virginia (catalog number 220(950) H3d). Because the record books from the U.S. Geological Survey Library were tightly bound, scanning was not practical. Instead, HVO volunteer Ben Gaddis photographed the replacement pages using a tripod-mounted Canon 5D Mark II camera with 16–35 mm lens, and then processed each of the photographed pages by cropping and by adjusting the exposure and contrast using a photo editing program. The scanned and photographed pages for this volume were then combined to form this digital version of the record book. Quality control and posting was done by Tim Orr of the U.S. Geological Survey Alaska Volcano Observatory.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Date

ABBREVIATIONS

A camera .....Anderson — 3¼ × 4¼
A ing. or A. .....ingento A
Al. V. or A.V. ....Al Vista — panoram
Alex. .....Alex Lancaster
aper. .....aperture

B. .....ingento B screen
B & J .....Burke & James

C.M. .....crag mass
cam. .....camera
chan. .....channel
C. camera .....Century

D.K. .....Devil's Kitchen
D.P. .....double protar
Dall. .....Dallmeyer
dist. .....distance

E.S.S. .....E.S.Shepherd
ex. .....exposure
elev. .....elevation

F.B.D. .....F.B.Dodge
F.P. .....focal plane
fum. .....fumarole
F.C. .....front combination Zeiss Anastigmat lens
ft. .....fountain
f. or F. .....F system of stops

Green Hg-CO_2 .....Green mercurial with compressed CO_2
G. (camera) .....Graphic — 6½ × 8½
G. (screen) .....Wratten G.
Gl. .....glycin
grot. .....grotto

Hale. .....Halemaumau
h.i. .....height instrument (5 feet when not specified)
hor. .....horizontal
H.O.W. .....H.O.Wood
H.V.O. .....Hawaiian Volcano Observatory

I.H. .....Instrument House
ing. .....ingento
I.P.M. .....I.P.Maydwell
I.P.J. .....I.P.Jaggar
Iso. or I. .....isochromatic

Kil. .....Kilauea
K2 .....Wratten K2
K2 cel'id .....Wratten K2 celluloid

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Date

loc. ..... location
lev. ..... level reading

M.L. ..... Mauna Loa

N.R.H. ..... New Rest House
N.F. ..... New Faithful
no. ..... number
N & G ..... Newman & Guardia
N.C. ..... non-curling

O.F. ..... Old Faithful
O.R.H. ..... Old Rest House

penin. or pen. ... peninsula
prob. ..... probably
pt. ..... point photographed or located
pl. ..... plate
pan. ..... panorama
P. (camera) ..... Premo —— $3\frac{1}{4} \times 4\frac{1}{4}$
P. (film) ..... panchromatic

Q.P. ..... quarter plate $3\frac{1}{4} - 4\frac{1}{4}$

R. or rod. ..... rodinal
ramp. ..... rampart

stag. ;..... stagnant
stalac..... stalactites
sta. ..... station
scr. ..... screen
spat. ..... spatter
S. pan. or S.P.... Seed panchromatic
s.h. ..... stadia hair

t. ..... time
ther. ..... thermometer
temp. ..... temperature
tele. ..... telephoto
T.A.J. ..... T.A.Jaggar
Tech. Sta. or T.S. Technology Station hut at Halemaumau

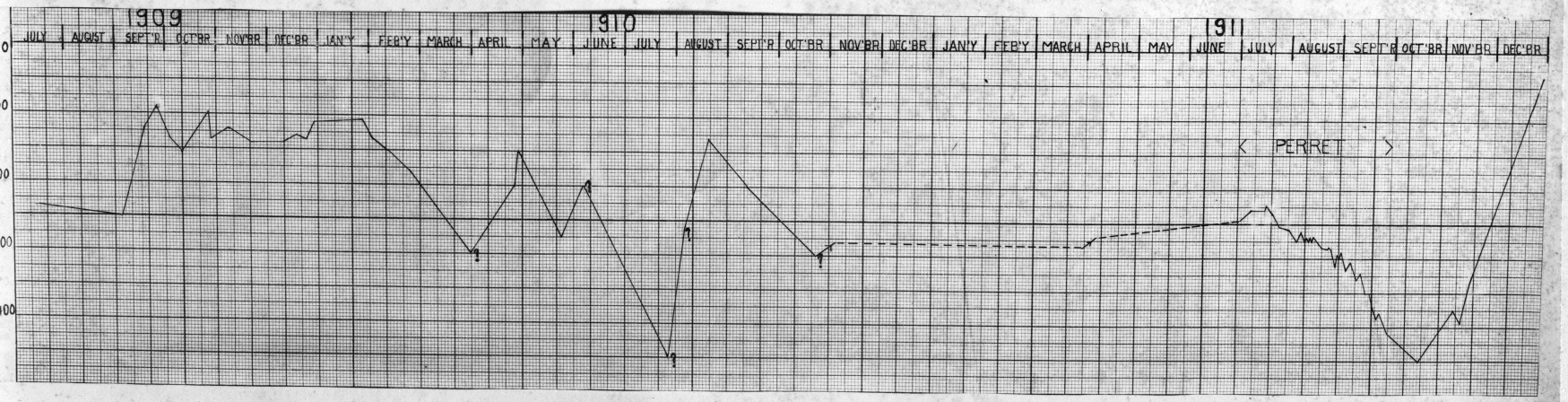
U.S. ..... uniform system of stops

vert. or V.A. ... vertical angle
vz ..... Zeiss 5x screen
V. ..... 5x screen
V,H. ..... Volcano House

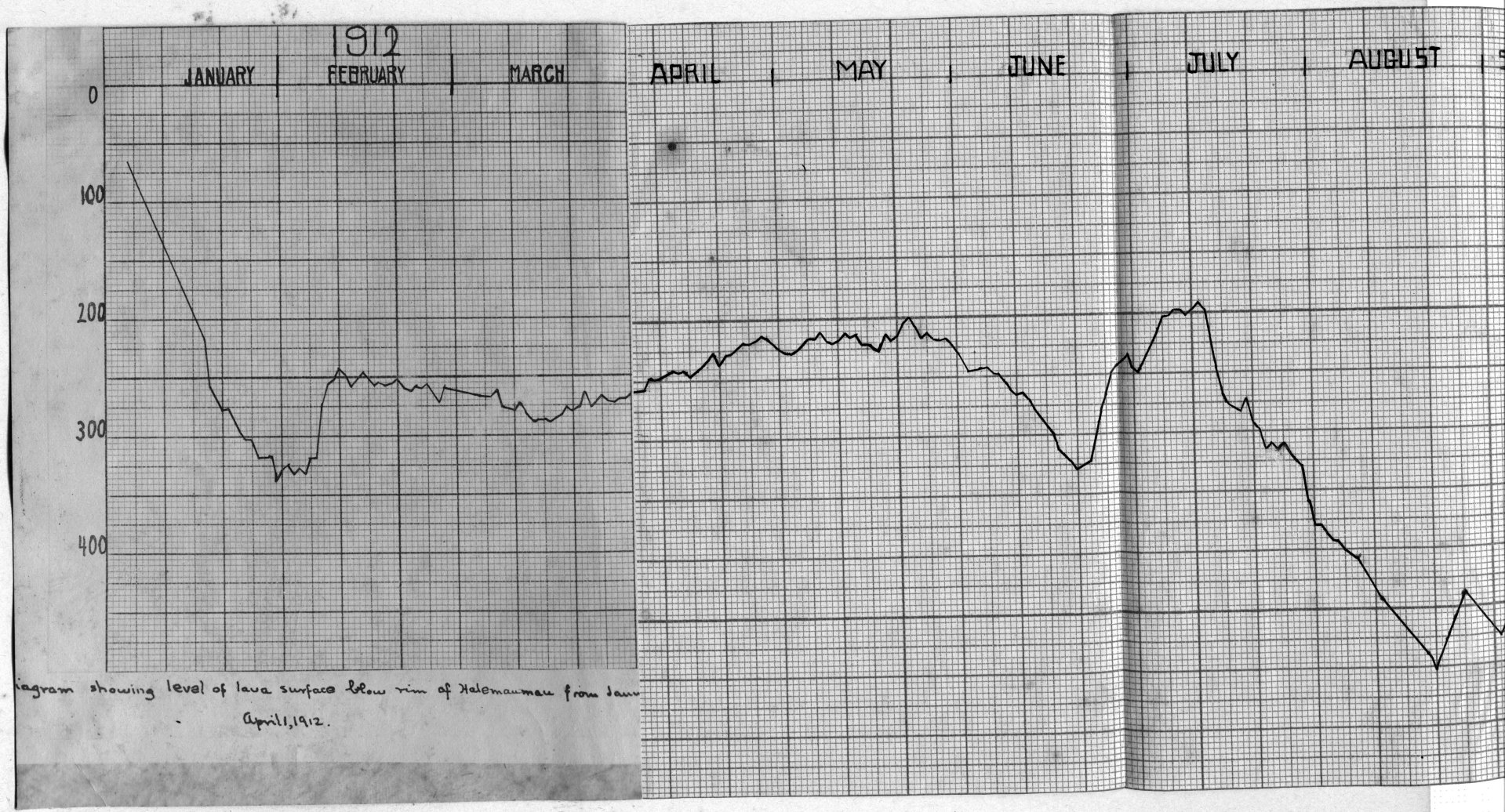
wea. ..... weather
Woll. ..... Wollensak
W.P. ..... Wratten panchromatic
W.M. ..... Wratten M
W.A. ..... wide angle

X. ..... 10x screen
5xz ..... Zeiss 5x screen
3x ..... ingento 3x screen

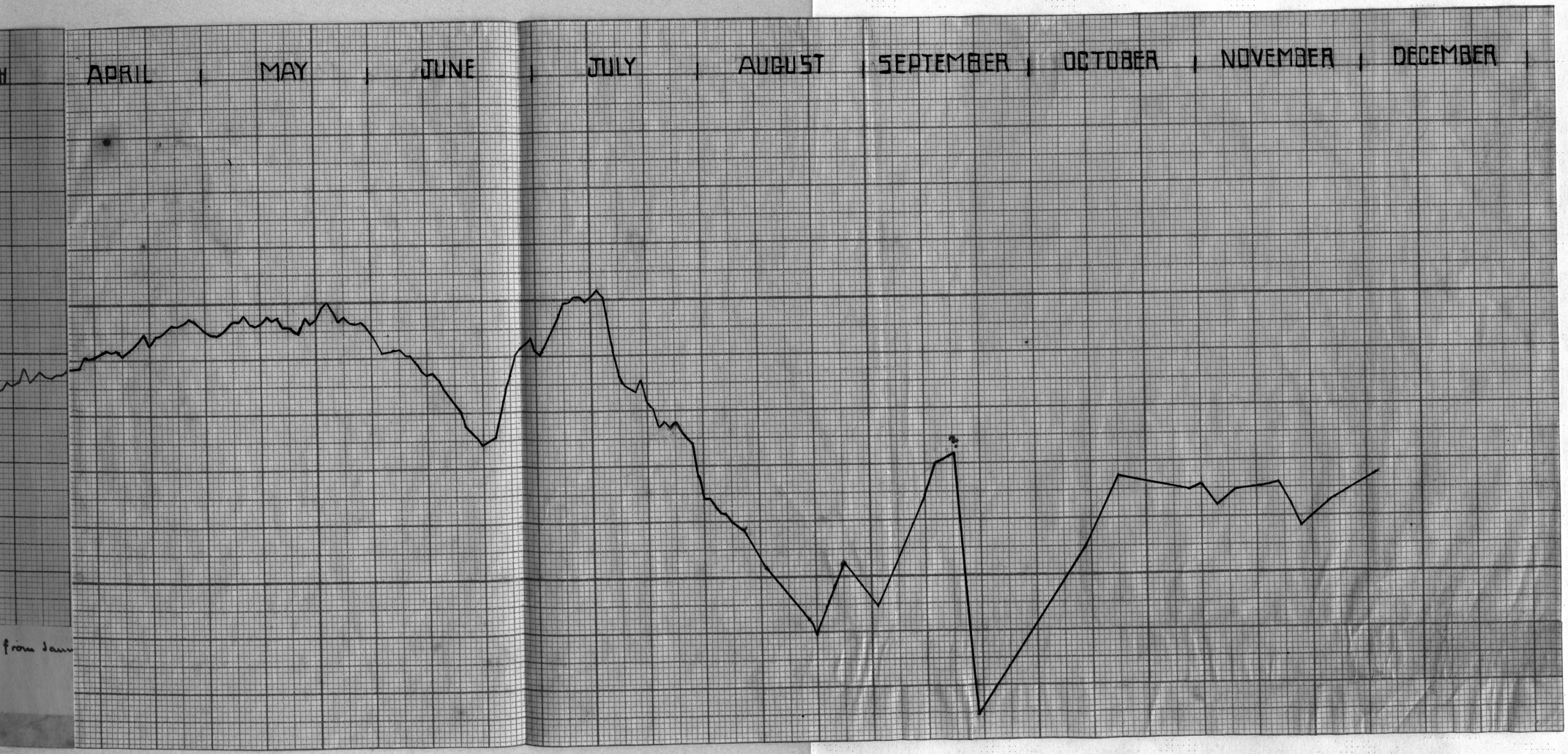
Z.T. ..... Zeiss Tessar
Z. Ana. ..... Zeiss Anastigmat



PS.20 Diagram showing level of lava surface below rim of Halemaumau from July, 1909 to December, 1911.
Dotted line = no record ? = doubtful record



iagram showing level of lava surface below rim of Halemaumau from Janu
April 1, 1912.


APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER

KILAUEA RECORD BOOK PHOTOS

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6/15			285
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7/31			359
8/6		Transit at rim	
8/8	8-9	Transit on walk way near rock shelter	
8/14		T.A.J. AND F.B.D., RECONNAISSANCE OF Mauna Loa Mualalai and circuit of island	
8/21			502
8/27		Observatory pier to Byron's ledge	

KILAUEA RECORD BOOK PHOTOS, SEPTEMBER*OCTOBER ~~1(1*~~ 1912

~~Octx~~		
September 1912	Several pictures to Halemaumau	
Oct. 1	Tech. station and other viewing stations	
10/3/1912	Shepherd's cottage	
10/3/12	Observatory	
10/6	Several pictures with long focus of Halemaumau	475
	from HVO	363

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Wednesday Date January 17, 1912.

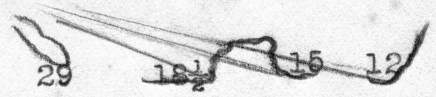
4:30 p.m. Vertical angles to near and far sides of pool -- NW corner station; near point is a streaming corner:

Near.	Far.	Direction.
26° 30'	10° 30'	N 84° W

Along foot of peaked peninsula:

28° 30'	16° 30'	S 72° W

Across peninsula to far corner:



S 80° W

W base of little island left:

19°	S 55° W

Right point behind island:

19°	N 70° W

From station E

to NE corner pool	N 72° W
	N 78° W
	N 85° W
	W
	S 82° W
	S 75° W
	S 65° W
	S 57° W
	S 67° W
	N 61° W
	N 51° W
	N 37° W
	S 52° W
Perret's Cone	N 77° W

Smoking hole two-fifths way up today N 87° W

Depth of lake below rim 218 feet. Pool 742 feet long in a direction N 83° W.

Intervals of Old Faithful: 32, 27, 37, 70, 30, 55, 45, 18, 41, 26, 56, 44, 30, 25, 41, 17, 31, 30, 39, 16, 39, 21, 54. Average 36 seconds. Maximum 70 and minimum 16 seconds.

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Thursday Date January 18, 1912.

4:55 p.m. From station, line of left side island right:

near edge	O.F.	S base island	direction
24° 00	21° 30	18° 00	N 76° W

From station, line of S promontory:

near edge	base promontory	
27° 00	20° 00	N 81° E

From station, down middle of pool:

near edge	far edge	
25° 00	13° 00	N 82° W

From station, left hand pinnacles and islets both high and dry: N 65° E

Sputter in far cove red spots 21° 00

From N leg of A-frame SE to

NE corner pool	N 44° W
S base island (across O.F.)	N 55° W
New small islet	N 61° W
Far side pool	N 67° W
Active corner lava SW cove	N 71° W
End promontory	N 68° W
Nigh corner under pinnacles	N 56° W
Sputter SE cove	N 82° W
Pinnacle SE islet	W
Pinnacles	N 67° W
A-frame across	N 50° W
Rest house across	N 38° W
Beggar	N 26° W
Station	N 8° E
Stone S rim	S 63° W
Small cave	S 85° W

Depression of pool below rim 257 feet. Pool 560 feet long.

Intervals of O.F.: 36, 39, 17, 19, 22, 46, 24, 48, 32, 24, 30, 39, 30.
Average 31 seconds. Maximum 48 and minimum 17 seconds.
O.F. south of where cable is. Chimney at left.

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Saturday Date January 20, 1912.

9 p.m. Foundering of border blocks. Streaming toward NE bubbling. No bubbling N of Old Faithful. East middle streaming N and S and down against promontory and down along NE bubbling.
Steam from "Kitchen" sucked down crater.
Light below fumes, apparently flames; SW high place; yellow light, four-sevenths way up.

Vertical angles from Old Rest House to

Island at base	29°
O. F.	22°
East end	17°

From station E to

Base island	19°	
O. F.	23°	Depression 276 feet.
Base promontory	20°	
SE cove	21°	
West end	12°	
East end	27°30	

Intervals of O. F.: 44, 56, 25, 47, 23, 32, 45 seconds.
Average 39 seconds.

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Sunday Date January 21, 1912.

3 p.m. Stationary since yesterday; some rising and overflowing.
No cracking around borders.
W end much more active.
Orange color at night

Sketch map from west A-frame:



V. A. from W A-frame:

W end	32	
Island	29	
NE cove	22	
E end	17	
SE cove	16	30
Promontory	19	

From station E:

O. F.	23	Depression 276 feet.
Promontory	21	
Far end	14	

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Tuesday Date January 23, 1912.

9 p.m. Right island gone.

V. A. from E station:

O. F.	24	30	
Promontory	22	00	
Base island	19	00	(gone later)
Far end	13	00	

Depression of lake 297 feet.

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Wednesday Date January 24, 1912.

8:30 p.m. V. A. from Old Rest House:

W end	24°
Promontory	20
E end	20
O. F.	25
Near corner to O.F.	29

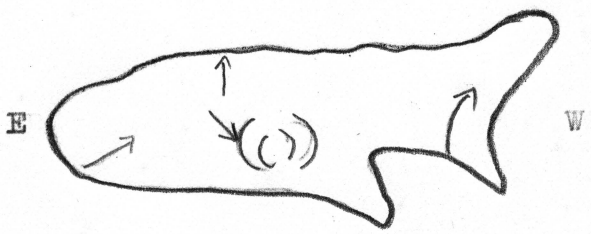
8:48 p.m. V. A. from station E:

W end	16°
Promontory	22
SE end	24
O. F.	25
O. F. cove	25
NW cove	20

Depression 304 feet.

More red glow. White flare E bench half way up suddenly blazed out, burning for 45 seconds.
O. F. sputter 100 feet high.
Loud gas hisses heard tonight.

Sketch map from N:



T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Thursday Date January 25, 1912.

11 a.m. Survey Halemaumau.
Station 1 -- real frame of west A-frame.
" 2 -- N side Tech. house.

	Station 1	Station 2
Rest House	N 5 E	S 5 W
Little Beggar	N 27 30 W	N 38 W
Old Rest House	N 37 W	N 56 W
Eastern A-frame	N 49 W	N 61 W
Perret's cave	N 63 W	N 77 W
Small cavern	N 82 W	S 83 W
W end S bench	S 53 W	S 42 W
E " " "	S 28 W	S 26 W
SE corner pool	N 84 W	S 62 W
E " "	N 56 W	S 71 W
O.F. " "	N 48 W	N 78 W
NW " "	N 56 30 W	N 78 W
W end pool	N 66 W	N 86 W

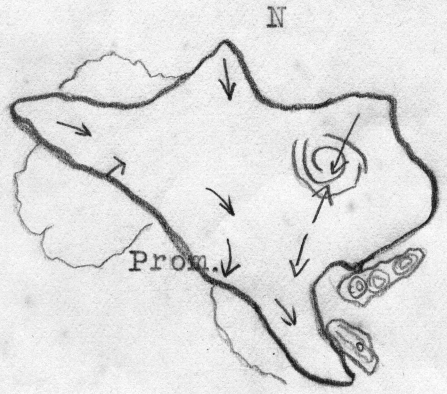
Vertical angles from N side Tech. house to

SE corner pool	25 00
E " "	30 00
O.F. " "	26 30
O.F.	26 30
NW " "	17 30
W end pool	14 30
S promontory	21 30
Near black ledge	28 00
Smoking place W side	9 00
Black ledge above smoking place	3 00
" " under old rest house	3 30
Top of O.F.	22 40

Photographs -- 5x7:

1. View looking N 20 W to M. Kea from flat N of Uwekahuna.
2. From Uwekahuna to Kau.
3. " " " Halemaumau.
4. " " " Volcano House.
5. Looking at descent from lava field.
6. " toward Uwekahuna and steaming spiracle.

Sketch map of lake:



T.A.J.

1912, Jan. 25



1



2

1912, Jan 25

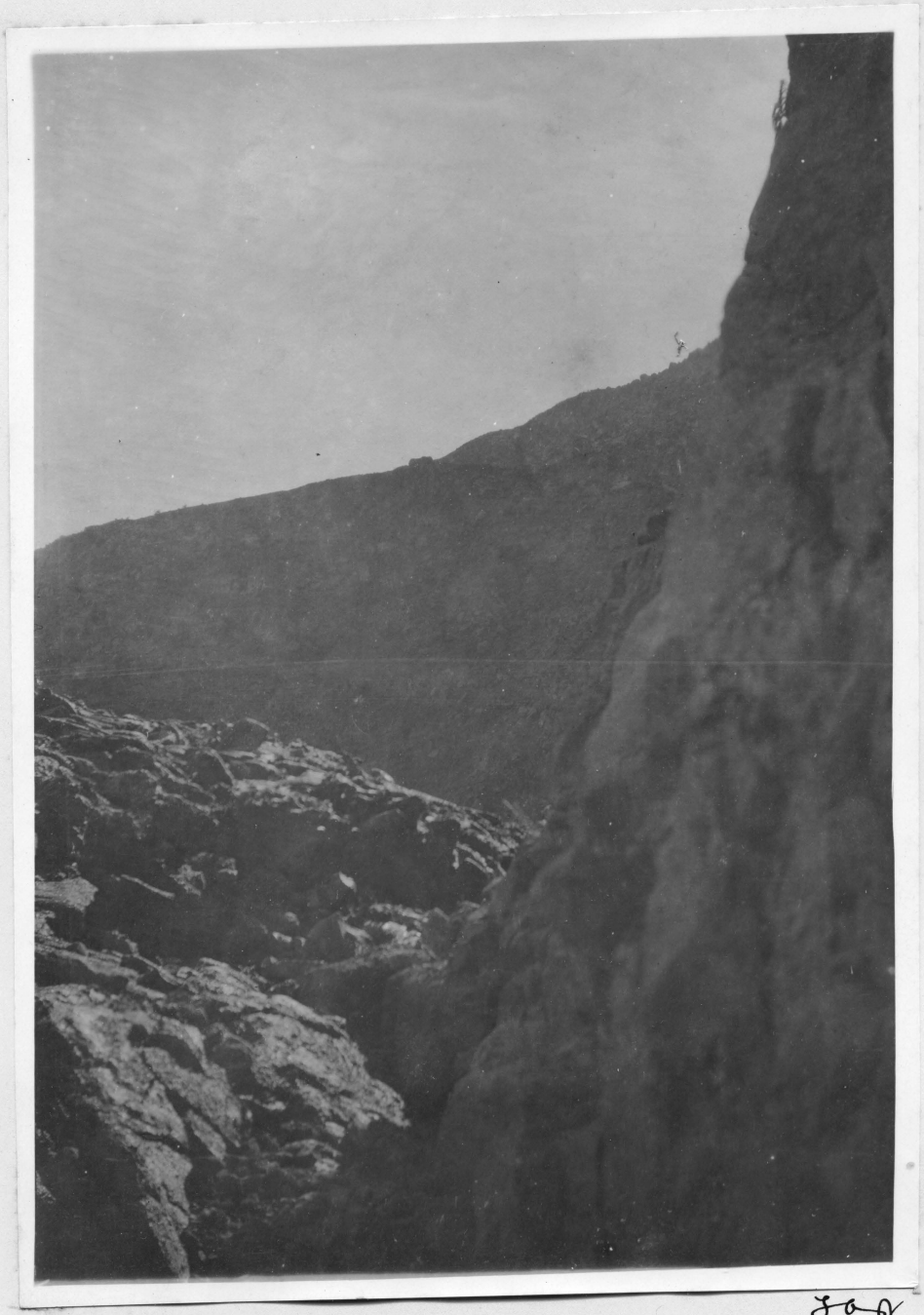


3



4

1912, Jan. 25



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1912, Jan 26.



6

Jag

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Friday Date January 26, 1912.

9 a.m. Vertical angle from station to O.F. 26°
Depression of lake 318 feet.

4 p.m. Vertical angle from O.R.H. to O.F. 27 30
" " " station " " 25 45
Depression of lake 314 feet.

Sketch map of lake:



N

T.A.J.

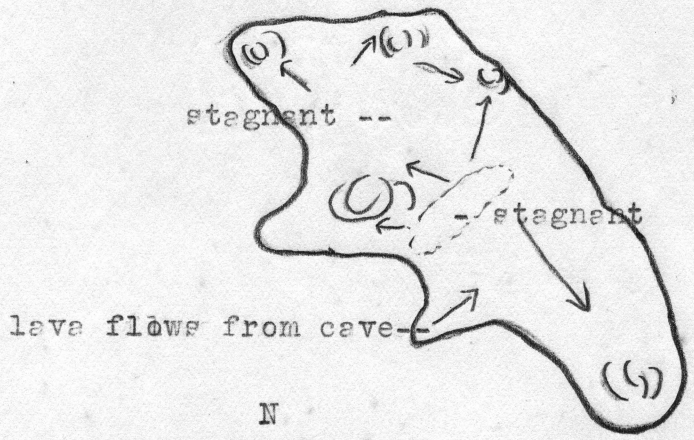
JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Saturday Date January 27, 1912.

10 a.m. Vertical angle from O.R.H. to O.F. 27 30
" " " station " " 26 00
Depression of lake 318 feet.

Wind S. Fumes bad.
No change in conditions. Much fume SE corner and W high vent; slight fume N high vent.

Sketch map of lake:



T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Sunday Date January 28, 1912.

3 p.m. From east A-frame:

	V. A.	Direction.
East cove	30°	N 55 W
SE "	28	N 72 30 W
O. F. cove	23	N 48 W
O. F.	23	
NW cove	18	N 55 W
W end	14	N 67 W
Promontory	22	N 71 W

From station E:

	V. A.	Direction.
SE cove	26°	S 70 W
O.F.	26	
O.F. cove	26 30	N 78 W
NW cove	20	N 79 W
W end	16	N 85 W
Promontory cove	21	S 80 W
E cove		S 70 W ca

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Monday Date January 29, 1912.

11 a.m. V. A. from station E to O. F. 27°
Depression of lake 332 feet.

3:20 p.m. V. A. from station E to

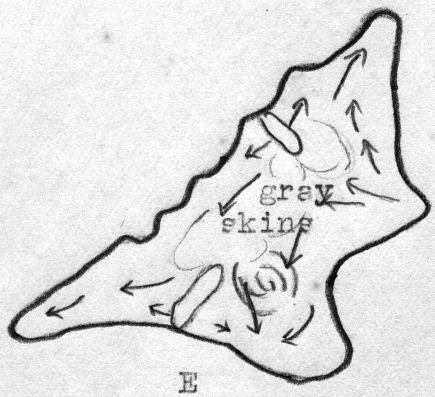
SE cove	26 30		
O. F. cove	28 00		
O. F.	27 30	27 00	27 30
NW cove	19 00		
W end	17 00		

Depression of lake 339 feet.

O. F. intervals: 0, 29, 33, 32, 19, 32, 15, 27, 11, 34, 29, 22, 10, 43, 29, 27, 15, 27, 53, 32, 14, 27, 27, 37, 50, 3, 24, 8, 38, 38, seconds.
Average 27 seconds; maximum 53 and minimum 3 seconds.

South wind causing bad fumes all day.

Sketch map of lake:



T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Wednesday Date January 31, 1912.

9 a.m. V. A.

	From O.R.H.	From station E.
Old Faithful	27 30	26 45
E cove	20 30	
SE "	20 00	26 45
W end	26 00	15 30
NW cove	35 00	19 30

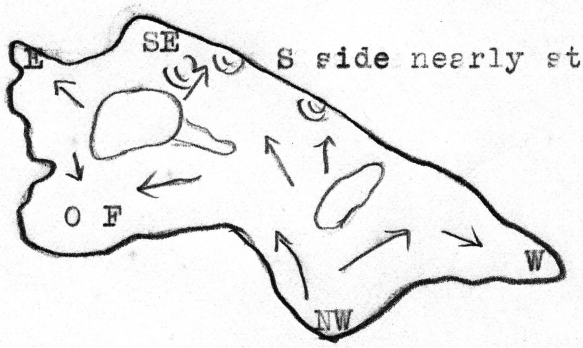
Depression of lake 328 feet.

Wind ENE, changing to SSW.
Walked around S side Halemaumau. Maximum Pele's hair found S 75 W, hence prevailing wind N 75 E.
White fume strong SE and W bank; less E; least N.
Found lava channel S side Halemaumau and much small aa with transitions to pahoehoe.

3:02 p.m. Felt small earthquake.

6 p.m. Another earthquake felt at pit. Heavy caving E side under Rest House made cloud of dust like ash.

Sketch map of lake at 9 a.m.:-



T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Thursday Date February 1, 1912.

5 p.m. From Old Rest House:

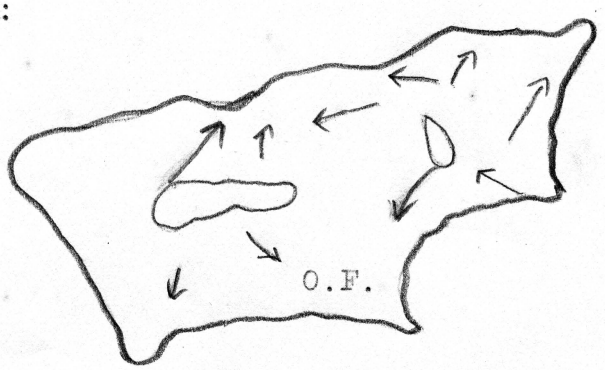
	V. A.	Direction.
O.F. cove	31 00	S 25 E
O.F.	28 00	
E end	22 00	S 25 E
SE cove	20 00	S 12 E
W end	27 30	S 30 W
NW cove		S 8 W
Smoking place W end		S 43 W
West A-frame		S 85 W
Gate new fence		N 42 W
SW corner ditto		N 63 W
NE " "		N 28 W
Pile stones S rim crater		S 14 W
The half dome		S 67 E
N cor, SW embayment just over Perret's cave.		S 59 W
S cor. embayment nearly over smoking place		S 45 W

110 feet from corner house to edge of crater in front of rest house.

From site of Tech. Sta. E near N.R.H.:

	V. A.	Direction.
O.F.	26 30	
O.F. cove	26 30	N 79 W
NW cove	20 30	N 80 W
W end	16 00	N 88 W
SE cove	25 30	S 57 W
Half dome		N 6 E
S end of shelf under sta,		S 43 W
S corner embayment		S 78 W
Smoking place		S 88 W
N corner embayment		N 82 W
Near corner new station		N 55 W
Pinnacle rocks		S 60 W
Summit SW table rock		S 50 W

Sketch map of lake:



Depression of lake 325 feet.

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Friday Date February 2, 1912.

1 p.m. Pouring under bank in O. F. cove.

Vertical angle from O.R.H. to O.F. 29°.

4:50 p.m. " " " site Tech. Sta. E to O.F. 27°.
Depression of lake 331 feet.

South wind. Activity same as yesterday.

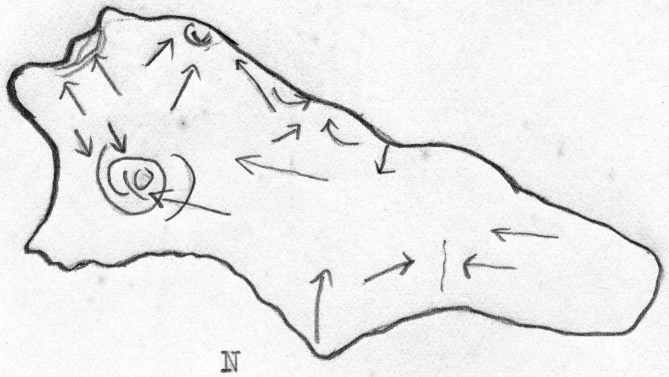
T.A.J.

1:00 p.m. Vertical angle to O.F. 26 30.
Depression of lake 327 feet. Rising.

3:15 p.m. Intervals of O. F.: 40, 53, 17, 62, 62 seconds.
Average 47 seconds.

V. A. from O.R.H. to O.F. 28 30.

Sketch map of lake:



7:00 p.m. Though wind N eddying SO_2 and fog of fumes comes up at O.R.H. Back from edge fresh air.
Glow spot high over SE cove. O.F. playing double and quadruple. All day distinct overlaps and flows showing rise since yesterday. Now cracks around rim and some foundering W cove.
Rampart of bombardment at O.F. cove, SE cove and E cove; a little on N wall.
W end breaks up; floes melt; some spatter over W end shore.
Stagnant zone down middle forms; outflow E, SE, S; W and NE to O.F. cove; a meeting point of inflow between NW cove and W end. From NW cove and W end flow is <u>from</u> the shore.
At O.F. cove everything flows in against the wall and is apparently sucked down.

7:30 p.m. O.F. intervals:

30 - double	36	36 - double 3
41 - "	51 - double 8	29
71 - "	27	35 - double 6
48	43 - double	51
33	37 - " 8	22
56 - double 13	43	30
52 - " 17	31	57 - double 12
48 - " 23	45 - double 10	

("Double" means secondary explosion at interval shown.)
Average interval 42 seconds.

V.A. from O.R.H to O.F. 27 25.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

- 2 - Day Saturday Date February 3, 1912.

8:15 p.m. Photographs: (5x7)

1. Three quarters of pool E, from O.R.H. No O.F. 1/25 sec., open lens. Wait for clear spell, fumes rise under black ledge under O.R.H.
+2. Same view. 1/50 sec. Double O.F. Lava splutter on bank at E end. Stagnation spot.
+3. Same view. 1/100 sec. Double O.F. At 8:50 p.m.

N end continues to break into blocks which founder or melt up. Cracking rim all around. At 8:15 no overflow of shore at O.F. A few minutes later it begins again.

8:16 p.m. Began shore bombardment; rising. Before that crack all around pool. New bombardment E, SE and S.
8:45 p.m. Cracking and lowering.
9:00 p.m. Rising and overflowing.
9:15 p.m. Cracking border again.
9:25 p.m. Flooding again with much cracking in W cove.
9:30 p.m. Subsidence crack W and S small peninsula.
This peninsula broke away and floated out as an island.



V. A. from O.R.H. to O.F. same as last time (7:30 p.m.) -- 27° 25'.
9:45 p.m. Sinking and shore stalactites. Active S shore.
9:55 p.m. Rise again.
Another glowing hole on bench halfway up S side of Halemaumau.
10:05 p.m. Sinking phase, cracks and stalactites.

T.A.J.

1912, Feb. 3



1

Jog

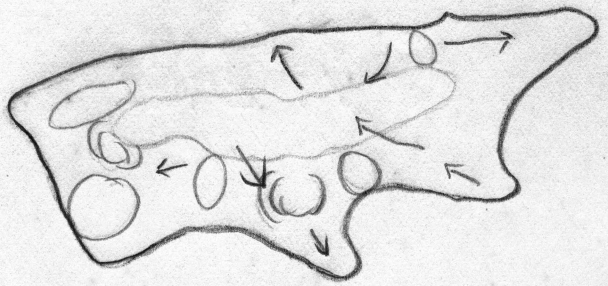
JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Sunday Date February 4, 1912.

6:20 p.m. V.A. from site Tech. Sta E to O.F. 27°.
Depression of lake 331 feet.

Pale blue spears of flame from blankets over pool. Whole stagnant -- flames from burst.



Distinctly dark and sinking. High ramparts.
Wind NE; rain.

7:45 a.m. V.A. from O.R.H. to O.F. 28° 45'.

9:10 a.m. Photographs:
5. Technology Station.
6. Pool from O.R.H. f/8 1/50 sec.

Finished moving house to N and occupied same last night.

T.A.J.

1912, Feb. 4



5

SP205303



6

Fog

JOURNAL

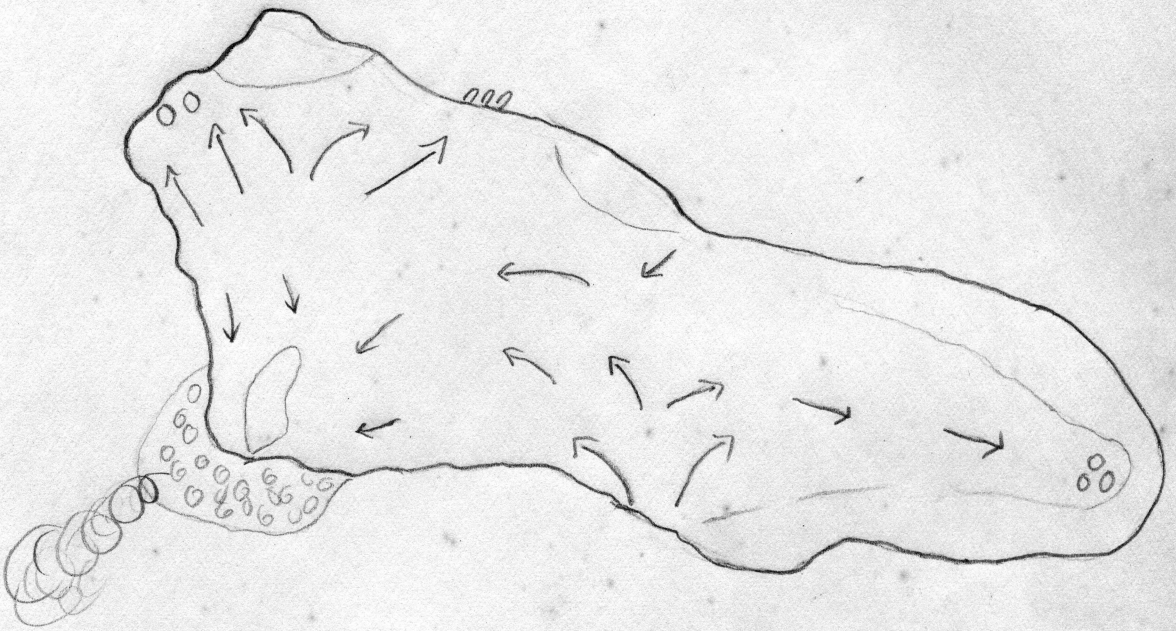
Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Monday Date February 5, 1912.

9:15 a.m.	V.A.	from	O.R.H.	to	O.F.	27 30
9:30 a.m.	"	"	E	"	"	26 30
5:00 p.m.	"	"	"	"	"	26 00
	"	"	O.R.H.	"	"	27 45

Depression of lake 318 feet.

Very heavy blankets and more inactive. At intervals a hissing sound comes from near E end cove from out of steam crack.

Sketch map of lake:



9:15 p.m. Blue tongues of flame reported from crack in ledge 3 feet long, 15 feet back of shore point of O.F. cove back of O.F. rampart.

T.A.J.

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

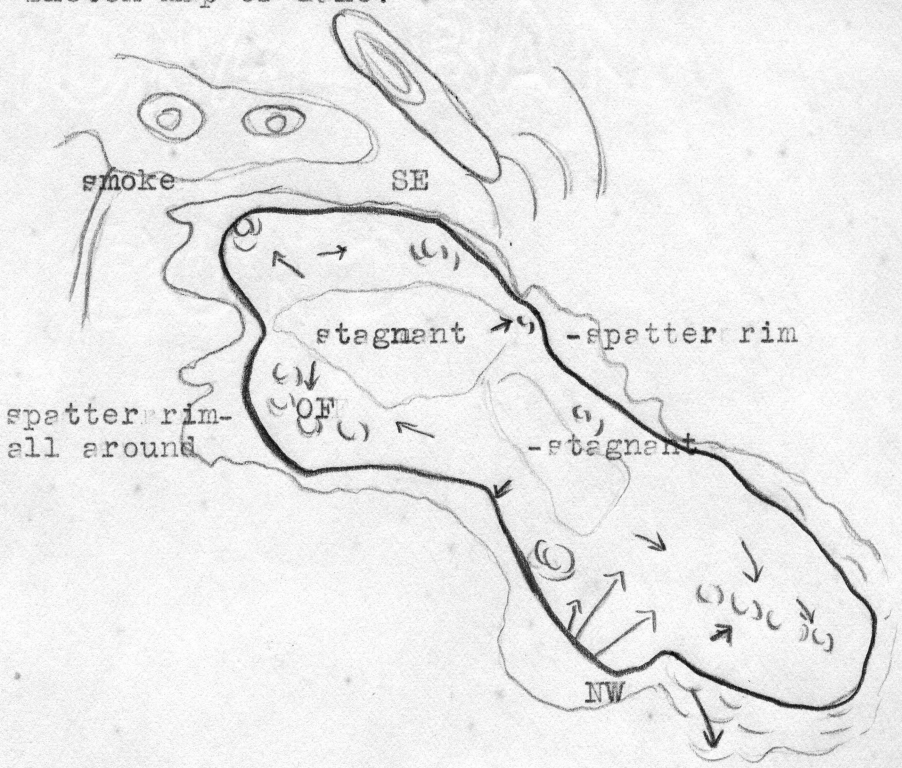
JOURNAL

 Day Tuesday Date February 6, 1912.

10:25 a.m. V.A. from O.R.H. to O.F. 28°

Pool very sluggish. O.F. triple and quadruple heavy low domes. Coves losing definition.

Sketch map of lake:



11:00 a.m. Tried microphone apparatus at O.R.H, too many artificial sounds. Noise of lava not recorded. Used megaphone with drum closed with tin.
Tried same at Postal Rift, effect of wind strong, heard no distinguishable sound of steam or water. Needs solid support and heavy wires and quiet place protected from wind.
Temperature with normal thermometer (compressed CO_2 over mercury.)
At fallen A-frame Postal Rift, depth of mercury bulb 105 cm., fissure 18 c. wide, temperature 270°. Fissure trends N 70 W.
Took other temperatures at steam cone farther N where maxima were from 70° to 100° and along the rift where average appears to be 200° at point 50 feet farther W than fallen A-frame.
Near maximum temperature, fumes in crevasse 4 c. wide. These fumes are bluish or brownish and smell SO_2, and dim mirror with water vapor.

9:00 p.m. V.A. from E to O.F. 26°.
Depression of lake 318 feet.

9:00 p.m. Rise since yesterday. Present phase, however, low lava and high rampart. Stalactite overhang all around S sides. Active surface. O.F. sputtery. Window showing bright luminous lava through rampart N of O.F. cove where blue flames were last night. Flow lines same as morning.

9:30 p.m. Same rising and sinking phases about 10 minute intervals. Note this evening streaming <u>out</u> from SE cove; into E, S, O.F. and W; away from SW, NW, SE and up the middle. Stalactites and cracking on borders during sinking phases; increased activity, drowning of stalactite caverns, spatter over ramparts.
Curious white luminosity to the window back of O.F. cove rampart due to blue flames playing over a spot which is kept bright orange by them; whiter than lava.
The 10-minute phases marked by intense <u>luminosity</u> (actinometer?) and bubbling all over for rising, cooling and stagnation, <u>low</u> luminosity for sinking; twenty fountains rising, five fountains sinking.

Queries: Why not try different levels different parts of pool, diurnal changes pool, actinometer phases pool, rising and sinking phases?

Several days ago saw flock of birds fly over Halemaumau, deflect upward and then fly away. Convection current or fumes.

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Thursday Date February 7, 1912.
Friday " 8, "

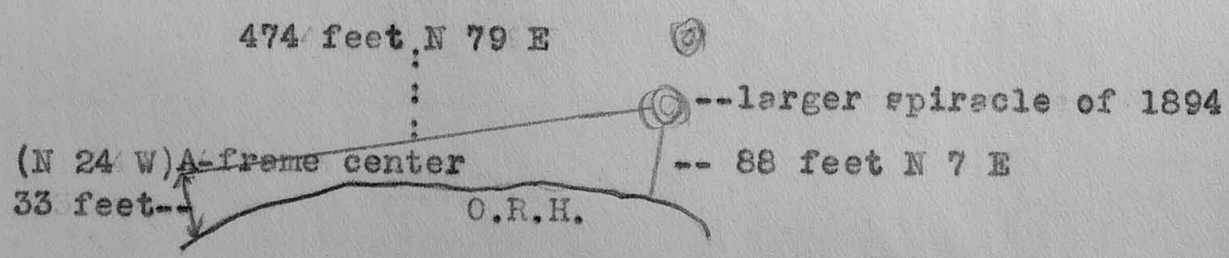
Feb. 7.
10:45 a.m. V.A. from E to lake 27 30.
" " O.R.H. to lake 28 00.
Depression lake 271 feet.

Feb. 8.
5:30 p.m. V.A. from O.R.H. to lake 27 00.
Depression lake 256 feet.

During this week S winds. Finished moving house and occupied it.
Temperature measurements made with Jena borosilicate glass thermometer filled with carbon dioxide at a pressure of 20 atmospheres reading to 550° C.

Contract for building observatory let to H. Hackfeld & Co., Ltd.
Consultation with C. H. Birdseye of U.S.G.S.

Base line sketch measured at this time:



T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Saturday Date February 9, 1912.
Sunday " 10, "

Feb. 9.
4:55 p.m. V.A. from E to O.F. 26 00.
Depression lake 251 feet.

Feb. 10.
Noon. V.A. from O.R.H. to O.F. cove 28 30.
Depression lake 243 feet.
Distance roof O.R.H. to O.F. cove 6.13 cm or 490.4 feet.
" to E house from O.F. cove 6.37 cm. or 509.6 feet.

T.A.J.

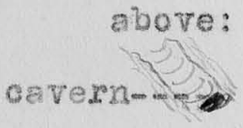
JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

 Day Sunday Date February 11, 1912.

Walked with Dodge to floor of Kilauea Iki.
PHOTOGRAPHS: 5x7
1. Jungle.
2. Driblet cone head 1868 flow.
3. Detail lava stalactites N side 1868 flow.
4. Looking W, two lava cascades.
5. Two levels lava rim of Kilauea Iki floor.
Aa lava delta on pahoehoe. Two levels lava rim of Kilauea Iki floor. There is a small pit of flow lava W with block lava stream flowing into it. There is flow lava from 1868 vent. Two cascades to Kilauea Iki; mechanism:

above: below:

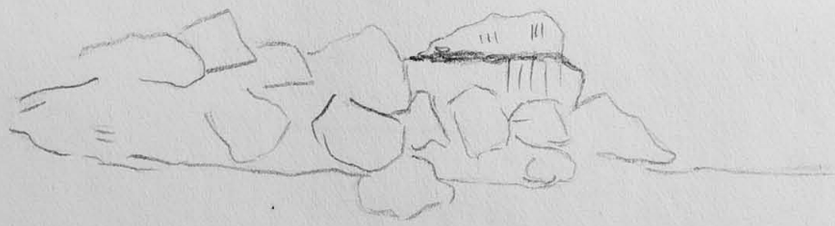


cavern----

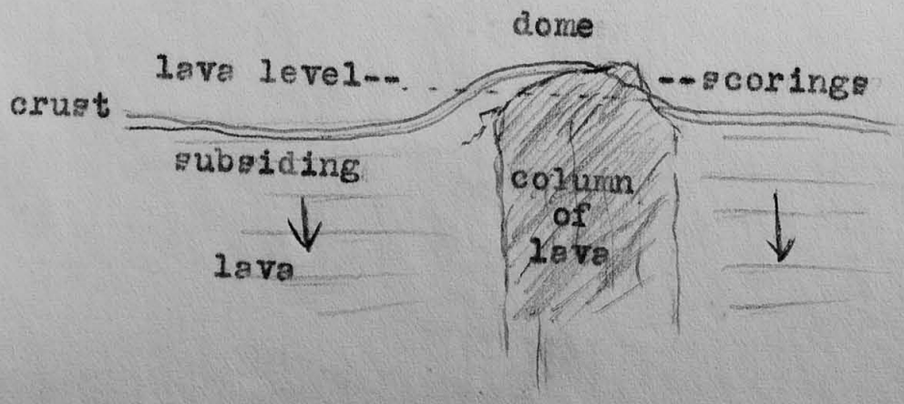


-----channel with aa floor. Aa of two kinds, (1) nigger head, (2) broken pahoehoe.

Farther down flows on to smooth Kilauea Iki pahoehoe floor. In many parts of flow there is pahoehoe on top, broken, with rough aa squeezed out from below.
Pickering's crust domes on floor of Kilauea Iki, some of them 15 feet high. Crusts highly vesicular or glassy on surface, coarsely so below; quarter of an inch surface, then one inch or more coarse, then several inches more massive uniform vesicular below. Crusts 3 to 4 inches thick.
The most interesting thing about these domes is the interior lava which appears as large knobs which push out through the broken crusts in places and show scorings on vertical surfaces and spatter marking levels. The appearance is like Bogoslof carapace and inner dome.



The summits of larger domes are on a level with the lower terrace-line level around the crater. Apparently the rest of the lava pool subsided and the domes are places of viscid columns which resisted subsidence. They (the domes) are highest W, lowest E; largest W, smallest E -- the general level of pahoehoe floor is highest W, lowest E.



Massachusetts Institute of Technology
Hawaiian Volcano Observatory

JOURNAL

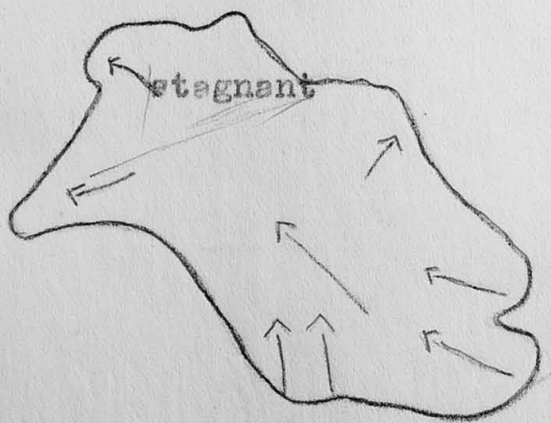
- 2 - Day Sunday Date February 11, 1912.

No steam cracks or temperatures around Kilauea Iki.
Went in over platform between Kilauea and Kilauea Iki by way of Kilauea trail. Came back by NW slope of Kilauea Iki and base of cliff dense fern forest. Some deep clefts up pali by sign "Kilauea Iki" near automobile road. There is a foot trail down the cliff.
Note on S side of Kilauea Iki pit proper a hill and lava cataract distinct from Poli o Keowe, mapped by Dodge and in the region marked ohia woods.
Rain p.m. Note that in this very humid weather the steam billow over Halemaumau very strong. Merely humid air raised to colder zone and condensed.
Note: use microphone <u>immediately</u> after <u>rain</u>.

8:30 p.m.	V.A.	from	O.R.H.	to	O.F. cove	28 30.	243 feet
	"	"	"	"	W	25 30.	248 "
	"	"	"	"	E	20 00.	253 "

Depression lake 248 feet.

Lower than yesterday. O.F. against the bank. Stalactites south. Cracking west. Flame O.F. cove and SE cove. Hissing of factory chimney.



T.A.J.

1912, Feb. 11



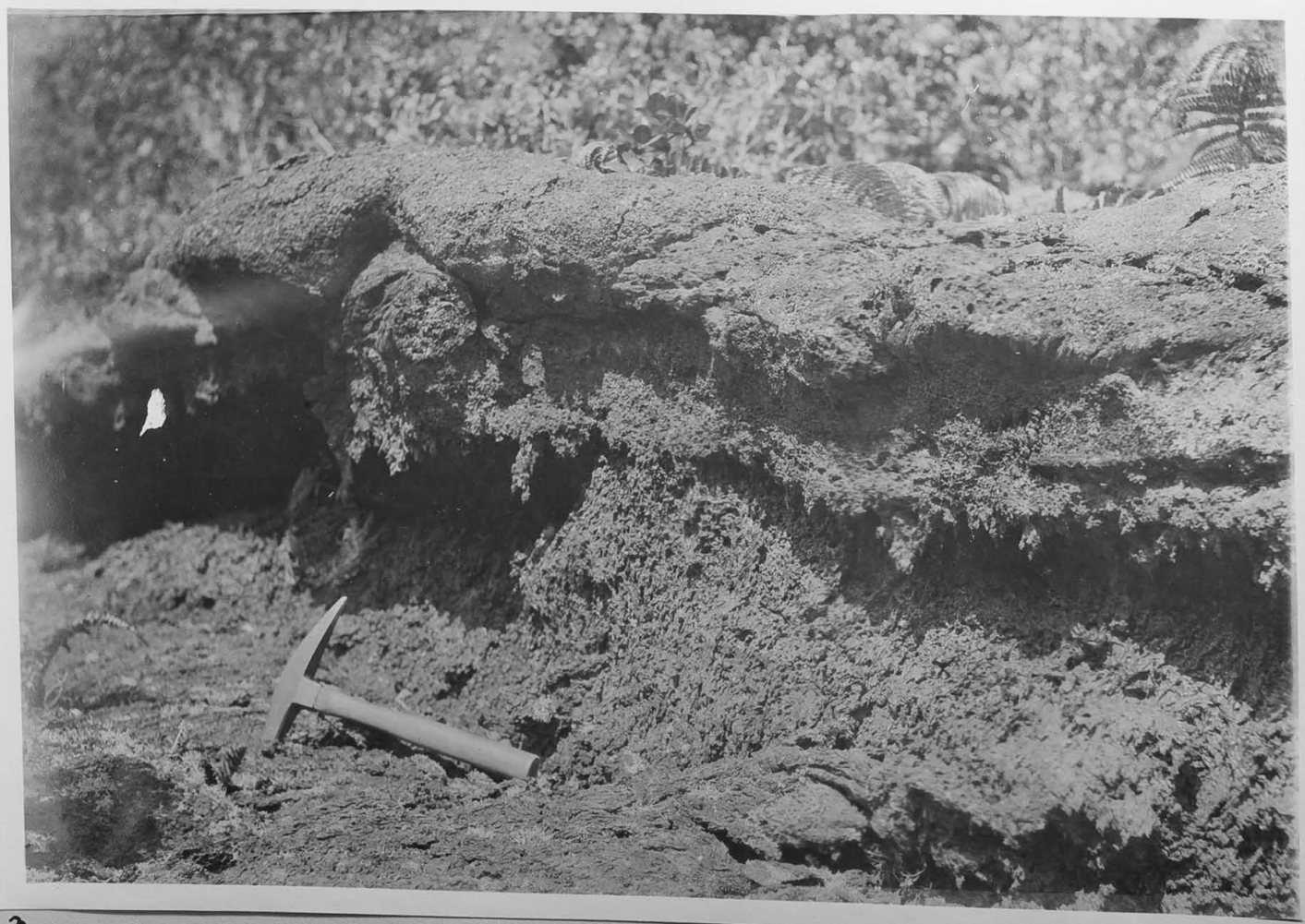
1

Fog

1912, Feb. 11.



2



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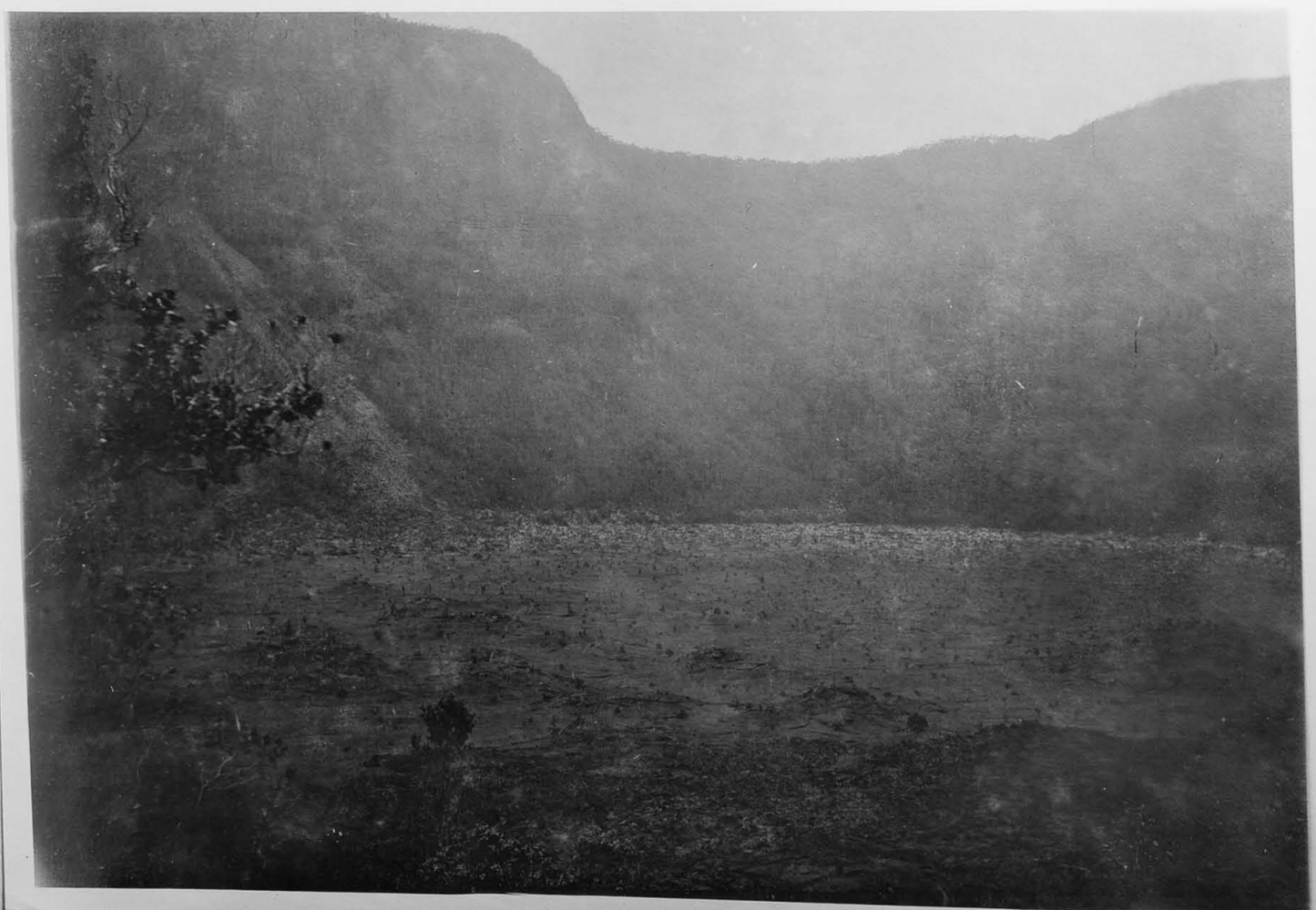


5

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Monday Date February 12, 1912.
Tuesday " 13, "
 Wednesday " 14, "

Feb. 12.
9:00 a.m. V.A. from E to O.F. 27 45
" " " " W end 16 15
(E end not visible)

V.A. from O.R.H. to E end 22 45
" " " " O.F. 30 15 to edge
" " " " W end 26 45

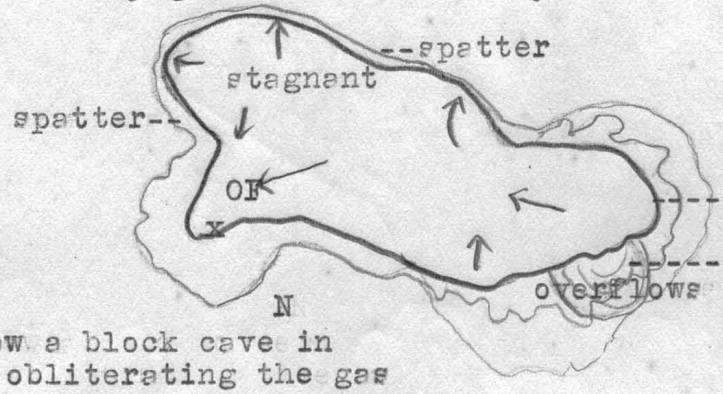
Depression lake 258 feet.

Aneroid Volcano House 25.98 (4050' upstairs)
" Monserrats 27.83.

Feb. 13.
12:41 a.m. Earthquake felt at Monserrat's.
Aneroid at Monserrat's camp site 22.78 inches, 7420 feet.

Feb. 14.
10:05 a.m. V.A. to O.F. cove 29 30
" " W end 27 00
" " E " 21 00

Lava high, up to rampart. Flows through rampart at three places W end. Very strong surface flow W to E. Stagnant E end. Ebullition W surface O.F. cove. S surface no great amount of shore attack. Chimneys flaming SE.
11:00 a.m. There was an overflow N side of W end. From 11 to 11:40 brimming; after 11:40 sinking, with rim.
1:00 p.m. to 2 p.m. brimming again. O.F. very near bank NE side of its pointed cove; O.F. frequently double and triple. The rampart building about O.F. cove has diminished the size of the cove, the old outlines of the cove appearing from the rampart. The rampart slopes up for a distance of about 50 feet from the old boundaries.



At x saw a block cave in square obliterating the gas jet in roof of cavern 2:30 p.m Feb. 13. This breaking away result of outbuilding meeting place of O.F. boiling.

(Cont'd)

Feb. 14.
3:30 p.m. Sinking.
4:00 p.m. Rising.
4:05 p.m. V.A. from O.R.H. to O.F. 29 10
" " " " SE cove 19 35
" " " " W end 26 45
Depression lake 247 feet.

5:45 p.m. Note three gas flues burning SE. Stalactite cavern below. Island of former days slowly foundering with oxidation above. Points of O.F., S and SE attack shift. Glow back of O.F. rampart. Notice new large cavern high S wall Halemaumau.
Note: The SE cove chimneys are over a cavern under crusts of former stage. Like the island of Perret. Slowly oxidizing and fusing up.

Feb. 16.
1:00 p.m. V.A. from O.R.H. to W 26 45 257 feet
" " " " O.F. 29 00 249 "
" " " " E 21 15 269 "
Depression of lake 258 feet. Rising,

Overflows new NW, SW, N and NE.
Note: Take rate fo flow of current. Do the big rises take place at night? Try hat-pin and string for azimuths on pool.

V.A. from Beggar Point (later called N station?):
To SE 21 00
O.F. 33 00
E 23 37
W 22 35

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day **Friday** Date **February 16, 1912.**

PHOTOGRAPHS:

5x7 Kodak, Eastman film.

1. Preparing ground for Observatory with prison labor.
2. Carpenter K. Fujimoto of H. Hackfeld & Co. (on right) laying cornerstone of Observatory. Halemaumau in distance.
3. Carrying first timbers.
4. F. B. Dodge, assistant, at Observatory site.
5. Sheething the Observatory.
6. Ash section exposed in cesspool cut, 10 yards south of Observatory.

T.A.J.

1912, Feb. 16.



1

SP 205 304



2

Jag

1912, Feb. 16



3



4

sag

1912, Feb. 16.



5

SP205305



6

Jag

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

JOURNAL

- 1 - Day Saturday Date February 17, 1912.

11:10 a.m. V.A. from O.R.H. to E cove 20 30 261 feet
O.F. cove 28 15 240 "
W cove 26 25 254 "
Depression lake 252 feet.

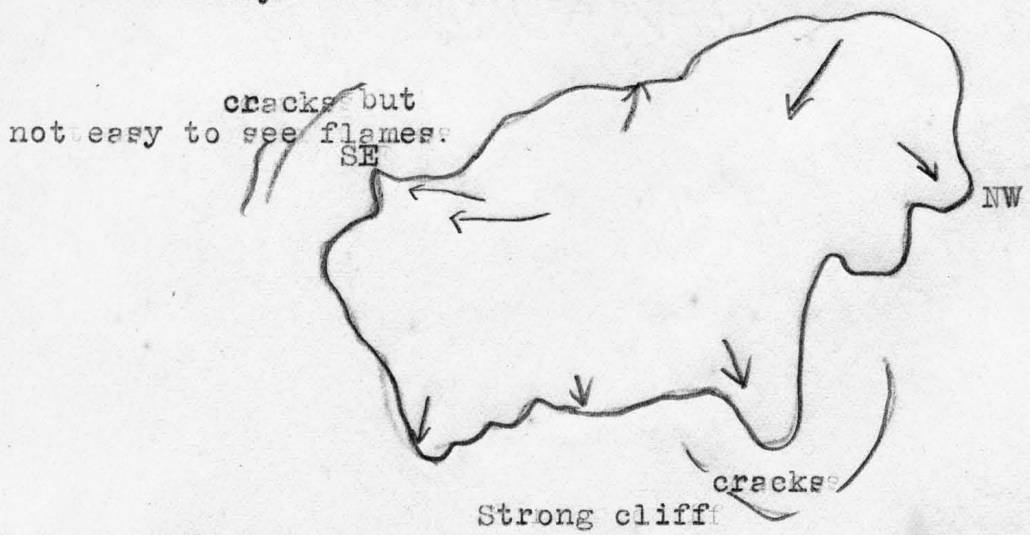
11:30 a.m. V.A. from E E cove not visible.
O.F. cove 26 40
W cove 15 40

Cockett's trail.
First crater small, round, wooded.
Second crater bigger, sheer, convergent talus at bottom. Steam cracks above talus E side. Guess 215 feet -- Dodge 300 feet. Some steam E side.
Third crater shallow, wooded.
High driblet hill W side.
S 20 E are seen two walls facing westward, very straight; trend N 70 E.
Another hill with flag S 43 E; another also with flag S 72 E, big double hill with saddle of the seven craters.



Fourth crater Devil's Throat, 50x35 feet; overhang. Longest axis N 60 E. Stones take 5 to 5½ seconds to strike. Cave under NW side and deepest there. Water dripping on bottom. (Note: come and lower acetylene light) By shielding eyes with hands like a field glass, bottom can be seen quite plainly. Appears flat lava surface and almost no talus! Water drip probably from NW cavern. With Zeiss glass could see bottom. Forked dead stick in one place. Lantern will prove CO_2. Easy to bridge. Is there a good water supply? Elevation must be 3500 feet.

7:00 p.m. Temporary sinking in Halemaumau. Larger pool since yesterday. Flow into NW cove.



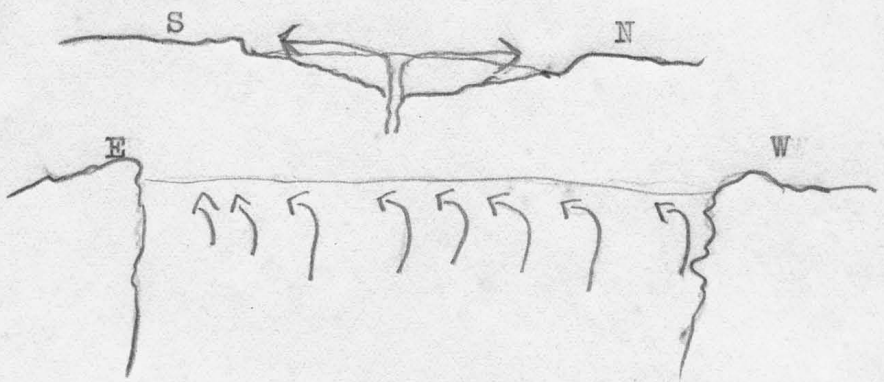
JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

- 2 ~~Day~~ Saturday Date February 17, 1912.
Sunday " 18, "

Feb. 17,
cont'd

Remarkable changes now on the new moon; rising apparently. Wilson reports overflow through cracks back of point between O.F. and NW. More flows W and breakdown and flow SE. Fumes now strong W end, faint E.
The inflow is from W only: to walls everywhere else; rising and spreading from medial line?



Feb. 18.

Routine. (Birdseye)
Suggested method. Daily check on
1. Height of pool.
2. Shape of pool.
Weekly check on
1. Inner benches.
2. Shape of upper rim (rarely changes)
Adopt permanent bench marks, and notation for temporary marks.

1:34 p.m.

V.A. to O.F.	28	45	246 feet
W	26	45	259 "
E	21	15	267 "

Lake 540 feet long, 275 feet wide.
Depression 257 feet.

T.A.J.

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

JOURNAL

Day Monday Date February 19, 1912.
Tuesday " 20, "
Wednesday " 21, "
Thursday " 22, "
Friday " 23, "
Saturday " 24, "

Feb. 19.
10:00 a.m. V.A. to O.F. 20 50 246 feet
E 28 55 265 "
W 26 30 256 "
Depression lake 256 feet.

Feb. 20.
11:00 a.m. V.A. from O.R.H. to O.F. cove 29 00 247 feet
E " 20 25 259 "
W " 25 45 249 "
Depression of lake 252 feet.

New flow on N side of pool.
Reason O.F. always appears higher from O.R.H. is that bank cuts off actual lava level. Compare E station ("Perret's") readings and check.
12:15 a.m. Small earthquake.

Feb. 21.
11:00 a.m. V.A. from O.R.H. to O.F. cove 29 15
E " 21 10
W " 26 25
Depression of lake 260 feet.

Clearing and cold after heavy rain. Strong visible steam vapor from vents N and SE of the crater. Nothing but pale blue fumes over the crater itself.

Feb. 22.
2;30 p.m. V.A. to W 26 45
E 21 30
SE 20 00
Depression of lake 262 feet.

Feb. 23.
Noon V.A. from O.R.H. to O.F. cove 29 05
E " 21 00 265 feet
W " 26 00 251 "
Depression lake 258 feet.

Feb. 24.
2:00 p.m. V.A. to E 21 30 272 feet
SE 19 45
W 25 50 249 "
Depression of lake 260 feet.

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Monday Date February 25, 1912.

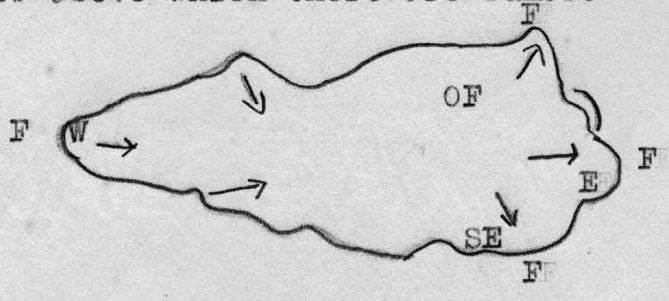
2:40 p.m. V.A. from Little Beggar (N) to E 22 53
SE 20 45
W 22 50

3:00 p.m. V.A. from O.R.H. to E 20 25 257 feet
SE 20 05
W 26 05 254 "

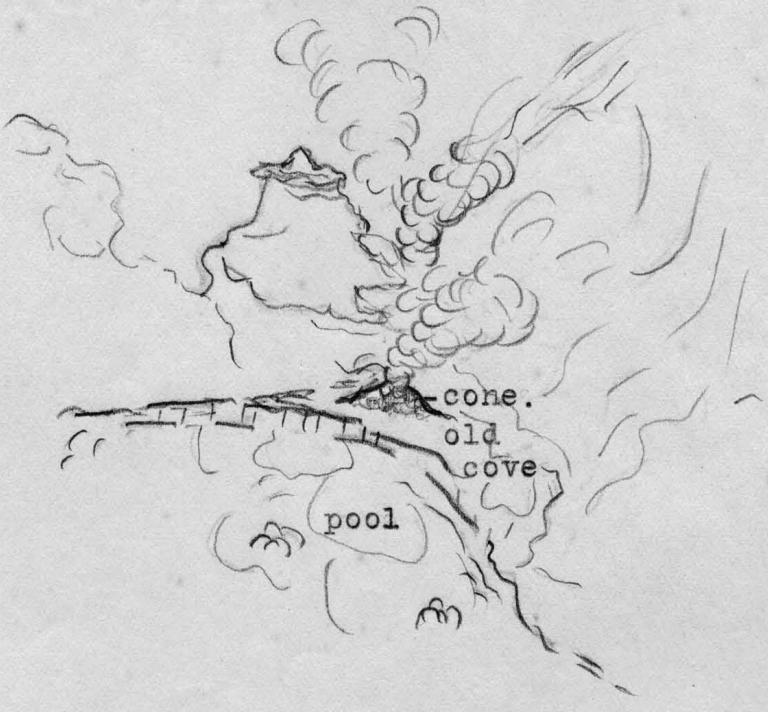
Depression of lake 256 feet.

Much fuming and cracking noise. Blocks floating out from W end. High overhanging wall W end. Flow to wall SE, S, O.F. and E. Flow outward NW, W and SW. Rampart wall not high under pinnacles E end: has that been subsiding bodily? Subsidiary cove between E and O.F. and small sharp point E of NW cove.
NE wind and fair but vortex brings fumes O.R.H.
Cracking noise may be spitting of many small fountains.

F -- places above which there are fumes:



Sketch SE cove and "island" from O.R.H.:-



T.A.J.

Massachusetts Institute of Technology

JOURNAL — Hawaiian Volcano Observatory

- 1 - Day Tuesday Date February 27, 1912.

3705 - 648 - Perret's pier
3973± Volcano House

10:45 a.m. V.A. from O.R.H. to E cove 21 15 — 269 feet
SE " 20 00
W end 27 10 — 275 "
Depression of lake 272 feet.

Experiments with Mansfield water finder:

10:06 a.m. Set up in O.R.H. with iron roof. Needle tends to rest on zero.
10:14 Needle 1° E.
10:15 Set up Brunton compass needle.
10:18 Brunton needle stationary, Mansfield needle 1¼° E.
10:25 Mansfield needle 1½° E.
10:34 Needle reaches maximum of about 1 4/5° near 10:30, and is now swinging back in short oscillations between 1° 30' and 1° 45'.
10:47 Brunton needle stationary, swinging between 1° 45' and 2°. Needle trembles, apparently from NE wind shaking ground and Rest House.
10:53 Same and observations at this point concluded.
11:07 a.m. Set up Manfield at point between Postal Rift and pit, bearings of point N 13 W from E A-frame and N 85 E from O.R.H., N 32 E from S stone pile.
11:10 Needle 3° 45' W, trembling strongly under wind. Needle oscillates between 3° 15' and 4°.
11:12 Oscillating strongly between zero and 6° W.
11:22 Needle swinging between zero and 5°. Instrument shaded; when sunlight was allowed to srtike dial, needle swung off, but it also swings without sunshine.
11:24 Needle swinging.
11:25:30 " at rest.
11:26:05 " swinging from 1° E to 3° W.
11:27:08 " at rest at 3° W.
11:27:42 " swinging from 5° to 1° 30' W.
11:28:32 " at rest at 3° W.
11:28:45 " swinging.
11:29:20 " at rest at 2° W.
11:31:45 " swinging from 1° to 2° 30' W.
Thereafter until 11:36 needle nearly stationary between zero and 1° W.
11:37:55 Needle swinging from 2° 30' E to zero
11:38:55 " stationary at 1° 30' E.
11:40 " swinging between 3° E and 1° E.
11:41:15 " nearly stationary about 2° E.
11:42 " swinging 1° to 3° E.
Throughout this test instrument shaded from sun by observer. Strong NE wind, needle trembling in consequence.
12 noon. Set up at SE corner of new rest house. Instrument shaded. Needle swings between 10° W and 6° E quite irregularly, showing tendency to settle down about 3° W.
12:08 p.m. Oscillating between 2° and 3° E

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

- 2 - Day Tuesday Date February 27, 1912.
Wednesday " 28, "

Feb. 27.
12:24 p.m. Needle oscillating between 1° and 2° 15' E.
Changed needle. Needle comes nearly to rest, oscillating between 0° 30' and 1° 30' E ; continues to oscillate as with other needle through about 1°. Made a test comparing fountains of O.F. with movements of needle. No accordance was observed.
12:32 Needle nearly stationary 45' E.

Feb. 28. V.A. from O.R.H. to O.F. cove 31 00
W " 27 00 259 feet
E " 22 20 286 "

5:08 p.m. V.A. to E 20 15 258 feet
SE 20 05
W 26 55 259 "
Depression of lake 259 feet.

Periods of O.F.:

Main.	Subordinate.
0 seconds	8
22	3
55	
21	
25	
22	
37	
40	
38	
22	
73	
27	
27	13
70	
44	

Average interval 37 seconds.

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Friday Date March 1, 1912.
Sunday " 3, "
Monday " 4, "
Tuesday " 5, "
Wednesday " 6, "
Thursday " 7, "

Mar. 1.
3:00 p.m. Depression of lake 263 feet.
Average intervals of O.F. 29 seconds.

Mar. 3.
3:30 p.m. Depression of lake 265 feet.

Mar. 4.
Noon Depression of lake 266 feet.

Mar. 5.
11:45 a.m. Depression of lake 267 feet.

Mar. 6.
3:00 p.m. Depression of lake 267 feet.
Moved all instruments, etc over to observatory.

Mar. 7.
5:00 p.m. Depression of lake 262 feet.

F.B.D.

JOURNAL

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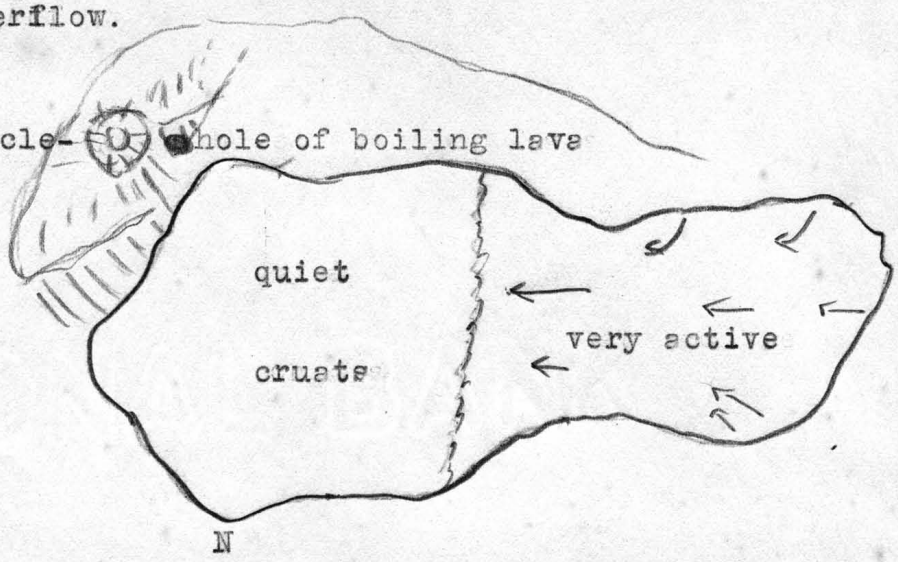
Day Friday Date March 8, 1912.
Saturday " 9, "
Sunday " 10, "

Mar. 8.
Noon. W end very active with little activity in middle and E end. O.F. at times nearly dead. Streaming SE .
Discovered a boiling lava hole under the W base if the pinnacle, about 80 feet south of S cove and a trifle higher than the lake; hole about 20 feet in diameter. Seems to be undermining the pinnacle. Much smoke comes from behind it and in front.
No overflow.

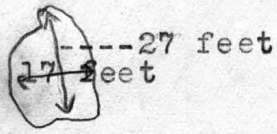


The boiling hole is where the red glow had been for so long.

10:00 a.m. V.A. to W cove 26 50
E " 21 35
Depression of lake 277 feet.

Mar. 9.
11:00 a.m. V.A. to W cove 26 55
E " 22 00
Depression of lake 278 feet.

New hole has increased to twice its size of the 8th.
Shape:



Mar. 10.
10:45 a.m. V.A. to E cove 21 45
W " 27 15
Depression of lake 279 feet.

New hole is three times larger than it was on the 8th.

F.B.D.

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Day Monday Date March 11, 1912.
Tuesday " 12, "
Wednesday " 13, "
Thursday " 14, "
Friday " 15, "

Mar. 11.
2:00 p.m. V.A. to W cove 26 55
E " 21 25
Depression of lake 273 feet.
Hole is larger.

Mar. 12.
10:00 a.m. From E house to N pile of stones 757 feet.
" N stone to A-frame 434 feet.
" A-frame to E house 1043 feet.
V.A. to W cove 27 45
E " 21 40
Depression of lake 282 feet.
Hole a little larger.

Mar. 13.
2:00 p.m. V.A. to W cove 27 25
E " 22 55
Depression lake 288 feet.
Hole still larger.

Mar. 14.
11:00 a.m. V.A. to W end 27 58
E " 22 19
new hole 18 07
Depression of lake 287 feet.
Hole still larger; about 35x28 feet.

Mar. 15.
3:00 p.m. V.A. to W cove 28 02
E " 22 20
West side of pinnacle fallen in, obliterating lava in new hole.

Photographs:
1. E end of lake. 8 opening. 1/25 second.
2. W " " " " " " "
3. Pinnacle " " " "

F.B.D.

1912, Mar. 16



top

2



1

1912, Mar. 15



3

Jaf

JOURNAL

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Day Saturday Date March 16, 1912.
Monday " 18, "
Tuesday " 19, "
Wednesday " 20, "
Thursday " 21, "
Friday " 22, "

Mar. 16.
7:25 a.m. Slight earthquake shock felt at Volcano House.
9:45 a.m. V.A. to W cove 28 14
E " 22 19 Depression of lake 289 feet.
New hole covered up.

Mar. 18.
3:00 p.m. V.A. to W cove 28 07
E " 22 10
Depression of lake 284 feet.
718 feet to E end, 529 feet to W end.
New hole covered up.

Mar. 19.
4:00 p.m. W cove 27 27) to new location
E " 21 05)
Depression of lake 276 feet.
Made a new map of points on edge of lake.

Mar. 20.
5:00 p.m. V.A. to W end 27 43
E " 21 35
Depression of lake 280 feet.
Lava has come up through the debris of the pinnacle in the new hole and shows through an opening 2 feet in diameter.

Mar. 21.
3:30 p.m. V.A. to W cove 27 25
E " 23 19
Depression of lake 276 feet.
Boiling pot down again; no lava to be seen.

Mar. 22.
8:00 a.m. V.A. to W end near S prom. 25 02. Distance 552 feet.
E " " " cove 20 40. " 721 "
Depression of lake 264 feet.
Lake rose about 20 feet and spread over a large area. Highest yet. Sank 8 feet by 4 p.m. In evening active cone in boiling pot.

F.B.D.

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Day Saturday Date March 23, 1912.
Sunday " 24, "
Monday " 25, "

Mar. 23.
12:30 p.m. V.A. to W end 26 07
E " 21 20
Depression of lake 276 feet.
A seven-foot cone on edge of O.F. cove with tongue of flame five feet long burning from top. While active at cone the surface current was away from O.F. flowing toward SW where it joined a current from the W and together they flowed SE. Later the surface flow changed and flowed towards O.F. and the cone became quiet.
Glow in cone under pinnacle. This cone similar to O.F. cone; has flame also.
Average interval of O.F. 51 seconds.

Mar. 24.
4:00 p.m. V.A. to W end 25 53
E " 20 58
Depression of lake 272 feet.
No remarkable changes at this time but much smoke.
New cone under pinnacle inactive.

Explored the cave discovered by C. H. Birdseye party. The cave is about a mile and a half down the Keauhou road below where the Puu Huluhulu trail turns off and a quarter of a mile W, along a fault facing N. The cave runs in for an unknown distance towards the sea. Travelled over a quarter of a mile and then turned back. A human skeleton was found, also two or three birds nests. The walls are very smooth and shelves, etc, run in parallel lines, showing that at one time it was the channel of a running stream of lava.

Mar. 25.
3:15 p.m. V.A. to W end 25 42
Depression of lake 267 feet.

S side of cone at O.F. cove fallen in and very active there. Current of lake has changed, rising in middle just S of O.F. flowing S and W to S cove and W cove. Hissing sound comes from cone near pinnacle. Lake as a whole very quiet.

F.B.D.

JOURNAL

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Day Tuesday Date March 26, 1912.
Wednesday " 27, "
Thursday " 28, "

Mar. 26.
12:15 p.m. V.A. from E station to S promontory 20 52. Distance 708 ft.
S cove 23 32 " 508 "
Depression of lake 271 feet.

Found there had been a large overflow out of S cove toward the pinnacle some time last night.
Strong surface flow toward W end and NW bank, rising just S of O.F. Cone at O.F. cove nearly gone but red glow showing N side.
Intervals of O.F.: 48, 20, 28, 90, 53, 90, 39, 10, 58, 33, 20, 8, 35, 24, 59, 49, 55, 80, 54. Average 45 seconds.
4:00 p.m. Lake unusually quiet with large thick scum. Very large scum formed in E end and floated to NW bank, lifted by pressure behind it over 3-foot bank and flowed down the other side.

Mar. 27.
2:00 p.m. V.A. to S cove 29 28 482 feet
O.F. cone 27 43 514 "
Depression of lake 272 feet.
Lake very active all over especially in five or six localities. Very strong surface flow towards S cove, rising in W end and in the NW. Red glow under pinnacle.
Made a new map of lake. Lake 490 feet long and 260 feet wide.

Mar. 28.
4:00 p.m. V.A. to S cove 28 57
O.F. cone 27 57
Depression of lake 270 feet.

Found there had been overflows at S cove and SW end.
Strong surface flow in lake toward the E.

F.B.D.

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JOURNAL

Day Friday Date March 29, 1912.
Saturday " 30, "
Sunday " 31, "

Mar. 29.
3:00 p.m. V.A. to S cove 29 08
O.F. cone 27 45
Depression of lake 270 feet.

Surface flow from W and E meet at O.F., where surface is sucked down.
3:15 p.m. Streaming changed, flowing directly to W end. Lake as a whole inactive at this time. Large scum formed at E end when flow is westward.
11:00 p.m. Lake very active with strong easterly surface flow. Large overflow over NW bank. New hole throwing up a little lava.

Mar. 30.
3:15 p.m. V.A. to S cove 29 22
O.F. cone 27 15
Depression 267 feet.

Some time in morning there was an overflow at O.F. cove. At present lake very quiet with easterly flow.
3:30 p.m. More active. Flow from O.F. cove towards the SW joins the easterly flow toward the S cove.

Set up Weather Bureau instruments this morning.

Mar. 31.
11:00 a.m. V.A. to S cove 28 43
O.F. cone 27 21
Depression of lake 265 feet.

Tremendous overflow all around in the night.
Lake higher and quite active, flowing E and W from middle.
O.F. cone changed in shape.
11:10 a.m. Large overflow just W of S cove.
11:20 a.m. The cone at hole W and under pinnacle broke open with a little explosion, throwing rocks into the air, and then poured out tremendous quantities of lava which filled up the basin around it. When this became full, the pouring out of lava stopped, leaving a bubbling up in the middle. Its overflow met the overflow from the bank W of S cove.
11:25 Strong surface flow towards SE.

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JOURNAL

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Day Tuesday Date April 2, 1912.
Wednesday " 3, "
Saturday " 6, "
Monday " 8, "

Apr. 2.
8:00 p.m. Lake 5 feet lower than on Mar. 31. Rather quiet with slow current rising in middle and flowing E and W. Saw O.F. cone blow its small top off, throwing up lava a few feet and showing a flame 3 or 4 feet long. "New hole"under pinnacle glowing; also all the new flows S showing glow in cracks.
Depression of lake 270 feet.

Apr. 3.
3:30 p.m. V.A. to S cove smoke (new location) 28 15
Depression of lake 264 feet.
Interval of O.F. 42 seconds.

Tremendous overflows all around. Lake to top of its banks and overflowing continuously. Cone built up at pinnacle hole but now inactive. High smoking cone at O.F. cove. Slow surface current eastward but shifting occasionally. Lake quiet but very active now and then at different places. Glowing rim undermining pinnacle and wall S of it.
5:00 p.m. Lake down 5 feet. Flow rising in middle and going N and S. The edge of the new lava flows is glowing where it strikes the old cliff on the N side.
The pinnacle cone hissing; its top is open.

Apr. 6.
9:00 p.m. Lake about the same. Depression 259 feet.

Apr. 8.
11:00 a.m. V.A. to O.F. cone 26 38
S " 27 26
Depression lake 257 feet.
Made new map of lake.

Very little smoke. Strong easterly currernt. Cones built up at O.F. and S coves, but inactive. Nothing doing at pinnacle. Cone there glowing at E end.
Very active at S cove.

F.B.D.

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Day Tuesday Date April 9, 1912.
Wednesday " 10, "
Thursday " 11 "
Friday " 12, "
Saturday " 13, "

Apr. 9.
10:30 a.m. V.A. to S cove 26 38
O.F. cove 26 01
Depression of lake 249 feet.

Tremendous overflows last night.
Large cones at N corner and W end. Strong easterly flow.
Lake quite high, 1 foot below its banks. Very active.

Apr. 10.
5:00 p.m. V.A. to S cove 26 44
O.F. cove 25 42
Depression of lake 249 feet.

Lake about the same with strong easterly flow. Small cone at pinnacle active and throwing up lava. Cone at S cove.

Apr. 11.
9:30 a.m. Lake very active with strong easterly flow. Hissing sound comes from pinnacle cone. High cone at W end with open top, also at NW corner. No late overflows.

V.A. to S cove 26 36
O.F. cove 25 52
Depression of lake 252 feet.

Apr. 12. Lake reported to be about the same.

Apr. 13.
10:00 a.m. V.A. to S cove 26 20 (new location)
Depression of lake 241 feet.

At 10 p.m. last night there were very large overflows on all sides, filling up around the pinnacle and extending beyond and higher than anything previous.
Now lake very high, to the top of its banks. Strong current due E. Peculiar looking cone at NW corner with top open and roaring.
Lava flows have filled up to within 20 feet of the top of the pinnacle.

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Day Sunday Date April 14, 1912.
Monday " 15, "
Tuesday " 16,
Thursday " 18, "
Friday " 19, "
Saturday " 20, "

Apr. 14.
8:30 a.m. V.A. from N station to S cove 20 10
Depression lake 244 feet.

Lake about the same with easterly current. High wall built at W end. Roaring at NW corner.

Apr. 15.
11:00 a.m. V.A. from N station to S cove 20 06
Depression of lake 242 feet.

Lake very quiet with slow easterly current, but very active along wall of S cove.

Apr. 16.
9:45 a.m. V.A. to S cove 20 14.
Depression of lake 247 feet.

Lake rather low, by the looks of its banks. Strong easterly current. Cones at S cove, W end and NW corner. Very active on S side near wall. Very loud hissing sound coming from cone at NW corner.
Five or six overflows last night.

Apr. 18.
5:30 p.m. Depression of lake 239 feet.
Very little change. Easterly current. Pool brimming and many overflows.

Apr. 19.
5:00 p.m. Depression of lake 234 feet.
Lake appears about 7 feet lower relative to its banks.
Very inactive with westerly flow.

Apr. 20.
10:40 a.m. V.A. to S cove 24 53.
Depression of lake 227 feet.

Strong easterly flow rising in extreme W end and sinking in E. Quite active. Three overflows occurred in 15 minutes. Very active at S cove.

Average depression of lake for week 239 feet.

F.B.D.

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Day Sunday Date April 21, 1912.
Monday " 22, "
Tuesday " 23, "
Wednesday " 24, "
Thursday " 25, "

Apr. 21.
10:15 a.m. V.A. to S cove 24 50
N promontory 20 17
(new location)
Depression of lake 236 feet.

Strong easterly current. Many overflows last night.

Apr. 22.
10:00 a.m. Overflows last night and four observed at this time. Lake high with easterly current. Smoking at cones at NW corner and W end.

V.A. to S cove 24 34.
Depression of lake 229 feet.

Apr. 23.
4:25 p.m. V.A. from N station to S cove 18 55.
Depression of lake 227 feet.

Large overflow at S cove. Very strong easterly current. Very active.

Apr. 24.
4:30 p.m. V.A. to S cove 24 15.
Depression of lake 223 feet.
Made new map.

The pinnacle covered up. Large cone with big open head back of W end about 40 feet throwing up lava; flaming and roaring. Lake overflowing in three places. Easterly current. Average interval of O.F. 50 seconds.

Apr. 25.
9:20 a.m. V.A. to S cove 23 57.
Depression of lake 220 feet.
Made new map. Length of lake 434 feet, width 244 feet.
Average depression for week 227 feet.

Lake quite high with easterly current.

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Day Friday Date April 26, 1912.
Saturday " 27, "
Sunday " 28, "
Monday " 29, "

Apr. 26.
3:30 p.m. V.A. to S cove 23 56. Distance 499 feet.
Depression of lake 220 feet.

Easterly current and very active around S cove. Tunnel through the bank at S cove coming out about 15 feet back and spouting lava.
Tremendous overflow last night at E end.

Apr. 27.
4:45 p.m. V.A. to S cove 23 40. Distance 499 feet.
Depression of lake 217 feet.

Easterly current and active around S cove. Activity circling around edge of lake.

Apr. 28.
2:00 p.m. V.A. to S cove 23 45. Distance 499 feet.
Depression of lake 214 feet.

Easterly current, into O.F. mostly. O.F. very active.

Apr. 29.
12:25 p.m. V.A. from E station to O.F. 22 24
Depression of lake 216 feet. New map.
Lake 430 feet long, 240 feet wide.

Lake very active especially at S cove. Hole at S cove spouting lava; also cone at W end. Easterly current.

F.B.D.

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Day Wednesday Date May 1, 1912.
Thursday " 2, "
Friday " 3, "
Saturday " 4, "
Sunday " 5, "
Monday " 6, "

May. 1.
4:30 p.m. Lava about 7 feet below the banks of the lake. Very active, especially at E end, but with sluggish current. O.F. intervals very short, with large explosions. Cone at S cove has large glowing open head.
Made new locations.
Depression of lake 225 feet.

May 2.
10:00 a.m. V.A. from N station to S cove 18 43
Depression of lake 227 feet. Average for week 219 feet.
Slow easterly current. Same as yesterday but not so active.

May 3.
4:00 p.m. V.A. from N station to S cove 18 47. (new location May 1)
Depression of lake 228 feet.

Very slow easterly current. Same as yesterday.

May 4.
Noon. V.A. from N station to S cove 18 40.
Depression of lake 226 feet.

Same as yesterday.

May 5.
4:30 p.m. V.A. from N station to S cove 18 28.
Depression of lake 222 feet.

Lake a little higher with strong easterly current. There were two or three overflows last night; also cone SE side spouting lava high into air.

May 6.
1:15 p.m. V.A. from N station to S cove 17 48.
Depression of lake 216 feet.

Lake very high and overflowing. Whole bottom of pit covered with new flows of last night. Strong easterly current and very little smoke. Loud hissing sounds like steam valves coming from cones at S cove and W end.

F.B.D.

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Day Tuesday Date May 7, 1912.
Wednesday " 8, "
Thursday " 9, "
Friday " 10, "
Saturday " 11, "
Sunday " 12, "

May 7.
10:30 a.m. V.A. from E station to S cove 23 09.
Depression of lake 216 feet.

Lake rising again. O.F. explosions are large and occur often. Easterly current. Small overflow last night. Cone at site of pinnacle was throwing up lava last night 50 feet into the air and forming flows around it.

May 8.
5:15 p.m. V.A. from N station to S cove 17 44. (new location)
Depression of lake 211 feet.

Lake looks higher with high built up walls. Cone at S cove extra active. Strong easterly current in lake.

May 9.
10:00 a.m. V.A. from N station to S cove 18 22.
Depression of lake 218 feet. Average for week 219 feet.

Lava fallen about 7 feet with high banks. Very slow easterly current. O.F. very active. Half way up bank at S cove there is a hole connected with the lava passage that built up the cone there. The lava is pouring out of this hole over the E end of lake. Much smoke.

May 10.
3:45 p.m. V.A. from N station to S cove 18 32.
Depression of lake 220 feet.

Easterly current. Lake down.

May 11.
11:15 a.m. V.A. from N station to S cove 18 23.
Depression of lake 218 feet.

Slow easterly current. Whole lake very inactive. More smoke.

May 12.
3:15 p.m. V.A. from N station to S cove 17 42. (Location of May 8)
Depression of lake 211 feet.

Lake to top of its banks and overflowing. Strong easterly current. Huge overflow on S side covering all that floor. Cracks around edge of cliffs glowing. Whole floor covered with new flows. Less smoke.

F.B.D.

Massachusetts Institute of Technology

JOURNAL

Hawaiian Volcano Observatory

Day Monday Date May 13, 1912.
Tuesday " 14, "
Wednesday " 15, "
Thursday " 16, "
Friday " 17, "

May 13.
3:30 p.m. Depression of lake about 215 feet.
Very inactive and O.F. nearly dead. Current rising through middle in a line from end to end and flowing to N and S sides.
8:00 p.m. Lake same elevation but more active. Easterly current.
Cone at S cove shooting up sparks about 60 feet at an angle of 45°, looking like a Roman candle and showing blue flames.

May 14.
5:00 p.m. V.A. from N station to S cove 17 54.
Depression of lake 213 feet.

Lake with slow easterly current, rather quiet. No change.

May 15.
3:00 p.m. V.A. from N station to S cove 18 07. New map.
Distance to S cove from N station 660 feet.
" " " " " E " 498 "
Depression of lake 222 feet.

Strong easterly current. No change.

May 16.
9:00 a.m. V.A. to S cove 18 07.
Depression of lake 222 feet. Average for week 217 feet.

Easterly current and much smoke. Quite active in E end.

May 17.
11:00 a.m. V.A. to S cove 18 19.
Depression of lake 225 feet.

High banks and slow easterly current. Much smoke. O.F. running into E end. Very little change.

F.B.D.

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Day Saturday Date May 18, 1912.
Sunday " 19, "
Monday " 20, "
Tuesday " 21, "
Wednesday " 22, "

May 18.
5:00 p.m. Depression of lake 227 feet.
Lake about 2 feet lower than yesterday. Strong easterly current. Much smoke. No change.

May 19.
12:10 p.m. V.A. to S cove 17 33.
Depression of lake 214 feet.

Lake very high but not overflowing. Strong easterly current. Little smoke. No other change.

May 20.
12:30 p.m. V.A. to S cove 17 45.
Depression of lake 218 feet.

Lake seems higher; last night three small overflows. Strong easterly current. Less smoke.

May 21,
1:00 a.m. V.A. to S cove 17 37.
Depression of lake 215 feet.

Strong easterly current and very little smoke. Lake a trifle higher. Very active especially around S cove. Pinnacle cone active, forming flows around it.

May 22.
:00 a.m. Overflow of lake.
:45 p.m. V.A. to S cove 16 58. New map.
Depression of lake 205 feet.
Lake very high with continuous overflowing. Strong easterly current. Whirlwind at W end formed column of smoke 200 feet high and 5 or 6 feet in diameter; lasted 5 or 6 seconds. Pinnacle cone glowing, (last night this cone very active. Circular current in lake.) Lake very active, little smoke.
30 p.m. Current rising in O.F. and W end, meeting in center, and flowing into S cove.

F.B.D.

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Day Thursday Date May 23, 1912.
Friday " 24, "
Saturday " 25, "
Sunday " 26, "

May 23.
9:40 a.m. V.A. to S cove 16 42 New Location.
new vent 13 36
Depression of lake 200 feet; of new vent 181 feet.
(These readings were presumably from N station. T.A.J.)
Average depression for week 215 feet.

Lake very high and overflowing continuously. Strong easterly current. Pinnacle cone making loud hissing sound. High cone built at W end. Two hundred feet W of lake and 20 feet higher, lava cascade pouring down side of cliff in five branches where old smoke vent was. Smoke puff first, then explosions with lava.

May 24.
4:15 p.m. V.A. to NE promontory 19 02.
Depression of lake 208 feet.

Lake down 8 feet. Very slow easterly current. Little activity in E end. Big pinnacle cone and W end cone glowing. Flow from lava cascade encircling outer rim of floor and nearly meeting at E end.

May 25.
3:30 p.m. V.A. to S cove 17 34. New location.
Depression of lake 217 feet.

Lake very low with high banks and rather slow easterly current. Flow from cascade joined in E end. Cascade flowing under its crust and breaking out at unexpected places. Much smoke. Pinnacle and W end cones glowing. Very active at S cove, otherwise quiet.

May 26.
4:45 p.m. V.A. to S cove 17 23.
Depression of lake 214 feet.

High walls; stronger easterly current than yesterday. Cascade still flowing underneath. Much smoke. Pinnacle and W end cones still red.

F.B.D.

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Day Monday Date May 27, 1912.
Tuesday " 28, "
Wednesday " 29, "
Thursday " 30, "
Friday " 31, "

May 27.
2:40 p.m. V.A. 17 28 (Presumably S cove from N station. T.A.J.)
Depression of lake 216 feet.

Very low with slow easterly and very slow westerly current, meeting in center and sinking. O.F. large and flowing into O.F. cove. Much smoke. Cascade glowing red; last night it was breaking out in cracks. Pinnacle and W end cones still red.

May 28.
12:10 p.m. V.A. to S cove 17 37.
Depression of lake 219 feet.

Medium easterly current. Much smoke. Both cones red. Cascade overflow breaks out at different points. Went to lake's edge with Drs. Day and Shepherd for collection of gases.

May 29.
11:00 a.m. V.A. to S cove 17 42.
Depression of lake 218 feet.

Medium easterly current. Much smoke. Very quiet.

May 30.
9:30 a.m. V.A. to S cove 17 58.
Depression of lake 222 feet. Average for week 216 feet.

Medium easterly current. Much smoke. Quite active in E end. Lake lower with high walls. Pinnacle cone dead.

May 31. Lake about 230 feet down.

F.B.D.

JOURNAL

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Day Saturday Date June 1, 1912.
Sunday " 2, "
Monday " 3, "
Tuesday " 4, "
Wednesday " 5, "
Thursday " 6, "

June 1. Depression of lake about 235 feet.

June 2. Depression of lake about 245 feet.

June 3. Depression of lake about 235 feet.
During the last four days no change except some caving in of sides and the change in level of lake surface.

June 4.
11:00 a.m. V.A. to S cove 18 47. New map.
Depression of lake 230 feet.

Lake very low and inactive. Slow easterly current. O.F. very small. Much smoke. Walls falling.

June 5.
3:30 p.m. V.A. to S cove, 19 18. New location.
Depression of lake 240 feet.

Lake very low with slow easterly current. Huge pieces of the wall on S side fallen in. Much smoke. O.F. small.

June 6.
9:00 a.m. V.A. to S cove 19 31.
Depression of lake 242 feet.

Lake very low with slow easterly current. Great pounding and active along S side. Much smoke. No other change.

F.B.D.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Friday Date June 7, 1912.
Saturday " 8, "
Monday " 10, "
Tuesday " 11, "
Wednesday " 12, "

June 7.
11:00 a.m. V.A. to S cove 20 01.
Depression of lake 246 feet.

Quite fast easterly current. Active along S wall.
Much smoke.

June 8.
9:45 a.m. V.A. to S cove 20 10.
Depression of lake 249 feet.

Very slow easterly current and very inactive.

June 10.
8:00 p.m. Depression of lake about 260 feet.

Slow current from W end and O.F. cove, sinking in middle. Pinnacle cone glowing in two spots.

June 11.
5:00 p.m. V.A. to S cove in corner 20 19. (See location of June 12)
Depression of lake 265 feet.

Slow easterly current. Very active at O.F. and S cove.
S cove wall fallen in. Lake totally changed in shape.

June 12.
2:30 p.m. V.A. to S cove 20 15. New map.
Depression of lake 263 feet,

Lake very quiet except along S bank and O.F. Current rising in O.F. cove and W end, meeting in middle and flowing into S cove. More smoke. Whole floor of pit sunk about 7 or 8 feet.

F.B.D.

Massachusetts Institute of Technology

JOURNAL

Hawaiian Volcano Observatory

Day Thursday Date June 13, 1912.
Friday " 14, "
Saturday " 15, "
Sunday " 16, "
Monday " 17, "

June 13.
11:45 a.m. V.A. to S cove 20 39.
Depression of lake 270 feet. Average for week 259 feet.

Lake surface nearly still, just a slight easterly movement. Quite active along S cove wall. Lava sinking a little W of O.F. Walls cracking. Lava floor W of pinnacle cone sunken a lot.

June 14,
5:20 p.m. V.A. from N station to S cove 22 27. New location.
Depression of lake 278 feet. Distance to S cove 678 feet.

Tremendous amount of smoke, mostly from cascade and rift near pinnacle cone. Current rising along and near S walls, and flowing N. W end nearly frozen.

June 15.
9:45 a.m. V.A. from N station to S cove 22 50. Distance 678 feet.
Depression of lake 285 feet.

Slow easterly current. Lake very quiet. O.F. small.
No other change.

June 16. Took Messrs. Jaggar, Wood, Day and Shepherd up to the 1881 flow by the Humuula trail.

June 17.
11:30 a.m. V.A. to S cove 24 00. Distance 675 feet.
Depression of lake 300 feet.

Very slow easterly current flowing in S cove, otherwise surface of lake still. Floor W and S of pinnacle cone sunken more. Also floor on N side about 20 or 30 feet lower. Practically whole floor sunk again. More smoke.

F.B.D.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Tuesday Date June 18, 1912.

11:00 a.m. V.A. from N station to SE promontory 24 54. New map. Depression of lake 313 feet.

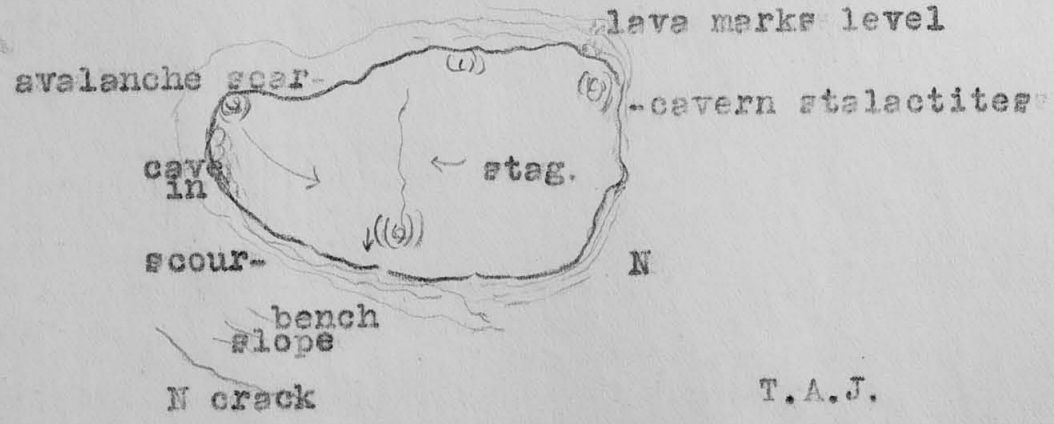
Lake very quiet with easterly and westerly flow, sinking in middle. Much more smoke.

Noon. V.A. from N station to

		Distance.	Depression.
Top S cove	18 21	745'	247'
" W end	20 40		248
SE smoke	13 55		219
Center smoke	15 03		233
Pinnacle "	17 00		242
SW smoke	10 16		179
W "	14 09		188
Top pt. E end	23 06		239
V.A. from E station to			
N smoke	17 45		217
NW bend on top	17 00		244

F.B.D.

Sketch of lake:



T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Wednesday Date June 19, 1912.
Thursday " 20, "

June 19.
2:45 p.m. V.A. from E station to SE promontory 29 29.
Depression of lake 318 feet.

Very slow easterly current and very inactive except at O.F. and S cove. More smoke than before. Floor sunken more.

June 20.
8:40 a.m. V.A. from E station to SE promontory 29 50.
Depression of lake 322 feet. Average for week 302 feet.
Dimensions of pool 530x290 feet.
" " cliff edge above pool 550x335 feet.

Very slow easterly current. Walls fallen in at W end and bar across lava formed. Not very active.

F.B.D.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Friday Date June 21, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
12:10p	E	SE promontory		30 17			328	F.B.D.

			no	pl	scr	stop	ex	cam

JOURNAL

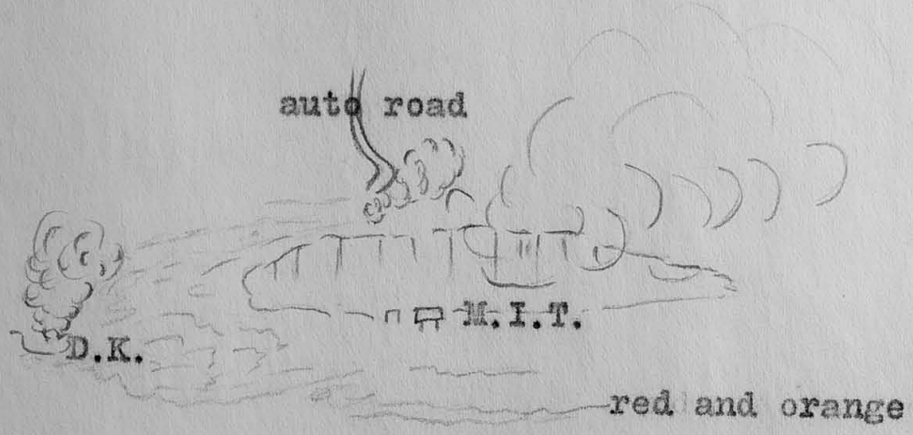
Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Friday Date June 21, 1912.

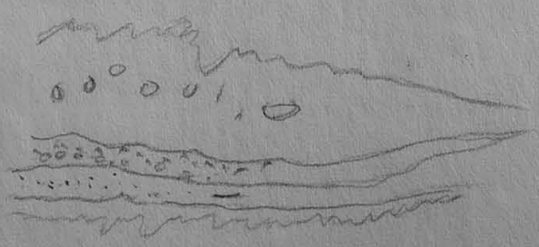
12:10 p.m. Very slow easterly current, practically still. Walls at W end fallen on bar and covered up lava back of it. Little of wall fallen at NW bend. No other change.

F.B.D.

With Wood to Uwekahuna and beyond.
From Uwekahuna note marked concentric staining of "Devil's Kitchen" and its extension N, NE and E of Halemaumau. Probably SE -- cannot see through the fumes.



Beyond Uwekahuna S.
Covering of agglom and thread lace scoria 1 to 5 feet deep over ropy pahoehoe below. Weathering pitted in the agglomerate. Valley back of fault block with water wash distributaries in sand. Cliff back of fault block remarkable transition from massive below, to heterogeneous vesicular above to rubbly aa higher still. (Photo subject.)
All in same flow.
Lapilli and sand. Lapilli on surface. Pele's hair mixed in. Flow two feet pahoehoe between aas; pahoehoe small vesicles, larger below. AA heterogeneous vesicles, larger below.



T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Saturday Date June 22, 1912.
Monday " 24, "
Tuesday " 25, "

June 22.
11:20 a.m. Slow easterly current. Active at S cove, O.F. and E end. S cove eaten away, formimg a tunnel toward smoke vents.

June 24.
2:45 p.m. Lava started to rise. Slow easterly current. O.F. larger and more active. Little less smoke. W end glowing half way up bank. More small bubbling throughout middle. No stalactites showing.

June 25.
3:00 p.m. Lake much higher with strong easterly current and O.F. big and active. Also one other shifting fountain very active. Much less smoke. Small fountains over surface.

F.B.D.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day
Date June 22, 24 & 25, 1912.

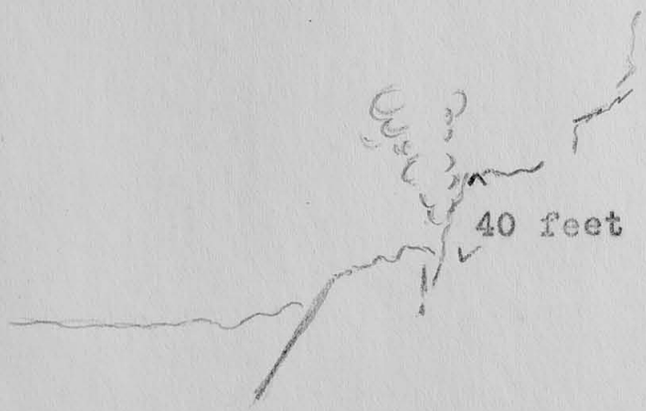
t	sta	pt	hor	vert	lev	dist	elev	h. i.
Saturday, June 22, 1912.								
11:20a	E(?)	SE promontory		30 28			329	
9:45a	N	SE smoke		14 27			228	
		E end top (New location)		22 48			234	
		W " " " "		20 20			247	
		(For survey outline see map of June 18, 1912.)						
Monday, June 24, 1912.								
2:45p	E	SE promontory		39 19			323	
Tuesday, June 25, 1912.								
3:00p	E	SE promontory		27 01		553	281	
								F.B.D.

			no	pl	scr	stop	ex	cam

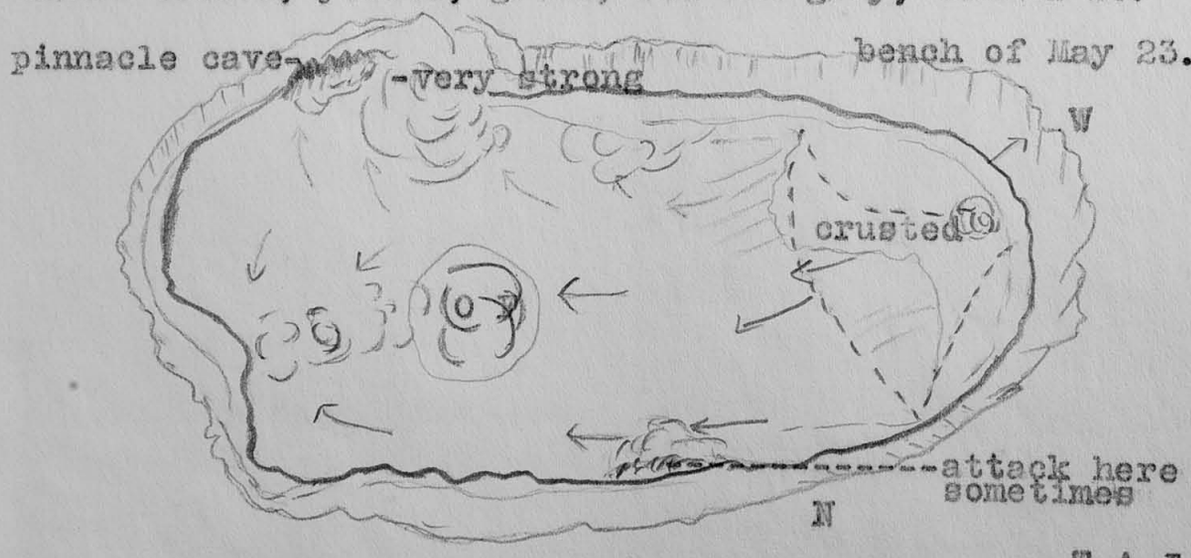
JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Wednesday Date June 26, 1912.

4:00 p.m. Lava pool large, 15 to 20 feet below bench of May 23. Fumes heavy back of pinnacle, less from high yellow and brown S patch, almost none from cascade locality at W end. Some fuming under N bench. A black hole over cascade. Spatter bench all around; location of attack of shore spatter continually changing. (See diagram.) A crusted area at W end breaks away every 15 to 20 minutes. (Dotted area diagram.)
Strong sulphur stain on high walls W of cascade.
From E station the N fuming crack at edge of platform of May 23 is seen to have opened and faulted down thus:



S platform of Dec. 1911 has slumped much. There are brilliant colors, yellow, green, red and gray, behind it.



T.A.J.

4:30 p.m. Found crater of Napau in SE corner of proposed park. Halemaumau. Strong easterly current and very active. Activity shifting. Very little smoke.

F.B.D.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Wednesday Date June 26, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
4p.m.	N	(Brunton) Small cave under pinnacle		19 45				
	N	(Brunton) W end		23 10				
							T.A.J.	
5:30 p	N	SE promontory		21 11			265	
							F.B.D.	

			no	pl	scr	stop	ex	cam

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Thursday Date June 27, 1912.
Friday " 28, "

June 27.
2:00 p.m. Lake very high and overflowing with strong easterly current and very active at S cove where a huge three sided cone has been built up without a top and very active in center. Very little smoke.

June 28.
3:40 p.m. Very strong easterly current and very active especially at S cove. Lake rose about three or four feet and overflowed to the cliffs in a few minutes while drawing map.

F.B.D.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day
Date June 27 & 28, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
Thursday, June 27, 1912.								
2 p.m.	N	S cove		18 20			249	
		Average depth for week					282	
Friday, June 28, 1912.								
3:40 p	N (?)	S cove		17 45		753	241	
							F.B.D.	

			no	pl	scr	stop	ex	cam

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Saturday Date June 29, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
4:20 p	N	South cove		17 43		751	238	
								F.B.D

			no	pl	scr	stop	ex	cam
		Panorama views.						
:55p	N	(Sun striking down)	1 - 3			full aper.	quickest clock	
p.m.	"	(Cloudy)	4 - 6			" "	slow instan	
:20 p	Near N.R.H.	Looking SW. (Cloudy)	7 - 9			Largest.	Quick clock	
:25 p	W	Sun on wall.	10 - 11			"	Smallest vane.	

T.A.J.

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

JOURNAL

Day Saturday Date June 29, 1912.

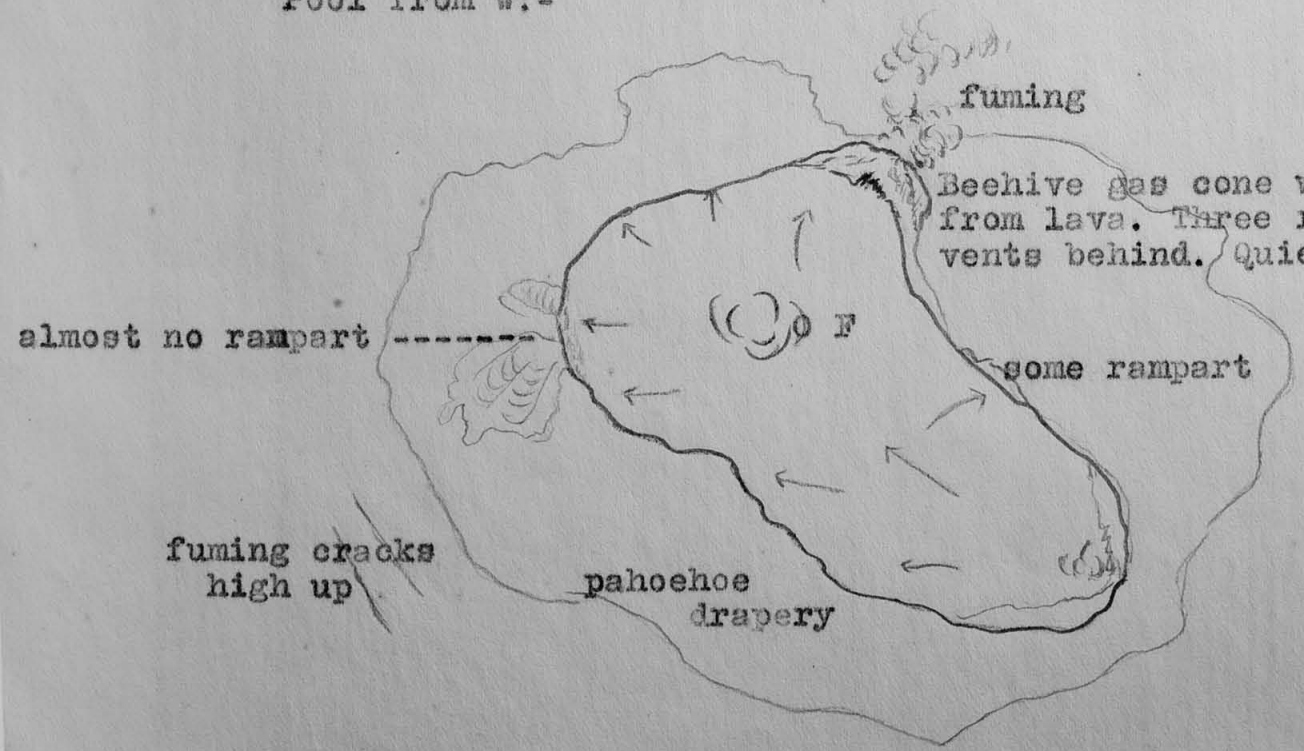
4:20 p.m. Strong easterly current and very active along S wall. Many small fountains over surface. Cone at S cove built in at center. Very little smoke. Overflowed this morning. Now with low rampart. No change in outline.

F.B.D.

5:00 p.m. After strong rise pool is overflowing May platform.

5:25 p.m. From NW station flow seen NE (see diagram) running over edge without rampart. Mechanism of flow as follows:-
The festoons keep moving longest, fed with hot lava above for five or six minutes. Lines of red hot lava at sides of festoon with cooler material farther on the side through which the festoon has made a path for itself in the first rush. When festoons stagnate a toe of lava emerges as from a tube under the festoon and at its foot. Festoons were revived by overflow twice while I watched.
Overflows on whole plarform least E and W, and most N and S. Great drapery folds from overflooding in broad sheets carrying surface blankets which wrinkle.
Slight ramparts on SW side.
The overflows on NE bank overflowed under attack. The lava seemed to mount the bank with a series of surges.
Streaming steady from W end, skin on each side of fountain there. O.F. occasionally violent, making concentric waves.
Many small flame jets breaking through NW blankets.

Pool from W:-



5:50 p.m. The beehive gas cone at S corner has open cave toward lake and three red hot vents on side away from lake which fume; this had been quiet but now the little opening on lake side started caving in.

6:05 p.m. Opening on lake side of cone bombarded and eaten away to a large cavernous,, glowing hole with shredded stalactites. The glowing, splashing lava made a thunderoud noise within the cavern.

Beehive cone E after fall:-



The noise of pool is mainly a rushing sound like a waterfall, to which is added surge and thud, the occasional peculiar belching of the cavern or of a bursting gas bubble -- it sounds like the quick exhaust of a steam engine.

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Sunday Date June 30, 1912.

00 p.m. Overflowed last night and covered up flows previous. Strong NE and SE current. No change in outline. SW portion along walls frozen over. Rest with heavy scum.

F.B.D.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Sunday Date June 30, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
5 p.m.	N	South cove		17 17		755	234	F.B.D.

			no	pl	scr	stop	ex	cam

Massachusetts Institute of Technology

JOURNAL

Hawaiian Volcano Observatory

Day Monday Date July 1, 1912.
Tuesday " 2, "
Friday " 5. "
Saturday " 6, "

July 1.
4:20 p.m. Lake lower with medium easterly current. Little more smoke. Lake was higher this morning. Cone at S cove totally covered on top and very active inside. Lake very active at several points, shifting always. Current running into S cove mostly. O.F. quiet and small.

July 2.
12 noon. Lake little lower with slow easterly current. Little more smoke especially at S cove. O.F. quite active and large, and several very active shifting fountains.

July 5.
8:00 p.m. Very strong easterly current and most active since its high rise in January. Many small fountains. Continually overflowing.

July 6.
4:30 p.m. More active than last night and stronger easterly current. More small fountains and very large shifting ones around edges. O.F. huge. Current six or seven miles an hour. Overflowing now.

F.B.D.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day

Date July 1,2,5 & 6,1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
		Monday. July 1, 1912.						
4:20 p	N	SE promontory		19 18		693	244	
		Tuesday, July 2, 1912.						
12 m	N	SE promontory		19 38			247	
		Friday, July 5, 1912, 8 p.m.					194	
		(Lake estimated to have been about 10 feet lower than on the 6th.)						
		Saturday, July 6, 1912.						
4:30 p	E	SE promontory		20 16		556	204	
								F.B.D.

			no	pl	scr	stop	ex	cam

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

JOURNAL

Day Sunday Date July 7, 1912.
Monday " 8, "
Tuesday " 9, "
Wednesday " 10, "

July 7.
5:30 p.m. Lake more active and stronger easterly current. Many small fountains and large shifting ones, about same as last two days. Current running into S cove. Lava rising little along N walls. Very active at the W end.

July 8.
5:00 p.m. Lake little higher with very strong easterly current. Even more active than last few days. Overflowing the entire floor. Larger and more "small fountains". Current shifting slightly at intervals.

July 9.
5:45 p.m. Extra strong N current rising along S walls and some of it running into S cove and W end where the lava appears to sink. Current is stronger than ever before, going at about eight miles per hour, and there are larger and more "small fountains". Lake appears little lower.

July 10,
5:00 p.m. Lake about same as yesterday but a little lower. Current rising in S and NW corners and E end, flowing toward and sinking at S cove and middle of N side.

F.B.D.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day

Date July 7,8,9 & 10,1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
		Sunday, July 7, 1912.						
5:30 p		SE promontory		20 06			202	
		Monday, July 8, 1912.						
5 p.m.	E	SE promontory.		19 32			197	
		Tuesday, July 9, 1912.						
5:45 p	E	SE promontory.		19 13			196	
		Wednesday, July 10, 1912.						
4 p.m. .	N	SE promontory.		16 33			201	
								F.B.D.

			no	pl	scr	stop	ex	cam

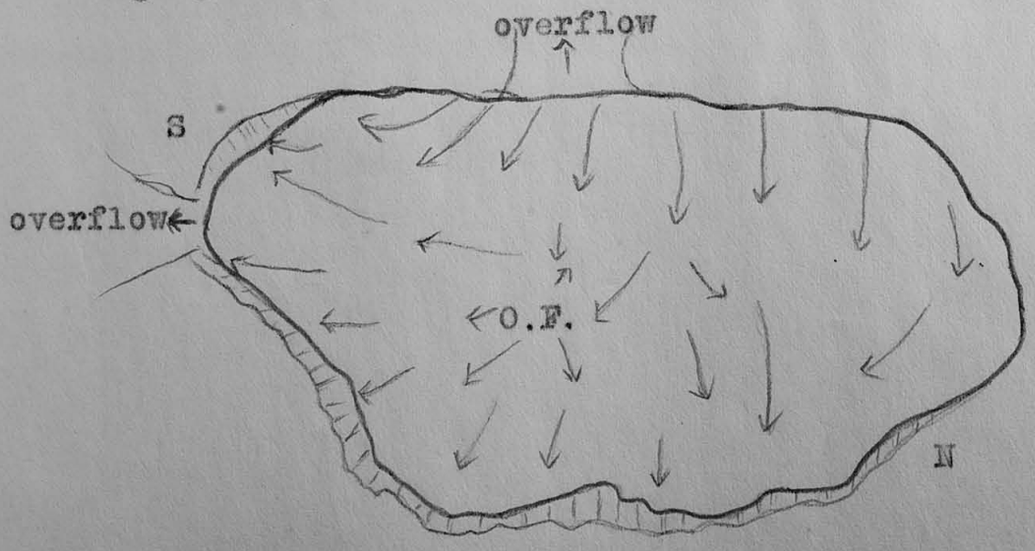
JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Thursday Date July 11, 1912.

10:30 a.m. Extra strong current rising along S walls and flowing to the N side and E and W ends. Everything about same as yesterday.

F.B.D.

5 p.m. to 9+p.m. Lava boiling all over surface in large fountains. Incessant rumble. At first flow from S side to N side, but incessant changes in the rush of surface currents. Overflow S, E and W. These flows, as for example at SE end, first rush in a flood, blacken on surface almost instantly and then glow only around the rims of individual flowing lobes so that the glow pattern appears like a network of cracks. A wide river of overflow in middle of SW bank shows a tendency to skin over across the torrent at edge of lake. Here the streaming lines are longitudinal or fan-wise. Further down the stream transverse festoons form. From the upper skin which protrudes over the lava of the lake, streaming lines in the lake move directly away from the overflow (see diagram). (This is extremely significant, demonstrating the tendency of liquid lava to skin over at a source, whatever may be the cause. Apparently the convectional circulation of the lake is maintained at such a place regardless of overflow.)
O.F. can be distinguished as the largest fountain but the other fountains are quite as large as O.F. is ordinarily. O.F. periods:- 50, 15, 45, 80, 15, 30 seconds.
Ramparts S, NE, N and NW.
The fountains themselves migrate like floating bodies across the pool with the current.
O.F. shows tendency to secondary interval of 15 seconds.
Frequently explodes in three or four domes.
There is surface flow away from a quieter spot around O.F. to the N, E and W. To the S this tendency is combatted by the northward flow from the S bank.
High glowing cracks S 40 to 50 feet above the pool.



T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Thursday Date July 11, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
10:30a	E	SE promontory		19 22			197	F.B.D.

			no	pl	scr	stop	ex	cam

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Friday Date July 12, 1912.
Saturday " 13, "
Monday " 15, "
Tuesday " 16, "

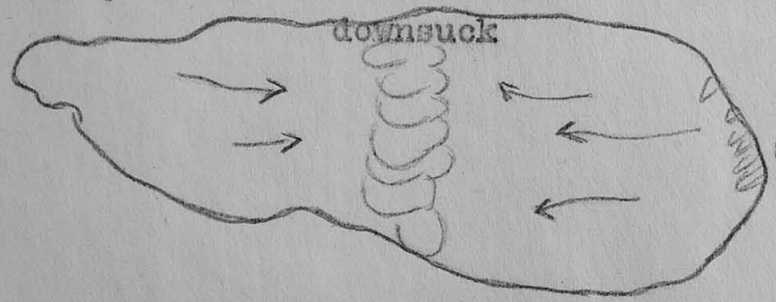
July 12.
4:00 p.m. Lake more active than any time before, with very strong shifting currents. Otherwise very little change.

F.B.D.

July 13.
11:30 a.m. Lake about same as yesterday with very strong shifting currents. Seem to be more gases coming from lava fountains.

F.B.D.

On the 12th and 13th noted so-called travelling fountains, lines of meeting of surface currents where in consequence of collision much gas is liberated. Incessant changes in rush of surface currents, and the wall to which they rush becomes a place of violent bombardment, erosion and even of caving. Volumes of fume rise from the bombarded places. There is much blue-brown fume and falling blobs of glass during this time of intense activity. (Which activity Alex the guide and others say is unprecedented.(?)) A high wall rampart around subsiding pool on 13th and 14th. Giant black stalactites and overhang especially W end. The roar is like a heavy waterfall continuous and with rumble.



T.A.J.

July 15.
11:45 a.m. Lake much lower with strong shifting current. Lava is sometimes quite active and then again not. Much more smoke rising from lava.

F.B.D.

July 16.
1:00 p.m. Lake lower with strong shifting current. Great deal more smoke from fountains. Lake still very active in way of fountains. No other change.

F.B.D.

Massachusetts Institute of Technology

KILAUEA DAY SHEET

Hawaiian Volcano Observatory

Day

Date July 12,13,14,15,16,1912

t	sta	pt	hor	vert	lev	dist	elev	h. i.
		Friday, July 12, 1912.						
4 p.m.	N	SE promontory Dimensions pool 550 feet by 325 feet.		15 17		701	192	
		Saturday, July 13, 1912.						
11:30a	N	SE cove		15 18		718	197	
		Sunday, July 14, 1912.						
10:30a	N	W end		19 06		608		
	W	S promontory (Nearly same as July 13)		16 36		737	219	
		Monday, July 15, 1912.						
11:45a	N	Center S side		19 56		680	247	
		Tuesday, July 16, 1912.						
1 p.m.	N	SE promontory		21 11			267	
								F.B.D.

			no	pl	scr	stop	ex	cam

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

JOURNAL

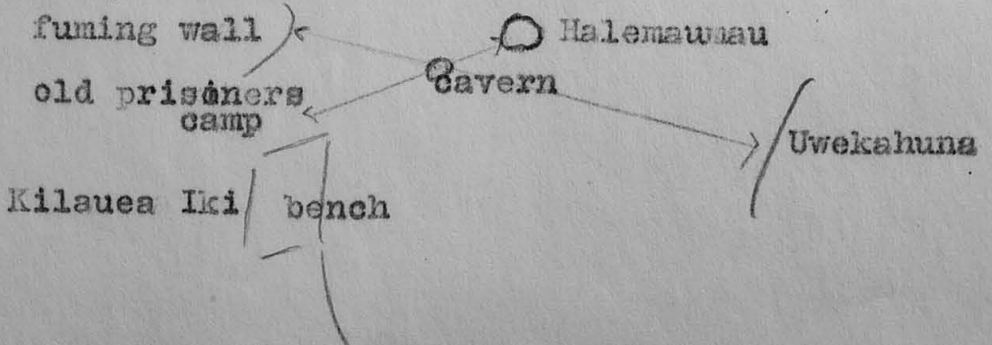
Day Wednesday Date July 17, 1912.

9:00 a.m. Pool appears 70 feet below rampart, boiling hard. Line travelling fountains N-S. Bombardment of N wall. Five or six stalactite levels show down to 40 feet, under that a spatter bench rounded outward, suggesting that for the last day or so the lava has maintained a constant or rising level.

9:10 a.m. Strong current from E, weak one from W. Fall from N rampart of rock from 60 feet± over pool. Lava shows red hot in wall whence rock fell. Strong fumes from bombarding lava on N wall. None visible from the hundreds of fountains towards the S, though their fumes may be sucked along surface towards N. The higher inner wall is fuming S and E, The bench has cracked away from older wall around its periphery and along the N wall a line of streamers of heavy white vapor pushes upward from the peripheral cracks. More irregular cracks vaporing along S wall and the old SW fuming patch high up has reëstablished itself in a tumble of blocks coated with sulphur and emitting fumes. Same is true of a higher vent under the western summit of the rim. A velvety yellow-brown coating on bench S, SE and SW. The attack on N wall causing caving, brown fumes rise, and a wave crosses pool to SW shore. At the point of caving on N wall about 30 feet over pool, sluggish red lava emerged from wall, and flowed down five to ten feet where it congealed. Apparently some of the floor lava within the bench is still fluid and released by caving away of face of bench. The fluidity varies for close watching showed that some of the incandescent material was scaling off solid, like dross from a blacksmith's forge. The movement was distinctly a stiff flow in one place.

9:21 a.m. Under the W end is a shallow covern overhung by stalactites. A crack six to eight feet back of edge of bench on N suggests that caving will soon take place there. There is a cove, roundish in plan, extending back 50 to 60 feet from the main line of rim of bench above pool on SW wall. This is only a niche half as deep as wall over the lava, hence say 30 to 40 feet deep. Flow is markedly from E to W now there is one E-W line of travelling fountains.

Walked off to the E of "Little Beggar" to site(?) of old lake Kilauea of 1874(?). Pool of hardened lava surrounded by break. Brown patch NE. Cave with water stalactites. Lava overlapping fallen old red blocks at entrance of cave. A second fine high cavern in lines of intersection marked by small peaked dome.

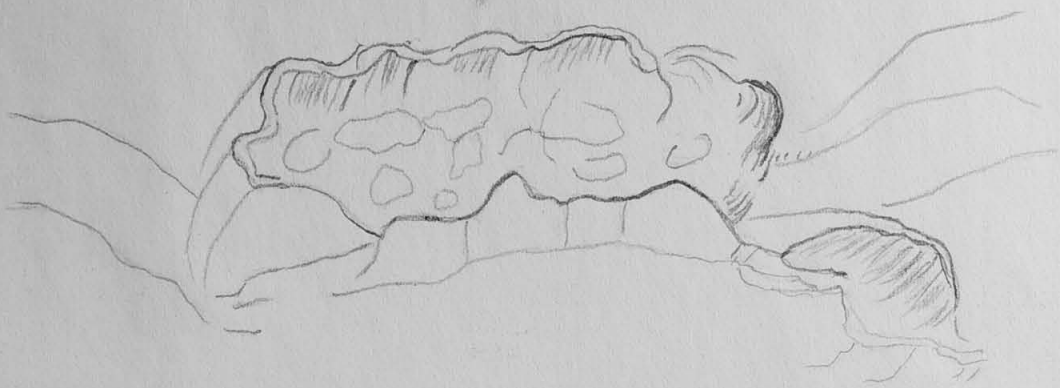


Massachusetts Institute of Technology
Hawaiian Volcano Observatory

JOURNAL

- 2 - Day Wednesday Date July 17, 1912.

Fine long stalactites and regular spring bed deposits of stalagmitic material. Cavern high enough to stand in. Cold drip. Vegetation. Algae.
Continuing found in the line of Uwekahuna and Kilauea Iki a depression surrounded by ridges and domes and with some lava cascades. (Line between Volcano House and golf links.)
Most remarkable broken open lava bubble, walls an inch and a half thick. The whole porous -- apparently blown up through a crack beneath. Shells sticking up all around the border like a dish. An extension at one side. Size across 18 feet -- oval. Originally, before breaking, perhaps two feet high.



Vesicular red lining to bubble goes down crack lines inside throughout. Crack two to ten inches. Outside of bubble gray with a denser brown skin. Marked by a great smooth domival island tract just north of it.
Turn left and go to stone pile on hill just after passing between the two domes -- going south on Halemaumau trail -- then go east.

T.A.J.

3:30 p.m. Strong shifting current and so much smoke that nearly impossible to see lake.

F.B.D.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Wednesday Date July 17, 1912.

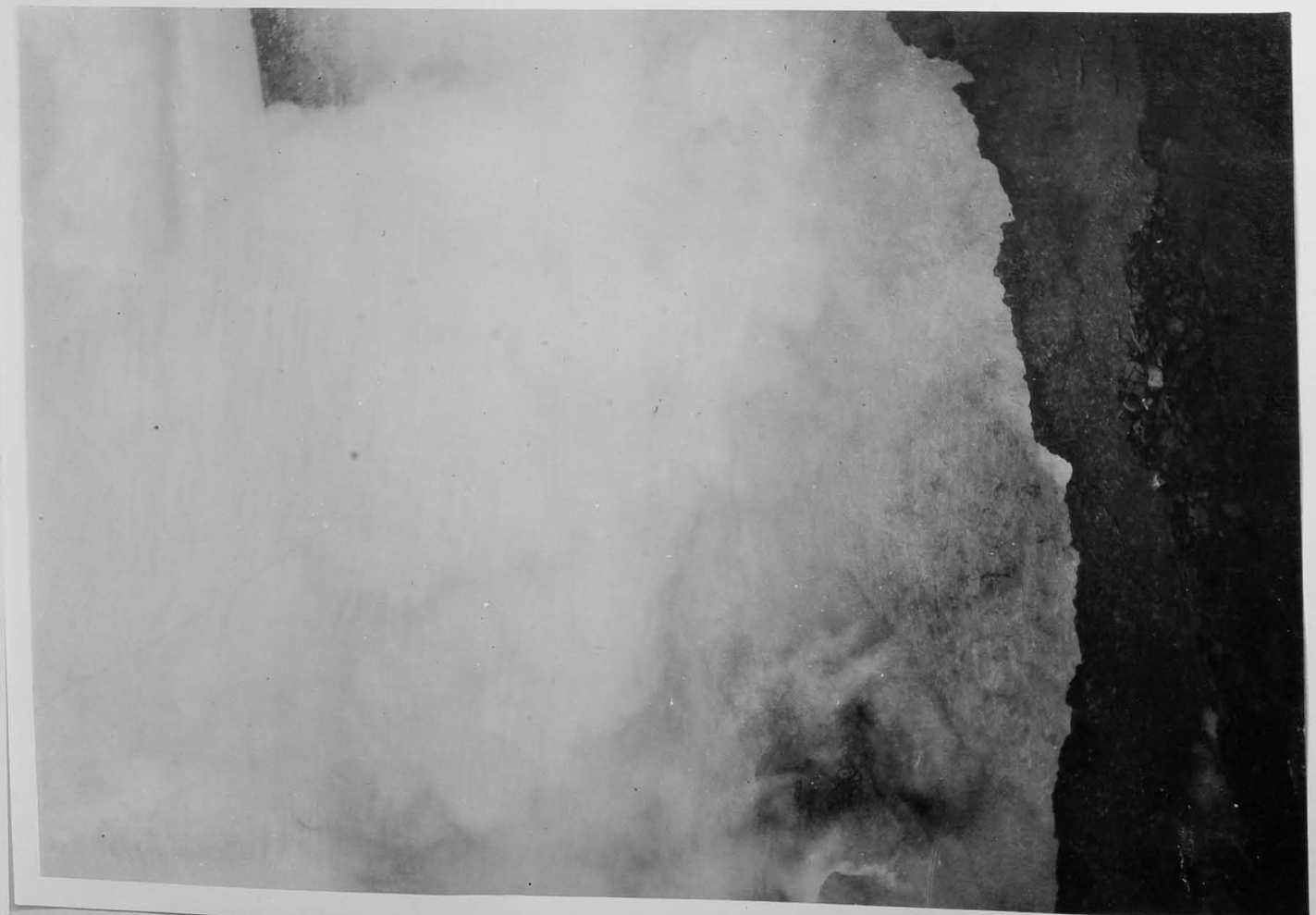
t	sta	pt	hor	vert	lev	dist	elev	h. i.
3:30 p	E	SE promontory		25 10			277	F.B.D.

			no	pl	scr	stop	ex	cam
		Fumes on N wall. Pan.	1					5x7 Kod
		Middle of pit. "	2					"
		South wall. "	3					"
	Lower bench E sta.	Pit	4					"
	"	"	5					"

T.A.J.

1912, July 17





1913, July 17





1912, July 19



Fog

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Thursday Date July 18, 1912.
Friday " 19, "

July 18.
10:30 a.m. Strong shifting current with great decrease in fountains. Much smoke.

July 19.
9:30 a.m. Same as yesterday

F.B.D.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Date July 18 & 19, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
Thursday, July 18, 1912.								
10:30 a.m.	E	SE promontory		25 47			280	
		NE point		22 10			201	
		SE point		20 01			145	(error)
		"Day's" point (E pt. of high cove)		16 54			214	
		Length of pool 575 feet Width " " 325 " Average depth of bench 207 feet, implying at least 20 feet of slump.						
Friday, July 19, 1912.								
9:30a	N	SE promontory		23 14			283	
								F.B.D

			no	pl	scr	stop	ex	cam

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Saturday Date July 20, 1912.
Sunday " 21, "
Monday " 22, "

July 20.
6:15 p.m. Strong south current. Very active along S walls. Fewer fountains.

F.B.D.

9:30 p.m. N and NE wall ragged. Flow from N to S quick with many fountains. Patches of skin parting from N side. Bombardment SW and E. S cove a narrow finger or chasm at end of a V-shaped bay. SW wall constructional (in contrast to walls of destruction by caving). Flow beneath spatter bench of 17th. Open shaft in bench with light and sometimes sparks inside beyond end of V of south cove. Strong fumes from walls. Luminosity strong but heat not great. Occasionally a large blanket forms. SW niche intact; roar continuous; many spitting fountains. O.F. not in sight from E.

T.A.J.

July 21.
6:00 p.m. Same as yesterday. South current.

F.B.D.

July 22.
4:00 p.m. Lake about same as yesterday with medium SE current. Less fountains. Whole floor of pit sunk and walls around S cove fallen in.

F.B.D.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Date July 20, 21 & 22, 1912

t	sta	pt	hor	vert	lev	dist	elev	h. i.
Saturday, July 20, 1912.								
6:15p	E	SE promontory		26 42			273	
Sunday, July 21, 1912.								
6:00p	E	SE promontory		27 20			293	
Monday. July 22, 1912.								
4:00p	E	SE promontory		27 44			299	
								F.B.D.

			no	pl	scr	stop	ex	cam

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Tuesday Date July 23, 1912.
Wednesday " 24, "
Thursday " 25, "
Friday " 26, "
Saturday " 27, "

July 23.
5:30 p.m. Lake more active than has been for last week. Very swift shifting current, usually southerly, and more fountains. Little less smoke. Huge half of S side cracked and nearly fallen; more upheavals at S cove. Glowing red in cracks and where open shaft was.

F.B.D.

July 24.
6:00 p.m. Little less smoke but otherwise about same as yesterday.

F.B.D.

July 25.
General description. The activity in the last week has decreased considerably, the lake having sunk to 315 feet from 280 feet. The currents are slower by about one half their former speed and activity of fountains much less than a fortnight ago. Walls 100 feet high surround lake, entire floor of pit has sunk 20 to 25 feet with much cracking. At S cove much rock has fallen into the lake.

Depth below E station 315 feet. Activity decreasing.

T.A.J.

July 26. Depth below E station 310 feet.
In evening heavy tumble of large portion of S bench into the pool, part of this formed a rigid island of elongate, oval form, its greatest length extending E-W about middle of pool.

T.A.J.

July 27. Depth about 320 feet. More avalanches took place.

T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Date July 23 & 24, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
		Tuesday, July 23, 1912.						
5:30p	E	W end		19 35			315	
	E	Middle of S side		25 53				
		Wednesday, July 24, 1912.						
6 p.m.	E	W end		19 24			310	
		Average depth for week 295.5 feet.						
								F.B.D,

			no	pl	scr	stop	ex	cam

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Sunday Date July 28, 1912.
Monday " 29, "

July 28. Depth below E station about 325 feet. Pool visited in evening with President C. W. Eliot's party. The important details were:
A small whale-back island E-W in the lake.
Streaming on both sides of it with the directions incessantly changing.
A whilrpool west of island.
A cavern at the south end of pool.
A crack emitting a large sheet of flame in S.W. wall.
Fumes around edge of bench and bench cracking and caving.
The talus which had been used by Day and Shepherd in their descent from the 1894 bench E. has slipped down to a much lower point.
There is a wild tumble of crags in southern part of inner pit.

Later in the night the island was submerged, (probably by rising of lava around it). The rotation of above mentioned whirlpool was counter-clockwise, as one looked down upon it and there was strong fountaining at its center which seemed to be a place of down-sucking. South and west there were high glowing spots in the walls of the inner pit.

T.A.J.

July 29. Depth about 330 feet below E. station.
A peninsula had appeared along the southwest wall at its base elongate to the northwest and with solidified crusts between it and the south bank. Increased fuming.

H.O.W.

Angular measures of pool July 25-29 by F.B.D. lost.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Tuesday Date July 30, 1912.
" Wednesday " 31, "

July 30.
3 to 3:30 p.m. Continued subsidence, depth unrecorded.

Much smoke obscuring view. Active fountains N, NE and S. South peninsula with spatter ramparts. In the fissure between peninsula and S. wall were two pots of fluid lava. NE bank caving. Old Faithful not playing regularly nor recognizably. The lava rising and sinking a foot or two at a time in short periods. No flames observed. Pool appears lower than July 28.

H.O.W.

July 31. Depth below E station 359 feet.
3 to 5 p.m. Spatter bench on N bank suggests subsidence of bench keeping pace with sinking lava. Large pieces of NE wall fell. At times tremendous fountaining and roaring with some increase of heat and glow. Caverns at W and S ends, former with stalactites. Bombardment E and N. Radial streaming sometimes from a quieter spot about middle of pool suggesting rising. O.F. not identifiable. Peninsula still in place.

H.O.W.

This the lowest recorded level of the year to date.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Wednesday Date July 31, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
	E	Little pt. NE shore		26 19			359	
	"	Pt. on peninsula SW		28 54				
	S	Little pt. NE shore		23 52				
	N	Pt. on peninsula		31 02				
								T.A.J.

			no	pl	scr	stop	ex	cam

JOURNAL

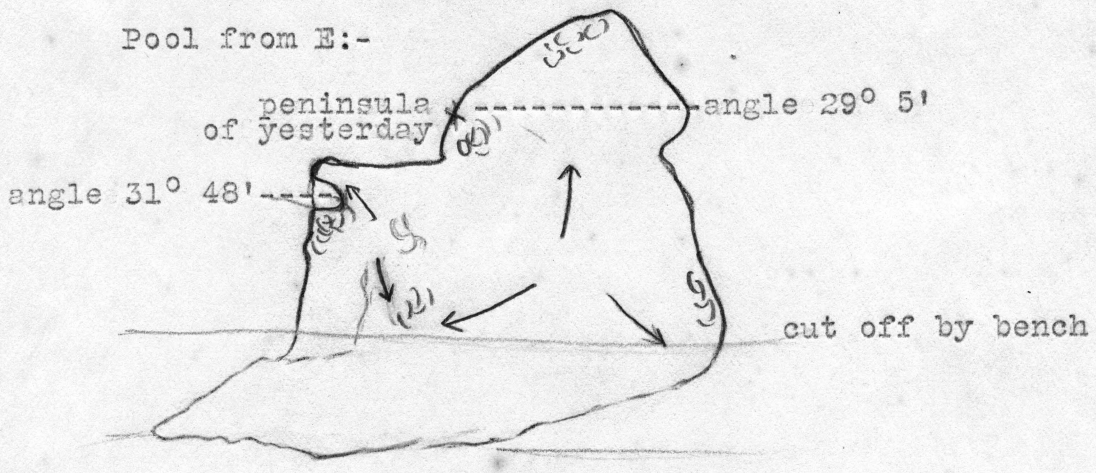
Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Thursday Date August 1, 1912.
Friday " 2, "

Aug. 1.
1:48 p.m. Radial streaming suggests rising.

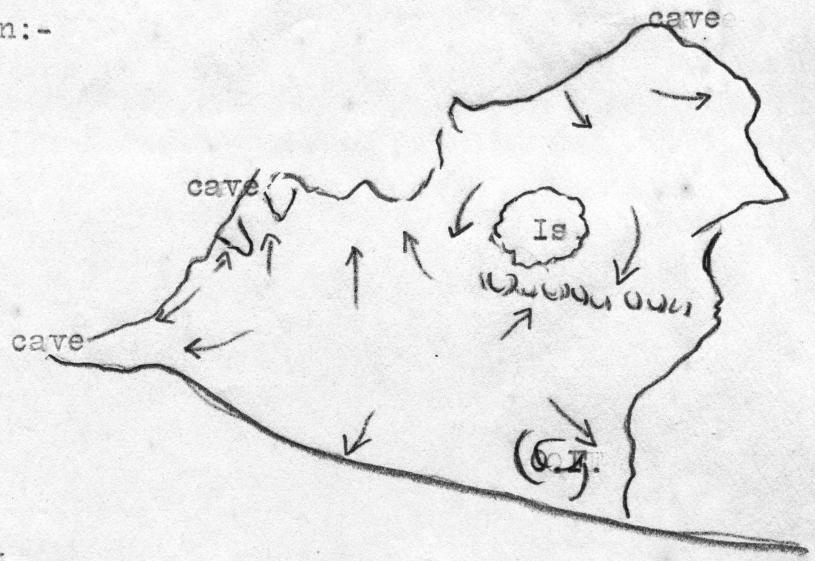
5:00 p.m. Where the peninsula had been the previous day an angular bay appeared. Lava surface streams radial from mottled blankets in middle of pool, fountains along shores. No islands. Fumes obscure view. SW slope has caved in and shows a talus. South wind.

Pool from E:-



Aug. 2.
7:00 p.m. Pool similar to Aug.1. High glow noted at several places. Caves S, SW and W. Island in W central part of pool, small and circular. Travelling fountains along N-S line, E of island. O.F. in NE region. Large mottled blanket area with radial streaming in E central part of pool. 200-foot bench cuts off view of E side pool from E station. Level of pool appears same as Aug.1. Island is small and rather circular, may have been derived from a notch in WSW wall. Activity very strong NW, SW, NE and probably under ledge in S cove. Fumes very dense.

From E station:-



7:30 p.m. Depth 380 feet.

T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Thursday Date August 1, 1912.

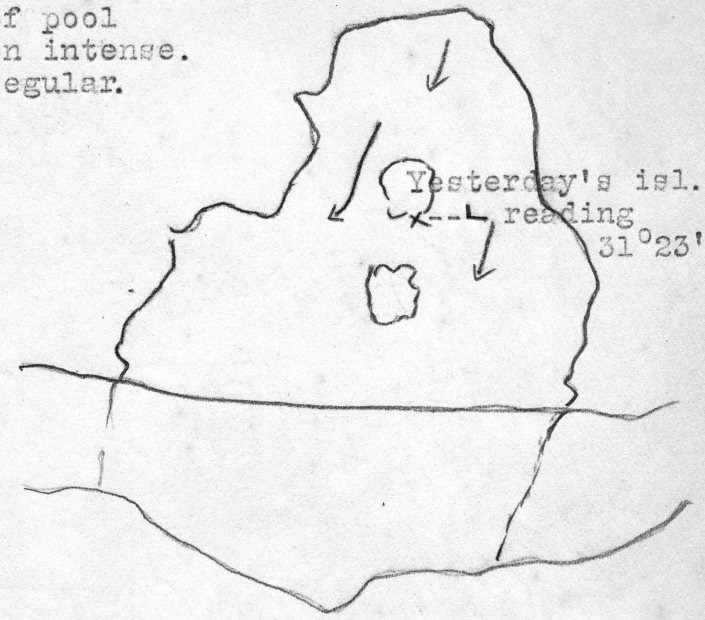
t	sta	pt	hor	vert	lev	dist	elev	h. i.
5 p.m.	E	SW point where peninsula had been		29 05			380	
	"	Point farther E in cove of SW shore		31 48				
								T.A.J.

			no	pl	scr	stop	ex	cam

JOURNAL

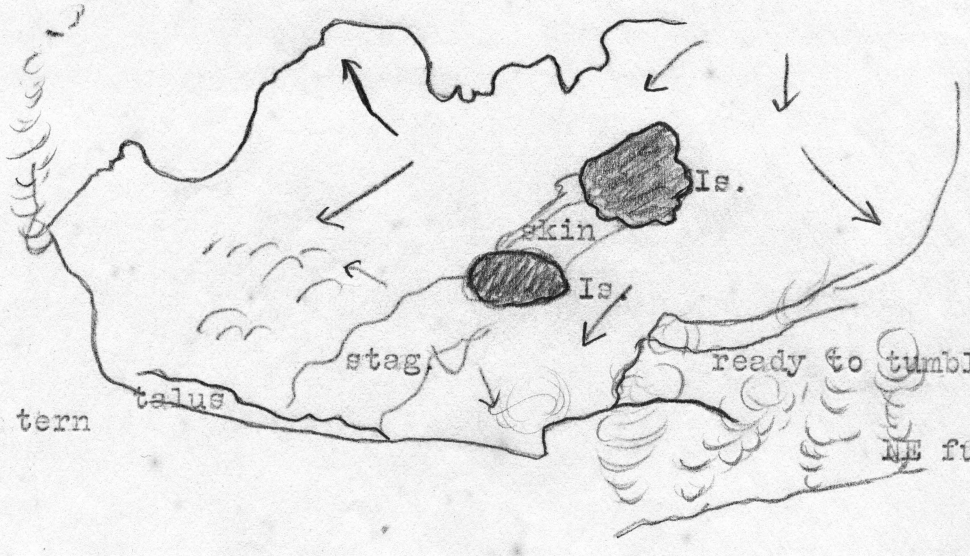
Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Saturday Date August 3, 1912.

Noon. Two islands, both small, instead of one.
The newer one in middle of pool
east of older. Ebullition intense.
Streaming various and irregular.
Heavy talus at east end.
O.F. against NE bank.
Fumes very dense.
Avalanches heard falling.



2:30 p.m. The sinking has been steady and rapid for last few days, the bench subsiding with the lava and the islets appearing to be submerged blocks derived by tumbling in of the SW wall, leaving notches there. The NE wall has also caved back so that the bench is much narrower. The SW high yellow fuming patch is like that of two months ago. The NE wall at its base has a row of fuming cracks in a line. The S cove is less active than a week ago and the chimney over it is jumbled. The fumes are so strong with S wind that there is no view of the pit except from a very narrow stretch on the E side.

From jagged NE bench:-



T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Saturday Date August 3, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.	
Noon	E	E shore of island of August 2		31 23			387	T.A.J.	
			no	pl	scr	stop	ex	cam	

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Sunday Date August 4, 1912.

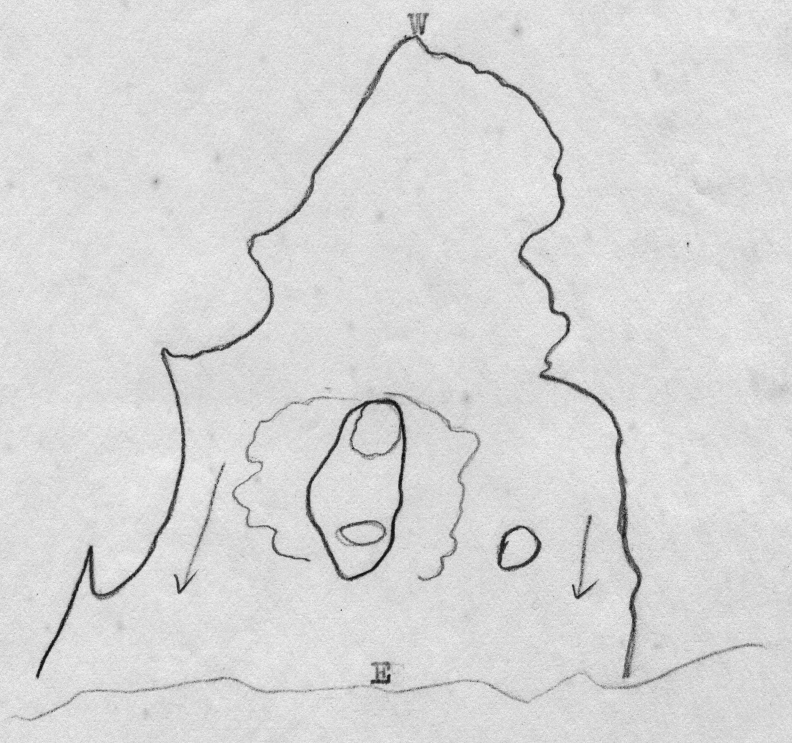
6:00 p.m. Depth below E station, point located W end, 393 feet.
Depth below NE station, " " " " 333 "

7:00 p.m. Light wind, vane at H.V.O. indicating E and ESE. Fumes from Halemaumau have blown W, NW and N, sometimes forming a wide curtain over the Kilauea floor, cutting off all view of Halemaumau from H.V.O.

Tested Zeiss Telemeter by comparison with intersections on stalactites in W end cove. Tested distance used in Telemeter was doubling of numbers in scale beyond correct point. These preliminary tests checked badly.

Point	Telemeter.	Intersection.
W end	415 metres	271 metres
SW corner	230 "	205 "

The activity was strong with streaming eastward, many fountains. Two islands, a little one N of the combined double island of previous days, and on latter skins form N and S continually parting from it. The W end of this greater island is high. Stalactitic caverns appear W and SW. A glowing chimney over S cove, short distance above lava with lava splashing within.



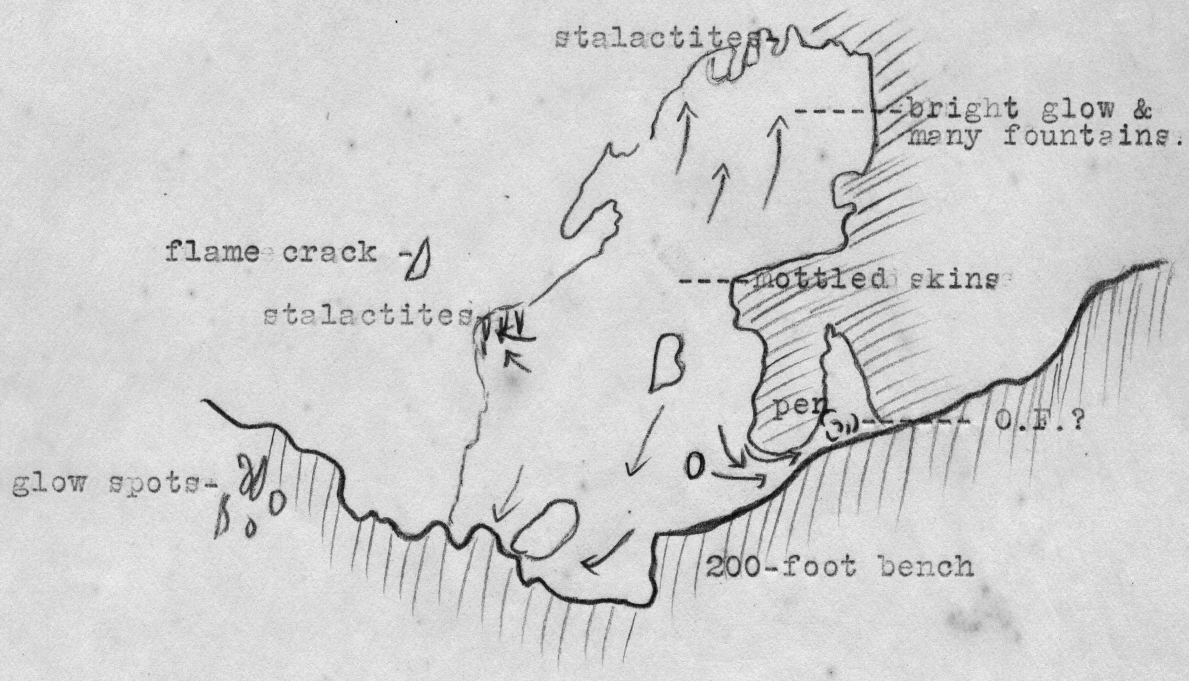
T.A.J.

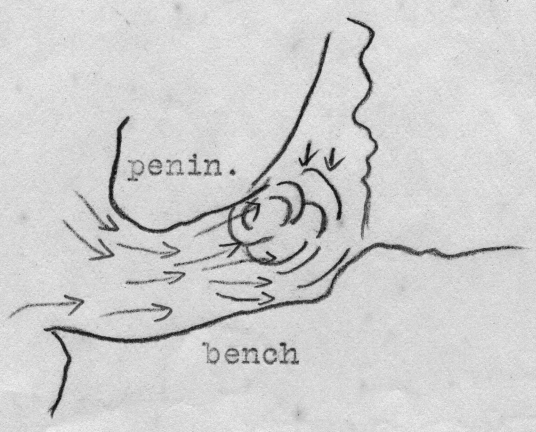
JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Monday Date August 5, 1912.

7:00 p.m. Very heavy fumes at first obscured view, fumes hug the windward walls owing to eddy. Wind E. Purple and yellowish glow on fume cloud. Pool from E station shows motled skins in middle. Flow E and W from middle region. Three islets in eastern half. A peninsula protruding eastward from N shore in an angle with a turbulent fountain back of it NE toward which a swift insucked torrent rushed from between the NE islet and the peninsula. This fountain appears to be O.F. Around the end of the peninsula the flow rushes with extraordinary rapidity and fans out into a continuous whirlpool through which occasionly a fountain explodes. There is a current out from the cove back of the peninsula into the whirlpool also. The effect is as though the lava were pouring over the edge of a cataract. There is a flame crack SW of the pool and three or four glow spots in the 200-foot bench SE. Highest glow and most small fountains at W end. Heavy stalactites.

Pool from E station:-





T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Date Aug. 5 & 6, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
Monday, August 5, 1912.								
7 p.m.	E	W end		26 08	(Brunton)		394	
Tuesday, August 6, 1912.								
11 a.m.	E	W end (Distance same as Aug. 5)		26 45			400	

			no	pl	scr	stop	ex	cam
Tuesday, August 6, 1912.								
11 a.m.	E	Towards N sts., clock without vane. (Thin, fair)	1 - 3			large		Al Vista
	E	Looking WSW, clock without vane. (Thin, fair.)	4 - 6			"		"
Noon	E	Towards crater(" ")	7 - 9			"		
1:30 p	E	" " (under-exposed)	10 - 12, instantaneous, full aperture.					
		Developer glycin.						
(Scratches on film, full length, 1¾ inch from top of camera and fog from ruby hole.)								

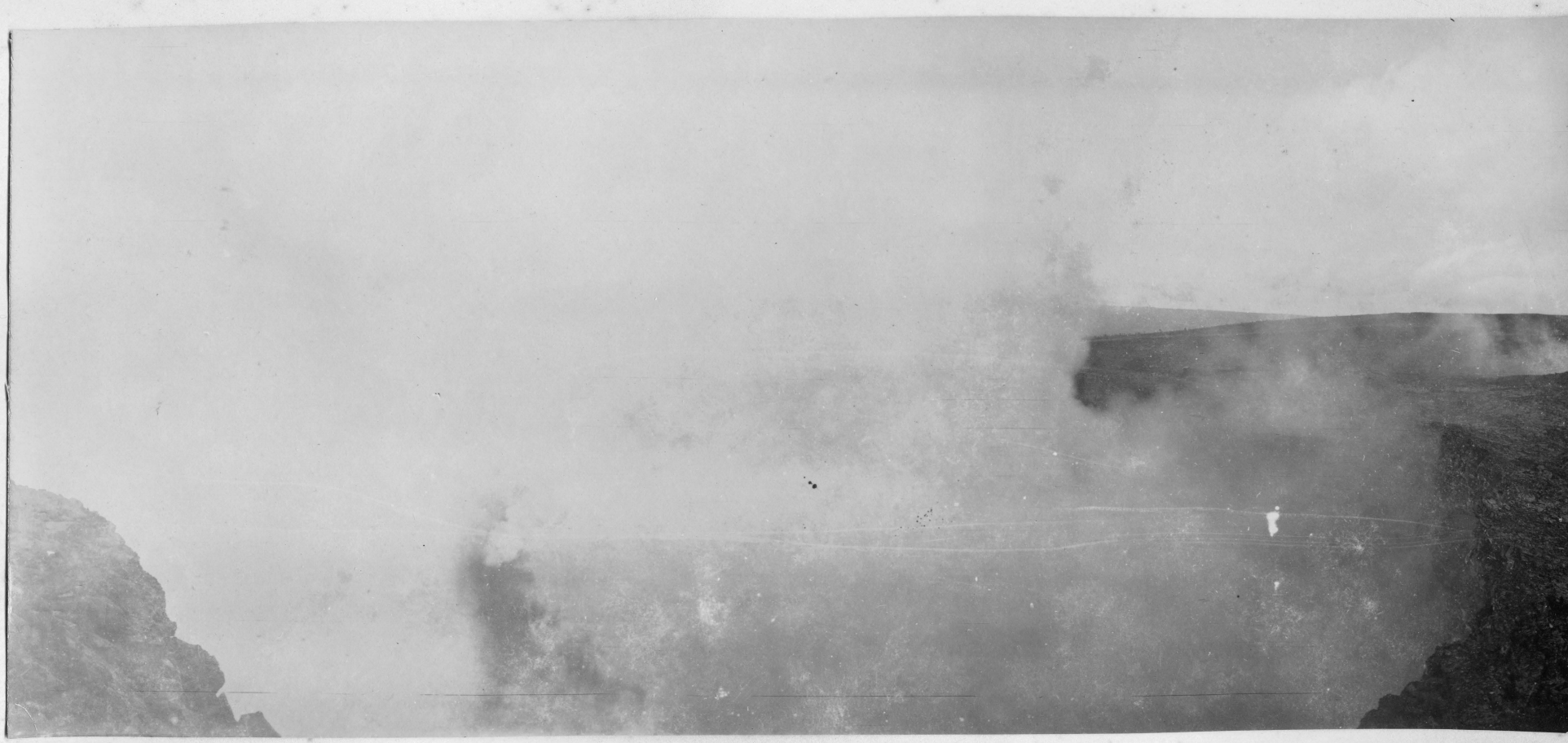
T.A.J.

1912, aug. 6.

1-30

1912, aug. 6.

4-6



7-9

Jbg

119

1912 Aug

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Tuesday Date August 6, 1912.
Wednesday " 7, "
Thursday " 8, "

Aug. 6.
11:00 a.m. SE island near E bank appears higher. Fountains very active and noisy, same general type of ebullition as was inaugurated early in July but with more motling pattern of blankets.

T.A.J.

Aug. 7. Pool obscured by fumes. In glimpses it appeared lower.

F.B.D.

Aug. 8.
10:30 a.m. Devil's Kitchen and Postal Crack and southern solfataric zone show very little vapor but there are great quantities of it in the pit. Does this imply water moving inward? Some odor of H_2S. Noted both brown and white fumes in different places around the walls.

11:50 a.m. Heard strong avalanche W end.

12 noon. Pit grew smokier, heavy white fumes rising from SW high bench-- no seeing.

5:30 p.m. Visitors reported heavy fall of rock SW.

T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Thursday Date August 8, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
10:30a	E	W end pool		26 43			407	
	"	NE station		4 4			34	

			no	pl	scr vane	stop	ex	cam
10a.m. to 12 m.		House at crater looking ESE including M.L. and spatter cones.	1-3		smallest	large		Al V.
	NE	of Halemaumau looking W.	4-7		"	middle		"
		Dodge and alidade looking NE station.	8-9		"	"		"
	E	Halemaumau	10-12		"	largest		"

Bright sunlight.

T.A.J.

1912, Aug. 8.

I.G.J.

I-3

122

1912, Aug. 8.

T. A. J.

4-7

1912, Aug. 8



8-9



10-12

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Friday Date August 9, 1912.

7:00 p.m. Halemaumau much obscured by fumes. Sinking still continues, shown by fumes, avalanches, much overhang around pool, cracking and foundering of crusts, and their recurrent formation. Throughout this week only view from E.
General form same as yesterday but crusts are forming uniting the NE peninsula, the islands and the W bank.
Avalanche from SW breaks in the crusts W of island. Large stalactites and overhang W and SW. Glow spots up to considerable heights on S wall and some along a crack back of the remnants of the former 200-foot bench near the sulphur patch under the SW rim of Halemaumau.
Streaming westward in W pool and eastward in E pool on opposite sides of the middle patch. Amount of crusting unusually great.
The V-shaped cove back of peninsula where O.F. was Aug. 5 is now very narrow and the current around end of peninsula, if it exists, can no longer be seen from E station.

Mauna Loa. 6:15 p.m.
After sundown at H.V.O. strong NE wind with flying scud. H. O. Wood observed two vapor jets on profile of NE slope Mauna Loa N.77° W. from Observatory; some distance apart and between two highest cones there. The vapor changed, came and went at the same spots, and considering the distance, would seem to be in considerable volume. Shows golden with the sun behind it.

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Saturday Date August 10, 1912.
Sunday " 11, "

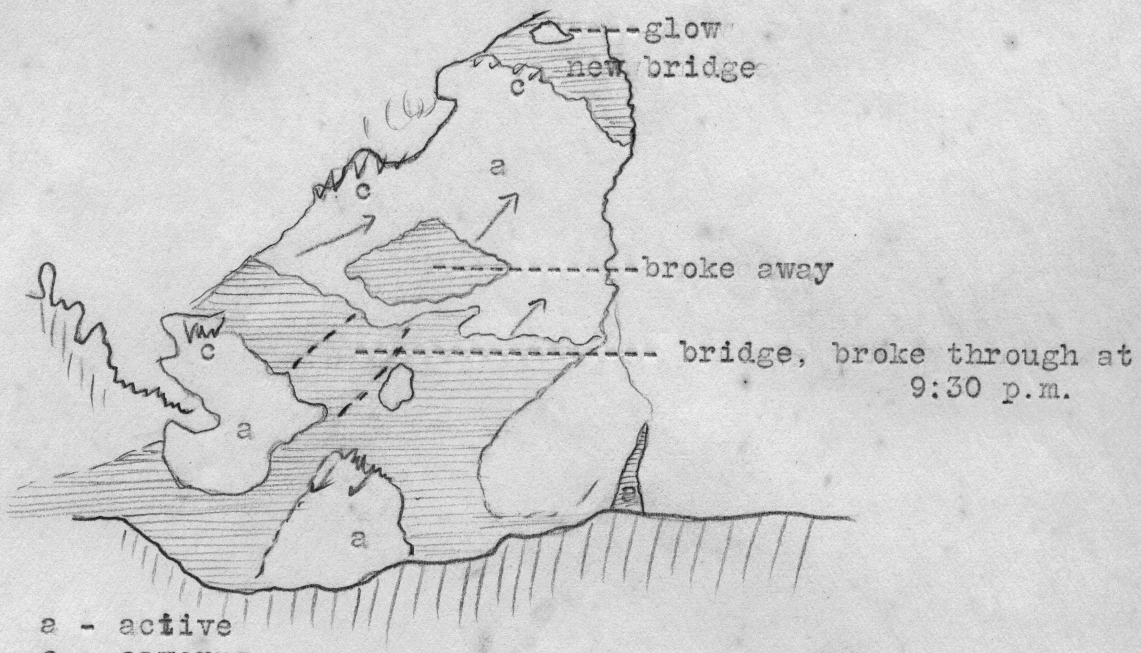
Aug. 10. Pool almost totally obscured by fumes.

Aug. 11.
9:00 p.m. Pool continuously visible for minutes and fumes appear thinner and glow brighter. Some small avalanches heard.
From E station pool seen to be bridged with crusts across middle and across E pool with active areas E, S and W.
Crust E side of W pool breaking away and floating westward.
Bridge of crust across W end with glowing pot. Caverns under W crust, on S side of W pool and on SW side of southern pool.
NE peninsula still in place but encased in crust. Streaming eastward in E pool.

Mauna Loa. Two jets seen on Mauna Loa at sundown, same place as August 9.

T.A.J.

From E station 9 p.m.:-



a - active
c - caverns

T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Saturday Sunday Date August 10, 1912. August 11, 1912

t	sta	pt	hor	vert	lev	dist	elev	h. i.
August 10, 1912.								
	E	W end, rough angle		30° ±				
August 11, 1912.								
	E	Glowing pot W end		26 30	(tripod Brunton)			
	"	" " " "		27 05	(better)			
		Both angles inconsistent with measures Aug. 12.						

			no	pl	scr	stop	ex	cam
August 11, 1912.								
X 5:30p	H.V.O.	Halemaumau				F 64	½	5x7

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Monday Date August 12, 1912.
Tuesday " 13, "

Aug. 12.
3:00 p.m. Strong single hisses heard now and then. One good view of the pool showed an active large pool at the W. The high cone of Devil's Kitchen is steaming visibly.

Aug. 13. No seeing.

T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Monday Date August 12, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
3 p.m.	NE	W cove (The glow spot of yesterday proves to be a chimney.)		31 30				
6:30 p	E	W cove (Waited three hours to get this reading.)		28 37		804	441	
								T.A.J.

			no	pl	scr	stop	ex	cam

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Wednesday Date August 14, 1912.

T.A.J. and F.B.D. leave for reconnaissance of Mauna Loa, Hualalai and the circuit of the Island.

WEEKLY BULLETINS INSERTED TO COVER PERIOD

AUGUST 14-22, 1912,

during reconnaissance of Mauna Loa, Hualalai,
and circuit of island by T. A. Jaggar.

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

JOURNAL

From WEEKLY BULLETIN Day Date August 15, 1912.

On the evening of August 14 only sudden glimpses could be had. No measure of depth could be made. The lava was apparently in sinking phase for stalactites could be seen dimly. Also occasional falls of rock took place from the walls. At intervals the ebullition was most vigorous; occasionally there was an escape of gas with a shrill, sibilant sound like that made by steam escaping from a safety-valve.

On the morning of the 15th of August the behavior was much as in the preceding evening except that infalls from the walls were larger and more frequent. No measure of depth could be made.

H.O.W.

In the evening on August 15 clear views were had at intervals, revealing stalactites pendent beneath a spatter cone which was still in process of forming indicating a temporary oscillation of level at this depth. There was no marked falling of rock during this evening. The noisy escape of gas was very marked. In the W pool a fairly active streaming to westward was noted.

Throughout the afternoon both on the 16th and the 17th no good view was obtained -- only one instant glimpse in a stretch of seven hours. Heavy falls of rock were frequent. In the late evening of the 17th visitors reported a clear view.

In the evening of the 18th visitors reported great falls of rock throughout the evening; no view was obtained.

There was no change on the 19th.

In the evening of the 20th good views were had between 9:30 and 10 and measures were made with compass from the E station. Stalactites were in marked evidence, rock falls were frequent and heavy but a spatter bench was in process of formation.

Similar conditions prevailed in the evening of the 21st when an excellent measure of depth, from the E station only, was obtained.

H.O.W.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Wednesday Date August 21, 1912.

7:15 p.m. Depth below E station 502 feet.

H.O.W.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Friday Date August 23, 1912.
Saturday " 24, "
Sunday " 25, "

Aug. 23. No measurements.

Aug. 24. No measurements.

Aug. 25. No measurements. Dense fumes arose from talus about the inner walls. Generally obscuring completely the lava pools which have been dimly seen from time to time at night at depths probably about 500 feet below rim.

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Monday Date August 26, 1912.

2:30 p.m. East wind, drizzle, distant audible boiling of lava and occasional hiss of gas heard from E station. No seeing.

2:52 p.m. From Old Rest House (N) medium avalanche heard and vigorous bubbling noise after it. Can see down to 200-foot bench.

2:58 p.m. Block of rock heard to fall W. The noise of the lava on this N side is continuous plashing of fountains and does not suggest any great change of depth from recent measurements.
About the 200-foot level W remnant of bench is a tumbled talus with sulphur stained cracks parallel to the wall above, white fumes rising through them and a cliff below obscured by fumes.

3:00 p.m. From NW station obtained view of pools. Two distinct pools seen, one at NW end of bottom area, the other SE, with a wide isthmus of tumbled rock between them. Obtained only one glimpse of SE pool. The NW pool is L-shaped with the two arms pointing W and S, and stalactites along E margin. There is active fountaining all over it, orange-red. The eastern pool appears larger and more noisy.



The interior of Halemaumau is funnel shaped with a promontory protruding from the W on the S side of the W pool.

3:40 p.m. Avalanche from the W. Large crater hole lined with yellow sulphur about 250 feet down under SW wall of Halemaumau. (Where sulphur crater was earlier in year.)

T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Monday Date August 26, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
3 p.m.	NW	S end NW pool		44 55			511	
Compass survey:								
	NW	S end NW pool			S 23 E			
	NW	N instrument house			N 76 E			
	E of IH	N station			N 88 E			
	" " "	S end W pool			S 3°20' E			
	" " "	Glimpse E pool			S 17 E			
	NW	N station			N 82°30' E			
								T.A.J.

			no	pl	scr	stop	ex	cam

PHOTOGRAPHS:

Afternoon. 5x7 Kodak, Eastman film. Panorama.

1. Observatory pier to Byron's Ledge.
2. " " " Kilauea floor south.
3. " " " Halemaumau.
4. " " " Mauna Loa.
5. " " " Sulphur Banks.

T.A.J.



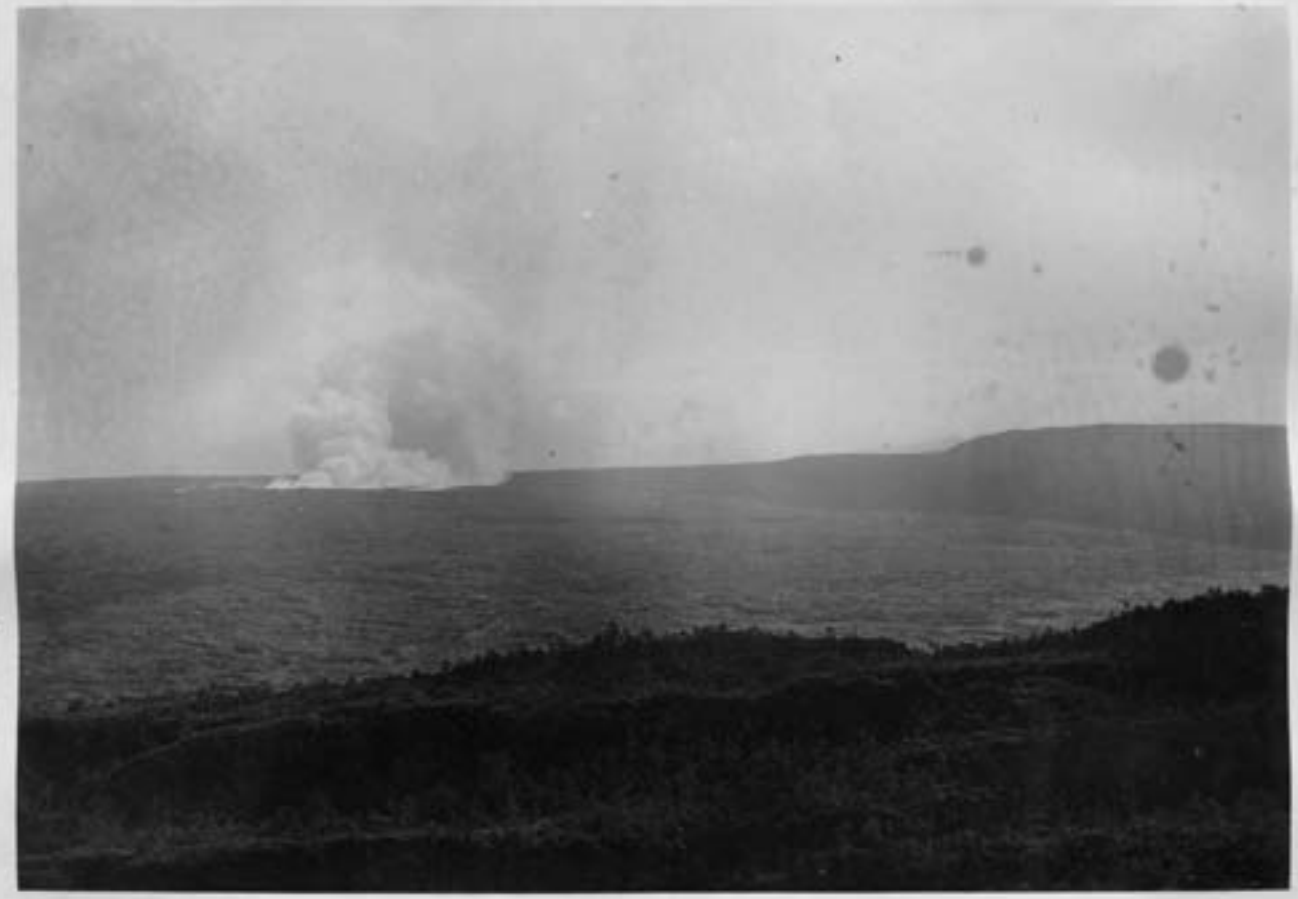
1



2

Fog

1912, Aug 27



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4

Fog

1912, Aug. 27



5

Jog

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Tuesday Date August 27, 1912.
Wednesday " 28, "
Thursday " 29, "
Friday " 30, "
Saturday " 31, "

Aug. 27.
11:45 a.m. Wind NE. No seeing. Rock falls heard. Boiling lava heard similar to yesterday.

Aug. 28.
2 to 3 p.m. Rainy, strong NE wind. One small fall of rock heard. Nothing seen on account of fumes. Rock falls apparently not so frequent as of late.

Aug. 29.
8-10 p.m. Fumes and red glow. Some clattering small slides heard. Muffled hisses heard and one heavy resonant belching thud as though a great gas bubble were released from viscous lava.

Aug. 30. No marked change.

Aug. 31. No marked change.

T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Wednesday Date August 28, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.	
Compass survey corr.									
2-3 p	NE	N station			N 52 W (good)				
	E	" "			N 37 W (imperfect)				
								T.A.J.	

			no	pl	scr	stop	ex	com	

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Sunday Date September 1, 1912.

6:30 to 9:30 p.m. From E station.
Continuous veil of fumes. S slope inside pit occasionally clears showing funnel-shaped; dense white fumes rising within. Three or four times during evening cleared sufficiently to show very small pool under a projecting ledge, which ledge appears to stand about 300 feet down. (No measurements.) Another larger W pool seen dimly. Glow suggests a third SW pool. Avalanches not numerous.
For the last two weeks dense fumes and the glow on them at night orange-red. For the past week little seen by anyone but there has been no marked evidence of change.

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Monday Date September 2, 1912.

5:00 p.m. From trail looking SW at Halemaumau fumes very heavy, rising rapidly and brown. Wind NE.

5:15 p.m. From old rest house light clatter of talus; noise of fountains very slight. Fumes not so strong smelling of SO_3 as usual, more like water vapor. Unusual amount of hissing as of impeded gas.

5:17 p.m. Sudden, sharp noise of hissing gas, very loud like a suddenly checked steam whistle. This was repeated all the evening. The intervals between blasts at this time were as follows:-

5:19:00 p.m.	5:22:50	5:25:25
5:21:20	5:24:00	5:26:10
5:22:00	5:24:45	5:27:20 (very heavy)

This is probably Old Faithful.

8:30 p.m. A heavy puff from the pit and then a roar of rushing steam from the S talus, the vapor clouds rising from it being visible. Avalanches frequent and Alex reports increase of avalanches all day.
View from E station of four E glow holes and a jagged edge next lava pool, the latter in the western area. No eastern pool shown. Noisier hisses from E of pool. There are active fountains in the western pool.

T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Monday Date September 2, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
9p.m.	E	S corner of pool Intersections secured from NE and E stations.		34 00	(Brunton)		430	T.A.J.

			no	pl	scr	stop	ex	cam

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Wednesday Date September 4, 1912.
Thursday " 5, "

Sept. 4. Rainy day, clearing late afternoon.

4:00 p.m. NE wind. E side of pit fairly clear, W side full of white fumes. No view of lava by daylight.
Noted four complete spectra, rainbow over lava to the E, and an outer bow. Sharp hiss about once per minute, unusually sharp every four or five minutes. Sounds of fountains as before. Postal crack fuming.

7:00 p.m. Dull glow but no view of pool.
Only one rock slide heard from 4 to 7 p.m.

Mauna Loa.

6:30 p.m. A peculiarly suggestive cloud formed over the summit of Mauna Loa. Six successive cumulus cauliflowers developed about over Mokuaweoweo and were blown off to the SW, but the train of clouds as a whole became dissipated as a rain cloud. The appearance resembled the present vapor cloud over Halemaumau and a train of falling rain could be seen against the background.



Sept. 5. Nothing seen day or night except fumes, by parties visiting pit. Glow dark in evening. Rain at night.

T.A.J.

Massachusetts Institute of Technology

Hawaiian Volcano Observatory

JOURNAL

Day Sunday Date September 8, 1912.
Monday " 9, "
Wednesday " 11, "
Thursday " 12, "

Sept. 8. Afternoon, no seeing; an occasional slow wheezing noise heard.

Sept. 9. At night glow wholly at W end and but little of the blowing noise.

Sept. 11.
2:30 p.m. Wind ESE, light. Fumes heavy and white, blowing towards Mauna Loa. From NW station saw western lava pool. Conditions similar to Aug. 26. Pool irregular oval within a funnel-shaped fuming depression surrounded by talus. An eastern blow-hole can be heard puffing every three seconds, like the exhaust of an engine. Rock slides heard occasionally, not heavy. Fumes appear less than recently. No sign of an open east pool, and no plashing heard at blow-hole.

Sept. 12.
7:30 to 9:30 p.m. Wind light, ENE; fumes NW and O.R.H. obscure view.
From E station rare view of three glowing spots together apparently in a pile of rocks or a chimney E of the main pool. Probably this is the blow-hole.
Best view from E. A-frame. A great eddy started by the ENE wind opened the whole SE side of pit to view and there showed volumes of fume rising from the 200-foot level and sweeping eastward along the remnant of the bench there, then rising and bending over and down into the pit again, making a great circular whirl with a bright spot -- the lava glow -- in the center of the whirl as though one were looking through a circular window. The S side of pit appears like an immense cauldron. The noises are light; the blow-hole irregular and the noise of plashing lava is stronger. The glow is strong.

T.A.J.

Massachusetts Institute of Technology

JOURNAL

Hawaiian Volcano Observatory

Day Friday Date September 13, 1912.
Saturday " 14, "
Sunday " 15, "

Sept. 13.
8 to 9 p.m. From the E. A-frame the glimpse of pool makes it appear no more than about 350 feet down, boiling vigorously. (No measure.) There was a glowing spot S of pool and a group of glowing cavities emitting flames E of it. Eddy of fumes from NE as before. Little to be seen from other places. Few slides heard and but little blowing. The lava was splashing noisily.

Mauna Loa. About sunrise Dr. Shepherd from H.V.O. saw the two fuming places on high profile of Mauna Loa between the two higher cones NE, same place as before. They appeared dark against western sky and three or four times as high as cones.

Sept. 14. Fumes appear heavy.

Sept. 15.
11:20 a.m. NE wind, fumes lifted by eddy -- fill space above 1894 bench -- and make breathing difficult at E station. SO_2 strong. Same bubbling noise and an occasional strong belching noise. No falls of rock heard.

12:30 p.m. No seeing NW, O.R.H., nor N station.

T.A.J.

Massachusetts Institute of Technology

KILAUEA DAY SHEET

Hawaiian Volcano Observatory

Day Sunday Date September 15, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
			no	pl	scr	stop	ex	cam
12 noon	E	Looking N. (The eddy fumes hugging E wall)	1			F 6.3	1/100	P
	N of east A-frame	Looking SW. (The open pit)	2			F 22.6	½	"
								T.A.J.

1912, Sept. 15



1



2

JAG

JOURNAL — Massachusetts Institute of Technology, Hawaiian Volcano Observatory

1:30 p.m. N station.
Steady roar heard. Vapor appears thin. Lava bubbling and fountains sound near. One or two slide blocks heard falling.
At O.R.H. hissing and bubbling sound nearer and louder than for weeks past. Fumes bad. Timed falls of debris. Heard as follows:-

1:30 p.m. roar and stones.
1:40 " small talus fall.
1:43 " larger " " (all on S talus).
1:51 " small " " (SW)
1:53 " " " " (S)
1:55 " " " " (E)
2:03 " " " " (SW)
2:07 " very small talus fall (S).
2:20 " " " " " "
2:22 " another long roar like 1:30 p.m.#
2:24 " small talus fall.
.....
2:45 " slide S.
2:46 " " SW.

#. These roars appear to be due to steam jets in the talus accompanied by some sliding due perhaps to the filling of a fumarole by infallen material which so clogs the gas that it escapes with a rush at long intervals. Probably same as 8:30 p.m. Sept. 2.
Between 2:24 p.m. and 2:45 p.m. (above) slides not counted.

E station.
Noise of fountains loud and near. Some heat on face. Sounds like large pool not more than 325 feet down. Noise of fountains in O.F. position where the blow-hole has been lately. Occasionally a greater fountain noise at this place.
As lately most open part of pit S. Yellow sulphur patches and many fuming vents in talus 200± feet down. Wall vertical opposite E. A-frame. A remnant of 60-foot bench of Jan. 4, 1912, clings to S wall under channel and a lower cracked remnant of it has slid 75 feet lower. The great eddy working and pool heard fountaining vigorously but not seen by daylight. Sliding heard today believed occasioned by a sudden rise of the lava which has disturbed and engulfed the lower ends of talus slopes. The noise of the pool is continuous and tumultuous as though it were constantly engulfing slide -rock. The end of E cable was found free and brazed; it was oxidized, brittle yellow and red, shreaded but not fused.

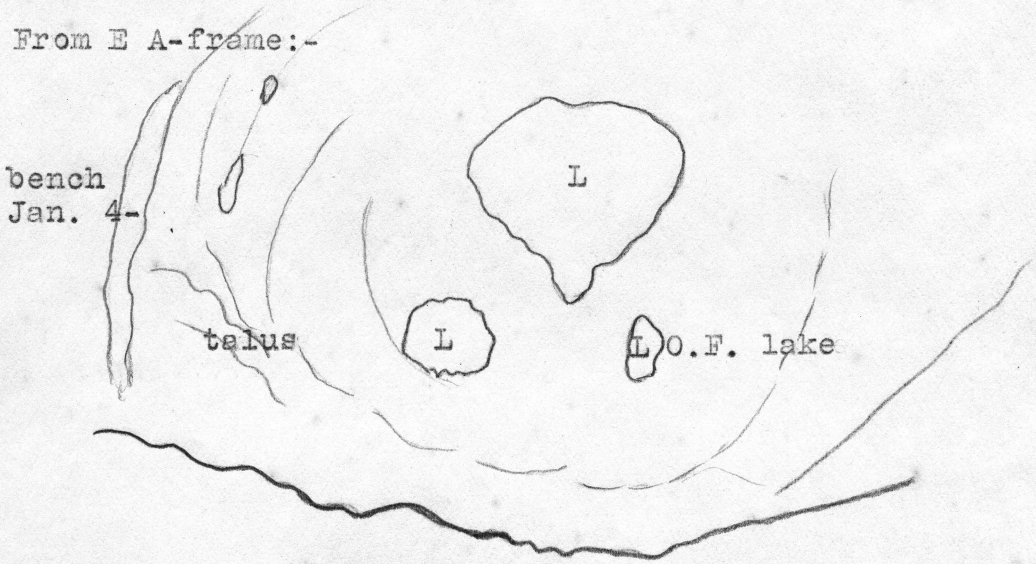
JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

 Day Monday Date September 16, 1912.

5:30 p.m. From reel E. A-frame lava seen as follows: a glow spot S, afterwards determined to be a pool; a small oval pool boiling hard farther N, (attempts to locate failed); a large pool beyond the little one; two high sulphur cracks SSW about 100 feet down have stopped fuming.
The small oval pool above identical with triple glow-hole of two nights ago (O.F.).

From E A-frame:-



Evening. Slides W and SW. One heavy one.

8:37:30 p.m. At W cottage, Volcano House, felt earthquake shock. Still moonlit night. Crater glow brighter than recently. If lava is rising, fumes do not dissipate as rapidly as is expectable. They still form a heavy cloud and there has been discussion on this account as to whether the lava really is rising. It is agreed, however, that there is a slight lessening of the fumes.

T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Monday Date September 16, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
		Compass locations of E. A-frame. (Unsuccessful attempt to locate by compass what afterwards was located at SE station.)						
		Direction from edge cliff at reel to cross E. A-frame				S 63	10 E	(Brunton)
		" to reel from E station				S 1	30 W	"
		Opposite direction to E station to reel (no check)				S 0	50 E	"
		Direction from N station to cross E. A-frame				S 26	25 E	(Brunton)
		" " E " " "	"	"		S 6	0 E	"
								T.A.J.

			no	pl	scr	stop	ex	cam

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Tuesday Date September 17, 1912.

8:00 a.m. Fumes appear less and gathered at W side.
H.O.W. at crater this morning. No seeing and no avalanches heard. Much blowing which sounded as though from fountains as in July. Fumes not heavy but diffused as a veil.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Wednesday Date September 18, 1912.

2:30 p.m. N station.
Slight blowing noise heard. Fumes dense, wind NE.

O.R.H.
Continuous steam hiss heard toward E end. Fountaining heard elsewhere, not so strong as on 16th. There is a more or less periodic fountaining heard at short intervals as follows:-

2:39 p.m. Strong puff and fountain, O.F. position.
2:39:30 p.m. Smaller fountain noise.
2:40:30 " Still smaller noise.
2:42:40 " Very strong whistle.
2:43:10 " Another very strong whistle.
2:44:00 " A long light puff.
2:45:00 " " " " "
2:45:40 " " " " "
2:46:25 " " " " " (a little stronger).

W side obscured by fumes. During twelve minutes no avalanches heard. There is a thudding noise in the fountains.

2:54 p.m. NE station.
Heard continuous hiss below. A great puff like whale every 30 to 40 seconds with smaller puffs intermediate. Timed four of the greater as follows:- 30 sec., 35 sec., 25 sec., 40 sec. Fumes eddying back of 1894 ledge at E end. Nearly suffocated climbing up there to E station

3:10 p.m. E.A-frame.
Tremendous puffs heard. Hardly any plashing noise. Continuous hiss and occasional very heavy rocket-like jets often prolonged. The rocket jets are rhythmical. Cannot identify any visible puffs of vapor accordant with noises. (These noises extraordinarily like those heard at Asama by T.A.J.)
Wind eddy same; S sulphur patches not fuming; partial clearing shows no glow; drizzle.
Compass needle at rest during the rhythmical puffing shows no effect.

3:50 p.m. S lava channel.
Saw no glow.

10:00 p.m. Moon just past quadrature from H.V.O. In bright moonlight fumes from Halemaumau show very weak glow, barely visible. Every evening at sunset fumes of Halemaumau lavender in contrast to rain clouds; probably due to first effects of glow within.
Change in conditions today from those of 16th suggests that lava has turned and gone down on the moon quarter near equinox after rising rapidly at time of new moon. The earthquake of last night may have been turning point.

Remarkably clear day -- ocean horizon in full view.

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Thursday Date September 19, 1912.

6:00 p.m. The blow-hole in O.F. position shows stalactites and a large pool is seen beyond triangular in shape. The S glow spot is very small, suggestion is of distinct rise since yesterday. A bright light appears when blow-hole blows. Lava is ejected through this hole and splashes down on rock with a thud. This must be the process of making "blowing-cones".
Fountains can be heard and there is less continuous blowing than yesterday. The large pool is active.
There are two kinds of puff from blow-hole, one with lava thud, the other pure gas. The stalactites noted are made by the falling back of lava.

7 to 7:30 p.m. With a light wind off Mauna Loa, floor came into view. Rocket jets of lava were shooting through blow-hole. The W pool was largest, surging sluggishly and as the viscous fountains burst, a hissing rush of vapor came from them. (See Sept. 20).

Photographs. Started taking morning photographs, 5x7, of Halemaumau from H.V.O. to record (1) character of day; (2) changes in vapor cloud; (3) small vapor jets; (4) possibly changes relative level Halemaumau dome.
These photographs later in the year were made with H.O.W.'s camera, Ross lens. Now were made 5x7 Kodak film.

T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Thursday Date September 19, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
6:15 p								
Direction from E station to small glow spot at blow-hole						N	82° W	(N 82 E?)
"		" E A-frame " "	"	"	"	N	57 45 W.	
	E	Small glow spot at blow-hole		42 35				
	A-frame	" " " " " " "		39 00			501	(corrected)

First tests of daily morning photographs of Halemaumau from H.V.O. as records:-

			no	~~DK~~	~~scx~~	stop	ex	cam
9:45 a	pier	Steep talus, base of cliff left of Uwekahuna on right of finder.	3	(100' focus)		F 16	1.25sc	5x7
	"	" " " " " " " "	4	"	"	F 5±	"	"
	"	" " " " " " " "	5	(Iso. adjusted ray filter.)		F 64	½	"
	"	" " " " " " " "	6	"	"	"	1	"

Developed, Eastman powders (Hydroquinome?) triple strength.

T.A.J.

1912, Sept. 19



3



4

Jag

1912, Sept. 19



5



6

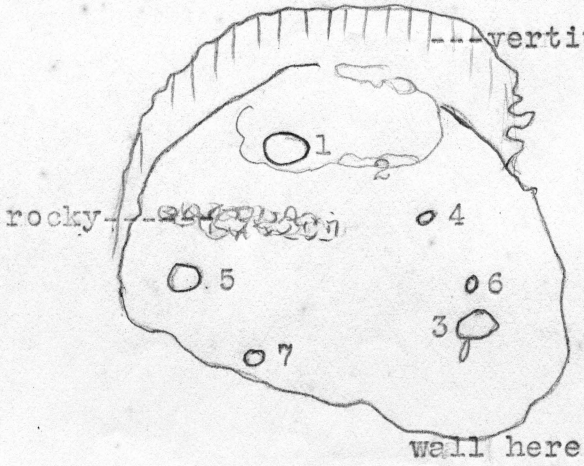
TaJ

JOURNAL — Massachusetts Institute of Technology, Hawaiian Volcano Observatory

- 1 - Day Friday Date September 20, 1912.

9:45 a.m. From O.R.H.
Bottom invisible. Puff every ten seconds lasting from 20 to 30 seconds. No slides heard. Fumes have thin edges. Noise seems from main western pool. Lava bubbling and blowing. No noise distinctive of E hole and no thud from lava jets. Same all day.

8 to 12 p.m. Spent night testing erroneous depth of yesterday. Average depth of W pool determined as 582 feet. The greater depth of blow-hole (593 feet) may well be true as there is a slope of debris from the W pool down to the E pools. Crusting and probably lowering of main W pool has happened between 19th and 20th. Today three or more holes around border. Before it was all in motion as fluid surface with fountains (19th). Now it is hard with a round pit at place marked (1) on diagram, where lava surges up and down. N of this is an elongate fissure (2) containing lava and emitting blue flame. W side of crusted area of W pool a wall rises vertically and there are glow spots along the border of the crust. At (3) is the most conspicuous feature of the floor, the blow-hole; this was the triple glow of Sept. 12 and 13, small oval pool of Sept. 16 at O.F. locality, the noisy blow-hole of recent dates, and now is a complex of fissures with one larger and more like a pit than the others -- it was a roundish pit Sept. 19 but has become constricted with spatter -- and through this every 30 or 40 seconds, but not regularly, an inclined spurt of lava spray is ejected with rocket-like noise to heights estimated sometimes over 100 feet. The incline is toward the N. There is a smaller hole also spurting adjacent to and E of the larger one. The spurting often culminates with the ejection of a sheet of lava that slops over the rock to the N and is building a cone. At (4) there is a small glowing pot. At (5) there is a hole, not splashing visibly but glowing within, and a continuous spear of blue flame plays from a crack beside it. At (6) a new hole opened during the evening between (3) and (4). Another small, glowing hole in the floor is at (7) NE of (5). The rocky slope is between the main western pool and (5).



A bench E of the whole floor shows a ragged edge overhanging the floor as seen from the E station.

Scene as a whole: Veils of brown and white fume rise and fall. Glow-lit ragged walls, blue flames, rushing noises of escaping gas, immense abyss; now and then tremendous spurt from blow-hole illumines scene. Its flashing glow above on vapor cloud seen as a flare even from H.V.O. This followed by the thudding downfall of its spatter on the rock and often an orange-red leaf-shaped lava flow spread about the orifice of the blow-hole on the floor beside it. This would remain glowing for one or two minutes.
Worked all day setting up new posts at Stations N, NE, E, SE, and painting same white.

T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

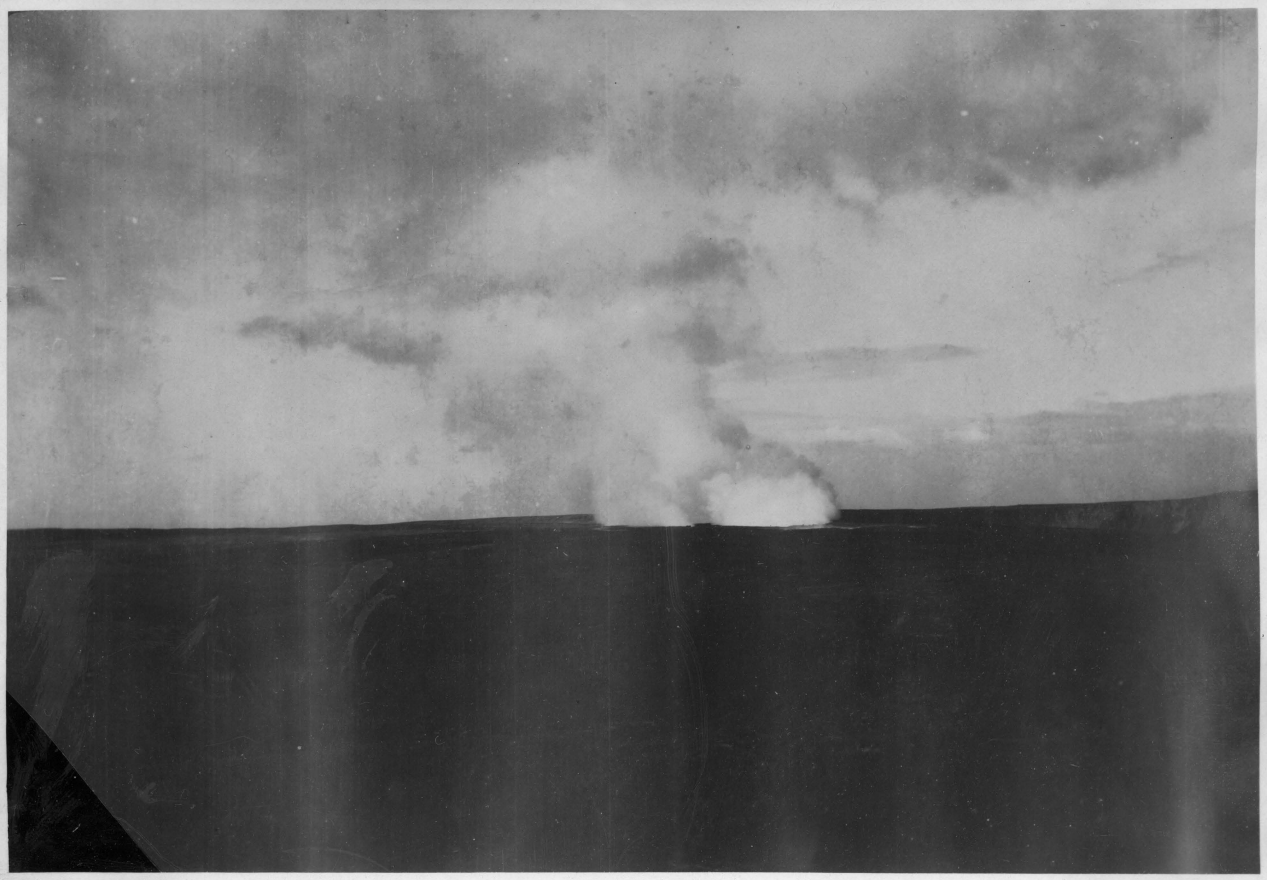
Day

Date Sept. 20, 21 & 22, 1912.

t	sta	pt	~~no~~	~~vert~~	~~hor~~	~~stop~~	~~ex~~	~~cam~~
		PHOTOGRAPHS.						
Friday, Sept. 20, 1912.								
8:30 a	pier	Halemaumau (sunlight) (focus 2 mm back)	1	Film Oct!09	screen	F 32	½	5x7
8:40 a	"	Halemaumau (sunlight) (focus 2 mm back)	2		"	F 16	1/5	"
	Test with ground glass shows		∞	focus is	1 mm	back of	100'	mark.
	" " " " "		"	" "	2 "	" "	"	"
		with screen.						
Saturday, Sept. 21, 1912.								
10:25a	pier	Halemaumau (pale sunlight)	3	Film Oct.'09	Iso screen	F 16	1/5	5x7
	Focus 2 mm back from 100' mark.							
Sunday, September 22, 1912.								
11:15a	pier	Halemaumau (cloudy)	4	1909 film	screen	F 32	½	
								T.A.J.

			no	pl	scr	stop	ex	cam

1912, Sept. 20



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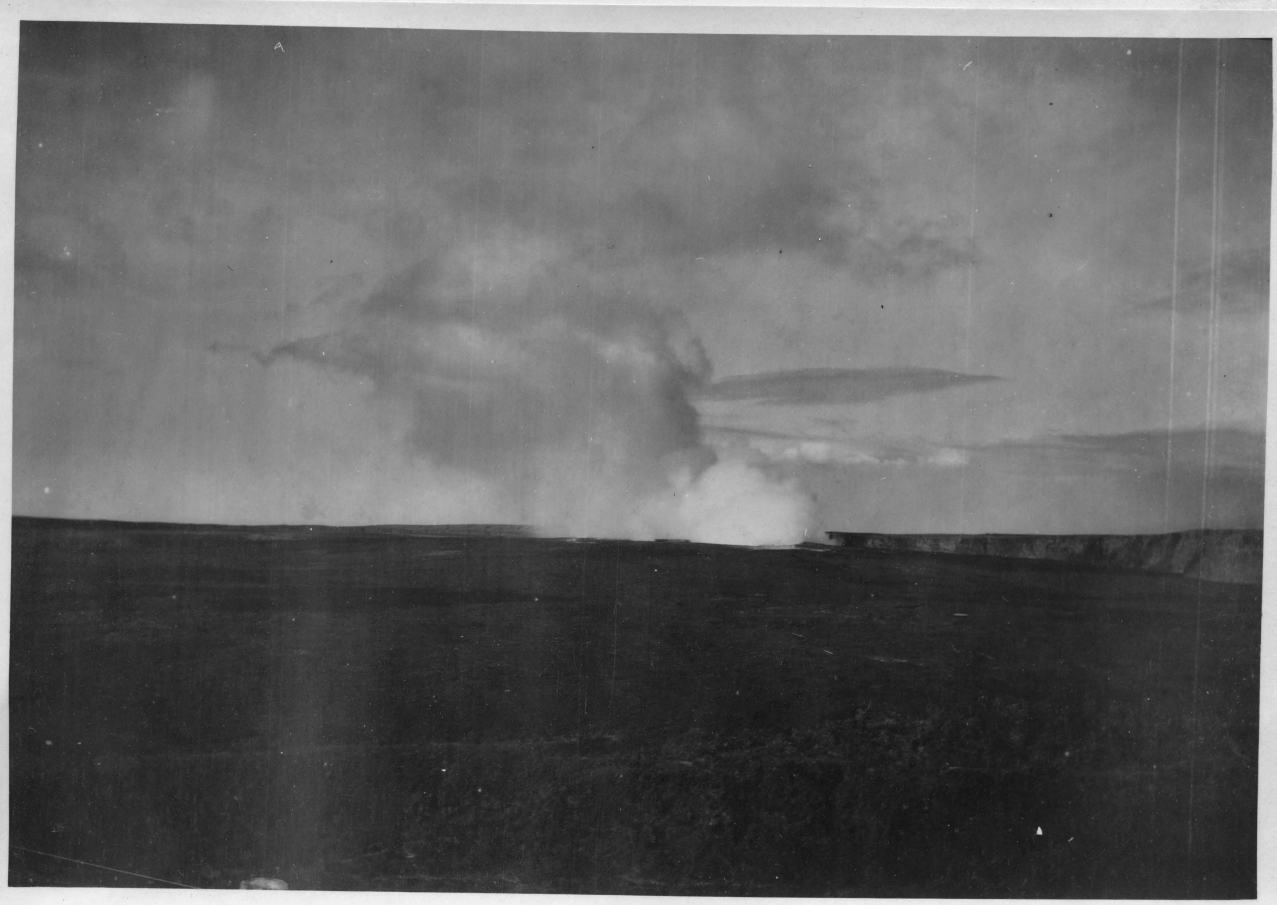


2

Jag

165

1912, Sept 21

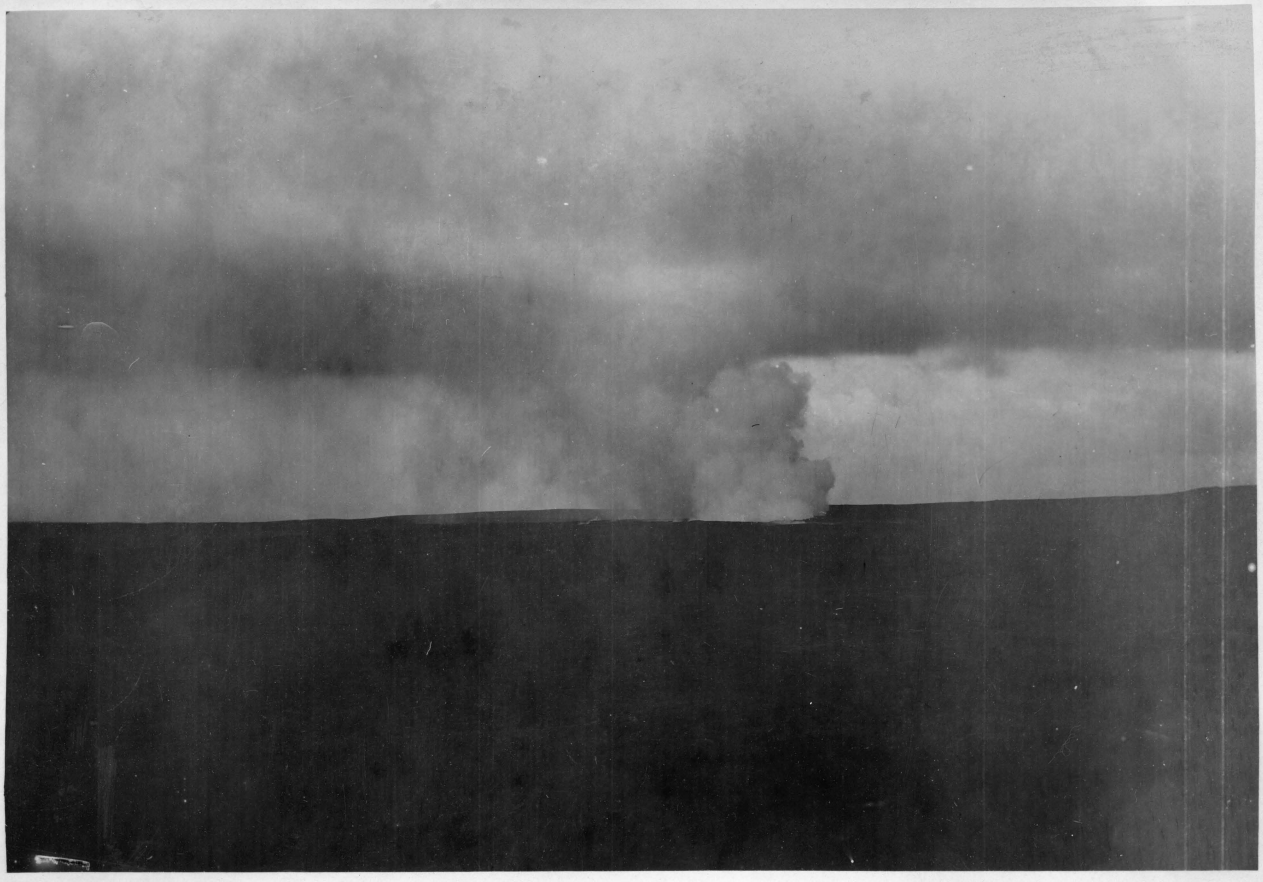


3

Fag

166

1912, Sept. 22



4

Fog

JOURNAL

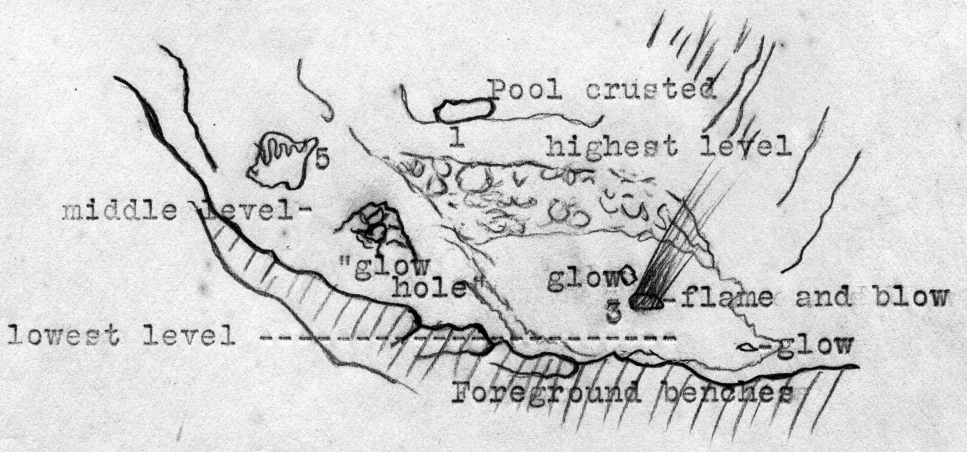
Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Saturday Date September 21, 1912.
Sunday " 22, "

Sept. 21.
Morning. Vapor diffused and no view. Noises same.
Painted NE station and set up and painted NW station posts.

7 to 8 p.m. No view early in evening, later H.O.W. and Dr. Shepherd saw bottom. Conditions similar to last night. Two holes of about equal size at blow-hole locality with lava spurting in them.

Sept. 22.
5 to 7 p.m. Fair NNE wind changing to NE. Gov. Frear, Secretary Fisher and party.
Good view, daylight, SE station of the E part of floor.
Same general condition as Sept. 20 but blow-hole puffing less strongly and much of the time without spray but with a pale blue flame.
Striking feature of view (see diagram below) was the confirmation in daylight perspective of fact that floor around blow-hole is at lower level than W pool. (See plane-table survey Sept. 20, blow-hole 593 feet; W pool 571 feet below E station.) There is a slope down from main pool W to blow-hole floor E and the slope consists of tumbled rocks. The W pool appears to be on a bench.
The S hole is in a talus slope intermediate in level between the W pool and the blow-hole, and what was noticed before as the flaming fissure next to it is now a filagree spatter-cone of beehive shape and whitish.



T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Monday Date September 23, 1912.
Tuesday " 24, "
Wednesday " 25, "

Sept. 23.
5 to 7 p.m. NE wind. Glimpses show conditions about the same. The blow-hole shows three holes and appears to be shaped like a low dome; puffing not strong. No avalanches heard. On going around crater S side note much Pele's hair, several tumbled bench remnants within pit and yellow sulphur-lined cavities representing active or quiescent fumaroles within the S filling of pit. From these a strong smell of pure sulphur vapor. There are beds of decomposed gray ash-like substance in solfataric areas near SW station. The cable used for rescue January 1912 decomposed by oxidation completely along W side of high W niche of 1894. This is a good test of place of maximum bombardment of acid fumes under prevailing winds. Fumes not at all intolerable on lee side.

Sept. 24.
3:00 p.m. No change noted. Carried minor Omori tromometer to pit to be set up at Technology Station.

Sept. 25. Glow at night dull. Fumes heavy. Full moon.

T.A.J.

KILAUEA DAY SHEET

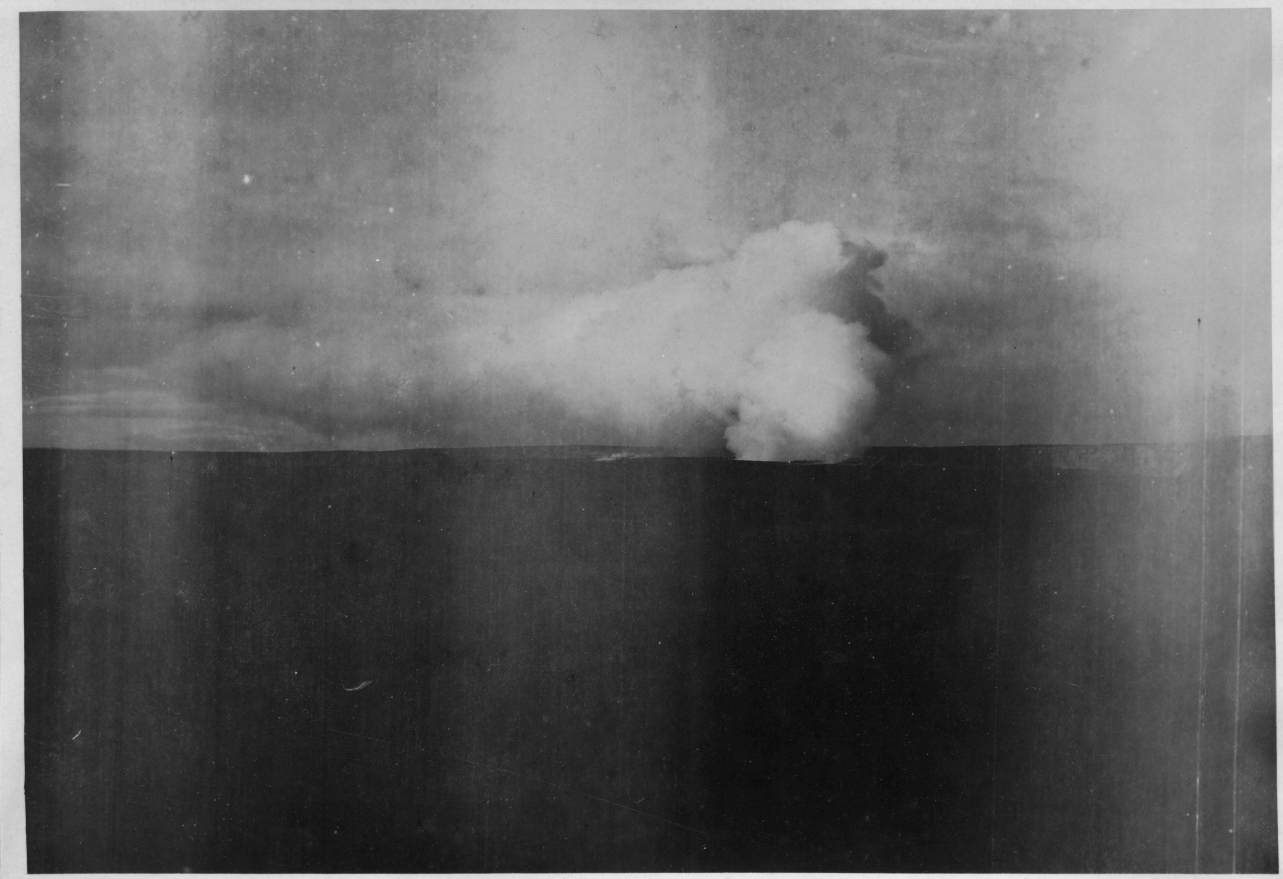
Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day September Date 23, 24, 25 & 26, 1912.

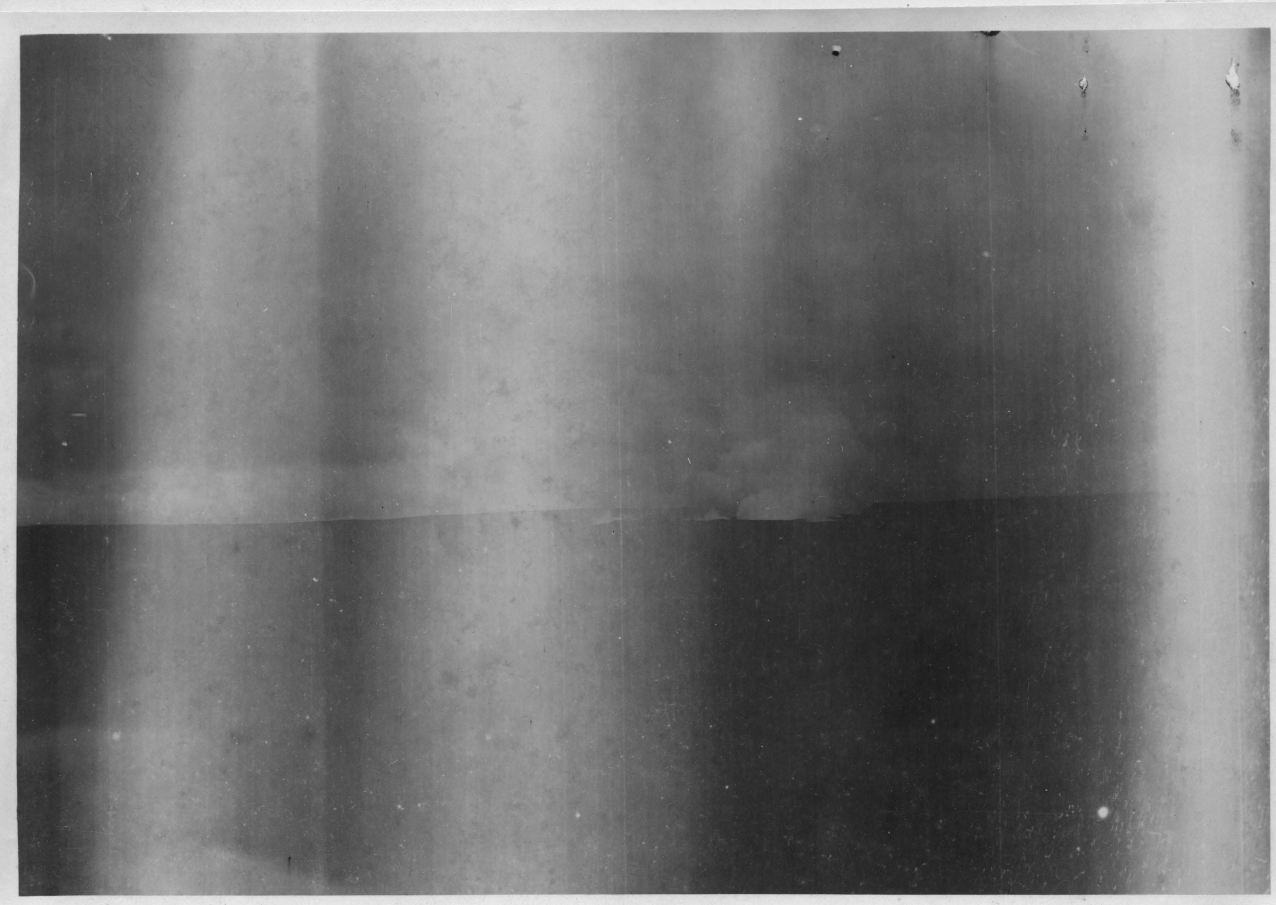
t	sta	pt	hor	vert	screen	dist	elev	cam
		PHOTOGRAPHS						
		Monday, September 23, 1912.						
7:40 a	pier	Halemaumau (sunlight and cloud shadows)	5		Iso	F 32	½	
3 p.m.		Cloudy (relative humidity 93) (Vapor from cracks in floor)	6		"	"	"	
		Tuesday, September 24, 1912.						
X 11:20a	pier	Partial sunlight	1	1909 film	Iso	F 32	1/5	
		Wednesday, September 25, 1912.						
12:10p	pier	Sunlight	2		Iso	F 32	1/5	
		Thursday, September 26, 1912.						
8:35 a	pier	Sunlight and mist. (Humidity 85)	3		Iso	F 32	1	
								T.A.J.

			no	pl	scr	stop	ex	cam

1912, Sept 23



5

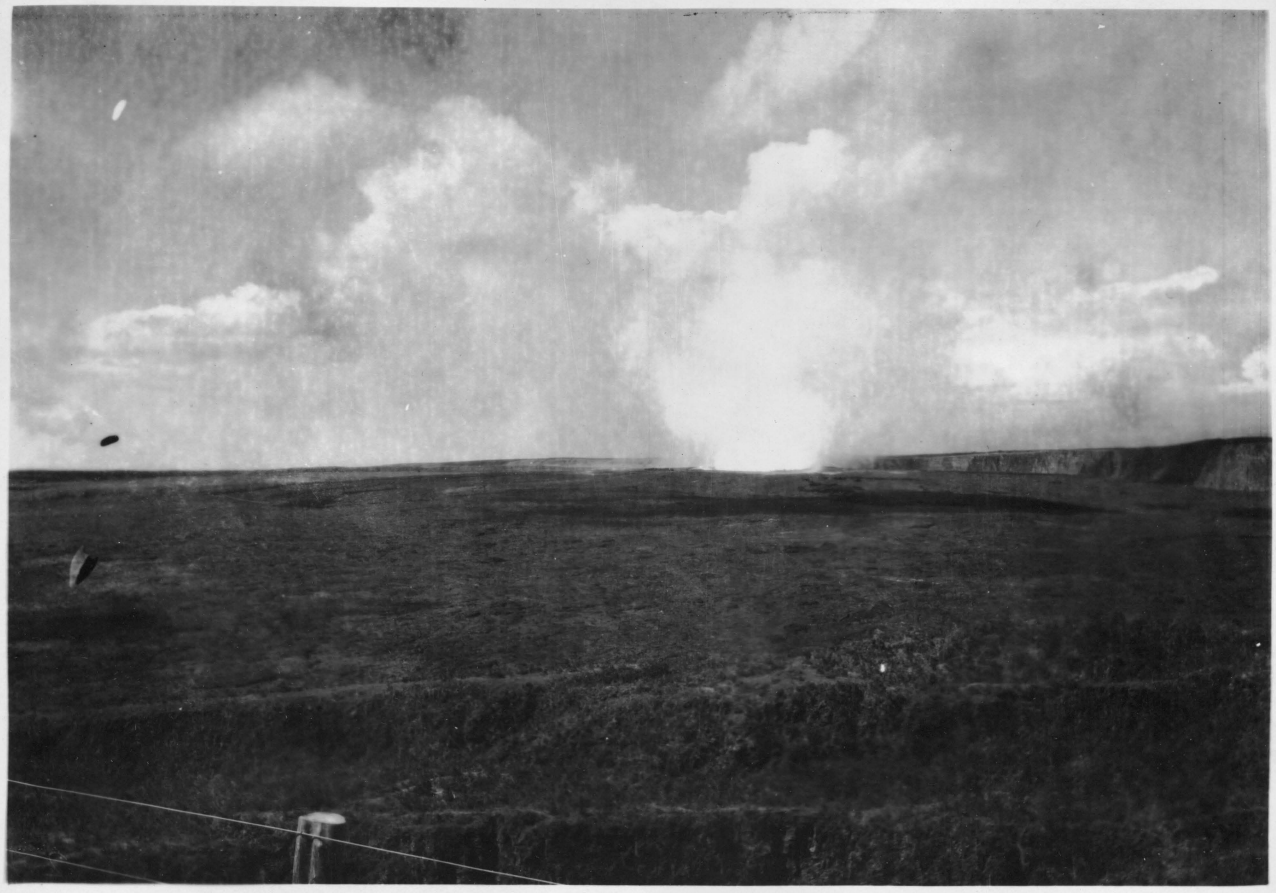


6

Jag

171

1912, Sept 25



2

Fog

1912, Sept 26



3

Jay

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

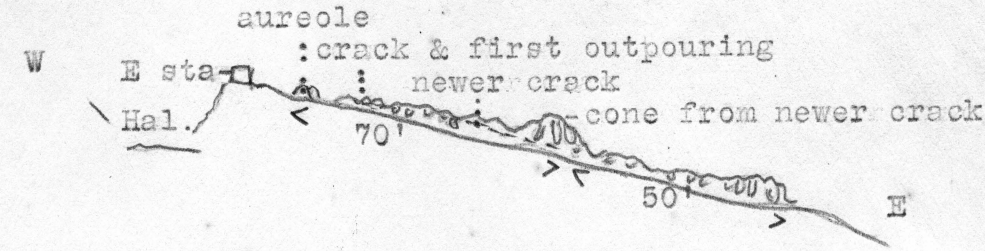
 Day Thursday Date September 26, 1912.

10:25 a.m. No seeing. Continuous puffing.
The SE amphitheatre is visible and note that former 200-foot bench surface, below the south sulphur patch, is still partially preserved with a strong inclination toward the pools and with many cracks. It appears to have been undermined from below so that the upper surface of bench is inclined toward the lake like one great broken slab. Fumes diffuse and white, not very heavy. No loud puffs from blow-hole. one hundred feet under S remnant of January bench thin dusty brown fumes are rising from talus. In contrast to these a hundred feet lower down pure white vapor like steam is rising in thick purls. Old inner walls SE are colored salmon red and yellow.

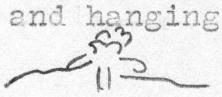
10:50 a.m. No change, no avalanches, no view.
The upper brown fumes above noted are from under the edge of the fallen part of January bench. The white fumes are from under the edge of the down-tilted part of the June 200-foot bench.

Evening. Reports from crater of small boiling pool surging up at O.F. locality. Strong, flaring glow seen from H.V.O.

Returned E toward S end Kilauea Iki platform. Found perfect miniature rift and lava cone on slope of Kilauea-Halemaumau cone. Similar to those on slopes of Mauna Loa but in miniature.

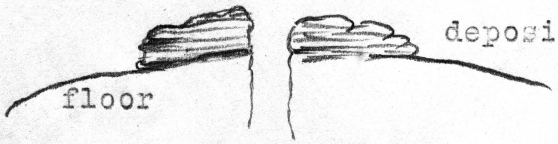


Broken, slabby and scoriaceous lava above, more glossy, firm blobby pahoehoe below on cone. Last culminating cone sharp, buried the older slopes beneath it and also buried the chestnut-burr crack. The older lava of the crack extends farther down the slope and the culminating cone appears to be about the middle of the rift. It is also highest.
Found a fine cavern (cold) opposite S end of Kilauea Iki platform 300 yards toward Halemaumau, opening towards Kilauea Iki. Caved in SE; stalactites still intact NW. Stalactites with fine stringy algae, brown and wet, attached and hanging down. Stalagmites with spatter extensions.



A deposit on floor shaped like cow-dung, same material as the stalactites, with a hole two

inches in diameter in middle. Appears like a geyser terrace; size eight inches diameter.



Apparently from flow up through a hole in floor; smooth layers not like the small detail of spatter.
The domes crossed in this line from E station to S end of Kilauea Iki platform are of great interest with overflow through cracks; one with wonderfully perfect miniature flow -- festoons, border-folds, cavern-slump, frontal folds, piling and toes. Near Kilauea Iki end a dome with pahoehoe flows from cracks and a small aa pile on top; five feet across, two feet high; pahoehoe toes at its periphery; like Tarumai. Finest transition pahoehoe to aa in miniature possible.
Ferns and water dripping from green algae in one small cave.
White lichens on old lava near E cliff.
Big open crack three feet wide parallel to cliff and 100 yards from it, opposite steaming cliff and N therefrom.

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Friday Date September 27, 1912.
Saturday " 28, "
Sunday " 29, "
Monday " 30, "

Sept. 27. No marked change at crater but less glow.

Sept. 28.
Evening. Visit of H. P. Wood and party. Conditions similar to recent dates.
From SE station dim views of O.F. locality show fissure there, shaped like a cross, larger than when last seen with occasional flaring splashes. S hole much larger showing lava splash. W end seen very dimly as three or four small glow spots in a line. No avalanches.

Sept. 29.
Afternoon. Lycurgus reports nothing seen.

Evening. Rain. Fumes thick. Flare less.

10:20 p.m. Felt a continuous earth tremble for about 30 seconds at W cottage Volcano House.

Sept. 30.
10:00 a.m. Strong gurgling and blowing heard; nothing seen; fumes as usual. No rock slides.

Evening. Glow dull, occasional flaring.

T.A.J.

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KILAUEA DAY SHEET

Hawaiian Volcano Observatory

Day September Date 27, 28, 29 & 30, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
			no		screen	stop	ex	cam
		PHOTOGRAPHS						
Friday, September 27, 1912.								
9:45 a	pier		4		Iso	F 32	1	
Saturday, September 28, 1912.								
9:35 a	pier		5		Iso	F 32	1	
Sunday, September 29, 1912.								
11:40a	pier	Misty.	6		Iso	F 32	2 to 3	
Monday, September 30, 1912.								
12:40p	pier	(1 mm back)	1	1911 film	Iso	F 32	½	
								T.A.J.
			no	pl	scr	stop	ex	cam

1912, Sept. 27



4

Fog

178

1912, Sept 28



5

Jag

179

1912, Sept. 29



6

Jag

1912, Sept. 30



1

Fog

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Tuesday Date October 1, 1912.
Wednesday " 2, "

Oct. 1.
Daytime. Fumes heavy all day over Halemaumau.
Night. Moonlight; glow at pit very dim.

- 1 -

Oct. 2.
Daytime. Fumes appear lighter.

7:30 p.m. Wind variable, light N, NE and NNW. Bright glow with some flaring. Foreground fumes troublesome from E station. Good views from SE station. Marked increase in activity. Diagram below shows details as follows:-
1 - W pool higher than 2;
2 - higher than 3, the eastern floor; the lower hole of 2 (also the larger hole) is probably on the same level as 3.
3 - the eastern floor around the O.F. blow-hole. This appears as a triangular orifice with scattered smaller glowing cracks and flame holes about it.
4 - a high flame chimney N of the western side of the talus slope which descends from 1 to 3. A great blue flame plays above this chimney which is a new feature.

From SE station:-



Blow-hole very noisy and there are great cracks in the floor about it. The S holes (2) are now two in number and the southwestern one is overflowing and the higher of the two. A strong thud of the lava is felt at Tech. Station. The noisy thud from southeast sounds as though melted lead were splashing in caves.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

 Day Wednesday Date October 2, 1912.

9:00 p.m. Whole area between the lower of southern holes and the blow-hole was overflowed. Blocks of crust apparently foundering, suggests subsidence rather than rising. Cooled off leaving no change in the appearance of the holes afterwards.

T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Tuesday Date October 1, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
			no	pl	scr	stop	ex	cam
2:30 p	pier	(1 mm back)	2		Iso	F 32	½	
"		Houses. Poor	2, 3, 4, 5 & 6					
5:30 p		Halemaumau fumes gray against dark cloud	1	1911 film	"	F 16	3	

No. 5 - Instrument Hut at edge of pit and Old North Rest House.
6 - Tech. Sta. at Halemaumau and Instrument Hut.

T.A.J.

1912, Oct. 1



2



1

Fog

1912, Oct. 1



5

SP205306



6

SP205307

Jag

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Wednesday Date October 2, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
			no	pl	scr	stop	ex	cam
9:15 a	pier	Sunlight, clouding up	2		Iso	F 32	½	
10 p m	SE	Pit downward. Shutter open and closed as fume cloud permitted.		Seed		F 8	10 min	A

T.A.J.

1912, Oct. 2



2

Fog

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Thursday Date October 3, 1912.
Friday " 4, "
Saturday " 5, "

Oct. 3.
Morning. Fumes appear thin though humidity is 94.

Evening. Glow moderate. Crater reported the same.

Oct. 4.
Evening. Glow dimmer.

Oct. 5. Fumes appear to increase in volume, but in evening bright glow with flaring.

T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day October Date 3, 4 & 5, 1912.

t	sta	pt	no	vert	lens cr	stop	ex	hyd.
		PHOTOGRAPHS.						
Thursday, October 3, 1912.								
Noon	pier	Dim sun. Humidity 94.	3		Iso	F 16	½	
	NW) fence)	Observatory	4		"	F 32	5	
	NW trail)	Shepherd's cottage	5		"	"	5	
	below)	Observatory	6		"	"	5	
Developed with 4-strength Eastman powders; good negative.								
Friday, October 4, 1912.								
9:20 a	pier	Sunlight. Humidity 89. Focus 2 mm back.	1	1911 film	Iso	F 16	2	
Made experiments in exposures G camera 27 inch extension and A camera - Telephoto 12 inch extension.								

			no	pl	scr	stop	ex	cam
Saturday, October 5, 1912.								
9:16 a	pier	Humidity 86. 1 mm back.	2		Iso	F 32	2	

T.A.J.

1912, Oct 3



3



5

CP 85184
SPZ05308

Log

1912, Oct. 3



CPBM 58818

SP205309

4



SP205310

6

768

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day **Friday** Date **October 4, 1912.**

PHOTOGRAPHIC EXPERIMENTS.

6½x8½ camera. Front lens turned back. 27-inch focus.
No. 1 - f/64. Pit from pier. 6 secs. Old plate. 1:45 p.m. Tele.
2 - f/64. " " " 10 " " " " " "

Anderson camera. Zeiss telephoto. 12-inch extension. Collar out.
× 1 - Seed 30 Gilt Edge. Pit from porch. Tripod. f/32. 1 sec.
13-inch focus fron rear combination.
× 2 - " " Gilt Edge. Pit from porch. Tripod. " 5 "
V color screen.
× 3 - " " Gilt Edge. Pit from porch. " " 10 "
X color screen.
The long focus combination (27 inch) of Zeiss anastigmat is the front combination.
" shorter " " (16+ inch) " " " " " rear combination.

The results, developing with Eastman Hydro. 4-strength and diluted about one-half brought up the two large plates too rapidly, but they show splendid detail.

Plate values
Standard Orthonon f/16 - 1/25 - bright light summer.
Seed 26 f/16 - 1/16 - " " "
Non-halation Ortho. f/16 - 1/16 - " " "
Seed 30 probably faster - (Seed 27 faster than 26)
" Pan-chromatic f/16th - 1/25 or a little slower.
N C film same as orthonon - f/16 - 1/25.

Lumiere Sigma - ,fastest plate known f/16 - 1/64.
Cramer contrast plate f/16 - 1/2

T.A.J.

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1912, Oct. 4

Fog

1912, Oct. 4



fog

2

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day **Saturday** Date **October 5, 1912.**

PHOTOGRAPHIC EXPERIMENTS continued.

4 p.m. 6½x8½. f/32 - 1/5. Full Anastigmat bright light on crater cloud, dark background, high wind. No screen. Fine negative. Try f/128 - ½ second.

Anderson camera on pier on its side. Seed 30.
No. 1 - Sleeve too short. Moved camera. 2 sec. f/32. 9:30 a.m. Appears overexposed but has no density. Old Eastman Devel. x4 (½ diluted). Try longer exposure and slow glycin.
2 - 10 sec. V screen. f/32. Old Eastman. Underexposed. Focus fair. Try 30 seconds and slow glycin (Anderson recommended 1 minute in his cathedral plate). Experiment with focus marked. Make camera rigid.

6½x8½. Fresh Orthonon (at least new, but some of the plates stained from winter).
No 3 - f/64. 27-inch focus. Front lens. 2 sec. 10 a.m. Old Eastman. Overexposed. Gray.
4 - f/64. 27-inch focus. Iso. screen. 8 sec. Old Eastman. Good but not enough detail in foreground. Try 10 seconds and slow glycin; also try larger stop and quick.
5 - f/64. 27-inch focus. ½ sec. 11 a.m. Slow glycin devel. ½ hr. Good. Would stand quicker exposure or smaller stop.
7 - Copying diagrams large table laboratory. 2 ft. 6½x8½. Orthonon. 14 sec. Fair. Old Eastman devel.
8 - Copying diagrams large table laboratory. " " " " " 15 seconds.
9 - Copying diagrams " " " " " " 16 sec. With fresh Eastman devel. x4 + ½ H_2O, strong. (Dense black and white negatives.)
The old Eastman developer when thick and red tends to stain the Orthonon plates.

T.A.J.

196

1912, Oct. 5

3a.g

4 p.m.

1912, Oct. 5



1912, Oct. 3



5

Jag

JOURNAL — Massachusetts Institute of Technology, Hawaiian Volcano Observatory

- 1 - Day Sunday Date October 6, 1912.

Fumes appear lighter.

5:00 p.m. At SE station with L. A. Thurston. Conditions appear same. No sound of lava fountains, continuous blowing heard. See but one glow-hole. The southern high sulphur fumarole has begun to emit vapor again which is thick and white. The fumes in general look denser. Occasional but rare loud puffs can be heard from O.F.

6:00 p.m. Wind changed to NNW which opened to new bottom area from SE station. The two SE holes began to fountain liquid lava which cascaded down a cone slope around them as continuous rapid flowing and festooning stream lines until the whole area about was filled with the glowing melt and the two fountaining holes continued to work like artesian gushers in the midst. They appeared to be draining the higher western pool. Outlines of flows could be seen all about. The large raised western pool showed only three or four small pits spitting lava.

The detail of eruption at southern vents was as follows:- A single fountain of very liquid lava appeared to be on the apex of a cone, with a stream estimated 30 feet wide flowing from it eastward (see diagram), rapidly above, and forking , widening, and festooning below, progressively more crusted over from top to bottom. The fountain welled up without any sputter or explosion and the glowing fluid slipped along in a serpentine stream quite continuously from a dome-shaped jet which was perhaps 10 to 15 feet high. Finally a second fountain broke out south of it and close to it and developed into its twin with only a narrow partition separating the two. From this second fountain a lava flow sped southward and united with the first flow where it had bent in that direction below.

The O.F. blow-hole farther NE was exploding at intervals with a great lava splash about its rampart (see diagram), the pot appearing to be 50 feet across and to send its spray fully as high. It overflowed eastward occasionally.



JOURNAL

6:45 p.m. Blackened lava around the two dome-shaped fountains S. Latter still boiling continuously but more spasmodically than before.
Area between O.F. and western pool appeared outlined with a glowing zigzag line as though half-crusted flows were either breaking through cracks or filling the intervening space. The whole increase in activity suggests a positive rise.

T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Wednesday Date October 9, 1912.

Depth 475 feet from E station to O.F.

Evening. Fumes thinner than since early days of August.

8 to 9:30 p.m. O.F. orifice opened and ejecting lava at short irregular intervals. Spatter fragments fell noisily on solid crust about it. A second orifice of small size south of O.F. and on south margin of lake ejected spatter fragments at longer intervals.
Constant gas emission accompanied by harsh sounds like stifled-breathing noises.

H.O.W.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Saturday Date October 12, 1912.
Sunday " 13, "
Tuesday " 15, "
Wednesday " 16, "
Thursday " 17, "

Oct. 12.
Evening. Glow strong with brilliant flaring.
Visitors report flows, cascading from W to E.

Oct. 13. Visitors report flows from higher western levels eastward, one of which poured into the O.F. orifice, while the latter was spurting.

Oct. 15. Evening glow these days faint. Activity confined to occasional jets from O.F. Pit obscured by fumes daytime.

Oct. 16. Depth evening (E or SE ?) to O.F. 363 feet.
Triangulation of position SE station revised.

Oct. 17, Lava seems to have been slowly rising during week past.
Flows have poured from small orifices in the floor, building it up. Rugged, uneven floor with numerous small glowing holes. Teo or three of these larger than the rest very irregular in shape.
O.F. ejects rockets of lava at irregular intervals producing the flare observed on the fume clouds above.
Gas hissing harshly with rhythmical variation and intensity.

H.O.W.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Saturday Date October 19, 1912.
Sunday " 20, "
Monday " 21, "
Tuesday " 22, "
Wednesday " 23, "

Oct. 19. Lumination strong in evening with occasional bright flaring. These periods of strong illumination due to small flows pouring out on hard crust of lake from some of the openings. This seems to indicate slow rise continuing.
Fumes continue dense.
Wheezing and hissing noise continues.

Oct. 20, 21, 22 and 23. Same as 19th.

H.O.W.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Monday Date October 28, 1912.
Tuesday " 29, "
Wednesday " 30, "
Thursday " 31, "

Oct. 28. Conspicuous spatter cone seen in daytime near W end of S margin of lake. Loud hissing and blowing from this cone.

Oct. 29. Depth 375 feet E station to "surface of lake" - evening. Crust thinner than in recent weeks and a dimly seen area at W end where crust occasionally broke up and the blocks flowed about and sank after which the area would freeze over and form a fresh thin crust.

Oct. 30. An active lava pool of small area in E end of lake with occasional small, thin overflows upon the neighboring crust. Most marked activity observed since the middle of August. The main holes continue to discharge small jets and O.F., the most active of them, with irregular period.

Oct. 31. During the past week the fumes have diminished, the level seems oscillating, occasional brilliant illumination due to extension of flows and general brightness greater.

H.O.W.

KILAUEA RECORD BOOK OF PHOTOS, NOV. DEC. KKKK 1912

11/1/12		Paheehee tees	376
3			
11/4	12,13,14	Whitney vault seismograph	
6		Laccolith	377
13			

12/1/12 - 12/31/12 Miscellaneous small pictures

Massachusetts Institute of Technology

JOURNAL

Hawaiian Volcano Observatory

Day Friday Date November 1, 1912.
Saturday " 2, "

Nov. 1.

9:00 p.m. Depth from E and SE stations to western oven-shaped hole 370'
" " " station to S pool 376'
" " " " " O.F. blow-hole 369'

8 to 9:45 p.m. Large crusted pool with numerous pots of liquid lava. O.F. a triangular hole in solid crust about 10 feet long; shows increased activity. Lava rockets thrown up over 100 feet at intervals, and a conspicuous blue flame which flutters over the hole, 20 to 30 feet high. At W end an oven glowing quietly. Most of the pots lie on N side of the lake. Eight of these between O.F. and the W oven boil continuously and fountain occasionally to heights of 20 to 30 feet. Four pools in eastern part. One SE of O.F. is 40 to 50 feet long, with cavern under its N bank where lava boils and towards which crusts stream as they are torn from the rim. A larger elliptical pond S of this kept freezing and thawing with inward flow and foundering of crust blocks. At extreme SE angle of lake a smaller cave is filled with boiling lava with streaming toward it from an area of torn and flowing crust. Another freezing and thawing pool at E margin. Entire E and S region traversed by cracks where at times there was thawing with streaming flow. Activity greatest since August.

Nov. 2.

5:00 p.m. Daylight glimpse of lake obtained. This recently has been impossible.

5:30 to 7 p.m. South pool and O.F. active, SE and NE sluggishly active.
O.F. choked to a very small orifice.
Pools at W end larger than night before.
Night views of pit taken.

H.O.W.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Sunday Date November 3,1912.

PHOTOGRAPHS:

Tests of Anderson black-sleeve camera, with Tessar lens, Seed plates.

Northeast floor of Kilauea crater:-

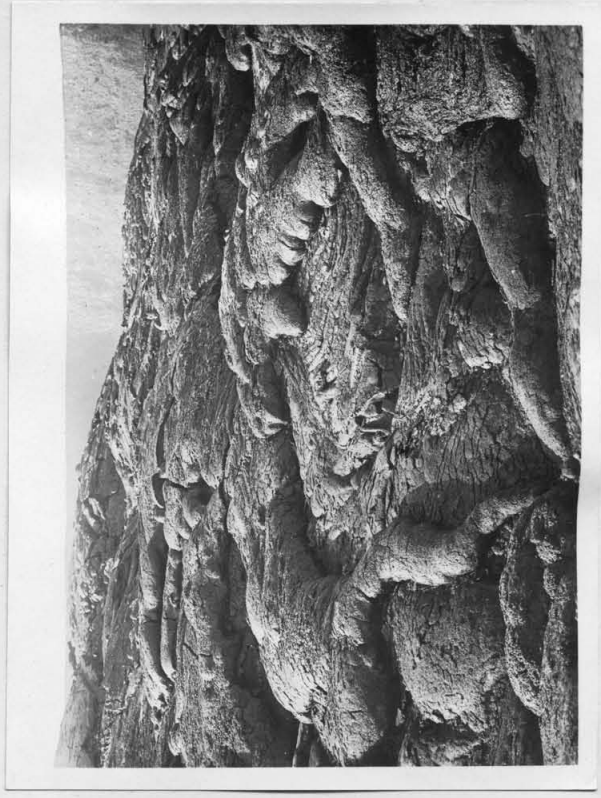
1. Shell lava lobes, detail.
2. Collapsed front of shell lava.
3. Collapsed lobe of shell lava.
4. Halemaumau from NE floor.
5. Pahoehoe toes.
6. Crack across floor NE.
7. Columnar walls of crack.

T.A.J.

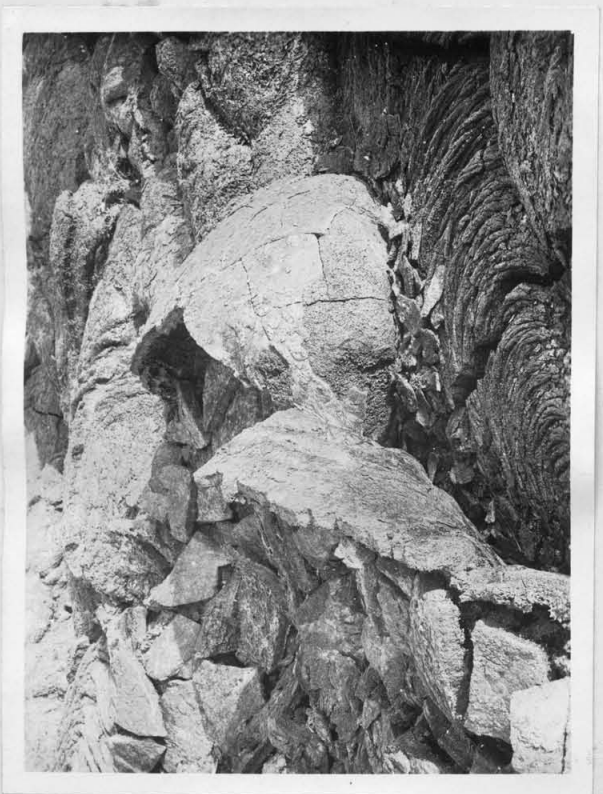
1912, Nov. 3



2



5



1



3



4



6



7

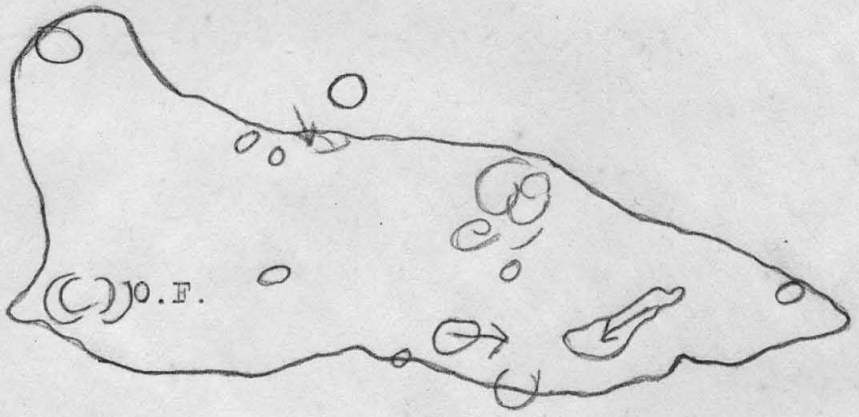
JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

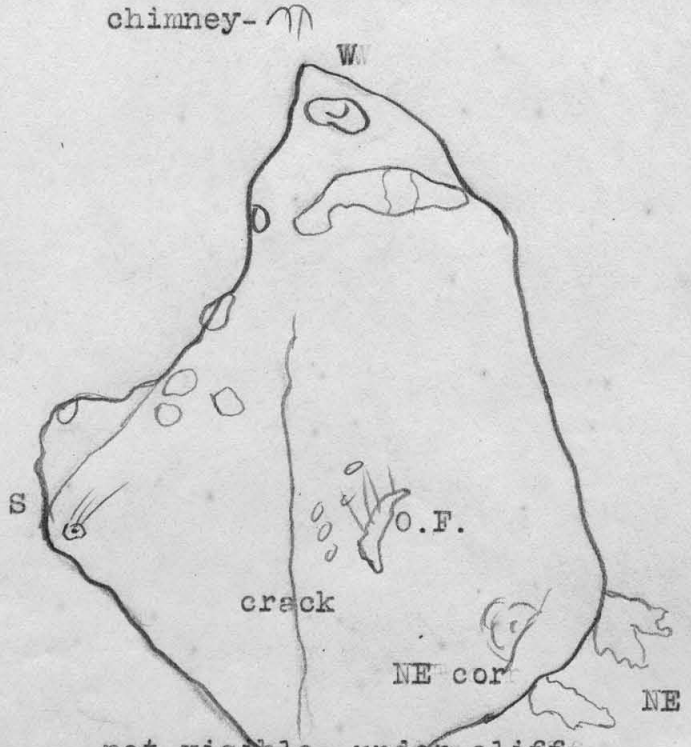
Day Sunday Date November 3, 1912.
Monday " 4, "

Nov. 3.
8:15 p.m. Fumes dense but some seeing from O.R.H. north. Pool area appears large. W end appears higher than O.F. Streaming currents out from S shore and two opposed currents flowing towards each other in large western pool with stagnant skin between them. Scattered boiling and spitting pots and flame-holes in crust. (See diagram). High glowing chimney in wall at W end of lake.

From O.R.H.:-



Nov. 4.
6:30 to 9 p.m. Outline with coves E, NE, N, NW and S. Largest area fluid lava W end. Overflows through a rampart NE. O.F. hole in flat cone built up to some height above mean level of lake. This hole ejected great spurts of lava which fell back on the hard surface with a thud. South of O.F. a long straight crack in the crust at least 200 feet long. Blue flames played through cracks in crust.



T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Monday Date November 4, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
6:30 to	E	W chimney		23 03			340	
9 p.m.	E	N cor. W large pool		27 59			390	
	E	NE cove		39 38				
	E	S cove		37 22				
	E	S end W large pool		28 18				
	E	Near edge O.F.		29 47	(higher than floor around it)			

Length lake area as whole 460 feet.
Width " " " " SW to NE 350 feet.
Dimensions of W pool 115 by 35 feet.

PHOTOGRAPHS.

Nos. 1, 5, 12 - underexposed.
2, 3, 9 - overexposed
4, 7, 11, 13, 14 - good
8, 10 - overdeveloped
6 - slightly overexposed.

			no	pl	scr	stop	ex	cam
× 9 a.m.	Cot. VH	Pahala	1	Seed30		f/8	1/100	A
× "	"	H.V.O.	2	"		f/16	½	"
× 9:15 a	"	Mauna Loa	3	"		f/32	½	"
"	Path	Sulphur (100' focus)	4	"		"	"	"
(20')		Steam crack sulph. banks	5	"		f/6.3	1/100	"
		Sulphur crystals (7')	6	"		f/22.6	¾	"
		" " (3')	7	"		f/32	1	"
×		" crack (15')	8	"		f/16	1/5	"
(50')		Sulphur crack & vegetation	9	"		f/11.3	"	"
		Vol. House from sulph. banks	10	"		"	1/25	"
		Mauna Loa " " flat	11	"		"	1/10	"
		Whitney Laboratory NE	12	"	WA lens	f/32	5	"
		Seismograph room NE	13	"	" "	"	10	"
		Whitney Laboratory N	14	"		"	"	"

T.A.J.

1912, Nov 4



5



7



6



9

Fog



4



10



11



12



13

SP2053,11



14

SP205312 Jag

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Wednesday Date November 6, 1912.
Thursday " 7, "
Monday " 11, "

Nov. 6.
Morning. O.F. a cone where are heard heavy falls of spatter, can see occasionally. Breaking angular foundering crusts seen.

Nov. 7.
10 a.m. O.F. blowing hard at intervals. Flow from S end and from S side of O.F. cone. Large pool at W end. Chimney in W wall. Fumaroles W wall and N wall. Crack 200-foot bench S.

Nov. 11.
4 p.m. NE wind, fumes dense.
A new high fumarole in talus just under SE station. No seeing. Survey failed. Noises as of late with occasional strong puff from O.F.

T.A.J.

215

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Wednesday Date November 6, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.	
			no	pl	scr	stop	ex	cam	
a.m.		The laccolith	8	Ortho	Iso	f/128	1/5	G	
X	O R H	NE station (27 in. extension)	9	"	"	"	$\frac{1}{2}$	"	
X	"	N station (27 in. extension)	10	"		f/256	1	"	
								T.A.J.	

1912, Nov. 6.



Aug

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Thursday Date November 7, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
10 a.m.	NW	S end large W pool		36 14			377	
	N	" " " " "		32 34				

			no	pl	scr	stop	ex	cam
	I H	Pool	11	Ortho	Iso	f/32	3	G
11:30	a "	Looking more eastward	12	"	"	"	"	"
	x "	Pool	1 to 8(Seed 26) With and without screen.				(1 to 4)	"
	x	Looking at O.F.	10	" "	" "	" "	" "	" "

T.A.J.

1912, Nov. 7.



11



12

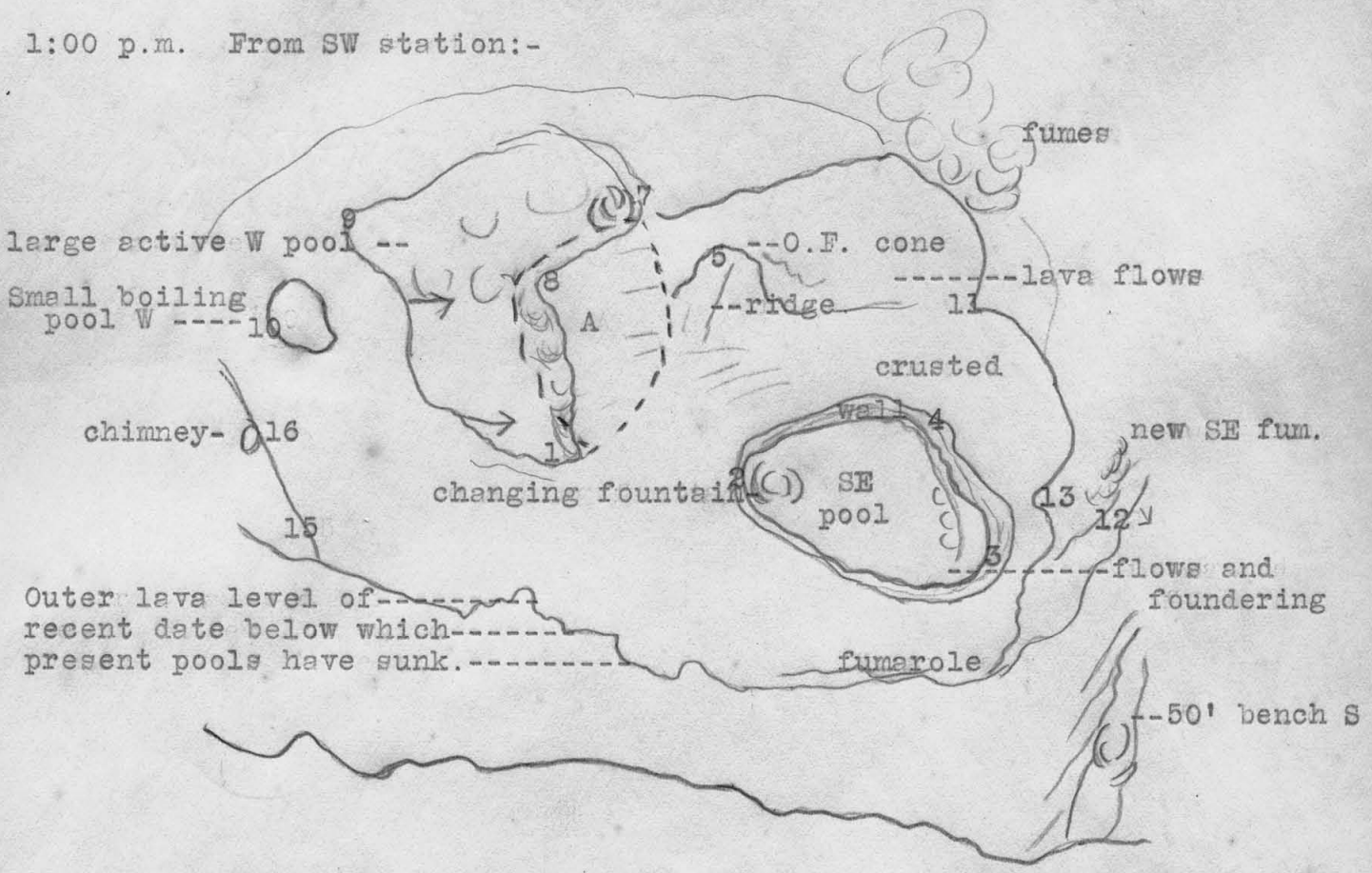
Fog

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Tuesday Date November 12, 1912.

10:00 a.m. One glimpse, fountain noises, rare O.F. blows, fumes diffused. From SE station there appears to be a sinking at E end where a fresh cliff appears and a black pool beneath 30± feet down.
Fume cloud appears heavier for the last few days.

1:00 p.m. From SW station:-



There are two main pools, one SE, the other NW, with O.F cone in between. The western pool is crescent shaped and area A foundered while I watched, making western pool round; occasional general foundering. There was a small boiling pot at extreme W end with crusts that foundered between it and main W pool. A chimney is still farther W. A ridge extends southward from O.F. cone. There are crusted lava flows E of O.F. cone, and weak spray from O.F. hole E. The SE pool has changing fountains at its W end. A low wall (4 or 5 feet) around it and foundering crusts with flows which well up from cracks at its eastern side; radial flows frozen on floor away from rampart of this pool. Fumes rise from edge of lake area NE.

T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Tuesday Date November 12, 1912.

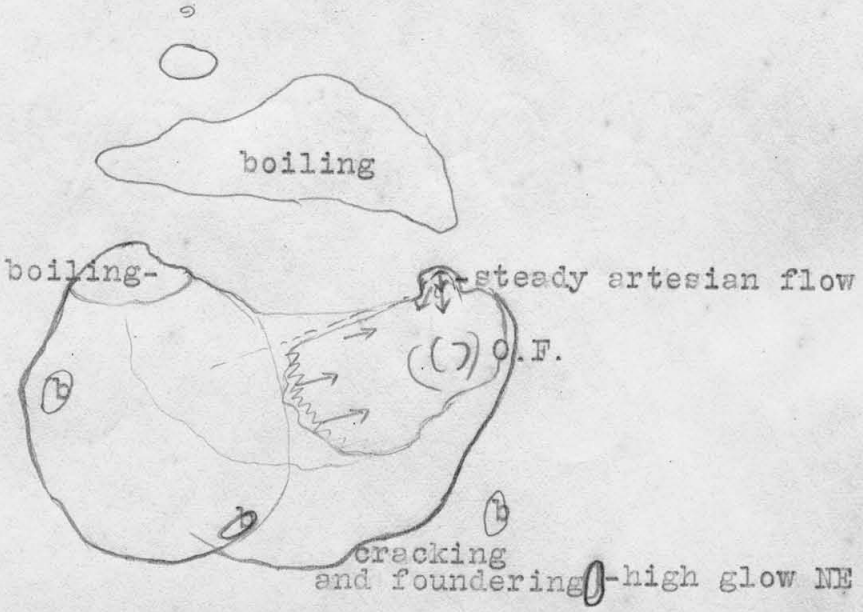
t	sta	pt	hor	vert	lev	dist	elev	h. i.
10 a.m.	S	S boiling hole		30 30	(rough measurement)			
11 a.m.	SW	Loc. 1 (on diagram)		30 47				
to	"	" 2 (appears higher		30 28				
4 p.m.		than No. 1)						
	"	" 3		32 03				
	"	" 9		27 38				
	"	" 5		25 18				
	"	" 12		19 43				
	"	" 13 (point)		25 07				
	"	" 15 (white block)		30 58				
		Depths from SW station:-						
		Average to W pool	377	feet.				
		" " E "	372	"				
		" " both pools	374	"				
		To summit O.F. cone	360	"				
		" border flows on floor	372	"				
						T.A.J.		

			no	pl	scr	stop	ex	cam

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Wednesday Date November 13, 1912.

9:00 p.m. General conditions changed since Nov. 12 as follows:-
O.F. cone and field of lava E of it have collapsed so as to double size of SE pool and extend it over whole E floor.
O.F. fountaining furiously every 30 to 40 seconds within a pool of partly crusted lava and near NW border of eastern pool, throwing spray over remnant of its cone on the isthmus between E and W pools.
Most remarkable feature a cataract of glowing liquid lava pouring continuously from a hole in the bank W of O.F. directly into the cauldron where the fountain was bursting. The hole appeared to be a tubular cavern about five feet wide, horizontal or slightly sloping down from W to E and acting as a conduit to draw lava from the western pool to the eastern one. Its mouth was a few feet above the O.F. pool and O.F. fountain deluged the cataract with its splash. Cataract poured out like water from a hose, sometimes showing flapping black skins hanging from the roof on the stream, and these would tear off and float down the cascade into the pool beneath.
There was some suggestion of inflow under the bank from tip of N horn of the crescent-shaped western pool, this place being opposite the place of emergence of the cascade.
O.F. sometimes a triple or quadruple fountain.
West pool boiling, and a skin separating off a small western pot.
East pool has four boiling ponds, other than the one around O.F. and shows some cracking and foundering NE.
The streaming other than cascade into O.F. pool was from the south.
A high glow hole showed above the pool NE.



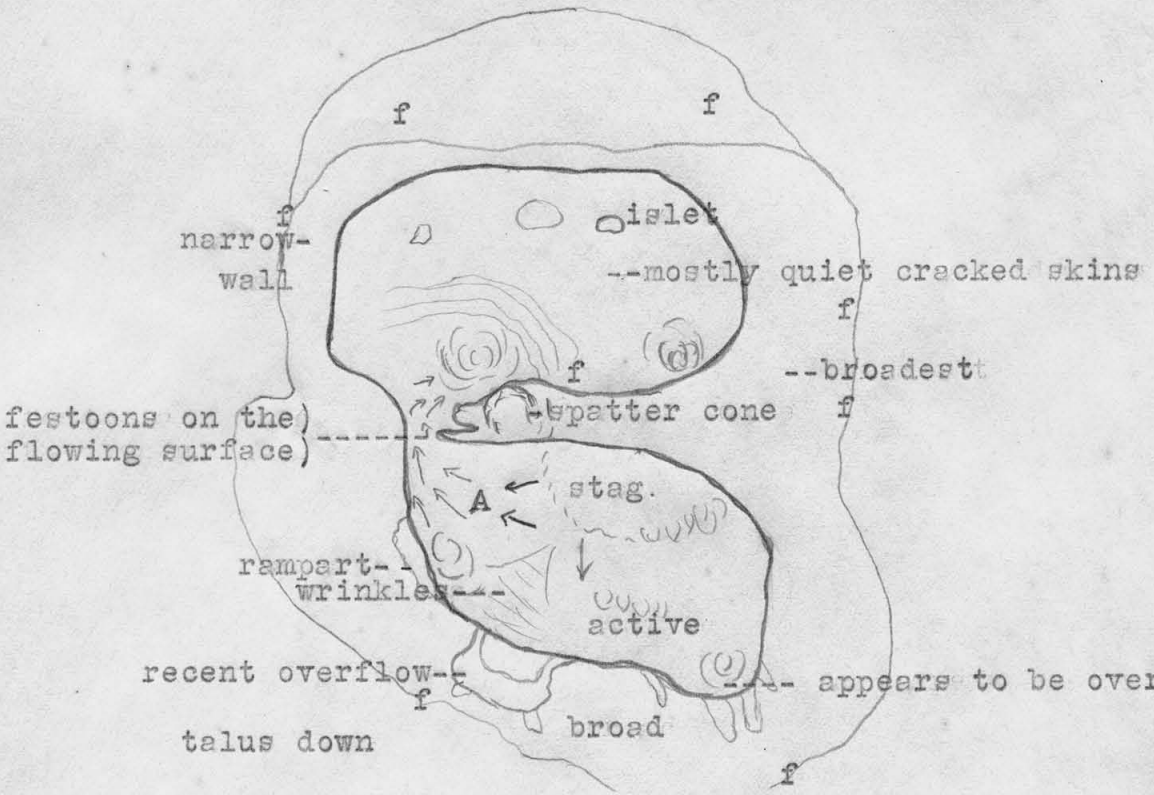
T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Thursday Date November 14, 1912.

10:00 a.m. Light SE wind. Open view at NW station.
Complete change since last night in that stream from W pool to E which was in a cavern is now flowing through a strait at the N end of a peninsula and a rapid flowing torrent steadily pours into the O.F. cauldron from the W pool.
Recent overflowing has been taking place W and N, flowing now W. What appears to be a small islet stands about the southeastern part of the E pool.
Around rim of floor are fumes NE, E, S and SW.

H.O.W. reports peninsula gone at night.



f - fuming
A - skins tear off

T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Thursday Date November 14, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
			no	pl	scr	stop	ex	cam
		Bright sunlight on pool.						
9:30a	NW	Pool (best)	1	S.Pan.	Iso	f/32	1	G
	"	" (too dense)	2	"	"	"	1/5	"
	"	" (thin)	3	Seed 26.	"	"	½	"
	"	" F.P. Shutter. (overexposed)	4	" "	"	f/16	1/20	"
								T.A.J.

1912, Nov. 14



1

Fog

1912, Nov. 14.



2

Fog

226

1912, Nov. 14



3

Fog

1912, Nov. 14.



4

Fog

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Friday Date November 15, 1912.
Saturday " 16, "
Sunday " 17, "
Thursday " 21, "

Nov. 15.
Night. A single lake of lava. Normal character, coated over with continually cracking crusts, which rushed into fountain areas and were swallowed up. No peninsula from the S or any special mention of a torrent at the N side of lake. Boiling pools at O.F. and near margin of lake E, W and SE. Open fountain orifice 20 feet above lake at W. A higher glowing gash on ledge W of margin of lake, possibly 75 feet above latter. Active fumarole with lazy blue flame a little above lake at the SE angle. Surface of lake slowly rose and fell through small range; first showing broken rim with long glowing stalactites, then showing overflow on the margin.

Nov. 16. Depth approximately 370 feet below E station.

Nov. 17. During these days lake lowered 30 to 40 feet leaving vertical wall of this height around margin. Peninsula reformed, jutting out from S. Partial re-choking of vent accompanied with increase of energy of eruption.

Nov. 21. Conditions continue about the same. O.F. boiling and splashing as on Nov. 13.

H.O.W.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Sunday Date November 24, 1912.
Tuesday " 26, "
Thursday " 28, "

Nov. 24.
5 to 6:45 p.m. Depth from E station 385 to 390 feet.
Lately much fume and rapid alterations in configuration of the lava pools. Probably prior to this date surface pool lower than 390 feet, judging from apparent height of fresh bank around lake. Two pools open, boiling sluggishly W and E. Occasionally the two pools are joined by a sluggish stream of lava, sometimes bridged with crust; streaming E. In evening a narrow fork from this stream branched northward and poured rapidly under the bank. Showed distinct downward slope.

Nov. 26.
7:45 to 10:45 p.m. Depth below different stations 376 to 385 feet. Average approximately 380 feet.
Small boiling pot near S margin in evening actively pouring a narrow stream into the O.F. pool. At W end above level of lake two chimneys spouting lava jets at intervals.
Glow hole N.

Nov. 28. Lava now appears to be rising slowly. Miniature flows now and then well up through angular cracks in crust. Less frequently parts of lake area break up and founder locally.

H.O.W.

Surface a single lake covered with thin crust, traversed by angular cracks.

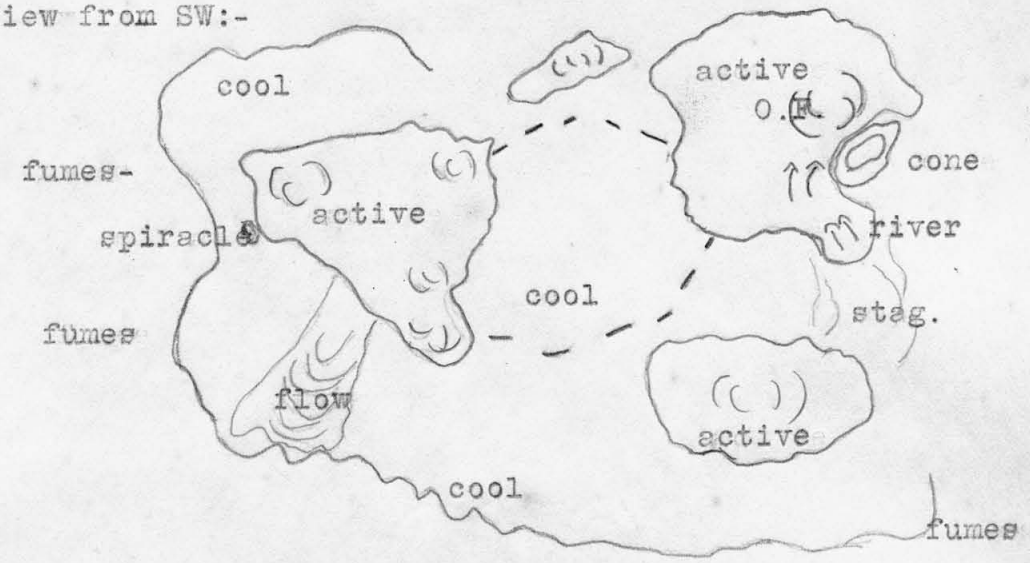
T.A.J.

JOURNAL

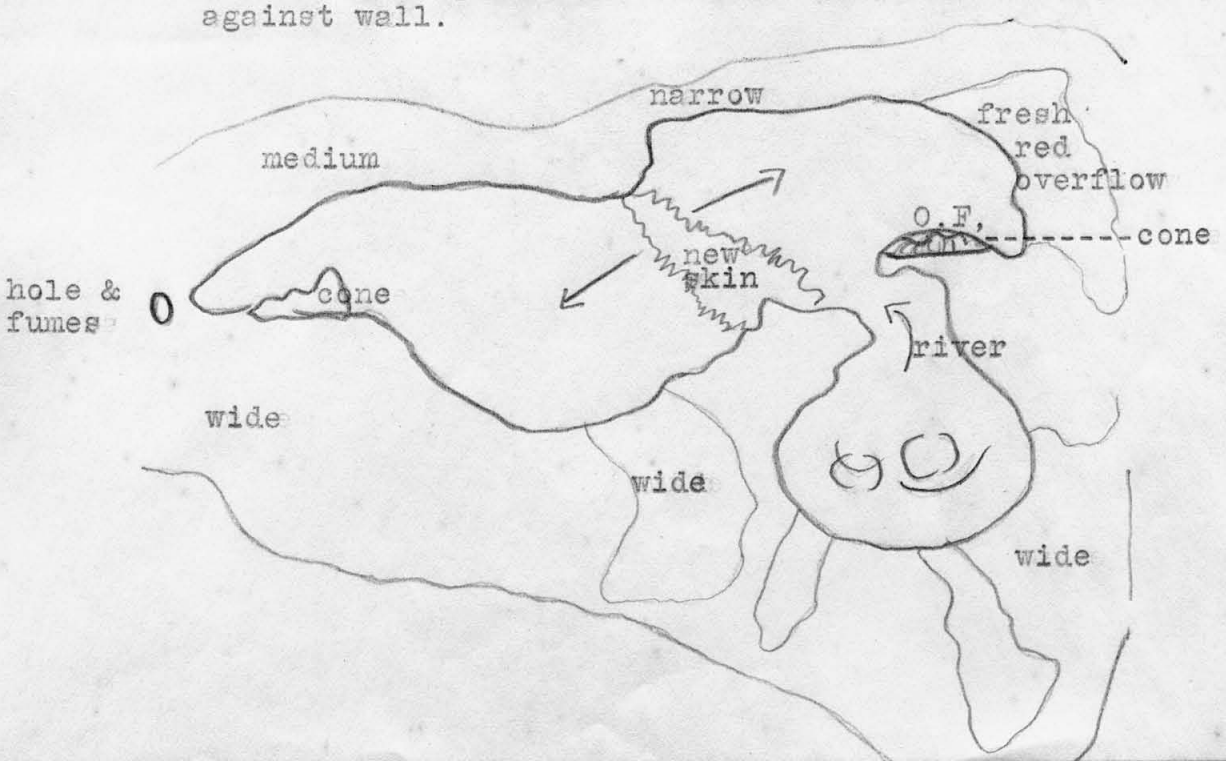
Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Sunday Date December 1, 1912.

10:30 a.m. Pool rising, overflows. Fumes thinner seen from Volcano House. Active boiling pools seen from S and SW stations N, E, S and W. Thick promontory between E and W pools and the small N pool is really a strait between these separated from the other pools by crusts on each side. Rapid torrent pouring from S pool into O.F. vortex, around a conelet on E shore built up by O.F. spatter.

View from SW:-



11:20 a.m. Promontory region between O.F. (E pool) and W pool broke up and pieces flowed E and W making whole area into one pool with western, eastern and southern lobes. After a few minutes this activity stopped and a stagnanat path of skin developed between the western and eastern lobes. Pronounced overflows with glowing edges S, SW and E. A cone on edge of pool at W end. Cracking on floor at extreme SE edge with lava welling up and overflowing back against wall.



T.A.J.

a 31

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Sunday Date December 1, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
10:30a	S	W side conelet SE of O.F.		26 17			359	
	SW	Ditto		26 24				
								T.A.J.

			no	pl	scr	stop	ex	cam

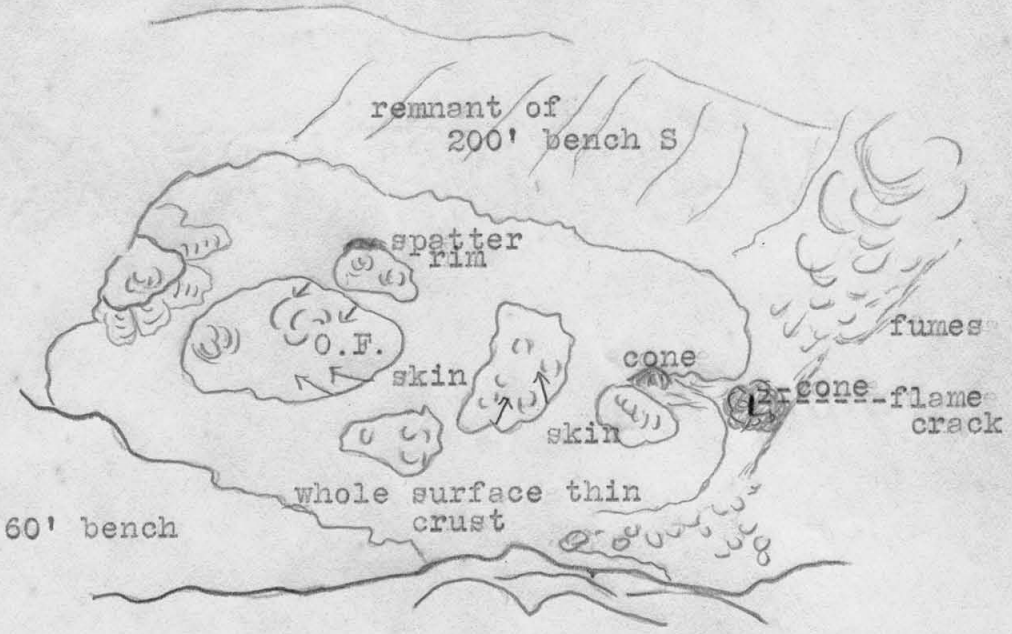
JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Monday Date December 2, 1912.
Tuesday " 3, "

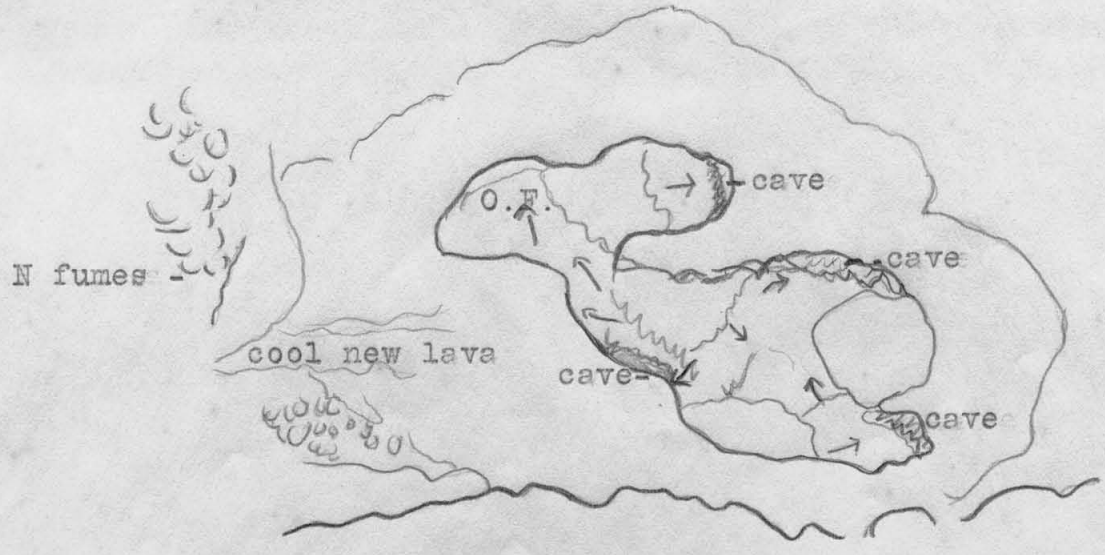
Dec. 2. Conditions continue about the same.

Dec. 3.
10:00 a.m. Good view from O.R.H. Several boiling ponds. (See diagram.) Two distinct cones at W end, one edge of pool, other farther back.



2:30 p.m. Pools more united. (See diagram). Not such marked overflows with festoons as on Dec. 1. Distinct radial flows about cone on platform near E end of bottom area; this cone at first a small open pot containing fountain. Streaming E and W from S promontory. Caverns and spatter rims W, SW, S and N. No stream fom S cove to O.F. Blanket keeps forming northward from promontory.

From NW station:-



T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Monday Date December 2, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.	
			no	pl	scr	stop	ex	cam	
X 5 p.m.		Mauna Kea in snow. (thin)	1	film pack	Iso	f/8	3	P T.A.J.	

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Tuesday Date December 3, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
11 a.m.	SW	D_1		24 34				
	"	D_2		27 12				
		Depth W spatter below SW station 361 feet.						
		" N " " " " 357 " .						
		Active pool 360 feet long.						
		" " 150 " wide W.						
		" " 180 " " E.						
		Outer crust 520 by 400 feet.						
		South cove 50 feet wide.						
2 p.m.		Depth N spatter below NW station 263 feet.						
3 p.m.	NW	D_1		40 01				
		Average depth below SW station 359 feet.						
		" " all readings 360.3 feet.						
		Axis of active pool WNW.						
		W conelet is 60 feet from bank active pool.						
		Flow from pointed N cove 180 feet long.						

			no	pl	scr	stop	ex	cam
11:30a	SW rim Hal.	Fumaroles looking SE (thin - good)	2	ordin'y film	Iso	f/8	1/10	P
"	SW	W end pool. (fair under exposed)	3	"	"	f/16	½	"
"	"	E end pool(" " "	4	"	"	"	"	"
"	"	W pool	5	"		f/11.3	1/50	"
"	"	O.F.	6	"		"	"	"
"	S	W end pool	7	"	V	f/8	1/25	"
2:30 p	NW	Pool breaking up	8	"		"	1/50	"
4 p.m.	"	Pool (failure)	9	"	Iso	f/11.3	1	"
"	"	" "	10	"	"	"	½	"
"	"	" (faint)	11	"	"	f/8	1	"
"	"	" ,O.F. exploding (faint)	12	"	"	f/6.3	½	"

(Used glycin 1 to 15.)
Above exposures made before new adjustment of focus. Focus bad.

T.A.J.

1912, Dec. 3



4



6



3



7

1912, Dec. 3



2



5

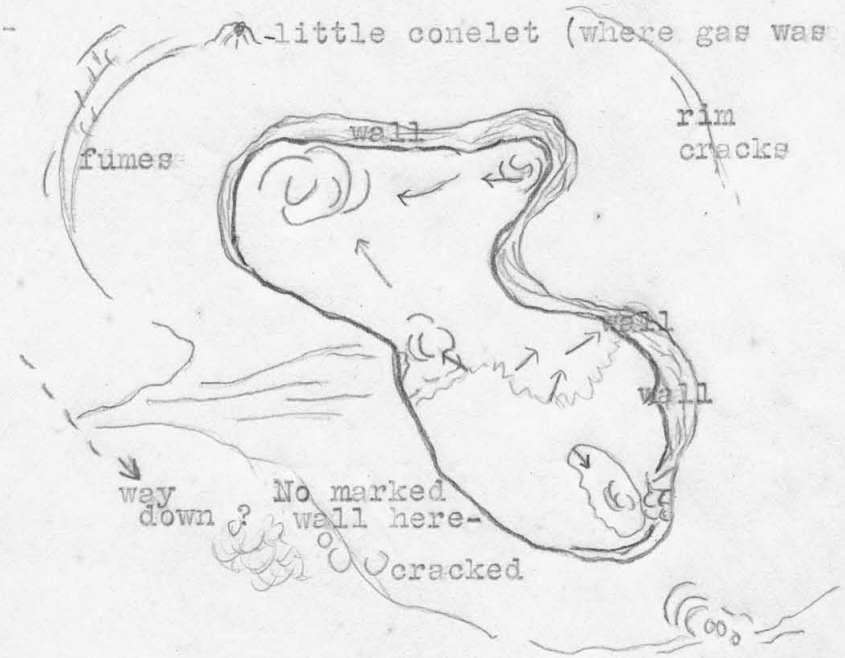


8

Jay

2:30 p.m. From O.R.H. Pool seen to be down about eight feet. Platform has slumped somewhat. Fumes thickest NE. Blanket across W lobe of pool and streaming E and W from blanket. E conelet four to five feet high with N-S slot five inches wide spurting flame on summit. Principal fumes intalus W, NE and SE, with flaming cones at various levels, the largest being at edge of platform at W end. (See diagram).

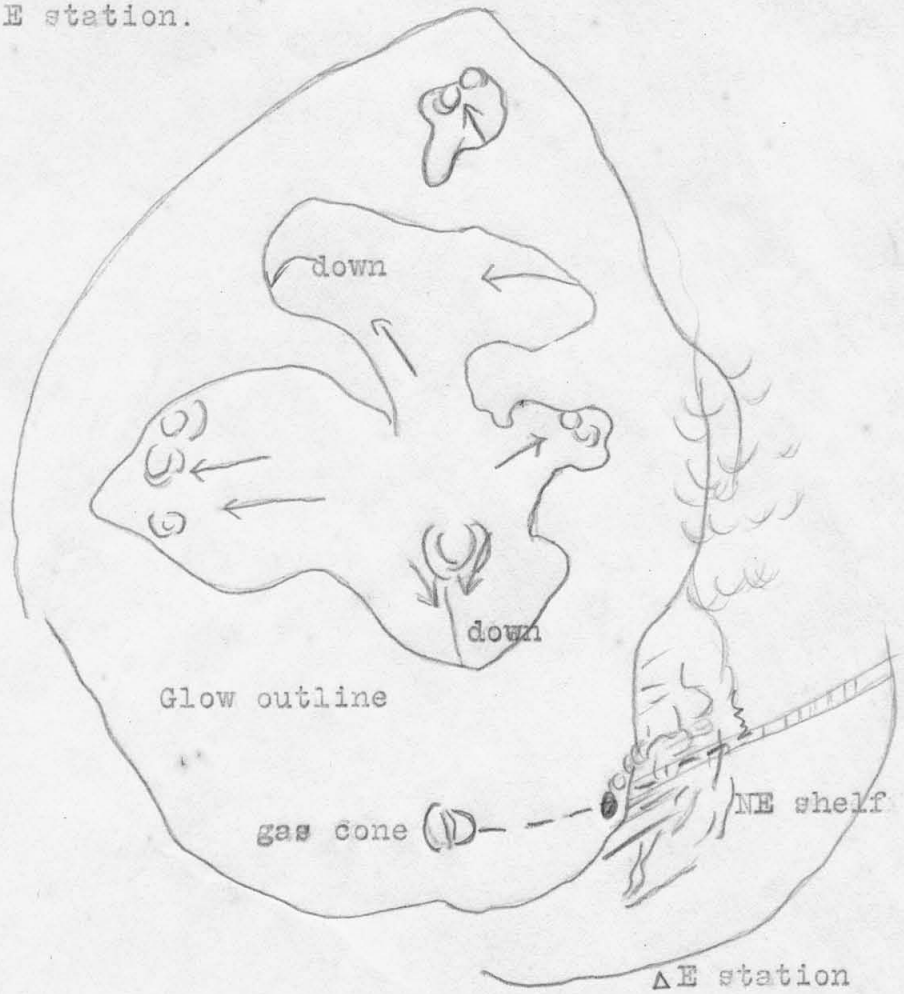
From NW:-



3:00 p.m. E.S.Shepherd, H. O. Wood and Alex Lancaster make descent. T.A.J. anchors rope at summit; method was as follows. Locality selected NE corner starting from near E end 1894 bench. Object of work E.S.S. to insert vacuum tubes in flame E conelet for collecting gas. Alex went down and anchored 50-foot rope ladder with hichory rungs on projecting ledge, the heavy rope from it lashed to timber in fissure back of 1894 bench. He called for a second 50-foot length, which was lowered to him attached to a lighter rope, and rolled up, and he descended first ladder, making second one fast to its lower end and unrolling. This 100-foot ladder reached the inner talus. The whole route involved about 100 feet of climb above 100 feet of ladder and 160 feet± of talus. At 4:30 p.m. Alex descended to floor and out on NE cool lava crust to conelet. He found good walking surface. He returned and guided S. and W. down, the former with an Alpine belt, a rope of which J. held at top. Alex carried vacuum tubes in knapsack. They secured without mishap five samples of gas, three of them excellent, the vacuum tubes (500 cc) being attached to the end of a bamboo pole, one at a time, carried out to the cone from the talus and inserted in the flame crack where the flame fused the bulb, admitted the gas from below the flame and then sealed the glass again. At the talus the tubes were sealed with a gasoline torch. All wore nose sponges of rubber with exhaust valves, the inlets being provided with wet sponge.

The work occupied 1¾ hours and at 6:45 p.m. all had returned with samples to high bench. The conelet was described as having long, sloping sides. E.S.S. was impressed by the noiselessness below of the fountains which were quite active and noisy as heard from above. From below, the floor seemed two to seven feet above the liquid pool. H.O.W. noted height of O.F. as 12 to 15 feet.

7:45 p.m. From E station.



The diagram shows general route followed in descent and appearance of lava pool and its crusts at this time. The trail followed started at same locality as was followed by A.L.Day, E.S.S. and F.B. Dodge, May 28, 1912. Since that time, however, the talus and floor have subsided much. During descent the fumes NE were thick above so that nothing could be seen below but they were reported to be less offensive below. These fumes came mostly from the N fumaroles at edge of floor and in the talus to the W of place of descent.

T.A.J.

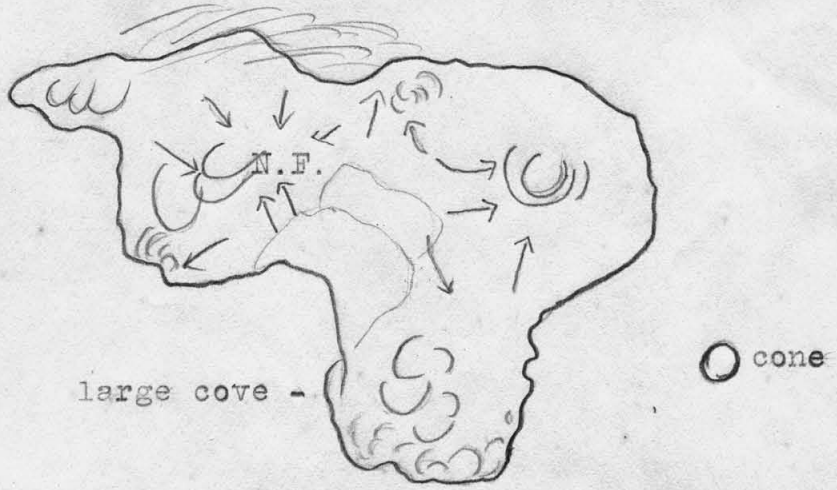
JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Thursday Date December 5, 1912.
Saturday " 7, "

Dec. 5.
10:00 a.m. Pool has risen again about five feet, rim only one to three feet high and in places pool overflowing.
Alex descended ladders and recovered them. it being necessary to go to the bottom to dislodge them desite the fact that we had a line attached to the bottom rung.

Dec. 7.
9:30 a.m. Pool appears to have sunk six feet, otherwise much like Dec. 4. Fumes dense from fumaroles W, NE, SE and SW. Pool active with many fountains all over surface, recalling the type of activity initiated in July. Note a high fountain (New Faithful) in SE part of western lobe of pool which is more or less rhythmic like O.F. O.F. exploding very heavily. Wind veers from NE to SE with rain, and a rain pattern of white vapor tails appears on the hot platform around pool. The E conelet appears larger and has a larger opening. The S cove is enlarged. (See diagram).
The intervals between O.F. explosions were as follows: 55 sec, 50 sec.; 65 sec.; 65 sec.; 60 sec.; 70 sec.; 60 sec.; twice in this series the fountain was broken up so that an explosion took place at the end of 45 seconds and then 20 seconds later, in one case, and at the end of 15 seconds and then 45 seconds later, in the other.



T.A.J.

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day Sunday Date December 8, 1912.
Monday " 9, "

Dec. 8. No change.

Mauna Loa.

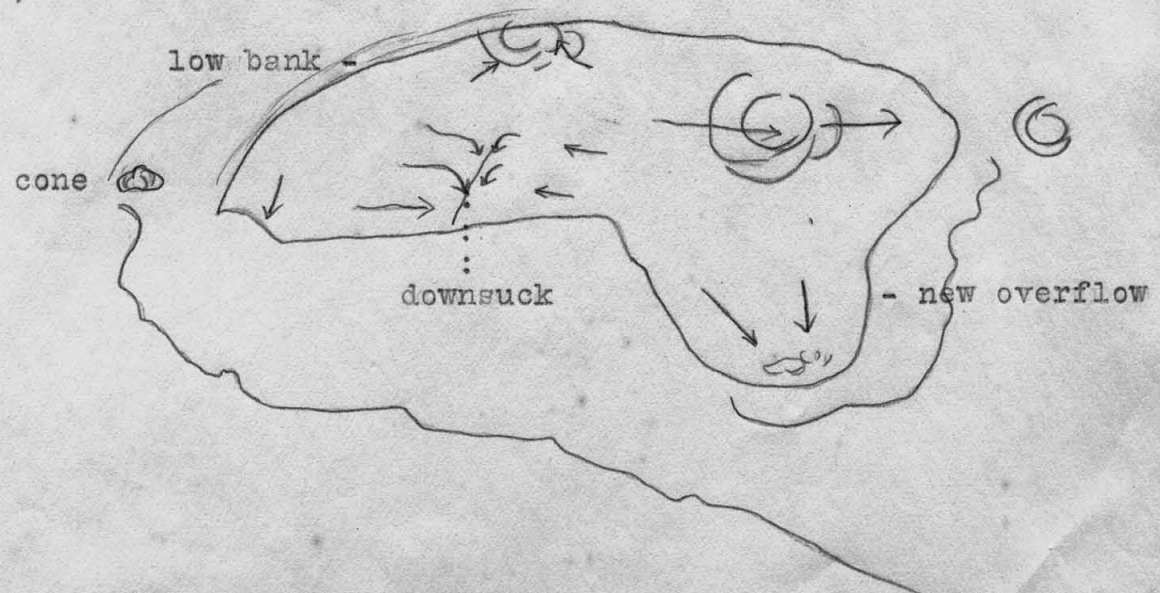
6:00 a.m. Four jets of vapor appeared on NE profile of Mauna Loa, three being between the two highest cones and one to the right (NE of the second cone).



Highest jet second from above and this rose four or five times the height of the cones. The morning was cold and there has been snow on the mountains recently.

Dec. 9.
10:45 a.m. No seeing N, NE, E and SE, from S station. The SE fumarole eddies and obscures view. Pool active and rising, coves less pronounced, new overflow about E and SE end. Low bank over pool N. Streaming eastward at O.F., north at N bank, south at S cove, and from E and W meeting in middle of W lobe of pool along a line of downsuck southwestward. Inflow under bank at W end. (See diagram). The line of downsucking trended northeastward.

Pool from SW:



11:00 a.m. Depth to S cove from S and SW stations (two readings with good check) 358 feet.

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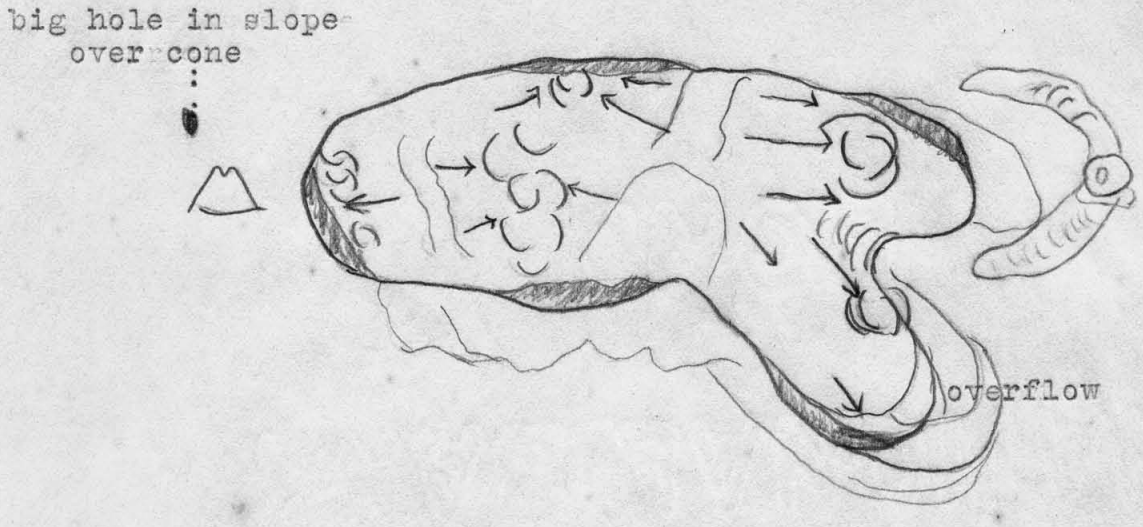
Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Wednesday Date December 11, 1912.

Morning

Depth a few higher, possibly 355 feet.
The eastern cone on floor (Shepherd's) shows two chilled flows from it to the N and SW respectively.
Pool rising and overflowing, no wall around it, spatter ramparts and fumes S, SW, W, E and N. (See diagram)
Streaming E and W from crust across middle. Ragged hole in W wall, glowing dull red within.



T.A.J.

KILAUEA DAY SHEET

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Wednesday Date December 11, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.

			no	pl	scr	stop	ex	cam
		F.P. shutter.						
11 a.m.	SW	Pool. (Good. Glycin.)	3	S Pan.	Iso	f/11	½(?)	G
"	"	" " "	4	"	"	"	½	"
"		SE fumaroles. " "	7	"	"	"	"	"
"		NW " (good but dense)	8	"	"	"	"	"
12 noon		NE rim (good)	9	"	"	f/16	"	"
"		N rim "	10	"	"	"	"	"
"		Shepherd's cone. (thin) (15 inch extension)	11	"		f/8	1/10	"
"		W cone. (best) (15 inch extension)	12	"	"	f/16	1+	"

T. A. J.

1912, Dec. 11



3

1912, Dec. 11



1912. Dec. 11.



1912, Dec. 11



8

1912, Dec. 11



9

1912, Dec. 11.



10

1912, Dec. 11.



Bob

1912, Dec. 11.



12

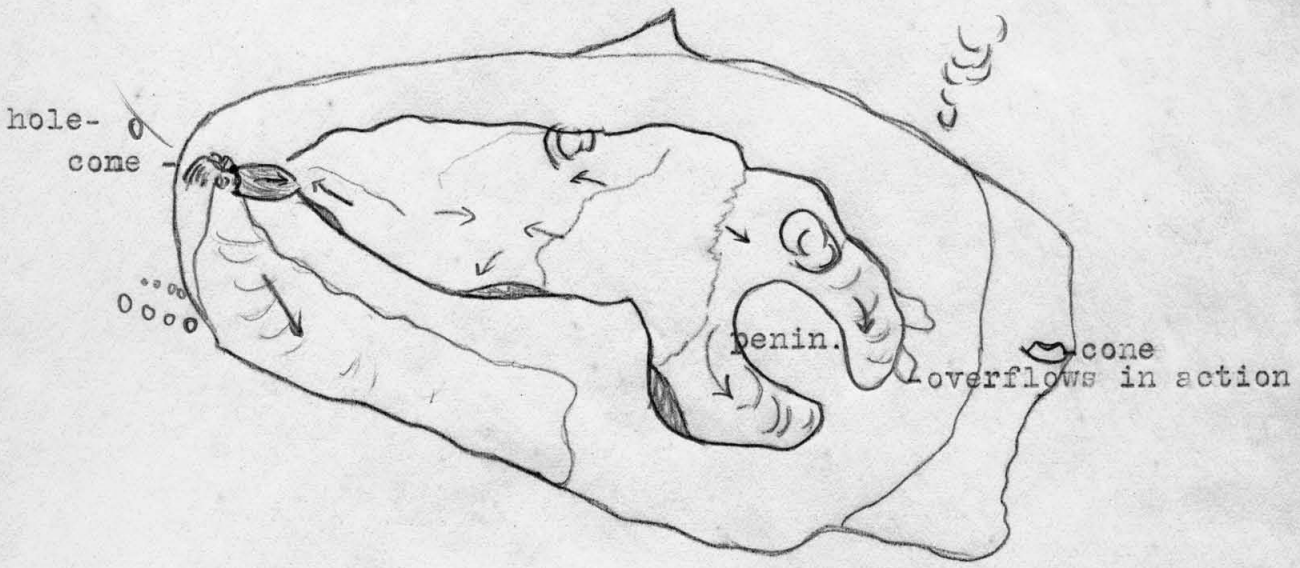
Fog

JOURNAL

Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Thursday Date December 12, 1912.

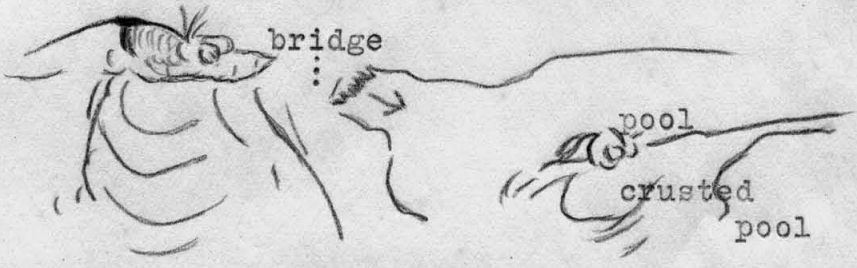
11:00 a.m. Pool rising, lava streams overflowing around a peninsula SE. Large stream overflowing bench southward from W cone. This was seen to break the crust in advance of it, the cracks in the platform forming a foot or two in front of the flow, and lava welled up through the breaks. This indicated clearly that liquid lava lay under the platform even well toward its borders.

12:30 p.m. Torrent pouring straight eastward into pool from opening in side of W cone. (See diagram)



Depth to hole in wall over W end, from SW station 346 feet. Depth from SW station to orifice of outflow W cone 349 feet. Depth to spatter bank S cove 354 feet. (Better reading makes last two 350 and 356 feet.)

3:00 p.m. The torrent had stopped running, a hard bridge blocked it and in the cavern at the side of W cone lava was splashing in a pot prepararatory to building a new cone. On the pool side of the bridge a stream was pouring eastward from a zigzag edge. Streaming in the pool E and W from middle region and while torrent was pouring from W cone from 11 a.m. to 1 p.m. it became constricted in width at its mouth and met there a W flowing surface current in the lake. Spatter ramparts at three places along SW border of lake. (See diagram.)



T.A.J

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KILAUEA DAY SHEET

Hawaiian Volcano Observatory

Day Thursday Date December 12, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.

			no	pl	scr	stop	ex	cam
	Trail	Sulphur banks	1	(Speed		f/8	1/100	P
×	"	" "	2	(film		"	1/5	"
	Road	H.V.O.	3	"		"	1/100	"
11 a.m.	SW	West cone	4	"	X	f/22	1	"
"	"	West lava stream	7	"	V	f/6.3	1/10	"
12 noon		First stage advance of flow, cracking floor.	8	"	V	"	1/25	"
"		Second stage of same.	9	"	V	"	"	"
× "		O.F. in action.	10	"	V	"	"	"
"		Shepherd's cone in sunlight.	11	"	V	"	"	"

T.A.J.

1912, Dec. 12



1



3



11

Jo J

1912, Dec. 12.



8



4



9



7

Jag

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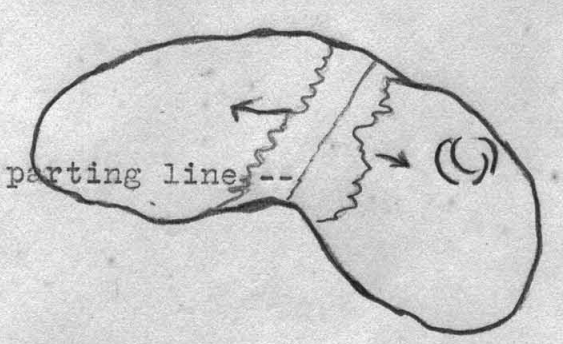
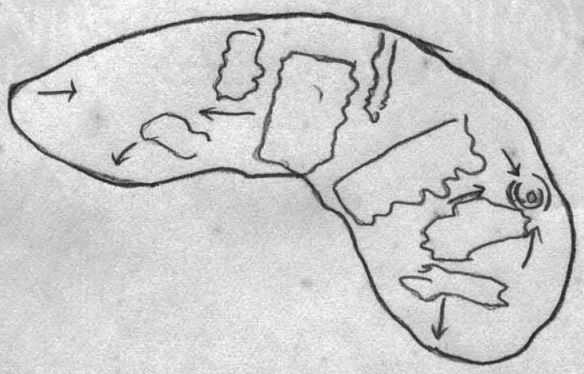
Massachusetts Institute of Technology
Hawaiian Volcano Observatory
Day Friday Date December 13, 1912.

5:00 p.m. Depth, estimated, 354 feet. (Compare Dec.12, SW station.)

4:30 to 6:00 p.m. Windy and fumy. Conditions unchanged. Activity strong.



Striking feature isthmus of skin across pool where peninsula was. This skin parts at intervals along a straight NNE line and the two halves break away into floes which float eastward and westward respectively and become engulfed. Apparently there is a cooling influence beneath this point, probably the jutting out submerged peninsula.



The tearing at intervals may be a part of the rhythmic rise and fall of the pool; it comes every 20 to 30 minutes about. A skin immediately reforms across the middle, and the middle region appears to be the rising or inflowing region, just as early in the year the N and W coves appeared to be the region of inflow.

T.A.J.

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Hawaiian Volcano Observatory

Day Saturday Date December 14, 1912.
Sunday " 15, "

Dec. 14.
6:00 p.m. to midnight. Approximate depth 350 feet. (See Dec. 12.) Gave greater part of night to photography. This the date of most remarkable overflowing climax of winter. Whole floor covered with overflows, one on S apparently from a pot at the border of the platform. Flowing overflows S, SW and opposite O.F. A hole punctured through ramparts S emits a flow with incessant sputtering and pounding of lava in a cave beneath the rampart. Glowing rims of flows appear in many places.

Dec. 15.
8:00 p.m. Depth approximately 353 feet. (See Dec. 12.)

7 to 9 p.m. Torrent 50 feet long and 10 feet wide pouring from W cone over the bank in a cataract into the pool. Pool about six feet down. The torrent pours about four to five miles per hour. After a time the torrent forked on the bank near the cone and a side flow poured northward over the platform just as the one seen in photograph Dec. 12 had flowed southward over the platform. The phenomenon in general was of the same character. The initiation of the forking came about by a breaking away of the north wall of the cone.

T.A.J.

Massachusetts Institute of Technology

KILAUEA DAY SHEET

Hawaiian Volcano Observatory

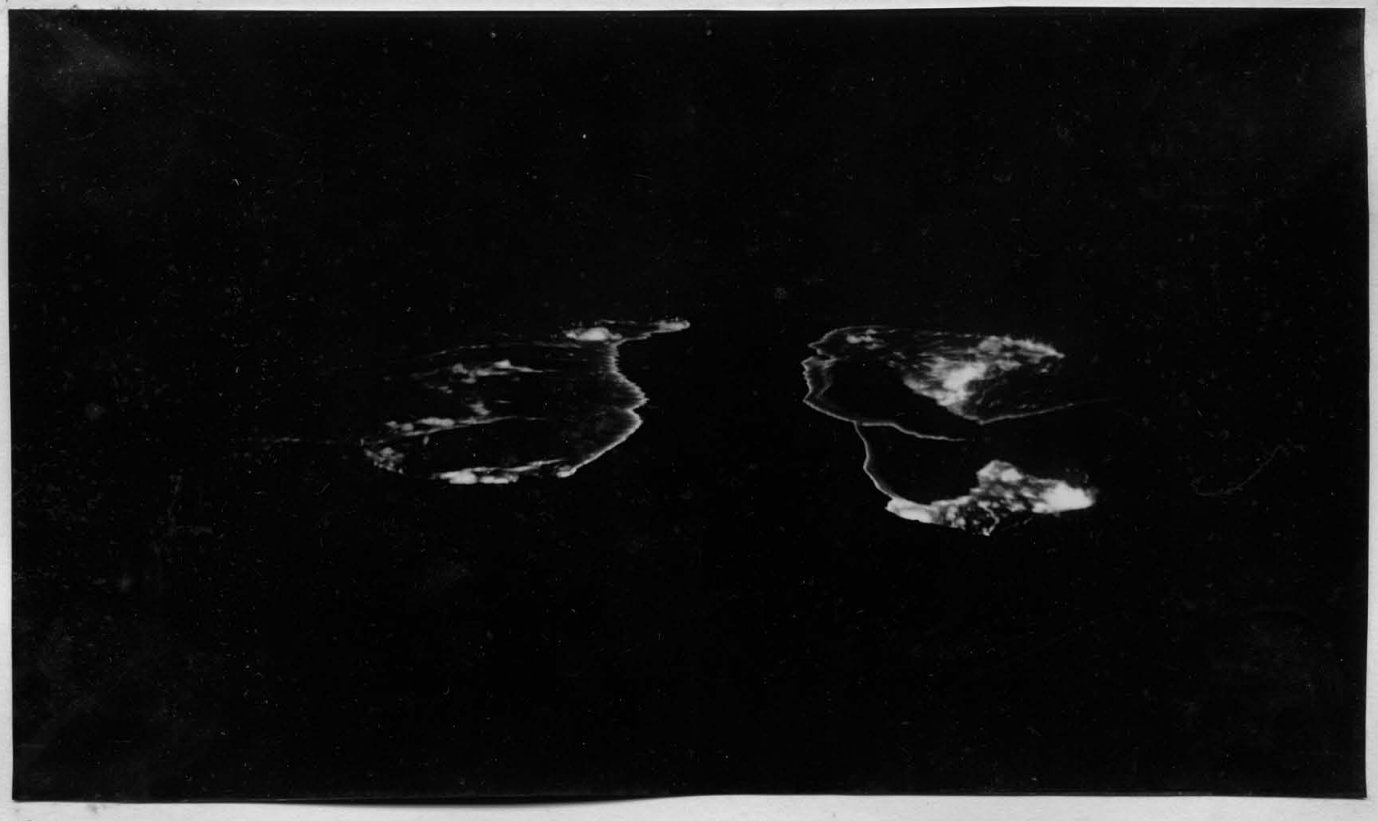
Day Saturday Date December 14, 1912.

t	sta	pt	hor	vert	lev	dist	elev	h. i.

			no	pl	scr	stop	ex	cam
6 p.m.	SW	Pool. (failure)	1	S.Pan.		f/6.3	1/10	G
	"	" (fair)	2	"		"	2	"
	SSW	" (thin, stained)	3	"		"	½	"
	"	" (good)	4	"		"	2	"
to	"	" (U.S. 3 F.P.) smoky	7	"		"	2	"
	"	" " " " "	8	"		"	2	"
		(15 inch extension)						
	S	Pool.	9	"	Iso.	"	1	"
mid-	"	"	10	"		"	1	"
night	"	" (good)	12	(Speed film	V	"	½	P
	E	" (poor)	1	Seed30		"	½	"

T.A.J.

1912, Dec. 14



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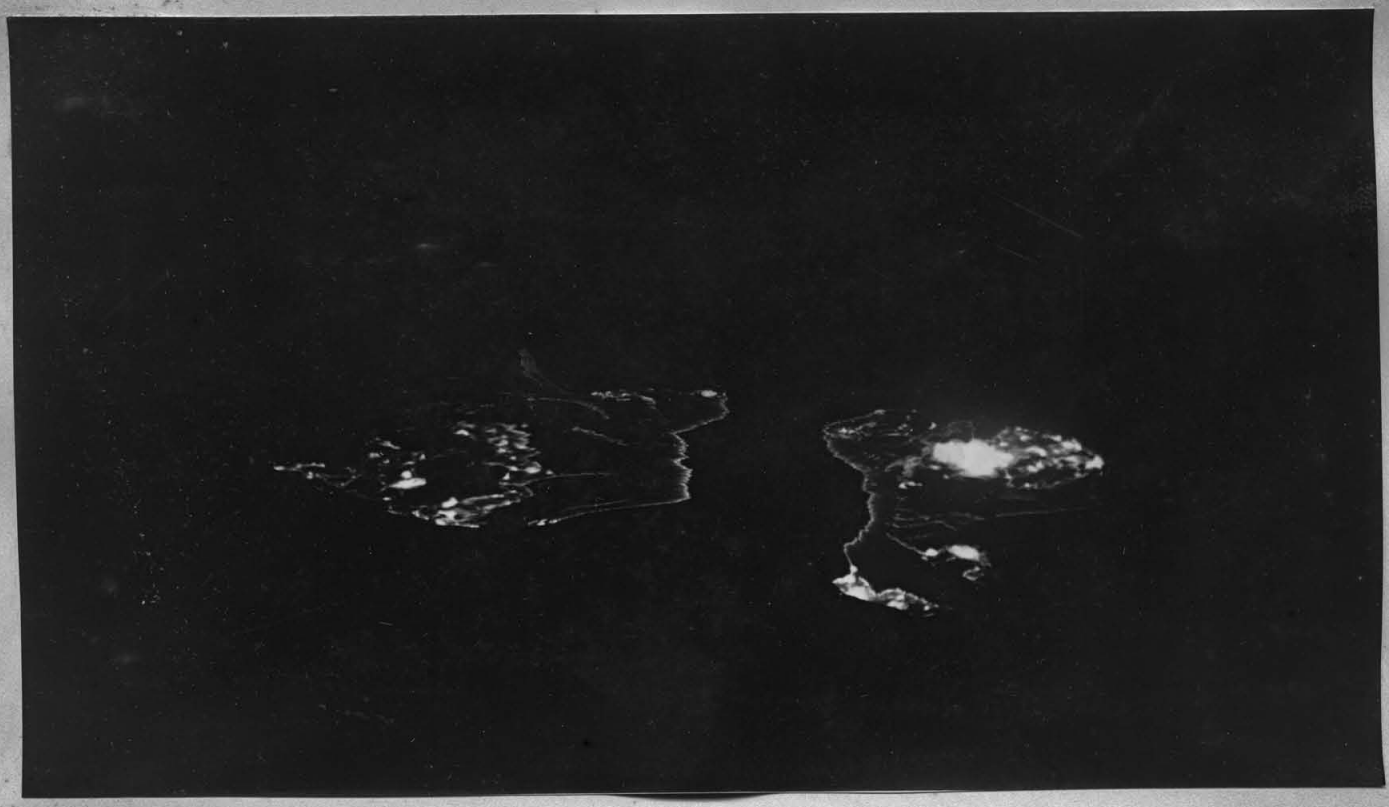

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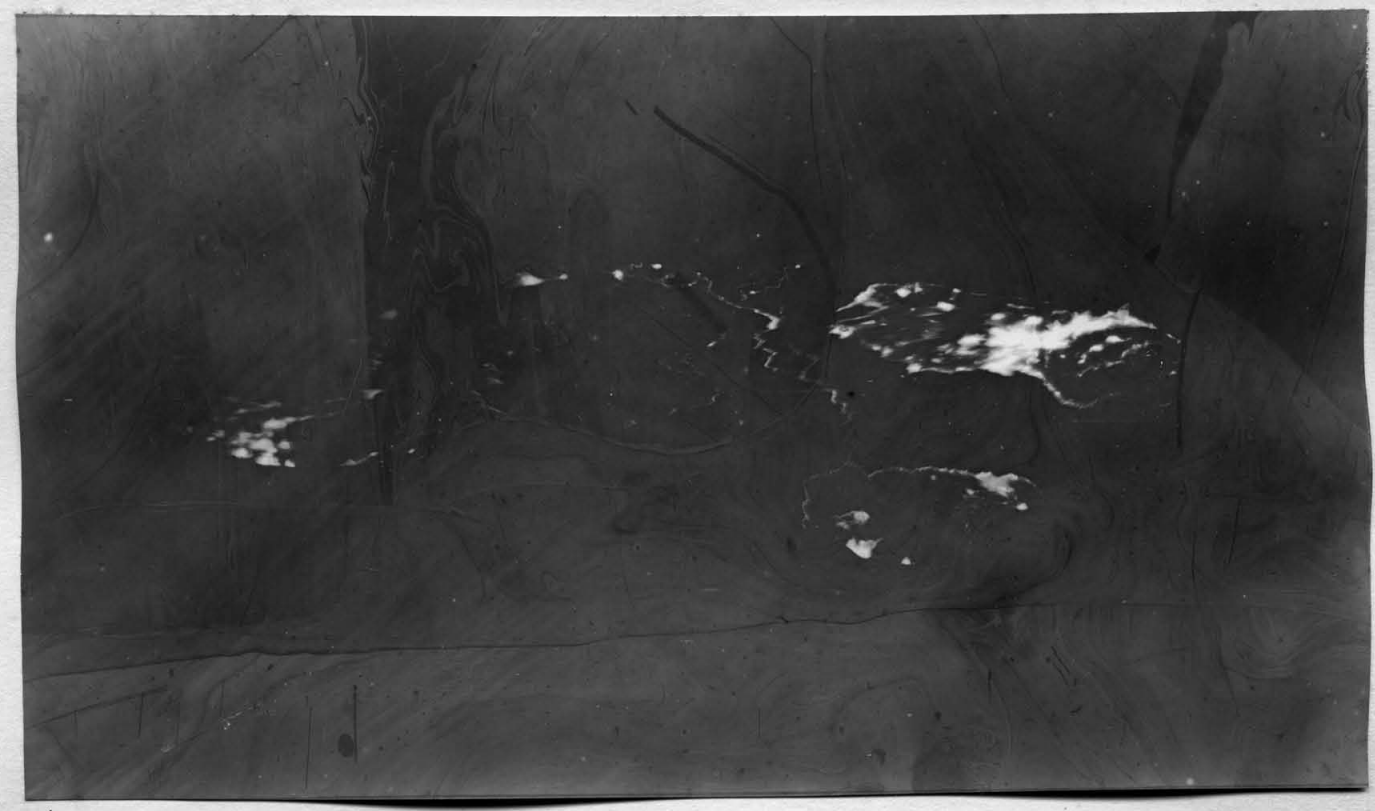
1912, Dec. 14



8



12

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Day Sunday Date December 15, 1912.
(approximate date)

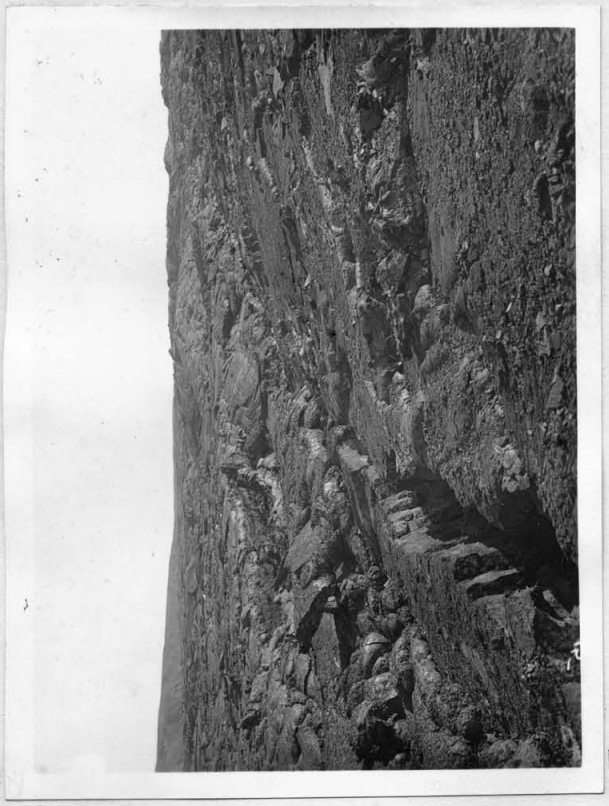
PHOTOGRAPHS:

P camera.

1. Uwekahuna bluff from Volcano House garden.
2. Kilauea floor after rain, from H. V. O.
3. Crag next N of SE station on rim of pit. (Afterwards fell)
4. E station from SE rim.
5. 1894 lava on trail to Halemaumau.
6. W station from SW rim.
7. SW station and S rim Halemaumau.
8. Outside ring of steam jets S of Halemaumau.
9. Smoke chimney in Halemaumau, looking E.
10. Halemaumau floor from SW.
11. W end Halemaumau floor from SW.
12. " " " " " "

T.A.J.

1912, Dec. 15.



15



Dec 8



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12



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Fog

1912, Dec. 1



11



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Jag

JOURNAL

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Hawaiian Volcano Observatory

Day Monday Date December 16, 1912.
Tuesday " 17, "
Wednesday " 18, "

Dec. 16.
2:45 p.m. Lake five feet below its bank at the mouth of the frozen torrent. The place of the torrent of last night can be seen with a festooned, frozen flow. Fountain activity increased, especially W during afternoon.

4:00 p.m. Depth about 357 feet. (See Dec. 12.)

5:15 p.m. Pool had risen two feet.

H.O.W.

Dec. 17.
4:00 p.m. Depth approximately 363 feet. (See Dec. 12.)
Subsidence continued, same general features. According to D. Lycurgus lava 20 feet below platform in morning, only 10 feet down in afternoon.

Dec. 18.
11:00 p.m. Depth approximately 365 feet. (See Dec. 12).
Fumes appear diminished.

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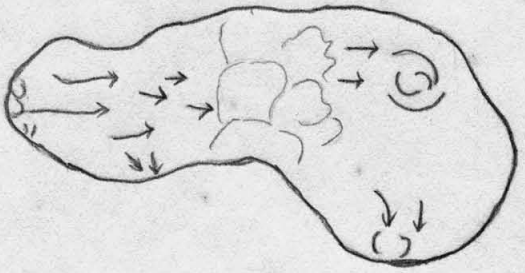
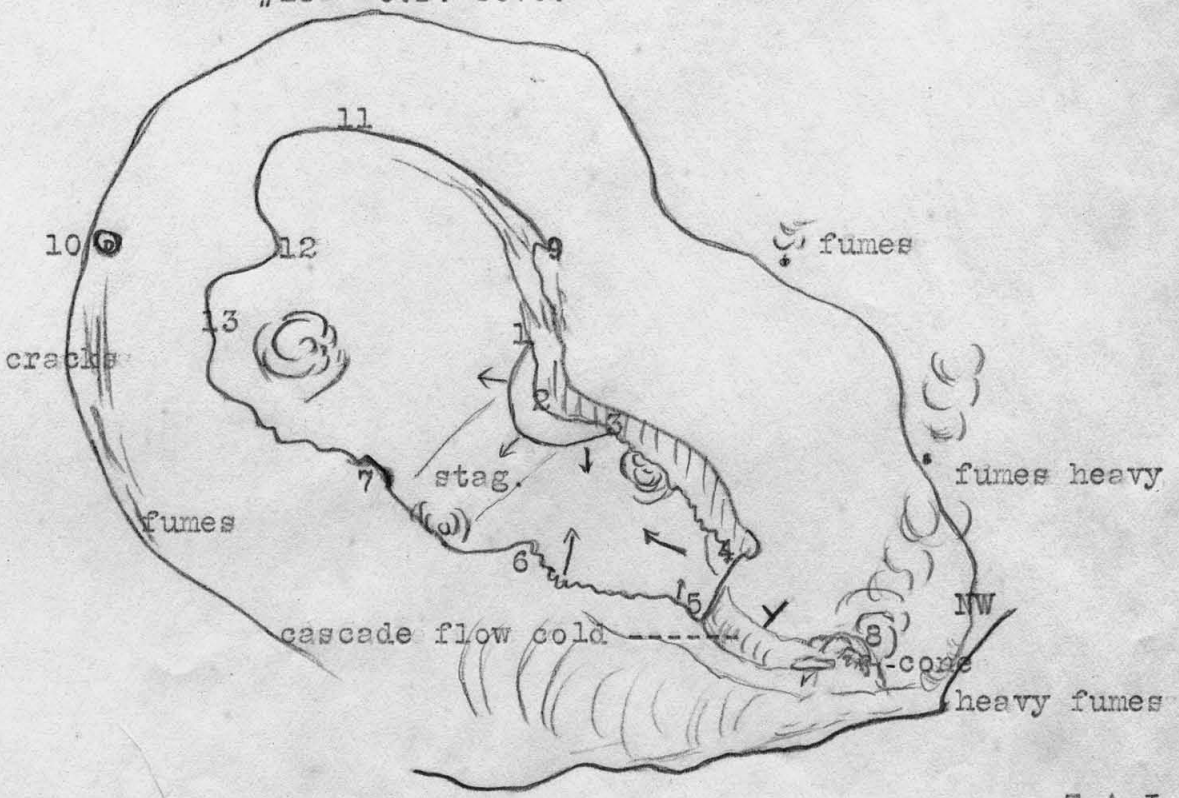
Day Sunday Date December 22, 1912.
Tuesday " 24, "

Dec. 22.
4:30 p.m. Depth to W end from NW and N stations 370 feet. Streaming eastward. Blankets in middle. Inflow under bank SW and S.



Dec. 24.
10:30 a.m. Depth below SW station 349 feet. Lake lower with wall about it. Frozen cascade, sloping down steeply from W cone. Surface flow out from W end. Fountains fairly active. Some talus sliding W. Stagnant area across middle. Cracks in edge of platform NE. Radial streaming out from S cape. Points located from SW station intersected from NW. (See diagram.)

Point #9 - spatter lump. #11 - SE corner, top of wall.
10 - Shepherd's cone. 12 - O.F. cape, bottom of wall.
#13 - O.F. cove.



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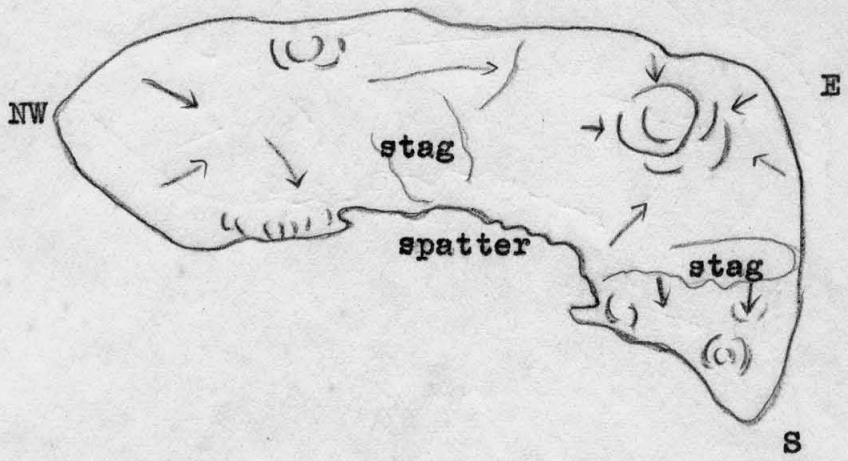
Hawaiian Volcano Observatory

Day Wednesday Date December 25, 1912.
Thursday " 26, "

Dec. 25.
4:45 p.m. From SW station.
No marked changes observed. Surface flow towards the east. Local inflow S and SW. Heavy spatter rim in middle of SW side of lake. Wall over lake appears 15 to 20 feet high. Stagnant area protruding from SW cape and across middle of S cove. Lake was reported rising and increasingly active in the night.

From SW:-



Dec. 26.
5:30 p.m. Depth below NW station to W end 372 feet.
SW promontory has become sharp pointed with a fan of blankets in the pool around it. Streaming is eastward, into O.F., and against S and WSW banks.



T.A.J.

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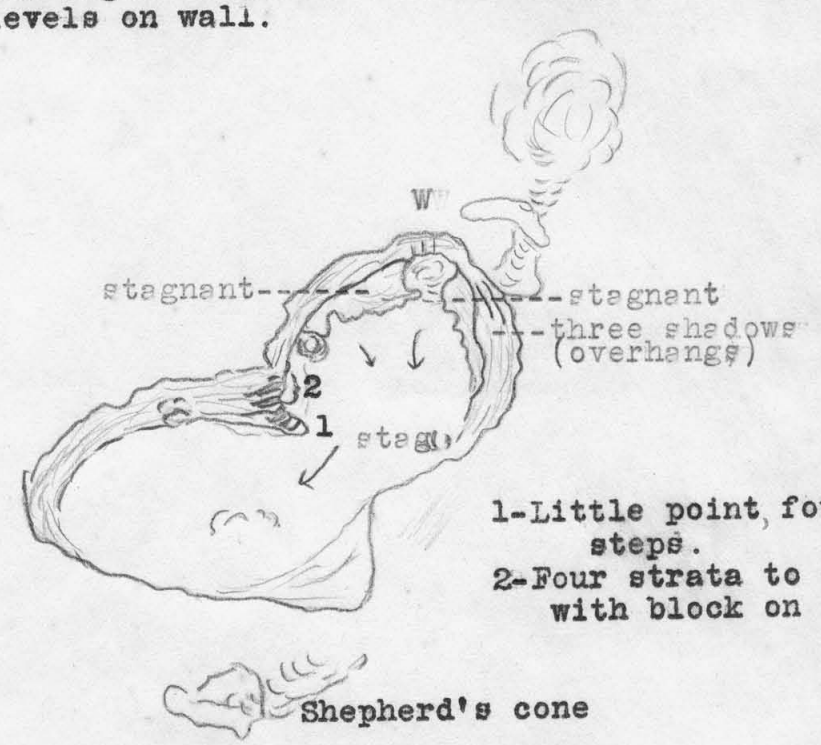
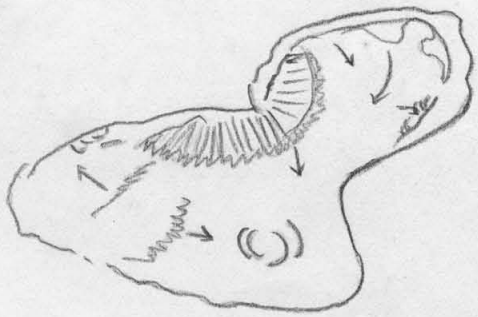
Hawaiian Volcano Observatory
Day **Saturday** Date **December 28, 1912.**

10:30 a.m. Depth below NW station 370 feet. General appearance same as December 26. General conditions suggest slow rising.

11:00 a.m. Stagnant area across middle and on either side of a small pond, extension of the pool, at W end. Fumes thin, strongest at W end. Black wrinkled skins on pool, but no cracking crusts on the shores. Noise steady plashing. Wall about 12 feet high. Scars of shoreline splash noted at different levels on wall.



4:00 p.m. Fountain activity greater than in morning and a remarkable semi-circular blanket was clinging to promontory, now and then breaking away and reforming.



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Hawaiian Volcano Observatory

Day Sunday Date December 29, 1912.
Monday " 30, "
Tuesday " 31, "

Dec. 29. Level reported about the same.

Dec. 30. Subsidence began.

Dec. 31.
3:00 p.m. Depth from N station to SE boiling region 388 feet.
" " NE " " " " " 350 "
This implies a lowering of about 18 feet in the last three days.

SW cape had become a peninsula and presented a terraced appearance growing larger below and nearly dividing the lake in two. Activity less both in streaming and fountaining. Peripheral cracks in platform with sulphur deposition at the lips. Fumes thicker than recently. Several small avalanches of talus heard.

T.A.J.