

Hawaiian Volcano Observatory Record Book 1914

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.

ABBREVIATIONS

A camera	Anderson
A ing. or A.	ingento A
Al V. or A.V.	Al Vista
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.	Dallmeyerr
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 Anæstigmat lens
ft.	fountain
f. or F.	F system of stops
Green Hg-CO ₂	Green mercurial with compressed CO ₂
G. (camera)	Graphic
G. (screen)	Wratten G
Gl.	glycin
grot.	grotto
Hale.	Halemaumau
h.i.	height instrument (5 feet when not specified)
hor.	horizontal angle
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. Jagger
Iso. or I.	isochromatic
Kil.	Kilauea
K2	Wratten K2
K2 cel'id	Wratten K2 celluloid

JOURNAL

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 pem. ...	peninsula
prob.	probably
pt.	point photographed or located
pl.	plate
pan.	panorama
P. (camera)	Premo
P. (film)	panchromatic
Q.P.	quarter plate
R. or rod.	rodinal
ramp.	rampart
stag.	stagnant
stalac.	stalactite
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. Jaggard
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

Jan. 11, 14
May 19, 1914
June 5
July 9

July 16
July 17

Auto on road
Tumulus
Cone Crater with Perret and Jaggar
Pahoehoe forms
Gas Blister
Tees
Hornito spire
Ash beds south wall Kilauea

1914

Dec. 9

440

Incandescent patterns

400

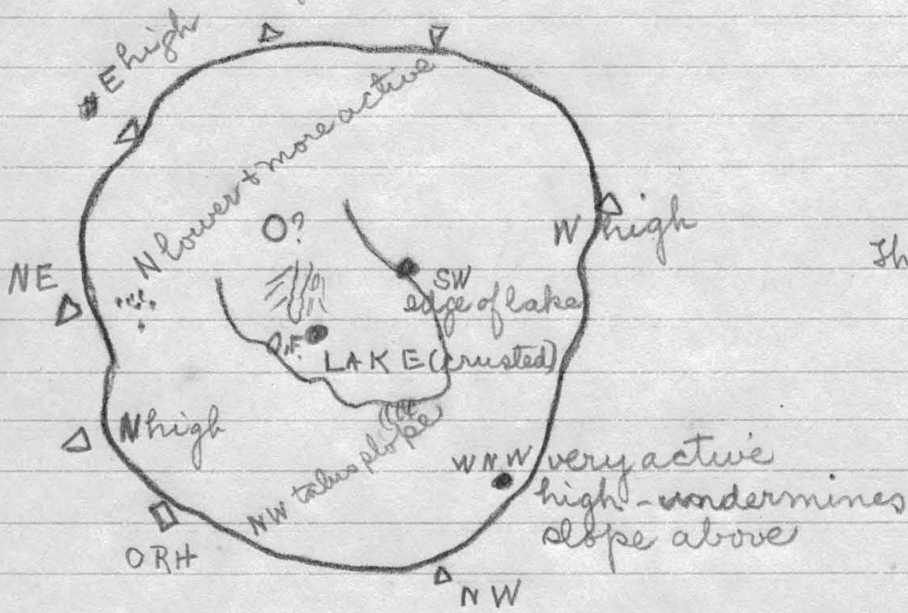
Hannon

December 31

10:45 a.m. Wind N.E. noises faint. O.F. blows 40-20-50-30. Partial clearing W and NW from O.R.H. Little sliding. Floor brown pahoehoe.



N and NW fumaroles cloudy and thin fumes. O.F. blue fumes. NE, WNW, W + SW many hard small cauliflower-like white vapor in tails through stones & sulphurous. Puffing O.F.

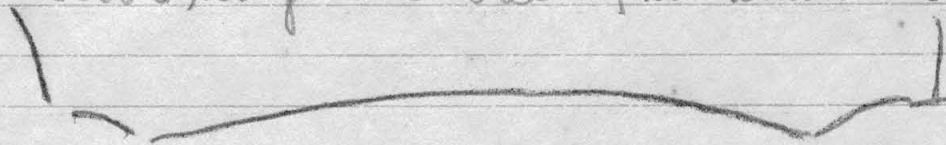


Plan of Pit.

Keanakakoi.

Floor of Keanakakoi from W, across and around it and up the west glen and back around the edge.

Floor ridge and valley all around dome in middle.



Faulted cracks. smooth crisp crust. Overflow evidence at borders like the overlap of swash on a sand beach. No hole or cone anywhere: marked fissure system from Kilauea to Keanakakoi and from latter by way of the glen towards the thirteen craters. Cross section of ash at one point N of Keanakakoi top of wall.

Day Sat.
Mon.Date Jan. 3, 1914
" 5, "

Jan. 3.

9:45 a.m. Three strong rumbles in direction of Halema'ama'u in close succession. No effect in cloud observed. Wind NE. Crater open on W side.

11:15 a.m. One rumble. (Wood heard two.) Wind E. Fumes blowing toward Uwekahuna. Afternoon rainy and misty. Nothing at crater. Barely heard blow.

Note: Rumble probably blasting at Pahala.

Jan. 5.

From O.R.H. 4 p.m. Strong NE wind. Drizzle. No peeing. No sliding. Faint blowing one to three minutes.

Fag

Day Wed. Date Jan. 7, 1914
 Thurs. + Fri. " 8+9, "
 Sun. " 11, "
 Tues. " 13, "

Jan. 7. - 4 p.m. Faint puffs at rare intervals. Slight view from O.R.H. A little sliding W. Fumes hard to breathe. Distinct splashing noise - rare.

Jan. 8 + 9 - Rainy. No seeing. Some rock slipping.

Jan. 11 - 3:30 p.m. Open S.E. Many avalanches inside the fumarole ring. Heard a puff S.E. Much blue smoke S end of bottom. Could not clearly see floor. Has it collapsed? Puffs 4 1/2 minutes O.R.H.

Photos:

t	sta		no	pl	scr	stop	ex	cam
3:30p		Auto in road	1			f11.3	1/50	G
	SE	looking down at fumaroles.	2			f11.3	1/50	"
	S	" " " "	3			f11.3	1/35	"
	chan	" " " "	4			f11.3	1/35	"

(Held in hand - strap over shoulder.)

Jan. 13 - 4 to 4:20 p.m. High No wind. Rainstorm this a.m. Now clear. Eddy opens view partially S.E. Same fumaroles from O.R.H. no sounds, not even rock sliding. Wind too strong to hear blow probably. Fumes appear a little thinner.

J.A.J.

1914, Jan. 11.

6



S.O.S.

#1

7

1914, Jan. 11.



8.05

2



8.05

2#



Bas.

#4

KILAUEA DAY SHEET

Massachusetts Institute of Technology

Hawaiian Volcano Observatory

Day *Thurs* Date *Jan 15, 1914*

t	sta	h. i.	pt	lev	vert	dif	dist	elev	NOTES
1 a m									<p><i>10 a.m</i> Wind N6. Cloudy. No seeing S8 No rocks there heard sliding! at O.R.H. no sounds and no feeling. Fumes strong.</p> <p>H.O. Wood reports the week has been remarkably quiet seismically.</p>
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
1 p m									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

t	cam	pl	no	lt	stop	ex	scr	dev	LOC

t	loc	ther	temp	wea	NOTES
<i>10.30 a.</i>	<i>Postal Ref</i>		<i>3140</i>	<i>1. air 13°C</i>	

T. J. J.

WEEKLY BULLETINS, JANUARY 16 to APRIL 30, 1914.

inserted to cover period of absence

T. A. JAGGAR in JAPAN.

Cloudy weather and strong winds, at first from the NE, later from the SW, have prevailed during most of the week past, causing very unfavorable conditions for observations of all kinds. There has been no change in the behavior of the volcano.

On Friday evening, January 16, a brief glimpse of the central glow-hole was obtained. No avalanches were heard and the noises of eruption were very subdued.

On Sunday, January 18, nothing could be seen on account of the swirling fumes. No sounds of eruption of any sort whatever could be heard. No avalanching or sliding talus was heard.

On Monday, January 19, the same conditions prevailed.

On Wednesday, January 21, though nothing could be seen, a short, sharp, but faint puffing sound was heard at considerable intervals, from 20 to 30 minutes, and during much of the time a low, grave, rumbling sound, suggestive of reverberations in a cave, could be heard. One heavy avalanche of short duration was noted, occurring under the NW cliffs.

Fumes continue to pour out without abatement.

m H.O.W.

During the past week there has been no change in the activity at Kilauea.

Long watches were kept on Jan. 22, 23, 24 and 28; a shorter stay at the crater was made on Jan. 25; and a brief visit was made on Jan. 26. On Jan. 27 weather conditions, fog and wind, were so unfavorable that no visit was made. On Jan. 28 a good view of the bottom of the pit was obtained. No other view has been obtained during this week.

The noises of eruption have undergone no change: faint, barely audible, puffing can be heard at long, irregular intervals; a deep-toned rumbling sound, weak in volume, can be heard at frequent intervals. Either of these sounds is inaudible in a high, rushing wind.

One heavy, prolonged avalanche has been noted during the week on Jan. 23, at about 10:30 a.m., lasting for about ten minutes. This took place at the south side of the pit.

Just before noon, on Jan. 28, a lull and an eddy in the wind cleared the pit of fumes and permitted a good view of the bottom for about ten minutes. Fumes were issuing copiously from a low cone about "O.F." but glowing lava could be seen in the orifice at the top of the cone. Also at the low cone near the W end on the southern margin of the "frozen" surface fumes were pouring out furiously, but glowing lava was seen. The peripheral fumaroles in the talus showed unabated activity, also the high fumarole in the wall under the north station. The floor remains unchanged in appearance -- so, as yet, there is no evidence of conspicuous subsidence. Occasional slight movements of readjustment among the talus blocks are heard.

H. O. W.

Still there is little or no change to report in the action of Kilauea. During the past week the winds have been light, allowing the pit to clear of fumes so that several good views have been obtained. There has, however, been no opportunity suitable for photography.

On Jan. 30, there were frequent views into the interior of Halemaumau, but no view of the very bottom. At a little before 11 o'clock in the forenoon, and a few minutes after 12 noon, heavy and prolonged avalanches occurred, the first at the south near the west end, the second at the north; these lasted ten and eight minutes respectively. Throughout the intervening interval, and the remainder of the day, there were frequent slight slidings -- probably only readjustments among the disturbed talus. Neither puffing nor rumbling noises could be heard.

On Jan. 31 nothing was observed except small slides at considerable intervals. These also were probably only movements of readjustment.

On Feb. 1 excellent views of the floor of Halemaumau were had at frequent intervals for nearly two hours in the early afternoon: the black floor remained level and unbroken, though much material had fallen upon it at the SW and NW margins. The orifices where glowing lava has been seen during preceding weeks were clearly visible; blue fumes were issuing vigorously, but no glowing lava could be seen. A gash appears to be developing in the wall at the west as the avalanching clears away the loose material of the wall. No slides were noted, except a few trifling readjustment movements. If any subsidence has been going on since the formation of the black floor in November, the floor has gone down as a whole without collapse or fracture. No depth measurement was undertaken because the views, while excellent, could be obtained only from the neighborhood of the old rest-house.

On Feb. 2 quiet air again permitted good views. The conditions observed were similar in all respects to those of the 1st. No noises of eruption could be heard.

On Feb. 3, on account of fog and wind from the southwest no watch was maintained.

On Feb. 4 again a good view was obtained; conditions were the same as on the 1st and 2nd except that small slides were more frequent, the rumbling sound of eruption was again audible, and glowing lava could be seen in small amount within the "O.F." orifice.

The energy of eruption has increased definitely since the last writing. Just at the close of the previous week, on Feb. 4, glowing lava had reappeared within the O.F. orifice.

On Feb. 5 quiet air made good seeing possible from the N and NW rim of the pit. Glowing lava was seen plainly both by day and by night in the O.F. orifice and, as well, in the orifice at the apex of a miniature cone near the SE end of the lake area. No slides of any notable magnitude occurred and no noises of eruption were heard.

On Feb. 6 again there was good seeing from the NW part of the rim. Conditions were nearly the same as the previous day, glowing lava being visible in both orifices. In the afternoon small avalanches were heard occasionally. Only one of these was notable, this lasting a little over two minutes. The low rumbling noise of eruption could be heard again plainly.

On Feb. 7 seeing was again possible and again the two glowing orifices were conspicuous. Up to late afternoon there were no noises of eruption except the low rumbling sound; but about nightfall explosive hissing sounds began to be heard at irregular intervals of two to three minutes.

In the afternoon of Feb. 8 these sounds had increased in frequency and energy, occurring at intervals of 5 to 60 seconds, the usual intervals being those so common to O.F., 15-20 to 35-45 seconds. Frequently this harsh blowing sound was almost continuous for minutes together. The noise was sharp and harsh at the same time, and rather loud -- as loud as in the early part of October, 1913, though not nearly loud enough to be heard at a distance of from 100 to 200 yards from the rim of the pit as was the case in the latter part of September. The rumbling noise was continuous, punctuated by a muffled coughing sound. In the afternoon the two glowing orifices were seen. In the evening these two, and three others were noted. It was reported by a visitor present in the early evening that jets of lava were thrown up from the orifice at the edge of the lava area just under the N station near the old rest house. No glowing lava was seen in that orifice during the day. No avalanches were heard on this date.

On Feb. 9 the harsh blowing and rumbling sounds were heard plainly but a fresh breeze prevented seeing.

On Feb. 10 a strong wind prevailed, with stormy and threatening weather. No prolonged watch was maintained. However, the blowing and rumbling continued, possibly a trifle increased.

On Feb. 11 again there was a strong wind, preventing any good view. The loud, explosive, hissing sounds were occurring at intervals of from 5 to 7 seconds. Some blasts were of considerable duration the noisy outrush of gas continuing for about ten seconds.

Throughout the week there has been bright moonlight in the evenings. No glow has been discerned on the fume cloud. The fumes continue to pour out in undiminished volume from fumaroles in the talus all about the margin of the lake area.

H.O.W.

There has been further increase in eruptive energy at Kilauea since last week, though no marked change has been noted during the last four days. No molten pool has appeared nor have any fountains, jets or sprays been observed either by the writer or any other accustomed observer.

On Feb. 12 no view was obtained on account of swirling fumes. Noises of snorting and prolonged sharp blasts, in quality like the sound of steam escaping from a safety valve, were audible for intervals of 1 to 10 seconds, often at considerable distance from the margin of Halemaumau. Sounds of rumbling, with interrupted coughing noises, were almost continuous and appeared to come from the cleft region at the W end of the lake area. These sounds were louder than on previous days. No slides were heard.

On Feb. 13 the fumes again prevented seeing; the sounds described above were heard but they were even louder than before -- the loudest blasts, at intervals of two to three minutes, being plainly audible at the old corral on the trail, nearly a third of a mile NE, up the wind, from the edge of the pit. Thudding sounds like the patter of falling lumps of molten or viscous lava spray were heard. However, these probably were muffled explosive coughings because subsequent views have not revealed any sign of lava jetting during the present spasm of increased activity. For a short time in the late evening on this date the fume cloud was definitely, though dimly, illuminated -- seen plainly from the Volcano House. It is inferred that the top of one of the blowing cones collapsed, but soon congealed again.

On Feb. 14 there was no view. Loud blasts were audible at the old corral down the trail, and the rumbling noise was very loud. The noises of snorting and hissing seemed to emanate from several separate orifices at the bottom of the pit. Also the sound like that of falling lava spray was heard.

On Feb. 15 a very brief, daylight view revealed glowing lava in the orifice at the top of the O.F. cone. No other glimpse of "fire" was seen. The rumbling, snorting and hissing sounds were very loud.

On Feb. 16 the gas blasts were still very loud, plainly audible at the old corral. Both rumbling and hissing sounds seemed to come from several different vents.

On Feb. 17 a good view of the bottom area was secured for a very brief time. Glowing lava was seen in the O.F. orifice. The cone at the SE margin and at the N margin of the lake area were smoking furiously emitting bright blue fumes, but, by daylight, no molten lava was discernible in their vents. Great quantities of bright blue fumes were rushing out of the cleft at the W whence a loud and continuous rumbling noise emanated. As before, all the

noises of eruption were very loud, the hard blasts still being audible as far away as the old corral. The sound of rumbling could be heard distinctly to the N of the hot fissure situated some 40 or 50 yards from the margin of the crater. On this date the blasts and hissing sounds all seemed to come from the O.F. orifice.

On Feb. 18, on account of a strong SW wind, with frequent showers, no visit was made to the pit; for these weather conditions preclude satisfactory observing.

H.O.W.

The energy of eruption has definitely increased during the past week. At night the fume cloud, as seen from the Volcano House, has been definitely illuminated, and the amount of illumination and the strength of the flaring has definitely increased. It is still, however, a very feeble illumination. The latest date covered by the preceding report was Feb. 17. No visit was made to the pit on Feb. 18 owing to weather conditions.

On February 19 the pit was reached early in the forenoon when it was remarked that a conspicuous diminution had come about in the harsh hissing and blowing sounds produced by spasmodic out-rush of gases. The rumbling sound, however, had undergone no diminution -- if anything it had increased in energy. During the forenoon many small talus slides were heard, and early in the afternoon one avalanche lasting for 22 seconds was noted. During the day no view of the bottom area was obtained on account of swirling fumes. But in the evening glowing lava was seen in the O.F. orifice.

On Feb. 20 no view was obtained. The rumbling and hissing sounds were heard much as on the 19th. At considerable intervals small talus slides were heard.

On Feb. 21 the blowing sound was again somewhat louder than on the two previous days. Brief but clear views of the bottom disclosed glowing lava, seen in daylight, in the orifice of the O.F. cone, and at the apex of a blowing cone under the SE station. The opening in O.F. was larger than heretofore during the present revival of activity. Nevertheless it was still a small opening, estimated at a little over three feet in diameter. Trivial talus slides were heard at irregular intervals. The greater part of the rumbling sound still seems to emanate from the cleft region nearly under the W station.

On Feb. 22 numerous clear views were obtained by many visitors. Both by day and by night glowing lava was seen in the orifices of the blowing cones -- in the evening four glowing orifices were seen, the two already mentioned, one nearly under the N station and one relatively high under the S station. Small jets of molten lava were seen by some visitors. The noises of eruption were as on the previous day. For the first time, during this revival, faint flaring in the illumination of the fume cloud definitely could be distinguished from the Volcano House.

On Feb. 23 small lava jets, throwing molten spray, "sparks", from O.F. were seen plainly in bright forenoon light. The glowing orifice at the top of the SE cone was also seen plainly. The noises of eruption were continuing without change. Small movements of sliding in the talus, from 25 to 45 seconds in duration, were heard from time to time. Many large and small boulders are seen resting on the frozen lake area, and its margins are nearly

hidden by fallen talus. The SE blowing cone appears as a small island in the talus. It was thought that glowing lava was visible by light of day in the high S orifice, about 100 feet above the lake surface, but this was uncertain.

On Feb. 24 no visit was made to Halemaumau.

On Feb. 25 both by day and by night molten spray was seen spurting from both the O.F. orifice and from that in the top of the SE cone. Fresh lava could be seen all about O.F. vent. In the late evening a large orifice was observed under the S station, about 100 feet above the floor of the pit, out of which shone a bright light, but no incandescent lava was seen in this vent. No sliding was noted. The noises of eruption were the same as usual recently. The fumes continue to pour out copiously through vents in the talus at points all around the periphery of the lake area.

H. O.W.

Activity in Halemaumau continues to increase, though slowly and irregularly. As yet there is no molten pool but, when the swirling fumes permit, glowing lava can be seen, especially at night, in the O.F. place, in the apex of the cone at the SE, in an orifice about 100 feet above the floor at the S, in an orifice at the W, and in one at the N. An occasional jet of molten lumps is seen, and the sound of falling spatter has been heard at rather long, but irregular, intervals. The fume cloud is faintly illuminated at night, punctuated by feeble but well-defined spasmodic flarings. The harsh blowing noise has again become very loud -- at times almost explosively sharp. The deep toned rumbling is loud and continuous. Sounds like those of surging and swashing of the heavy molten fluid can be heard plainly.

On Feb. 26 a good view was obtained of the O.F. cone, and the SE cone. Several small cones were seen -- one at the SSE in the talus between 20 and 50 feet above the floor. Talus slides were frequent and prolonged. The rumbling sound continued unabated, and the blowing sound, though not so loud as earlier, was the same as on the foregoing days.

On Feb. 27 no views were obtained. The noises were as usual. There were frequent talus slides, some lasting fully half a minute.

On Feb. 28 a good view of O.F. was obtained. Glowing lava could be seen within the cone. No molten spray could be seen, even when the blasts were hard. The blowing sound was about the same as yesterday. The rumbling was as usual. The SE cone was seen and glowing lava was visible in it at the apex; but no gas blasts were issuing from it -- only from O.F. Blue fumes were issuing copiously from a large orifice on the floor between the S and SE stations; also from the western crevasse.

On Mar. 1 only a fleeting view was obtained. Three glow-holes, possible each 3 or 4 feet in diameter, were seen at the apex of the O.F. cone. Thin and scanty blue fumes were seen to be rising constantly out of the talus at the S, less than 100 feet below the summit rim. The rumbling was loud and continuous and had a pulsating quality. The blowing noise had greatly increased in energy and the blasts were occasionally prolonged, at irregular intervals, lasting from 30 to 150 seconds. Blue, and white, fumes were issuing copiously from the SE group of fumaroles in the talus.

On Mar. 2 a good view was obtained. Three large orifices exhibiting molten lava were seen plainly at the apex of the O.F. cone. Gas blasts were issuing from these every two or three seconds, and the noise was very loud. The rumbling was as usual. Every few seconds a flash of light was seen within the large crevasse at the WNW and there were three blowing orifices close by.

On Mar. 3 in the early part of the day no view was obtained. However, visitors reported that just before nightfall there was an excellent and prolonged view. Glowing lava was visible in several orifices in the talus as well as, probably, in the O.F. place.

Small jets of molten spray were seen. On this day the blowing noises were much louder than on the 1st and the rumbling was as usual.

On Mar. 4 no view of the bottom was obtained. Again blue fumes were seen rising from the talus less than 100 feet below the S rim, from the spot from 150-200 feet below the rim under N station, and in very great volume from the crevasse at the W. The sounds of blowing were much louder than on the 1st, and the quiet intervals were shorter, but no prolonged blasts were heard. Rumbling was heard as usual. One trivial talus slide occurred. At night, in bright moonlight, distinct flaring was seen at the irregular short intervals so characteristic of the fountain action of O.F. -- but while the moon was shining no continuous illumination from the molten lava could be made out. After moonset, both on the 3rd and 4th, a faint but steady illumination of the fume cloud was seen.

H.O.W.

During the past week conditions at Halemaumau have undergone little change, but there has been no diminution in activity, probably a slight increase.

On Mar. 5 no visit to the active pit was made from the Observatory, but visiting tourists reported the blowing noise to be loud, the rumbling continuously audible, and views of glowing lava after nightfall in the usual orifices.

On Mar. 6 a very prolonged watch was kept. Many brief views were obtained. Throughout the day and evening molten lava was ejected in flying lumps from the O.F. orifice, at an interval of about 45 seconds. Some of these jets of molten spray shot up from 40 to 50 feet. Brightly glowing lava was seen in late afternoon and evening in the large gash, or crevasse, on the floor leading into the cliff under the NW station. Glowing spots were seen on the floor at the SE and in the talus near the floor at the SW. The blowing noise was louder and harsher than on previous days. The rumbling was much as usual. At night the fume cloud was illuminated brilliantly by flaring for instants, though there was bright moonlight.

Because of wind, and the prolonged watch on the previous day, no visit was made to the pit on Mar. 7.

On Mar. 8 the blowing noise, though frequently prolonged and quite loud, had lost much of its harsh, shrill quality. This probably resulted from the enlargement of the orifices from which gas is escaping. The rumbling was as usual. O.F. was seen plainly -- three small orifices at the apex of the cone, within which glowing lava was visible. No lava jets were seen, nor no sound of falling spatter was heard. Glowing lava was seen at the SE on the floor, at the SW a little above the floor in the talus and in the gash leading into the wall at the NW. This latter was by far the largest and hottest orifice. Here the rock was snapping sharply from the increasing heat. At times flame appeared to be playing above it. Here blue fumes were exhaled in great abundance. Blue fumes were again noticed escaping from several orifices high up in the S talus, and from the high N fumarole. Brief slides were heard.

On Mar. 9 the rumbling noise was not so loud, but the blowing was fully as loud, possibly louder than on the 8th. Lumps of molten lava were sprayed up from O.F., falling as spatter about the cone. Many small slides were heard, and several lasting from 45 seconds to a minute were noted. The moving material in most of the small slides, and at least one of the longer ones, ran down into the gash orifice under the NW station.

On Mar. 10 wind prevented any view. There were many small slides, and one of about one minute's duration, which occurred at the SE. The sounds of blowing and rumbling were as usual.

On Mar. 11 in early evening, a brief view from the SE showed O.F. and the SE cone, both with glowing orifices, and both ejecting showers of molten spray at intervals. The blowing noise was very loud, particularly the blasts from O.F. The rumbling was as usual. No slides were heard. Smoke prevented any view of the WNW orifice.

H. O.W.

As a spectacle Kilauea is again in action -- at night affording to the patient watcher, unless a strong wind blows, fitful views of jets of molten lava flung upwards to heights sometimes exceeding 100 feet, these jets springing up every few seconds from three or four different orifices. The pit is theatrically illuminated by the glow from several small caves and orifices in its depths. As yet, however, there is no molten pool.

On Mar. 12 at frequent intervals lava was violently ejected, but in small quantity, from the O.F. orifice and from that in the SE cone. Noise of blowing and rumbling was as usual. A large orifice was noted, for the first time, under the NE station at the very edge of the lake area. Here the gas was issuing in spasmodic blasts, but no lava jets were noticed. The glow on the fumes here was very bright. No slides were heard. At times a blue flame was seen playing over O.F.

On Mar. 13 jets of molten lava were seen issuing from O.F. and from the SE cone, and glowing lava could be seen in the orifice of the NE cave. The blowing sound was very loud indeed. The jets from O.F. were thrown up from 40 to 50 feet. Blueflames were playing above its cone. No slides were heard.

On Mar. 14 conditions had undergone no change, except that nearly all the marks of activity had slightly increased. No incandescence, however, could be seen at the NE orifice, but simply bright illumination of the fumes there. A new, small orifice was observed under the NW station at the edge of the lake area, in which glowing lava was seen.

On Mar. 15 wind prevented seeing in afternoon and early evening. It was noted that the blowing sound, remaining fairly loud, had become continuous, but that it was punctuated at intervals of from one half to two seconds by explosive snorting and coughing sounds. Further, at intervals of 20 to 100 seconds there occurred still other louder and heavier gas blasts. Rumbling was heard as usual. There were frequent snapping sounds, loud and sharp, as of rock cracking from heat. There was heard, doubtfully, the sound of falling spatter.

In the late evening as reported by visitors, jets of molten lava were flung up from 40 to 50 feet from O.F., and a flow cascaded to the floor from the low, gash-orifice at the WNW. Though there was a SW wind, blowing the fume cloud toward the Observatory, from here bright and prolonged flares were seen at times.

On Mar. 16 a very strong SW wind prevailed, preventing all views. This wind set up and maintained a state of vibration of the foundation piers of the seismographs exceeding in amplitude the vibrations commonly produced by violent activity in the pit. At Halemaumau a few trivial slides were heard; also, as usual, sounds of rumbling and of continuous blowing punctuated by snorting and coughing sounds.

There were subdued, but heavy, sounds as of considerable bodies of lava in motion. The sound of falling spatter was plainly heard, and the flaring, seen at the pit-side, was very bright.

On Mar. 17 conditions had undergone no change. The large WNW orifice had partly closed, but the rumbling there was very loud. No glowing lava could be seen in it until evening, when very small incandescent holes could be seen. Jets of molten lava, sometimes in considerable amount, were flung from O.F. at every eruptive spasm. The blowing noise was continuous but the coughing and snorting was less pronounced. Trivial slides were heard, and much material was seen to have fallen to the floor since the early part of the week here under report. The SE cone was nearly covered with talus. After nightfall many small glowing orifices were seen in the talus, and cliff wall, near the edge of the lake area -- up to 100 feet above the floor of the pit. Despite the swirling fumes views, satisfactory from the spectacular point of view, were frequent throughout the evening.

On Mar. 18 general conditions remained the same. Lava jets from O.F. sometimes exceeded 100 feet (estimated) in height. At these times tons of molten lava were flung into the air from this orifice. Incandescent lava was seen plainly in the WNW gash. Numerous small glowing places were seen again in the cliff walls and in the talus high above the bottom of the pit. The SE cone was seen to be almost buried under talus. Jets of lava were springing obliquely out from the NE cave. No blue flames were seen. A few trivial slides were heard. The sharp sound of rock snapping from heat was heard plainly.

H.O.W.

- 1 -

Kilauea grows more spectacular -- though no molten lake has yet formed. Up to the evening of Mar. 22 the eruptive energy continued definitely to increase: since that time the condition then reached has been maintained at practically a stationary point, but with minor increases and decreases in energy. The sound of rumbling continues unabated. But the blowing sound produced by the outrush of gases has markedly declined in harshness and volume -- owing, probably, to the notable enlargement of the orifices already established and to the opening of new orifices. Correlatively, though jets of lava spring up at frequent irregular intervals, the molten lumps are not flung so high nor with such seeming violence, and seemingly the volume is not so great as at the time of the last report. No outflows of molten lava have been witnessed but flaring, seen from the Observatory, has suggested flowing and freshly cooled lava is seen on the floor of the pit.

On Mar. 19 jets were seen to rise from O.F. to heights of 50 to 100 feet or more, and incandescent streaks were seen all over the floor. The cone under the W station was blowing loudly. The glow was very marked at the NE cave, and from the WNW orifice. Rumbling was as usual. A few trivial slides were heard.

On Mar. 20 a high SW wind with heavy rain prevented observation.

On Mar. 21 jets of lava from 50 to 100 feet in height were flung from O.F. Small jets were springing from the cone under the W station. Blowing was loud at the NE orifice and a brilliant glow was seen there. Incandescent lava was seen in the WNW orifice. During the evening the activity increased. The O.F. orifice became a long narrow rent, at least 20 feet long by 2 to 3 feet wide, with a secondary opening about 4 by 6 feet. The jets on this evening were very violent. A blue flame played continuously at a minor orifice in the O.F. cone. Incandescent lava was seen at many places on the floor.

On Mar. 22 no observations were made. Visitors reported conditions much as described above. It was said that seething, molten lava was seen in the WNW place.

On Mar. 23 conditions were much as before except that the jets were less energetic. Lesser jets were seen from O.F. and from the W cone, and incandescent lava was seen in the WNW orifice. Many cracks were seen in the frozen lake surface through which incandescent lava shone. A new orifice had appeared under the E station. Many small orifices were seen on the floor.

On Mar. 24 jets were seen from O.F., also, for the first time, from the WNW orifice. At the W cone the blowing and rumbling noises were decreased. Fresh lava was seen on the floor. O.F. was seen to have built a steep cone, with a broken-in top. The scene

in early evening was unusually spectacular; also, in the night, the illumination of the fume cloud was striking and brilliant.

On Mar. 25 jets from O.F. were few and small but the orifices in the cone were of good size and were glowing brightly. Bright glow was seen at the WNW cave and in that at the NE. Numerous small orifices were seen on the floor. Rumbling was as usual. The sound of blowing was a trifle louder than on the previous day. Many trivial slides were heard. Blue fumes were issuing copiously from all the usual orifices. No blue flames were seen.

H.O.W.

A lull has followed the energetic activity which prevailed and was increasing up to about one week ago. The week just past has been exceptionally unfavorable for eye and ear observation at Halemaumau. High winds from the SW, with fumes, fog and rain, have prevailed much of the time. Consequently views have been fewer, and watches less prolonged, than just previously. However, the violent up-jetting of molten lava from orifices in the floor has greatly declined -- has, indeed, ceased almost altogether -- and the blowing sound has diminished in like manner. Despite this, all the orifices previously mentioned remain open, and through them the brilliantly glowing lava shines. If anything, the bottom area appears hotter. It seems merely as though the spasmodic uprush of gases had diminished. On account of the cessation of jetting the scene is less spectacular and the illumination of fumes at night less brilliant on the average.

On Mar. 26 the weather conditions were bad for observing. In early evening brief glimpses of the usual orifices were afforded at rare intervals. No slides were heard. No flames were seen. The sound of blowing had diminished, but the rumbling was as usual. No lava jets were seen.

On Mar. 27 violent winds from the SW made it futile to undertake observation.

On Mar. 28 conditions for observation were very unfavorable. No views were obtained. Small slides were heard, one under the S station lasting at least 45 seconds. The rumbling was as usual. The blowing, while diminished, was about the same as on the 26th.

On Mar. 29 no watch was maintained, owing to bad weather until early evening. Visitors obtained brief glimpses of the usual glowing orifices. No jets or flames were seen. No slides were heard. The noises of eruption were much the same.

On Mar. 30 a good view of the bottom was obtained in early evening. The usual orifices were glowing brightly, but no jets were seen. The sound of blowing was very subdued. The rumbling was as usual. A few trivial slides were heard.

On Mar. 31 no observations were undertaken owing to unfavorable conditions for seeing.

On Apr. 1 once again all the usual orifices were seen, with glowing lava showing brightly, in early evening. The brilliant appearance of the NE, the O.F., and the WNW orifices was particularly noted. No jets or flames were seen. The blowing was not loud. Rumbling was as usual. A few trivial slides were heard.

Following the slight decrease noted last week there has been evident a slight increase in activity at Kilauea since that time. The orifices have slightly enlarged and jetting lava has been seen. The noises of blowing and rumbling have again increased slightly -- there have been short intervals during which these sounds were very loud. As a spectacle, however, the volcano is not so fine as it was just before the end of March. Nevertheless, though the behavior is not easy to interpret, the writer inclines to the opinion that the surface activity is still greater than at that time. The rising fumes seem much thinner during three or four days past -- this is noted by all accustomed to see the crater, though the phenomenon is impossible of measurement. This is considered to indicate rising temperature at the top of the magma column, a condition usually due to elevation of the column. There are more and larger orifices and in at least two of these seething lava has been seen plainly. Also, at the ENE, along a system of deep cracks about 100 yards back from the rim of Halemaumau, and peripheral to it, blue fumes of sulphur of a very acrid kind are issuing copiously. This phenomenon began to attract attention about the first of the year but very recently the action has increased noticeably both in the amount of the fumes and in the degree of their acidity. No sort of quantitative measurement has been possible with our equipment. But the discomfort caused by these fumes has greatly increased within a fortnight. It is possible, of course, that this aspect of the matter is accidental.

No observations were made on Apr. 2. Visitors reported conditions much as usual. Views of the glowing orifices were obtained. The blowing and rumbling was as usual.

On Apr. 3 an excellent view of the floor region disclosed new lava a little to the W of O.F. in a position suggesting that it had welled up through a fissure in the floor. The orifice at the top of the O.F. cone appeared much enlarged. At considerable intervals jets were flung out from O.F. The lava thus ejected was in large amount but it was not thrown very high. Small jets were springing from the W cone. Glowing lava was seen in the WNW orifice. In all six orifices were seen, four on the floor and two, at the WNW and at the NE, at a slight elevation above it. No flames were seen. Small slides were numerous. The sound of blowing was very subdued and even the rumbling noise was less than ordinary.

On Apr. 4 boiling and seething lava was seen in the WNW and in the NE orifices. For all that the blowing and rumbling was less. Jets were seen springing from O.F. and from the W cone, but small in amount and height. In addition to the six orifices seen yesterday a small glow hole was discovered under the SW station about 100 feet above the floor. No flames were seen. One or two trivial slides were heard.

On Apr. 5 no routine observations were made. The usual conditions were reported by visitors.

On Apr. 6 conditions were as above described except that both the blowing and the rumbling sounds were much less than common. Jets from O.F. were rare and very small. A large blue flame was seen issuing from this orifice, fluttering like a banner. Smoke concealed both the NE and the WNW orifices. About midnight very bright flaring was seen from the Observatory.

On Apr. 7 in early afternoon there occurred a spasm of violent blowing, short, sharp gas blasts in quick succession, with greatly increased rumbling. This more violent phase wore away toward evening, but the sounds still remained louder than on previous days. Smoke concealed the WNW and the NE orifices. Small jets were thrown from O.F. No flames could be seen. Several small slides occurred.

On Apr. 8 conditions remained without significant change. Blowing and rumbling had decreased slightly in loudness. No lava jets were seen, though incandescent lava could be seen plainly in the usual orifices. No flames were seen. Small slides occurred frequently.

H.O.W.

Since the last writing there has been a steady increase in activity at Kilauea manifested by an increase in the size and in the apparent hotness of the glowing orifices, by increased loudness in blowing and rumbling, and by jet action.

On Apr. 9 a strong wind prevented seeing. Puffing, blowing and rumbling were as usual. Trivial slides were heard.

On Apr. 10 no visit was made to the pit on account of an exceptionally strong SW wind accompanied by fog and light rain.

On Apr. 11 seething lava was seen in the WNW orifice above which wavered a blue flame. At intervals the puffing sounds, chiefly from O.F., were quite loud. Lumps of molten lava were flung from O.F. and from the cone under the SE station. Blue flames were issuing from a subsidiary orifice in the O.F. cone. In all nine glowing orifices were visible. Many trivial slides took place, some lasting for 30 seconds. The rumbling sound was loud.

On Apr. 12 the orifices showed distinct enlargement. Molten lava was surging about making a distinct swashing sound in addition to the louder blowing, puffing and rumbling noises. Seething lava was seen in O.F. and especially in the WNW orifice, now almost large enough to be called a pool, where in early evening a miniature flow was poured out. The illumination of the walls and the rising fumes were highly spectacular. At long intervals blue flames flashed above O.F. No jets were seen and no slides worth mention were noted.

On Apr. 13 a good view of the WNW center of activity was obtained where several orifices are now clustered; the larger, almost a pool, exhibited seething lava and blue flames. The sounds of blowing and rumbling were louder, but good views of O.F. and of the SE cone did not disclose any jet action. Trivial rock falls occurred.

On Apr. 14 jet action had begun again at the O.F. orifice but nowhere else. Blowing and rumbling are still louder than yesterday. No flames were seen. No slides were heard. Swirling fumes prevented clear views so that the larger orifices were not seen.

On Apr. 15 excellent views showed seething lava in the WNW orifice into which loose talus was seen to be sliding -- some of the slides lasting 40 seconds. Many trivial slides took place. Rumbling and blowing was very loud in the early evening but jet action was not observed until later when "sparks" were flung up from the SE cone. In mid-evening the O.F. cone collapsed making a large orifice where splashing lava was visible thus greatly augmenting the illumination of the walls and fumes.

During much of the past week conditions for observing at Kilauea have been unfavorable. However, another halt in the increase of energy of eruption has occurred. For four or five days past the noises of eruption, and all the visible manifestations, have been undergoing sporadic increase and decrease either side of the condition reached on Saturday, April 18,, as an average or stage of reference. There is no reason to think that any quasi-permanent diminution in eruptivity has occurred. The condition appears merely to be one of the customary lulls.

On April 16 continual small jets of lava were seen to spout from O.F. and blue flames played above it; and boiling magma was seen plainly in the WNW orifice out of which small jets were seen to spring at considerable intervals. Incandescent lava was seen in the openings of all the cones hitherto described, being particularly brilliant in the NE orifice. Also a new, brightly glowing orifice was seen about 50 feet above the bottom of the pit at the WSW. The noise of rumbling was very loud. Blowing and rushing sounds were produced frequently and were of much volume but were somewhat lacking in harshness and intensity. An unusually large number of medium-sized talus slides occurred many of which lasted for nearly a minute. Most of these plunged down into the large WNW orifice causing the magma there to surge and splash. During the previous twenty-four hours a great deal of readjustment in the talus materials had taken place; in consequence of which the SE cone was nearly buried. All things considered the activity on this date was greater than at any other time thus far during the present revival of eruption.

On April 17 so far as could be ascertained the conditions of eruption were almost as on the previous day, but the rising fumes were kept aswirl by a fresh wind so that no really good view was obtained. Sounds of blowing and rumbling were little if any diminished and the fumes were brilliantly illuminated in the neighborhood of the larger orifices, particularly at the WNW. A brief view of O.F. showed the action there to be as yesterday. Only a few talus slides were heard.

On Apr. 18 there was little if any diminution in the intensity of the phenomena -- flaring, for instance, seen from the Observatory, was very brilliant, but no jets were visible at the pit-side. Swirling fumes prevented any but brief glimpses during which the conditions seen were much as on previous days. However, throughout the hours devoted to observation, talus slides were occurring almost continuously and many of them were of prolonged duration. Nevertheless it is considered that no fresh rock was dislodged, but merely an extensive readjustment of the loose material brought about.

On Apr. 19 in the forenoon swirling fumes prevented views but noises of rock-fall, and the blowing and rumbling sounds of eruption were plainly heard, as also was the case in early afternoon. But as the afternoon wore on all the sounds decreased and the interval separating eruptive spasms increased until in early evening no noises could be heard and nothing could be seen -- not even a faint illumination of the fumes, which were eddying violently, not even in the neighborhood of the orifices. It was feared that a collapse had occurred.

On April 20, however, brief and poor views in early evening through the fumes revealed incandescent lava in the chief orifices, O.F., the WNW and the NE orifices. The usual rumbling sounds were audible, little if any subdued. But the blowing sound was faint and low. Probably the conspicuous readjustments in the talus during the day or two previous had the effect of choking the vent and of depressing the temperature of the top of the magma column. The fume cloud, seen from the Observatory, was definitely illuminated at night, with feeble flaring.

On Apr. 21 conditions for observing were so unfavorable that no visit was made to the pit. At night the fume cloud was seen to be faintly but definitely illuminated, with feeble flaring.

On Apr. 22 nothing could be seen on account of high winds and eddying fumes. The rumbling was as usual and the blowing noise was again very loud. At night blinding rain shut out the view of the pit from the Observatory.

H.O.W.

Again there has been a slight increase in activity in Halemauau. But readjustments among the talus blocks produce frequent trivial rock-slides, occasioned probably by the melting and subsequent fluid movement of the lower layers. Nevertheless the state of heat at the bottom of the pit near the top of the magma column seems to be increasing steadily though the balance of surface conditions which make for spectacular display varies in a partly irregular and partly regular way. It may be appropriate to call attention again to the tolerably close agreement between this observed change in activity and theoretical variations in earth-strain produced by the action of sun and moon components of attraction. It is a tentative opinion, or hypothesis, that this variation in apparent activity noted from week to week is controlled partly, or largely, by this variation in earth-strain.

On Apr. 23 conditions at the pit were usual; brief glimpses of the incandescent orifices were obtained, but no flames or jets were seen. A few trivial slides occurred. There was nothing specially noteworthy about the blowing or rumbling sounds.

On Apr. 24 owing to weather conditions unfavorable for observing no visit was made to the pit.

On Apr. 25 nothing could be seen on account of swirling fumes. The blowing and rumbling had become loud.

On Apr. 26 no watch was maintained at the pit but visitors reported the usual conditions.

On Apr. 27 intermittent lava jets were seen playing out of O.F. and from the SE blowing cone to heights closely approximating but not exceeding 75 feet. Blue flames wavered above the O.F. orifices. Rumbling and blowing was loud, the latter at considerable intervals being very loud indeed. No slides were heard and almost no symptoms of readjustment among the fallen blocks. Fumes obscured the WNW and the NE orifices but in the neighborhood of these the illumination of the fumes was brilliant.

On Apr. 28 no lava jets were seen during the brief glimpses obtained of the O.F. and the SE cones but sounds of blowing and rumbling were very loud, the former of staccato quality. No prolonged slides were heard but the movement of individual rocks was noted frequently.

On April 29 an excellent series of views was obtained. Small lava jets, 20 to 25 feet in height, were springing from the O.F. orifice and blue flames were playing there. Nowhere else were jets noted. Seething lava was again visible in the WNW orifice. Blue flames were playing at the SE cone also. Prolonged trivial slides were occurring frequently.

Rumbling loud. Blowing very loud. Occasional
louder blasts. Much smoked.

J. J.

Day	Fri.	Date	May 1, 1914.
	Sat.	"	2, "
	Sun.	"	3, "
	Mon.	"	4, "

May 1-

5:20 p.m. at O.R.H. Good view of pit. Floor visible, O.F. blowing and rumbling distinctly. Blue flame from cracks. Large slide late in afternoon about 45 sec.

7:55 p.m. Another view of pit. Glow plainly seen in hole under WNW station. Glow in other holes but no sparks seen. Loud blowing and rumbling. Several slides. Seen from SE. (Alet.)

May 2-

5:40 p.m. at O.R.H. Fine view of O.F. blowing out sparks. Rumbling heard. Glow in hole under W.N.W. station. Rumbling and blowing there, but no sparks.

6:10 p.m. O.R.H. Got another view of bottom. Evidence of new lava having flowed over floor. O.F. surrounded. Flow came from cone under SE station. Many ^{glowing} cracks. Cone under W station occasionally shooting out sparks. Rumbling from this cone. Several slides.

6:30 p.m. O.R.H. Fine view of pit. Fine display of sparks from O.F. Blue flames coming out of large crack in O.F. cone. Sparks from a big hole in side. (Alet.)

May 3-

6 to 8 p.m. Pots bubbling. Fine and flames seen. Smell from aureole N. Great fumarole activity. Fumes high under channel S. S.a.g.

May 4-

3 to 4 p.m. Saw bottom for 20 or 30 minutes. O.F. a small triangular orifice. Glowing cone SE + two small glowing spots at floor level. Two more under NW station. Marked activity in larger WNW orifice, concealed mostly by fumes. No lava jets. No cave glowing. Rumbling strong, blowing comparatively weak. Fume from high N fumarole in well very active. Great glow at night. S.a.g.

KILAUEA DAY SHEET

Hawaiian Volcano Observatory

Day Tues Date May 5, 1914.

Wed. NOTES .. 6 .. (below)

t	sta	h. i.	pt	hor ter	vert	dif	dist	elev
1 a m	S		SE	0	0.40			
2	"		SE cone	51.36	43.52		610	584
3	"		OF	54.36	33.56		716	479
4	"		No cave	44.32	33.28			
5	"		sub spot	66.58	36.28			
6	"		ca whole	76.50				
7	"		stang pool ca	41.16				
8	"		ca hole	35.10				
9	SE		OF	84.21 275.39	45.14		584	587
10	"		SE cone	78.42 281.18	50.21		486	585
11	"		S.	0				
12								
1 p m								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

Used Japanese transits for measurements. Great display. Blowing, bubbling and flowing over. Pool around SE. Cone on floor No. Am views SW + W. Two or three flows. 7 glow places. Great glow at night.

t	cam	pl	no	lt	stop	ex	scr	dev

LOC

t	loc	ther	temp	wea

NOTES

May 6, 1914 - No great glow.

T.A.J.

Day	Date
Thurs.	May 7, 1914
Fri.	" 8, "
Sat.	" 9, "
Sun.	" 10, "

May 7-

11:15 a.m. Partial view SE. Deep V of insloping rock wall vacated by talus S. Most of talus gone. S bench still under channel. Slow avalanches W. OF hissing and blowing continuously. No definite rhythm. Wind diffuses fumes in pit. Seeing bad. No sound of great activity.

May 8-

Solar glow at night.

S.a.g.

May 9-

12:50 p.m. (noon). Fine view of OF. Lava flowing from it toward NW. Cone under W station shooting lava up to a height 50 or 60 ft. Blowing and rumbling loud. Crackling sounds.

1:13 p.m. Another good view of OF. Boiling lava running back and forth. Lake is about 25 ft long and 15 ft wide. A long flut running from OF toward cone under SE station. Large hole under WNW station throwing out sparks occasionally and rumbling considerably. The floor is covered all over with fresh lava. Several short slides. (Alert)

8 to 10 p.m. Seeing from SE and S (!) sta.

From S sta: -

high W beehive filagree cones flaming.

higher W pool

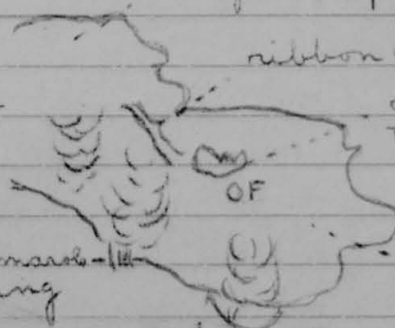
ribbon cascade W to E

Sounds as though this were the place of loud blowing.

open pit, lava streaming and some times spitting out.

strongest fumaroles - 11 ft - puffing

cracks glowing, this whole field a lava flow.



The SE cave of 2 days ago now submerged under lava flow from O.F.

Flow from W to E just the same as in Nov. - later 1912. Eight or ten glow spots. Noises of lava cascade, rumble, sharp hisses + splashes. A little sliding.

S.a.g.

May 10-

5 p.m. No clear seeing. Noises as yesterday.

S.a.g.

3:20 p.m. Good peeing from S station. Lava in lake boiling. No new flow. Blowing and rumbling very loud.

4:20 p.m. From S₂ had another good view. Lava splashing over the bank of O.F. lake. Glow in the cone on the floor under the S₂ station. Blowing and rumbling.

(Acet)

KILAUEA DAY SHEET

Massachusetts Institute of Technology

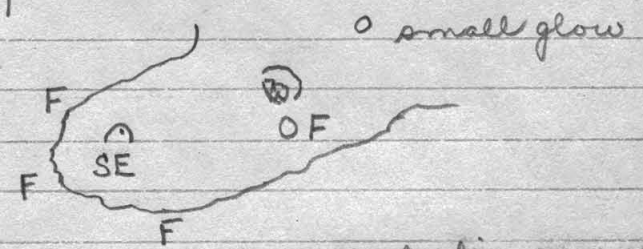
Hawaiian Volcano Observatory

Day *Tues.* Date *May 12, 1914*

41

t	sta	h. i.	pt	lev	vert	dif	dist	elev
1 a m								
2								
3								
4								
5								
6								
7								
8								
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10								
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1 p m								
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11								
12								

3 p.m. Poor seeing S.E. station. Continuous hiss. Rumbling and puffs OF glow hole. Splashing. Fumaroles active bottom S.E. of S. High one 100 ± ft. above floor in wall E. No great change has taken place. Rumble can be heard at Tech. Sta.
5 p.m. from S.E. sta:-



at foot of wall. High fum. just S of W sta. Smoking.

t	cam	pl	no	lt	stop	ex	scr	dev

LOC

t	loc	ther	temp	wea
4:30 p	Postal Refr		308° C	1. an 20°

NOTES

S.A.J.

Day Wed.

Date May 13, 1914.

Thurs.

" 14, "

May 13 -

4:20 p.m. Got a glimpse of O.F. from SE station. Poor seeing - too much smoke. No change could be seen. Still blowing + rumbling.

5:50 p.m. From same place. Could see no better. Noises loud.

(Alert)

May 14 -

3:52 p.m. From O.R.H. Slide lasting about 45 seconds. Sound seemed to come from SSW. Other small slides later.

6:25 p.m. SE sta. Had a good view of O.F. ejecting lava. Three holes in a line. Blue flame coming out of one. Little cone under SE station blowing sparks occasionally. Noise of blowing and rumbling continues. Under NW station a bright glow spot. Another hole under E sta.

6:15 p.m. SE sta. Got another glimpse. Saw a flow running from the NW toward O.F. Looked about 10 or 15 feet wide.

(Alert)

KILAUEA DAY SHEET

Hawaiian Volcano Observatory

Day Fri

Date May 15, 1914

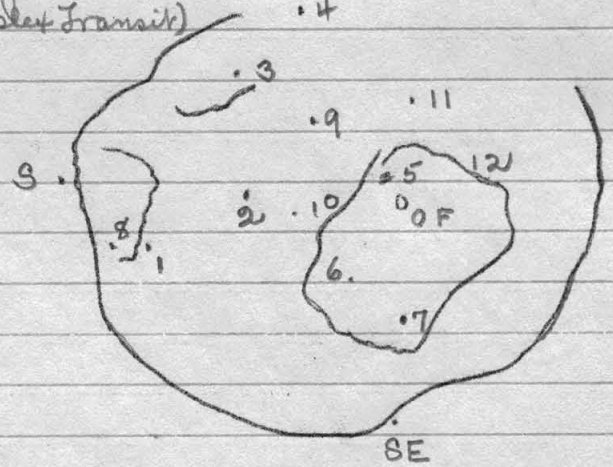
Sat.

NOTES

" 16, "

t	sta	h. i.	pt	lev	vert	dif	dist	elev
1 a.m.	SE		#8	0.8	8.21			
2	"		1	358.30	14.53			
3	"		5	276.7	44.52		584	580
4	"		12	276.24	43.44		623	594
5	"		6	281.45	49.52		492	582
6	"		11	283.16	37.22		810	615
7	S		5	54.25	39.4		712	576
8	"		6	51.46	43.20		612	576
9	"		10	61.25	46.23			
10	"		11	69.38	35.52		838	603
11	"		12	56.24	38.16		740	581
12								
1 p.m.	SE		S	360				
2	S		SE	0				
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

May 15, 4:30 p.m. SE sta: -
(Simplex Transit)



- S = S sta.
- 1 = fum. under S bench.
- 2 = yellow patch under wall.
- 3 = W fallen S bench.
- 4 = fumarole SW wall.
- 5 = OF spitting.
- 6 = SE cone now spitting + hissing.
- 7 = flow SE end of floor
- 8 = Boulder on S bench
- 9 = Remnant 200-ft bench yellow patch
- 10 = fum. Status level of f. ring
- 11 = W cone splashing

243' SW cone to O.F. 110' SE cone to O.F.
Pool 550 ft. long - 200 + wide.

t	cam	pl	no	lt	stop	ex	scr	dev

May 15 + 16 - From S and SE.
High activity. 20 pts more or less. Flow from SE over E floor; W cone, OF, a pt. W of O.F., SE, NE, E side of floor + W holes all active. Noises sharp hisses, bubbling + rumbling. Could identify hisses with jets from SE cone. Slipping SW. Measurements taken. Rising.

t	loc	ther	temp	wea

NOTES

J. a. g.

Day	Mon.	Date	May 18, 1914.
	Tues.		" 19, "
	Wed.		" 20, "
	Thurs.		" 21, "

May 18-

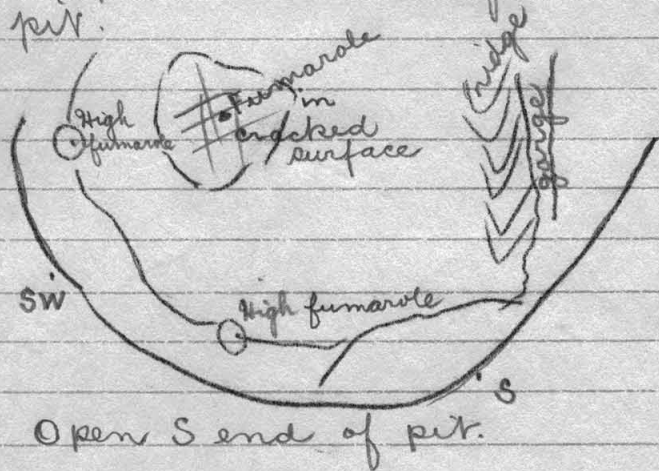
5:50 p.m. From S6. View of entire bottom of pit. O.F. blowing lava all over floor. Flowing over the floor under E station. Cone under S6 sta. spitting. All very active. Blowing and rumbling loudly.

6:10 p.m. All cones active. Large flow coming from under N station and going toward O.F. (Alet)

May 19-

1:30 p.m. Wind veering S'ly. Continuous loud hisses and puffs. No seeing NW or S6. Fumes very disagreeable from NE + E of pit in the aureole. No period of hissing. Wind from W on W side and from E on E side of pit.

Floor shows black. O.F. etc hissing. No great flow activity. Some rumble.



(Photos)

T.A.G.

May 20 - S6 sta. 6:15 p.m. Good view of floor. Flowing from under WNW station into O.F. Cone under E sta. spitting 40 to 50 ft. in the air. Little cone under S6 sta. spitting occasionally. Occasional blue flame from same place. Floor covered with glowing cracks. Noises the same. Under N6 station could see no fire - just a bright light. (Alet)

May 21-

8:15 - 8:45 p.m. From E A-frame and channel station. Acid fumes from peripheral vents very troublesome, particularly at E A-frame. Bright illumination of walls and fumes. Narrow vent just W of O.F. showed very rapid current - down steep gradient as seen from channel - into O.F. Lava seen in OF streaming, apparently rapidly to E. Molten lava 8-12 ft below solidified crust. Many dull red permanent-appearing cracks all over eastern half of floor. S6 cone quietly glowing. Greater activity in two N6 places at, and just above, foot of wall. One orifice conspicuous at N and two or three, mostly concealed by fumes, at W. Tinkling sounds of cracking rock. Individual rock falls. Rare low jets from O.F. (How)

(Photos) T.A.G.

45

KILAUEA DAY SHEET

Day Tues.

Date May 19, 1914.

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

no	pl	scr	stop	ex	cam
1	film				P
2	"				"
3	"				"
4	"				"
5	"				"
6	"				"
7	"				"
8	"				"

1:30 p.m.

SW
"
"
"

SW fumarole upper tubes
SE chimney
SE chimney & east Rest House
SE chimney
Dome N. Halemaumau
cracks in dome
" " "
Cavern

S.a.g.



#1



#2



#3



#4

1914, May 19

F



Bos

#5



#6



#7



#8

KILAUEA DAY SHEET

Hawaiian Volcano Observatory

Day *Thurs.*

Date *May 21, 1914*

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

			no	pl	scr	stop	ex	cam
<i>7:20 a.m.</i>	<i>Cottage</i>	<i>Waldron's ledge (panoram)</i>	<i>1</i>	<i>film</i>	<i>8X</i>	<i>F 11</i>	<i>74</i>	<i>P</i>
	<i>U. H.</i>	<i>Halemau mau "</i>	<i>2</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>
	<i>"</i>	<i>Uwekahuna "</i>	<i>3</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>
	<i>"</i>	<i>Mauna Loa "</i>	<i>4</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>

Sag.



#1



#1



#2



#3

T.A.J.

Day Fri. Date May 22, 1914.
 Sat. " 23, "
 Sun. " 24, "

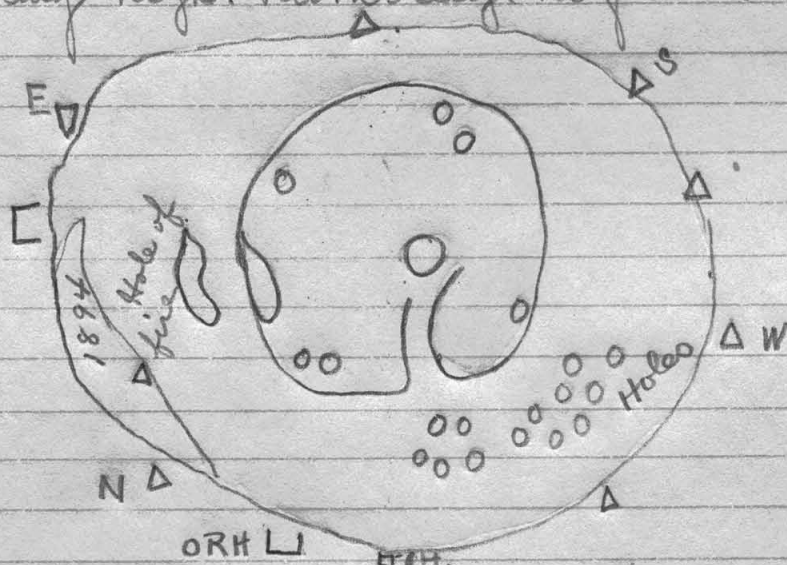
May 22 - 11:20 a.m. - O.R.H.

Good view of cone under NW station. About 8 or 10 ft. high. A large hole at top and pit holes on side, five of them being in a straight line. All glowing. Occasionally boiling lava is to be seen in summit orifice, but no jets are thrown up. Rumbling and blowing noises, the latter rather faint. Several slides in different parts of pit.

11:45 a.m. O.R.H. - Another view. O.F. has sunk leaving a round hole about 20 ft. across + 5 ft. deep, from which lava occasionally shoots up. Glow in hole under NE station.

4:20 p.m. O.R.H. - An excellent view of floor. O.F. boiling + spitting. All cones glowing brightly.

7:45 p.m. P.E. station - Fire showing through all cracks in floor. Cone under E station spitting high. Rumbling. No flows. (Alex)



May 23 -

5 to 6:30 p.m. from S, SE + NW stations. - Wind ENE. Open pit S. Seeing poor SE. At S sta dim views; glow holes NE; flame O.F.; bright flare from time to time in W end of pool obscured by fumes. Noises continuous puffing and splashing. SE fumaroles show what appears a new open crack lined with sulphur as an open crevasse from which the fumes rise. NW station no seeing, but a bright flare W end of pool is accompanied by the unmistakable sound of splashing as of bombardment of fountains on the bank of a pool. The cracks back of O.R.H. appear wider. Is there fresh movement? The fumes of NE + E region of aureole are very acid. J.A.G.

May 24 -

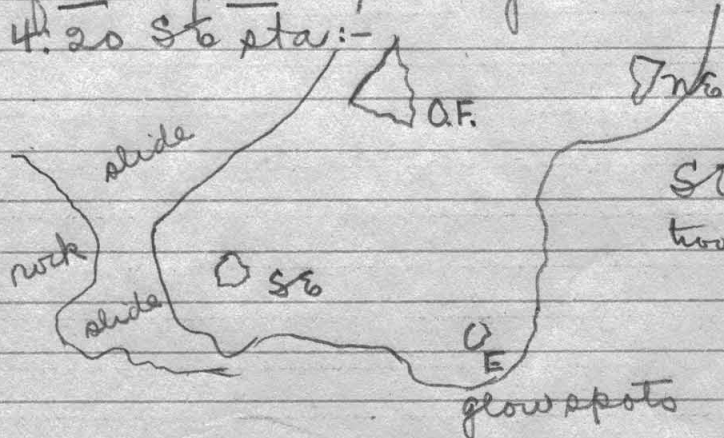
Afternoon and evening rainy and pit fummy. A few glow holes seen from SE; no flows. J.A.G.

Day Mon. Date May 25, 1914.
 Tues. " 26, "
 Wed. " 27, "

May 25-

3:30 p.m. Steady hiss O.R.H. Thudding, rumbling like boiling viscous lava. (Settlement in cracks shown N edge of pit. Filling of 30-inch crack back of NW station has settled 3 inches. Twelve inch crack 40 ft. in front of Tech. Sta. shows movement downward 4" of its wall on pit side. Platform W. diagonal timbers radial to pit pulled out $2\frac{1}{2}$ " ; settlement on outer side. E end O.R.H. crack opened? No motion at N sta. but big cave E of it. No changes on trail to N & sta. Blue fume place straight back from E sta. - makes eyes smart.)

4:20 S6 sta.:-

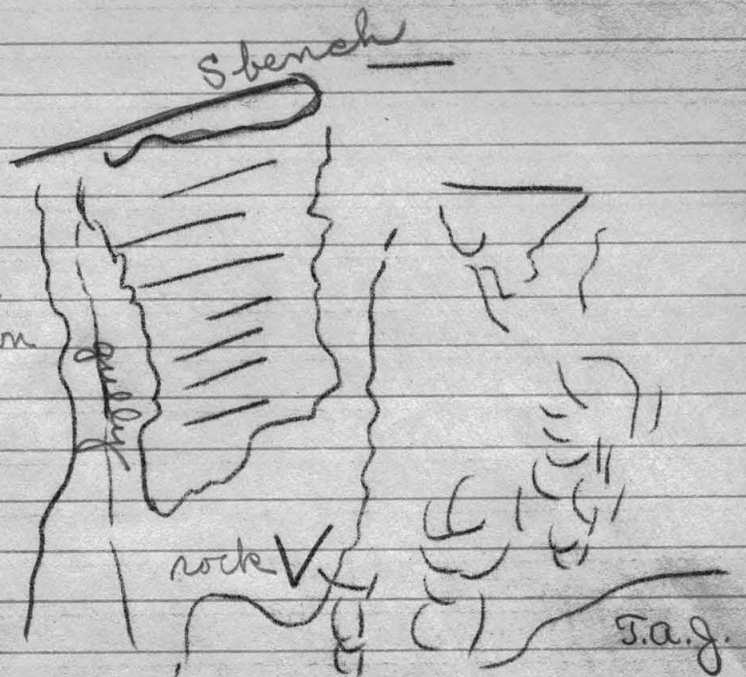


Black floor; no flows; hissing. Slide and S6 fumaroles appear to have changed greatly in two days.

Looking down at S6:-

The rock V under S sta. appears to have moved down. The S6 fumarole shows no sulphurous crevasse. Only some white rocks overhanging red bench 100 ft down under S6.

Hiss and rare rumble from S6. Noise goes up N.



May 26-

6:30 p.m. S6 sta. Large hole about 5 ft. long + 3 ft. wide in O.F. Boiling lava plainly seen in it. Occasionally would rush to top and flow out on floor. Many small glow spots on floor.

7 p.m. Got another view and saw O.F. shooting out lava quite a distance on the floor. Hole under N6 sta. glowing brightly. Rumbling & blowing. Cone under E sta. blowing out lava spray quite high. (Alex)

May 27-

SW wind. Fumes at V.H. Weak glow in evening. Continuous rainy days for many weeks past.

J.A.G.

WEEKLY BULLETIN, MAY 28 to JUNE 4, 1914,

inserted to cover period of absence

T. A. JAGGAR in Honolulu.

The week at Kilauea has passed uneventfully. No unusual phenomena have been observed nor any fluctuation in activity of noteworthy sort. Owing to rain and wind the volcano has been less under observation than ordinarily.

On May 29 fitful glimpses were obtained showing the usual orifices on the floor as well as those at the NW and E higher than the floor. All were brightly incandescent exhaling fumes copiously but with comparatively little noise of eruption. Frequent trivial slides were heard, indicative, in the judgment of the writer, of slow rising disturbing the lower stratum of talus blocks and thus producing sliding readjustments. Snapping sounds, as of rock cracking from heat, were heard very frequently indicative of increasing heat at the top of the magma column. Neither lava jets or flames were seen.

On May 30 conditions indicated a slight rise. Jets were springing from the WNW, the NE and the E cones and the noises of eruption had much increased. In the course of the evening the top of the NW cone was blown off and a flow poured out, gradually covering the floor of the pit. No flames were seen. Short slides were frequent.

On May 31 no flowing lava was seen. Lava jets were visible and the noises of eruption were relatively loud. No flames were seen. Slides were comparatively rare.

On June 2 conditions indicated a slight decrease. Jets, or sprays, of molten lava were thrown from O.F. and all the usual orifices were glowing brightly, particularly a long fissure in the wall under the E station. But no flows occurred, no slides were heard and no flames were seen. Noises of eruption were not quite so loud.

On June 3 again a slight increase appeared to be indicated. Jets were springing to greater heights and the sounds had increased in volume. Swirling magma was visible in O.F. which exhibited a somewhat enlarged orifice. No slides were heard and no flames were seen.

H.O.W.

KILAUEA DAY SHEET

Hawaiian Volcano Observatory

Day Thurs. Date June 4, 1914

t	sta	h. i.	pt	lev	vert	dif	dist	elev	NOTES
1 a m	With F. A. Perret at Halemau mau,								2:15 p.m.
2	tests with chemicals for various								<p>Small vent with yellow tasy salts. Acid to blue litmus. No fumes ammonia = no HCl T = 95 C. No H₂S (lead acetate paper) Smell SO₂. At edge of pit O.R.H. fumes acrid, ammonia fumes. Rod dipped in nitrate of silver & exposed to fumes, white precipitate, then in HNO₃ dil. precip. appears. Shows HCl. Noises in pit bubbling, hissing and thudding. 3:15 p.m. - Walked around pit NW, W, SW, S. Between W + SW a 15 inch crack open, & warm gas 50 ft back of edge, yellow alum deposit, smell of fresh sulphur? which Perret calls the solfataras smell. Thought it H₂S + CO₂ but no test H₂S with lead test paper. No rotten-egg smell. He does not know what gas it is. Partial seeing SW + S. 5 p.m. Went to auto terminus and tried various vents near outer top entrance. No strong smell. white gypsum crystals, white waxy deposit tastes like sal ammoniac + alum. yellow waxy deposit. Buff powdery deposits. Various iron stains. Ammonia fumes but no HCl test with silver nitrate. 6 p.m. Flow 18x60 + ENO base of wall pouring toward wall ENO. Zigzag pattern at its commencement, pours down + under crust where it ends. A number of chimneys in ENO wall.</p>
3	stituents of gas fumaroles.								
4									
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1 p m									
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t	cam	pl	no	lt	stop	ex	scr	dev	NOTES
t	loc	ther	temp	wea	NOTES				
2:15 p	Postal Rift	Perret's Map	305° limit of thermometer.		Perret had 305° in 1911 - limit. Acid test no HCl. By ammonia test, lime water emptied from vial into crack. fills bottle with gas + lime precipitates; immediate precipitation shows CO ₂ . Smell acrid.				

50g.

KILAUEA DAY SHEET

Day *Friday*

Date *June 5, 1914.*

t	sta	pt	hor	vert	lev	dist	elev	h. i.
		Visit to cone crater with F. A. Perret who also took photographs with his camera. <i>Jag</i>						

			no	pl	scr	stop	ex	cam
		Kau Desert wash	1	film				P
		Cone crater with Perret and Jaggar	2	"				"
		Puu Koaie from the North	3	"				"
		Pahoehoe Kau Desert	4	"				"
		(Perret)						<i>Jag.</i>



#1



#2

CP 121,438



#3



#4

Tag.

KILAUEA DAY SHEET

Day *Saturday* Date *June 6, 1914.*

t	sta	pt	hor	vert	lev	dist	elev	h. i.
		<p>With Perret to locality where he first found Pele's tears a spatter cone on cliff fissure upper rim of Kilauea crater at NW corner of crater S of Kaw road. Perret believes the spatter to be identical with lava of about 1880. The spatter droplets are distributed in the soil. Lava of cone appears fully as old as 1882.</p> <p style="text-align: right;"><i>J. a. g.</i></p>						

no	pl	scr	stop	ex	cam
1	Pele's Tears locality N edge Kilauea crater				<p><i>P</i></p> <p style="text-align: right;"><i>J. a. g.</i></p>



T.a.g.

Day	Sun.	Date	June 7, 1914
	Mon.	"	8 "
	Tues.	"	9 "
	Wed.	"	10 "

June 7 -

10 a.m. with Perret at S sta. Puffing loudly. Pot. E N₆ belching + splashing liquid lava. Strong puffing E. Continuous roaring hiss W. S. SW cliff fumaroles - more active. SW 200-ft bench fumarole - more active, yellow deposits on 200-ft bench + in talus E of it. SE fumaroles very active. SE cone belching out a lava flow on its SE aspect. No pot boiling actively. O.F. a cone with SE triangular hole, lava spouting. Activity rising. W or NW holes heard blowing like an engine + puffs at a time. No chimneys glowing. Disturbing black pebbly floor of fresh lava.

4 p.m. Much quieter. Noise mild splashing + blowing. Main flows N₆ + W.

4:30 p.m. Flow from O.F. westward. Some spitting out at source of flow. Cones SE, E, N₆ + O.F. hole. Occasional sharp hisses W. Perret collected "panache" O.R.H. vac. tube. Photos of talactites in cavern E. by Perret.

Tag

June 8 -

6:30 p.m. SE sta. Good seeing. Flow coming out of SE cone toward N₆ - about 20 ft. wide + very long.

7 p.m. S Sta. Many small flows on floor. O.F. spitting occasionally. Rumbling + blowing the same. Floor full of glowing cracks.

(Alex)

June 9 -

5 to 6 p.m. S sta. Set up transit but fumes prevented measurement. Occasional glimpses revealed E end of floor, very large black cone with glistening rounded surfaces and a hole on top near E end of middle part of floor. Against the wall on floor E N₆ is an unusually large open pot with lava splashing within. SE cone let seen but not O.F. A glow spot where O.F. supposed to be cools down + disappears. Cracks + glowing points on the floor indicate recent flowing. Noises loud - blowing + splashing.

5:15 p.m. S sta. Large pot boiling against wall E N₆. O.F. - SE with flow crackling. Hissing + bubbling noises.

Tag

June 10 -

6:30 p.m. O.R.H. Flow from under NW sta running toward O.F. - about 30 ft. wide + very long. Every part of floor seems glowing.

7 p.m. Many small flows on different parts of floor, cone under E station spitting. (Alex)

9-10 p.m. Seeing fair from S sta. Floor rising by many overflows as described 6 p.m. + by Alex. Whole floor covered with crackling + glowing flows, glow + flames from cracks and around edges. Open pot against E N₆ wall smaller than yesterday; another at N edge of floor. Large cone in E part of floor. Smaller filagree ^{cone} with blue flames N of it. O.F. in its position of recent dates not identified. Long N-S gash glowing + flaming high above floor in E wall. Another high above floor W end. W part of floor foundering, crust area with ragged jagged edge with flows welling up cracks, appears like a pool or a pooled part of a great surface flow. Noises blowing + hissing. General activity very high and floor appears larger than seen before this spring or summer. Evidently positive rise is in progress. Rare crackling sounds. Illumination of fume cloud moderate.

Tag

KILAUEA DAY SHEET

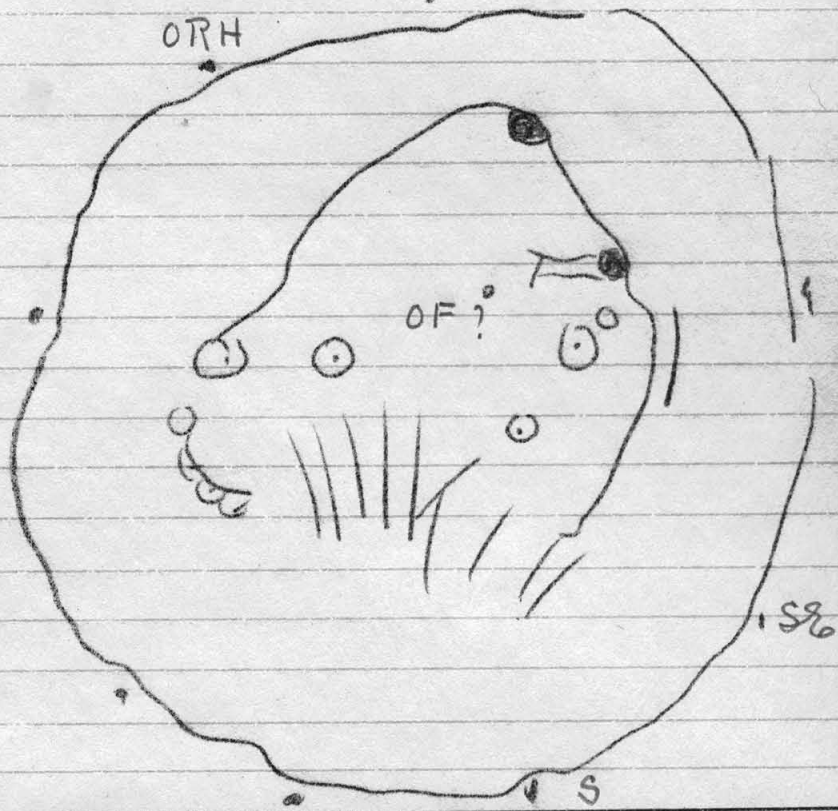
Hawaiian Volcano Observatory

Day *Thurs*

Date *June 11, 1914*

t	sta	h. i.	pt	hor lev	vert	lev dif	dist	elev	
1 a m									
2									
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10									
11									
12									
1 p m									
2									
3									
4									
5									
6	<i>June 12: -</i>								
7									
8	S		S5	0					
9	S		spread talus from S	58.24	44.4				
10	"		small from black floors	128.56	23.53				
11	"			47.43	43.41				
12									

June 11 -
 6:52 p.m. Spta. Cone under E sta. spraying hot lava on floor. No flows seen but floor full of glowing streaks. 7:15 from O.R.H. saw cone between W + NW sta. + O.F. blowing out lava. Rumbling + blowing. (Alert)



t	cam	pl	no	lit	stop	ex	scr	dev

June 12 -
 Stalactites on edge NW. Edge of pool seen E. Avalanche W about 5:40. Noises moderate puffing - continuous W.

June 13 -
 Evening - Bartley reports not much to see.

t	loc	ther	temp	wea

Mauna Loa -
 H.O.W. reports, June 15, three steam jets usual place 600' high + some others lasting for several hours.

Sag.

June 14 -

5+ p.m. Very loud roaring blasts in pushing spasms first one place then another heard from S & sta. From S sta. occasional peeing. Rapid rising; loudest blasts W. Flow from O.F. region S to talus. Flow festoons & crusts & breaks out below. Bubbling small fountain at about O.F. position, flowing W. Big cone W end of floor made out dimly. Do not see large cone E end of floor. At many points small holes apparently at source of flows on surface where confined gases are rushing out & hissing & spitting. Wall pots small but very active E, NE & N. Flaming gashes E as usual. Splashing pot in middle of W end. Noises in general very loud. W end large pool apparently with flow lines. Two high chimneys in W flowing. narrow cascade E end from a heap built against the wall rock.

6.4 p.m. noise much quieter. Fine views of W end as dark approached; showed the old procedure as 1912-13. Fountain rising extreme W end, wide flow pouring over the whole floor eastward. Pot maintained through it.





J.A.G.

KILAUEA DAY SHEET

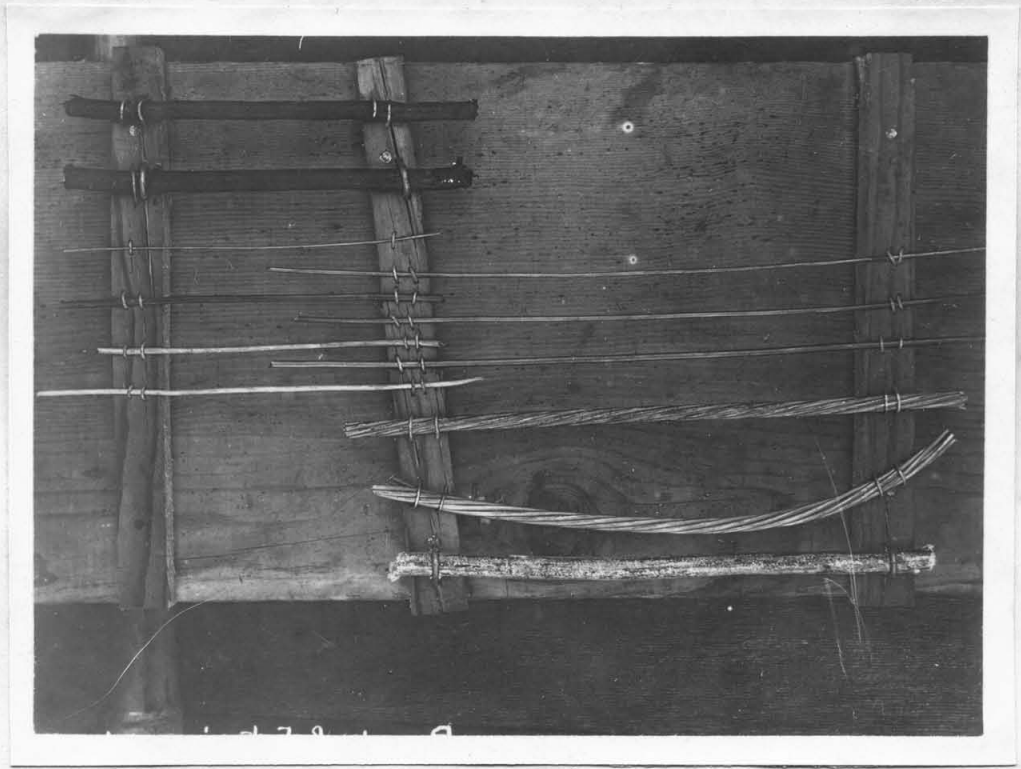
Hawaiian Volcano Observatory

Day Mon

Date June 15, 1914

t	sta	h. i.	pt	hor lev	vert	lev dif	dist	elev	NOTES
1 a.m.									<p>2:20 p.m. No seeing SB sta. Continuous hiss E. Not so loud as yesterday. Noises W, SW + S - strong puffing and spouting sounds W end of pool. Steady hiss E. like a pool W, and floor E.</p> <p>3 p.m. In W niche placed board covered with sample wires just where the cable was most eaten at head of niche.</p> 
2									
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11									
12									
1 p.m.	S		SB	0					<p>Placed it just under surface slab edge of cliff where a hollow was found. Set the board covered with wires in horizontally edgewise.</p> 
2	S		NE pot	41.32	39.25	-49	688	528	
3	SW		"	55.9	32.43	+3	832	531	
4	SW		S	0					
5									<p>Found place by stepping down two steps over cliff toward bottom of niche. Alex + Jagger placed the board. The board 1x12, 2 ft long with cleats nailed across & the various wires & cables attached to the cleats by gal-</p>
6									
7									
8									
9									
10									
11									
12									
t	cam	pl	no	lt	stop	ex	scr	dev	LOC
									<p>vanzed iron staples. Duplicates labeled kept of all samples in pasteboard box in Director's room. Samples furnished by Hawa. Electric Co.</p> <p>5.15 p.m. Wind change. Seeing from S sta. Depth 530 ft below S rim to NE pot.</p> <p>Test wires.</p> <p style="text-align: right;">S.A.G.</p>
	4x5								
t	loc	ther	temp	wea	NOTES				

S.A.G.



S.a.g.

Day	Date
Tues.	June 16, 1914
Wed.	" 17, 1914
Thurs.	" 18, "
Fri.	" 19, "
Sat.	" 20, "

June 16 -

5:50 p.m. S sta. Rainy + windy. Fumes too thick for seeing. Got one glimpse + saw no flows slow in O.F. locality + in cone under NE sta. Many glowing spots on floor. Noises the same. (Alex)

June 17 -

11:30 a.m. No seeing SE or NW. Steady hiss center + E. Puffing W. Fumes at O.R.H. very acid. No avalanches heard. Drizzle. Last night a mild steady glow. (J.A.G.)
 5:30 p.m. Got a glimpse of O.F. It was blowing out lava on the floor. Cone under E station very noisy. Strong wind + pit full of fumes. From SE station. (Alex)

June 18 -

5 to 8 p.m. S station. Little seeing at first. Improved toward evening as wind drew Westward. (Is there a systematic wind change?)
 6:30 to 7:30. Fine view of many spitting holes E floor. Small wall pots NE + N. Cone under steep wall under flaming gashes E. High inclined spatter horn SE. O.F. spouting "dross" 50 ft. high at intervals of 40 sec. Pasty lava bubbling pluggishly at a place just W of O.F. SW border a large dome flat with a fountain on top which poured radial flows down all sides! Largest eastward, which forked into lobes. At W end a spouting cavern under wall which ejected splash down a half-cone to the floor. NW end another pot against wall seen rarely. Fierce hissing from a NE cone on floor and from O.F. Intense rising activity still going on. The SE talus fumaroles appear wider than ever, creeping higher, and the talus under the V nearly gone. (J.A.G.)

June 19 -

10 p.m. Flaring glow very fine. Reports from crater same as last night with increased activity. (J.A.G.)
 4 p.m. SE sta. Loud rumbling. Glimpse of floor on E side. Cone under E sta blowing lava spray high in air. 4:16 p.m. Another view. O.F. seen blowing lava on floor. A wide flow from NW edge of floor passing by O.F. and going toward the east. O.F. noisy.
 6:25 p.m. S sta. Cone under NE sta sending out lava spray some distance on floor. Many holes and glowing cracks on floor. Loud roaring sounds. (Alex)

June 20 -

5 to 6 p.m. Strong NE winds. No good seeing. NE pot, E gashes, ENE filagree cone black floor, glow at O.F., no flowing. The talus over the SE fumaroles almost gone. Fumaroles apparently in cracks of bedrock. Noises quiet. Puffs (J.A.G.)

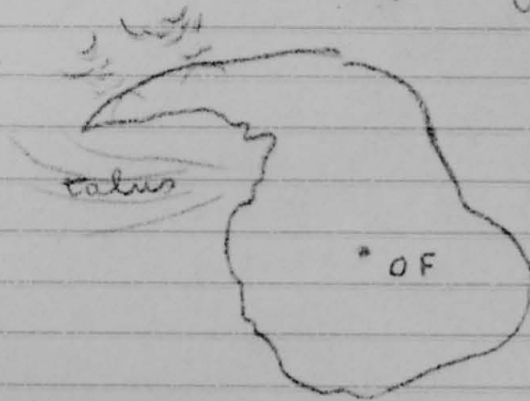
Day Sunday Date June 21, 1914
 Monday " 22, 1914

June 21 -

5 p.m. O.R.H. Two glow spots NW wall. Blowing E + W and big puff in middle once in 40 to 60 seconds, probably O.F. Hear spatter fall after some of the O.F. puffs. Secondary puffs 10 to 12 seconds, as a whole noisy. Faint rumble occasional. One small rock-slide NE.

5:15 p.m. S station. Strong fumes from SE fumarole coming up E + SE. Strong also S. Hear slide E again. These and the O.F. puff sound like subsidence. Hissing NW from wall openings.

6 to 7 p.m. with Harrison and Fowler. Rainy. Seeing poor S station. Noises strong. Better seeing W and NW. From NW floor on W side seen 3 cones edge of floor flaming and jetting and blowing pluggishly. Round black vertical hole high on wall W without any activity same as last year. Strong puff 50 to 60 seconds O.F. Two avalanches earlier: quiet later. No high gashes W wall! What has been mistaken for flaming high gashes W from S station for some time back is the point of a horn in shape of floor.



Faf

June 22 -

3 p.m. SE. Large flow seen coming from O.F. flowing SE. Seeing poor. Rumbling sounds heard. Blowing as from hole under NW station. At 5 p.m. flow from O.F. stopped. Lava spray blowing out instead.

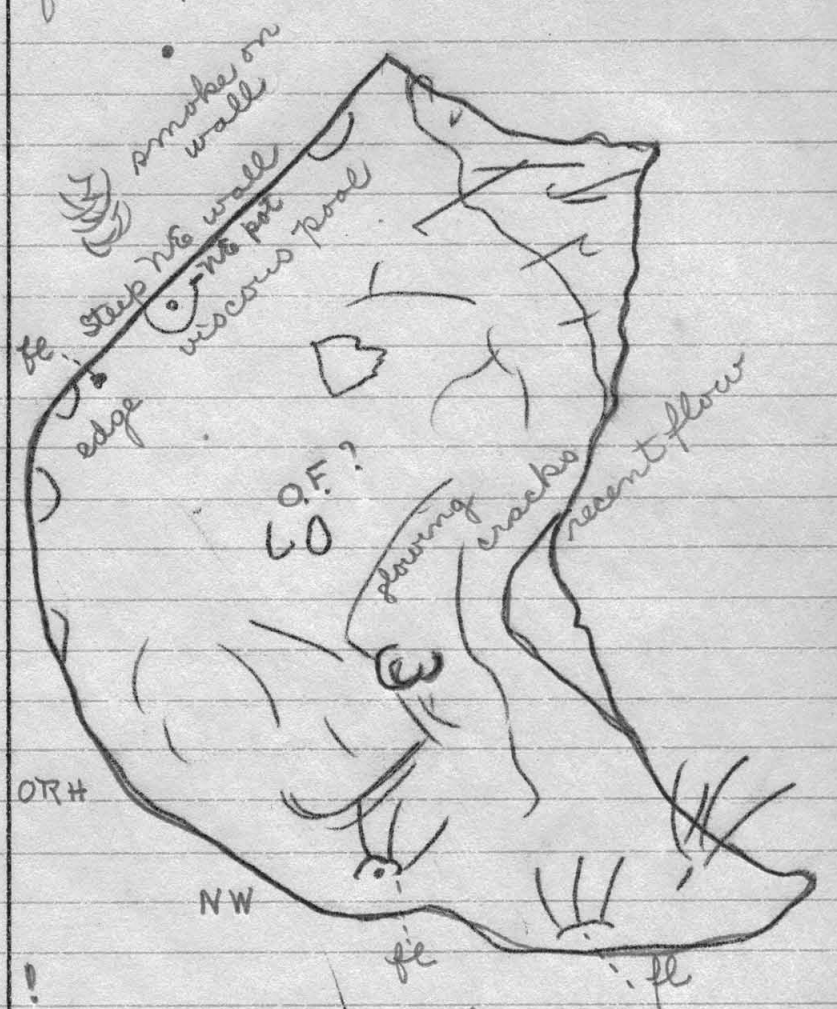
Alef

KILAUEA DAY SHEET

Massachusetts Institute of Technology
 Hawaiian Volcano Observatory
 Day *Jues* Date *June 23, 1914*

67

t	sta	h. i.	pt	lev	vert	dif	dist	elev	NOTES
1 a m									Noisy at first at S sta. no seeing. Quiet after 10 p.m.
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12									
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8									
9									
10.15	NW		No pt?		36.56			554 !	
11									Shape pool from NW.
12									fl = flame.



t	cam	pl	no	lt	stop	ex	scr	dev	LOC

t	loc	ther	temp	wea	NOTES

F.a.g.

Day	Wed.	Date	June 24, 1914
	Fri.	"	26, "
	Sat.	"	27, "

June 24-

2:30 p.m. O.R.H. Very little of floor to be seen. Cone under WNW station jetting lava high into air and out on to the floor, there are two holes on top of cone.
 3:4 p.m. Had good view of floor. A large flow has covered it. Location of O.F. hard to find. Cone under WNW sta. still blowing out lava with a great noise. At 6:25 saw all three cones - WNW, NW + SE - all sending out laval spray noisily. (Alex)
 8 to 9 p.m. Open at O.R.H. + W. Not so active as last night. Same scene. Spatter cones building (2) under NW wall. Large cone with open orifice spouting WNW + smaller one point of W cone. Flames numerous. Mild blowing. One rock-fall W. Brightest glow at night this week. The marked spattering at the W and less activity E suggests what has been the rule in late years - rising in small fountains W, + steaming towards down-suck region E. (Jaf)

June 26-

3:50 p.m. SE sta. Had view of floor but could see no fire. Blowing + rumbling under WNW station.
 7:30 p.m. S sta. Good view of floor. New flow had covered it. Cool top full of glowing cracks. Cone under WNW sta. + that under NW spouting. Loud blowing and rumbling sounds. (Alex)

June 27-

6:30 p.m. SE. Cone under E sta. spouting lava on the floor. Rumbling and puffing.
 7 p.m. S. Floor in bottom full of glowing streaks. Two cones under NW station active. A few rock-slides. (Alex)

KILAUEA DAY SHEET

Hawaiian Volcano Observatory

Day Sun Date June 28, 1914

t	sta	h. i.	pt	hor lev	vert	diff	dist	elev
1 a.m.	S		cone in valley S edge	55.43	48.22		420	473
2	"		O.F.	53.10	35.37		714	510
3	SB		"	274.51	41.51	+5'	576	523
4	"		Score	304.40	48.55	+6'	422	482
5	S		SB	0				
6	SB		S	360				
7								
8								
9								
10								
11								
12								
1 p.m.								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

Mild hissing S station. Fresh small flows
 New cone up S talus. O.F. + West of O.F.
 two open pots. Filagree cone S. Wall
 pots S. No fan flows. SB large glow
 edge of flow.
 Measurements made
 Depth to O.F. - 517 ft.
 " " Score - 478 "
 Height Score over floor - 39 ft.
 from mean point between S and SB
 stations.

t	cam	pl	no	lt	stop	ex	scr	dev

LOC

t	loc	ther	temp	wea

NOTES

T.A.G.

Day Mon Date June 29, 1914.
 Wed. July 1, "
 to Mon. " 6, "

June 29 -

5:20 p.m. NW. Eleven cones seen on floor - quite high but only a few active. Mild rumbling + puffing. Glow to be seen in all cones. Few slides below W station. At 6:40 from O.R.H. the floor looks much the same. Glow in cracks. Few slides.

(Alex.)

July 1 -

5 to 8 p.m. Afternoon set up and cleaned the station Omou middle seismograph. All afternoon heard loud rhythmic puffs and strong hissing. Avalanche at 6:15 and again at 7. From S station the eleven glowing cones seen ^{after dark}. Open pots at W end, O.F. east of O.F. + E end. Large glow cone on S talus, grown since two days ago. At 7:15 p.m. O.F. raved in + made a large pot with pool splashing violently + flaming on the clouds, size about 40' x 25'. The E pot has huge stalactites hanging over liquid lava beneath. The E chimneys have diminished in size and brightness. Fresh flow on SE floor. Fumaroles very voluminous vapor.

July 2 -

Evening. Floor hissing. Cone over O.F. High cone in S talus. Flames. Activity moderate. Some slides. Open pot E.

July 3 -

Evening. Puffing stronger. Splashing pot O.F. High cone S talus. 10 or 11 other cones. Flaming chimney E. Fountain + stalactites O.F.

July 4 -

3:30 p.m. Faint bubbling noises from SE. No seeing. Distinct fountain noise.
 Evening same as yesterday.

July 5 - 6 to 7 p.m.

Professor E. C. Moore, of State College, Pennsylvania, reports conditions the same. O.F. slightly enlarged its pot to the N and more violent fountaining. Flaming chimney E end, very active, ^{with} blue smoke. Noise continuous hiss E; and S cone loud puffs every 3 or 4 seconds. S high fumarole at 200' level very dense fume. O.F. bursting in pool.

July 6 -

5-7 p.m. S sta. At first poor seeing. S cone big - spitting lava SW side of summit. After 6 p.m. some clearing. O.F. a long pool NW - SE with baby fountains, at least 80 ft. long; pointed at ends; nearer NW well than S. Cone NW + SE + E.

S.A.G

1914

August - November

Aug. 12			501 down
Oct. 12		General Incandescent	498
		pattern	
Oct. 21			516
Nov. 9			469
Nov. 21	3	Volcano House	

KILAUEA DAY SHEET

Massachusetts Institute of Technology

Hawaiian Volcano Observatory

Day Thursday

Date July 9, 1914.

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

no	pl	scr	stop	ex	cam
1	Earthquake slide NW part Kilauea crater	film			P
2	Rift NW floor Kilauea	"			"
3	Pahoehoe NW part "	"			"
4	Festoons " " "	"			"
5	Spatter grotto " " "	"			"
6	W wall Kilauea	"			"
7	Perret's Cone	"			"
8	Cavern collapse NW part Kil.	"			"
9	Gas blister " " "	"			"
10	Intrusions W wall Kilauea	"			"
11	O.R.H. West end Halema'au	"			"
12	" " " NW niche "	"			"
13	" " " NW floor + wall chimney	"			"
14	" " " observatory	"			"

S.O.G.



#1

Sag.

73a

1914, July 9.



Bas

#2

73b

1914, July 9.



#3

S.A.G.

73c

1914, July 9.



S.A.G.

#4

73d

1914, July 9.



S.O.S.

#5

96705

74

1914, July 9.



R.O.S.

L#

74a

1914, July 9.

CP 96706



S.A.G.

#9

75

1914, July 9.

CP96707



#8

S.A.J.

76

1914, July 9.



S.O.S

#10



#6



#11



#14



#12

S.A.G.

77a

1914, July 9



B. 05

#13

Day	Wed.	Date	July 8, 1914
	Thurs.		" 9, "
	Fri.		" 10, "

July 8 -

6:50 p.m. S sta. Good seeing. O.F. spitting; also cone under S sta. Floor covered with glowing cracks. Rumbling + blowing. No flows + no slides. (Alex)

July 9 -

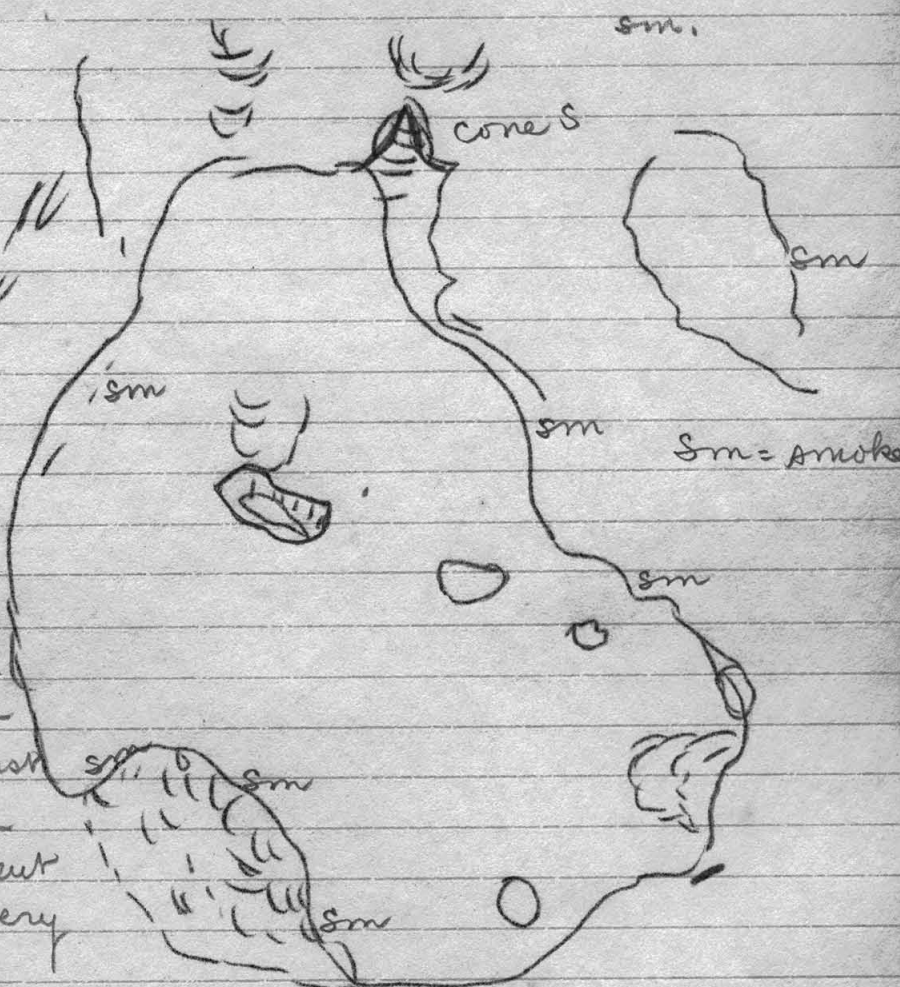
11:30 a.m. S sta. Wind N6. Pit open SW. Not much seeing. Noises: puffing W and hissing E. Not loud. Fumes dense. Take 12 photos 3x4 film NE part crater.

12:30 p.m. O.R.H. Wind E. Good seeing. One fumarole and small low talus under O.R.H.



Three cones W end, largest under W niche. Floor has changed shape, risen, W end. Activity mild. Black stalactites in O.F. pot and black skin on sluggishly boiling pool. No big domings. Rumbling O.F. + sharp puffs from S cone. A little talus sliding WSW + S.

Twelve fuming places in all. Cone puffs loudly S; very high, certainly 30 ft. Stands well above the floor with lava flows from it on the slope. O.F. sluggishly bursts every 35-40 sec, followed by a subordinate interval 12-15 sec. Sometimes splashes over whole rim. Length O.F. 1/20 of floor or say 50 ft long. Lava of O.F. soft black mush otherwise. Red when it bursts. The round craterlet in NW wall unaltered. Big filagree haystack against base of WNW wall. Floor has surface flows of pahoehoe - glassy + different lustre from those beneath. Floor very flat.



T.A.G.

July 10 -

7 p.m. S sta. O.F. pot boiling and throwing out lava. Little cone under S sta spitting + making a loud noise.

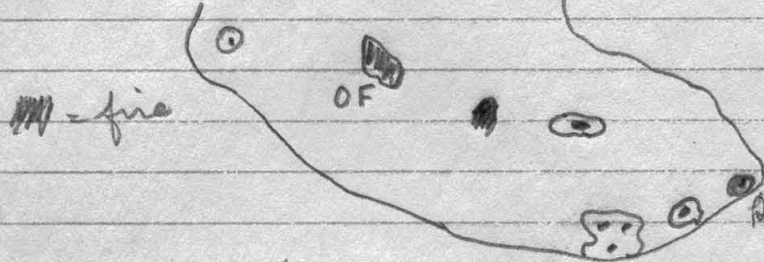
7:45 p.m. E sta. O.F. pot about 30 ft wide + 50 or more long. Not good seeing. Rumbling everywhere. (Alex)

Day	Sat.	Date	July 11, 1914
	Sun.		" 12, "
	Mon.		" 13, "

July 11-

3 p.m. No seeing S.E. Wind change. No seeing O.R.H. Glow hole W. Hissing W to E. Furnes strong. Weak thudding O.F. ?

4 p.m. NW sta. Smoke appears unusually brown - this a.m. and now.



Evening: Flow from W reported. Great activity. Cracks under E chimney

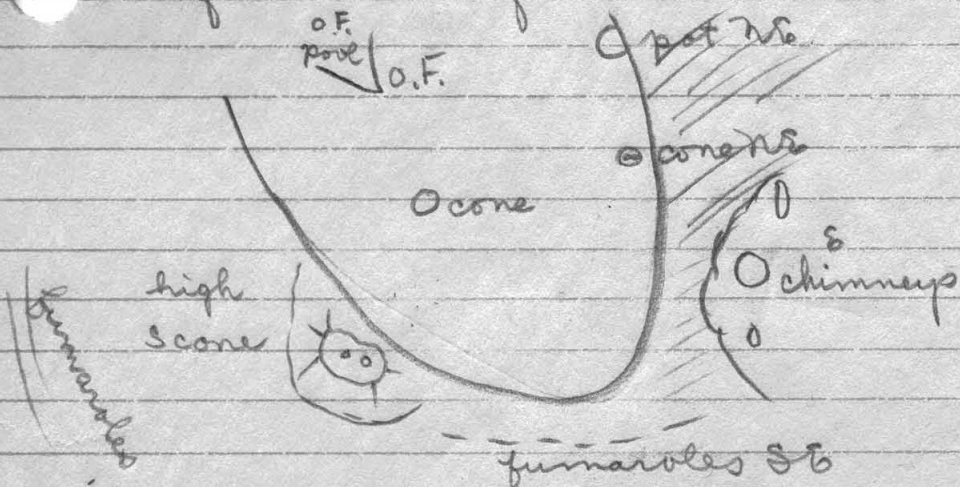
10 p.m. H.O.W. reports 2 or 3 flowing Vs at W end. Very thin flow over W half of floor. O.F. active but smaller. Cracks glowing in wall under E chimney. No avalanches.

July 12 - W.W. Thayer reports no seeing all afternoon. Evening poor and fummy. Noises loud from the W. No avalanches.

July 13-

5 p.m. No seeing. Opening however at S sta. S.E. fumaroles dense. S cone hissing strongly in blasts every 3 to 5 sec. Occasional puffs from W. S fumarole dense. Drizzle. Large E chimney glowing.

S cone appears higher than ever + from this point of view appears now to rise from a black swirl of lavas. Has the floor risen by overflow to its base? No.

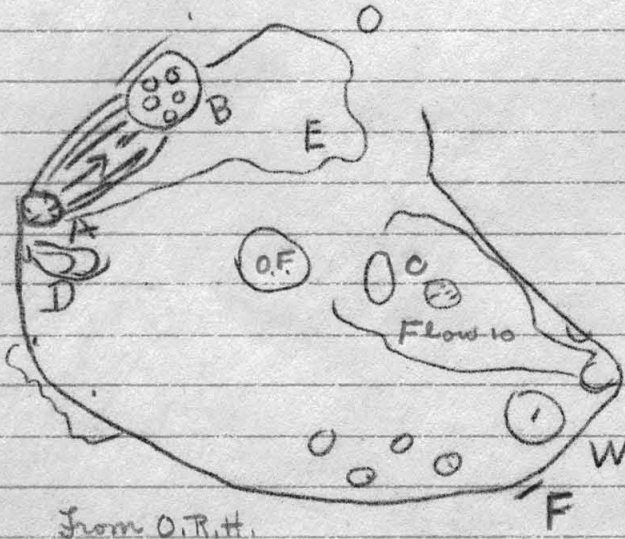


Pool from S station.

T.A.G.

July 14 -

8 to 9 p.m. O.R.H. Fine glow.



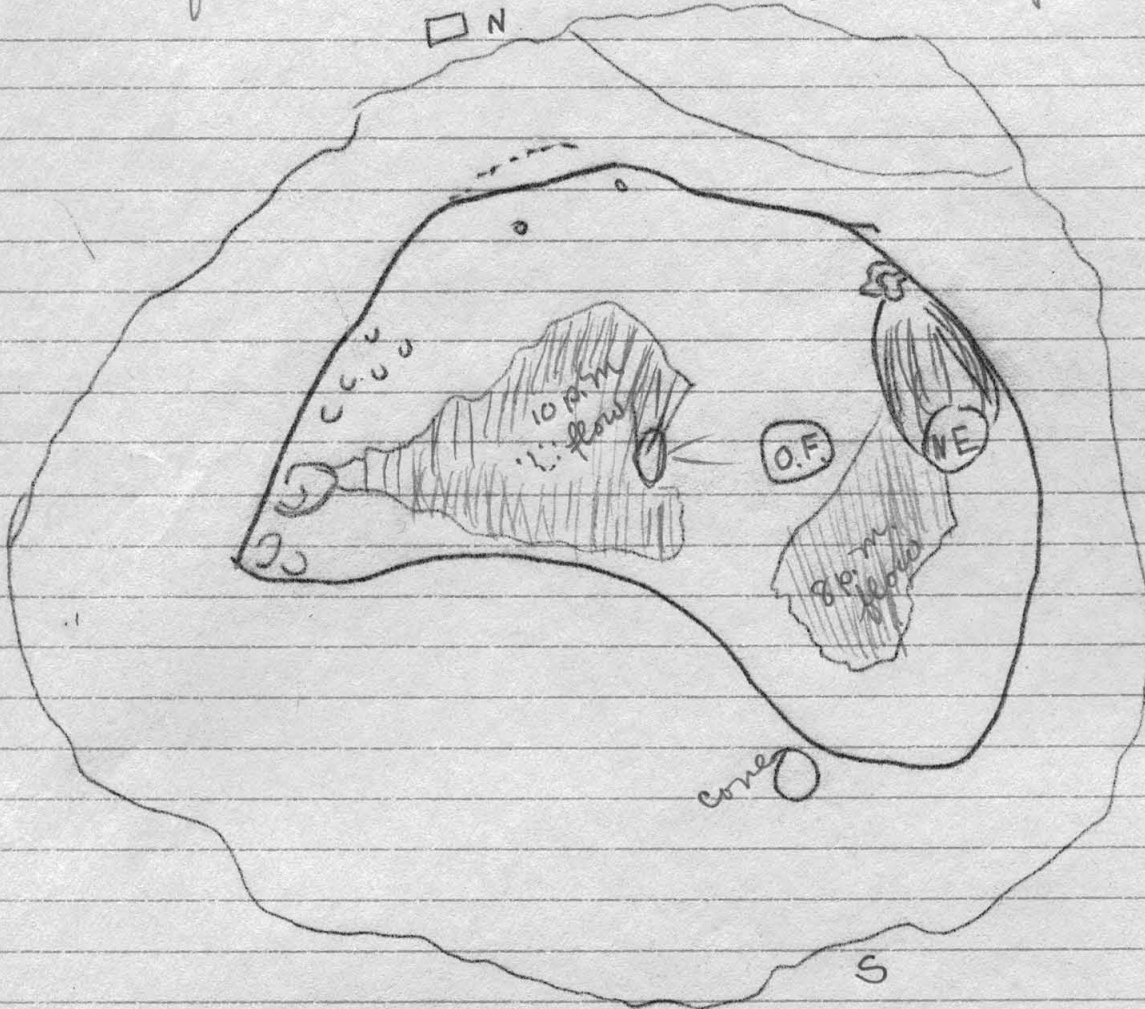
From O.R.H.

A to B a flow up A like artesian well, down B with much fountaining. O.F. circular and fountaining and ^{over}brimming. For twenty minutes watched flow and overbrimming of these places.

C jetting spray up 30 ft. D spitting out a short flow. Overflow on floor E from the stream between A and B. After this the stream stopped, B became a fountaining pot about same size as O.F. with baby fountains, C stopped jetting except rarely. During the high activity of these places the W end flaming very hot & yellow the brightest glow on the field. Twenty-two or

twenty-three glowing holes in all. F crack at W end very bright banner of flame. Tested 12 minute period alternate rise + fall. Ended with fall - after 3 periods.

10 p.m. Flow from SW corner, reported by Mr. Thayer.



Sketch evening, from S station by W.W. Thayer + J. Jaggan.

15 to

July 15 -

4 p.m. Reported that whole floor was seen from E. O.F. + NE pots low + sluggish. One heavy avalanche. Light SW wind.

8 p.m. How reports O.F. + hole W of it, bubble fountains about 10 ft. down, steady blowing noise, about 3 light trickling avalanches. In general low surface activity.

T.A.G.

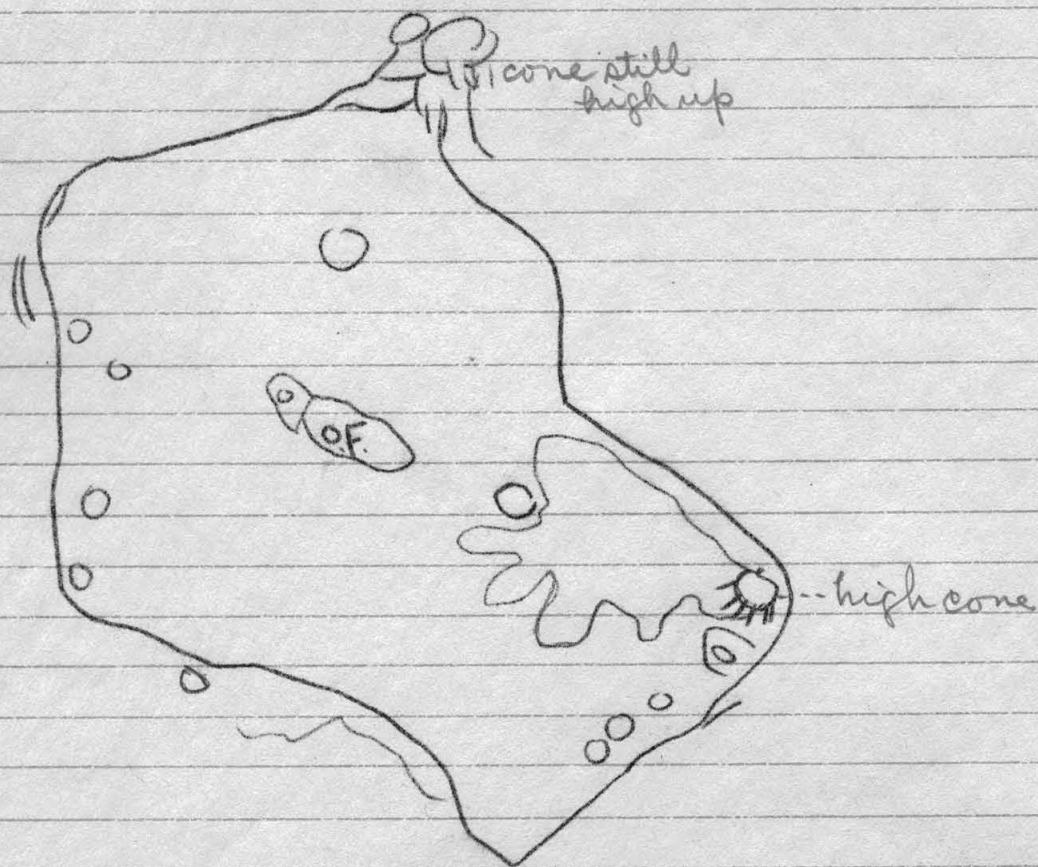
Day	Thurs.	Date	July 16, 1914
	Fri.		" 17, "
	Sat.		" 18, "

July 16 -

10 to 12 a.m. Walked past to small aa from Peanakahoi to Halemauunau. Photo of toes and aa.

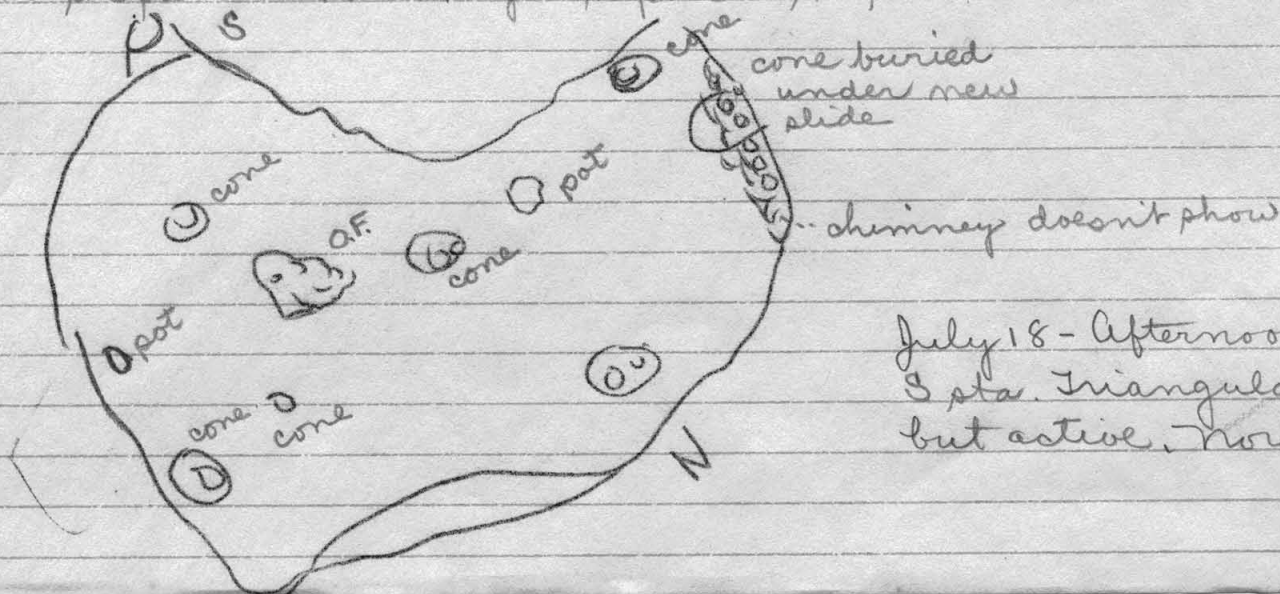
Halemauunau 12 to 1. Lull and change in wind to E (as several days ago). Open bottom from NW, N, + NW sta. From N sta. see high cone built up 20 ft. ± in extreme W corner. PHOTO. This the source of Thayer's flow two nights ago. Long E-W slot in cone against WNW wall stopping lava. N-S cracks in wall N of it. O.F. about 10 ft. down, stalactites, active glow, bubble fountains moving from E to W occasional O.F. explosions, steady hiss from S cove. 5 open pots + cones NW. One avalanche E. S cone base still high above floor.

An opening in a low cone over E end of O.F.:-



July 17 -

12:45 p.m. Seeing from O.R.H. Noise steady hiss from S cove. Conditions in general the same. Last night reported the same with activity S. Photos.



July 18 - Afternoon. Slight seeing from S sta. Triangular pot NW, O.F. small but active. Noises as usual.

J.A.G.

KILAUEA DAY SHEET

Day *Thursday*

Date *July 16, 1914.*

t	sta	pt	hor	vert	lev	dist	elev	h. i.
			no	pl	scr	stop	ex	cam
		Aa flow E. Kilauea crater	1	film				P
		Source of above	2	"				"
		Joos eastern part Kilauea crater	3	"				"
		The Peak " " "	4	"				"
		Long toe " " "	5	"				"
		Joking toes " " "	6	"				"
		Elephant toe " " "	7	"				"
		Joos E. part Kilauea crater	8	"				"
		Cone W corner Halemaemau	9	"				"
<i>1 p.m.</i>	<i>N</i>	" " " "	10	<i>W.P.</i>				"
<i>"</i>	<i>"</i>	<i>O.F. pot floor</i> " "	11	"				"

Tag.



#1



#2



#4

S. a. g

83a

1914, July 16



Sag

#13



#5



#8



#6



#7

S.a.g.



#9

Sag.



#10

5.29



Fig.

11

KILAUEA DAY SHEET

Day *Friday*

Date *July 17, 1914.*

t	sta	pt	hor	vert	lev	dist	elev	h. i.	
			no	pl	scr	stop	ex	cam	
		Glassy lava S bay Kil. crater	1	W.P.				P	
		Ash beds over basalt S wall Kil. crater	2	"				"	
		Viscous extrusions S bay Kil. crater	3	Seed pan			snapshot	G	
		Driblet cone S bay Kil. crater	4	" "			" "	"	
		High spiracle " " "	5	" "			" "	"	
		Spiracle built above crack S bay Kil. crater	6	" "			" "	"	
		Ash beds S wall Kilauea	7	" "			" "	"	
		General view S bay looking S	8	" "			" "	"	
		Cavern S bay Kilauea crater	9	" "			" "	"	

T.A.G.

Ms. G. 2, Box 2, 4

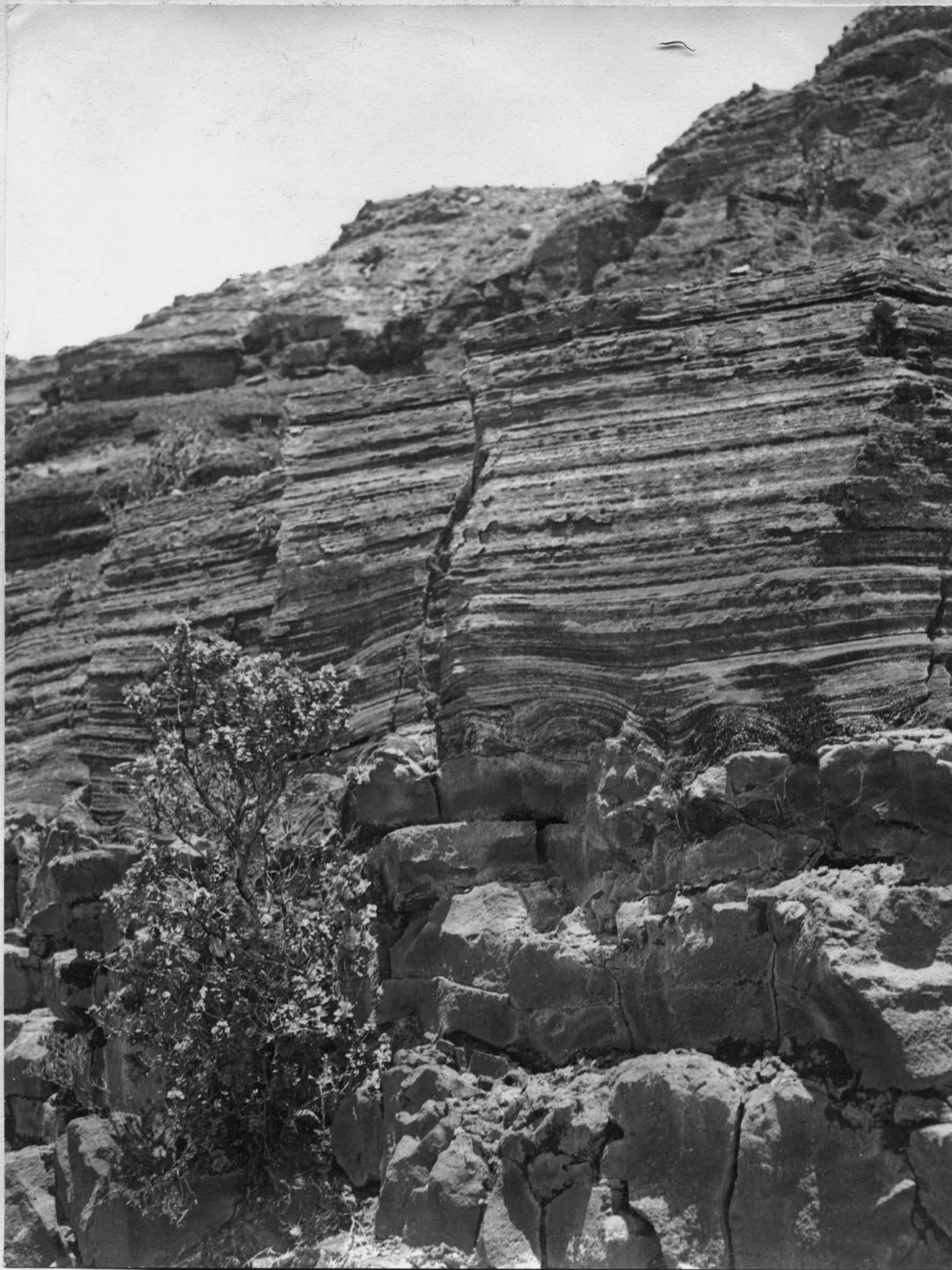


#1



#5 CP 101, 351

5a.g



#2

5.09



Bas

3

Bos



#4



#6

S.A.G



#7

S.A.G.



B.G.S

#8

Box



#9

t	sta	h. i.	pt	lev	vert	dif	dist	elev
1 a.m.	N	4 fr.	loc 9	79.31	46.43			
2	"		" 2	75.54	44.58			
3	"		" 16	80.0	44.4			
4	"		" 17	100.50	40.18			
5	"		Rock 3	62.0	42.56			
6	"		S. 3	63.39	42.56			
7	"		Loc 1	96.5	42.18			
8	"		Loc 8	99.34	50.50			
9	"		Loc 10	99.37	45.0			
10	"		Sum cone 5	40.41	34.11			
11	"		loc 7	31.5	39.20			
12	"		Sum cone 6	35.2	37.12			
1 p.m.	"		loc 18	24.45	31.44			
2	"		app. loc 11	106.22	32.46			
3	"		loc 15	37.4	35.8			
4	NW		N	300°				
5	N		NW	0				

Instrument 3 fr. S of post.

Pool from N Sta

Fumes. No intersections

- 1 - a Δ hole with lava within.
- 2-16 - long O.F. bursting
- 3-4 - cones
- 5 - big cone
- 6 - wall cone
- 7 - glow crack
- 8-9-10-17 - small holes + cones
- 11 - high chimney

t	cam	pl	no	lt	stop	ex	scr	dev

LOC

12-13-14-15 - corners

Condition of pit about the same. No marked changes. Usual hissing. O.F. increased 10 to 12 a.m.

t	loc	ther	temp	wea

NOTES

T.A.G.

WEEKLY BULLETINS, JULY 20-29, 1914
inserted to cover period of absence
T.A.A. JAGGAR in Honolulu.

During the week ending with July 22 the action at Kilauea has been more than commonly instructive; -- though perhaps a little less brilliant and spectacular than just previously.

On July 16, for over an hour, from noon to one o'clock, there was good seeing from the NE, N and NW stations. From the N station the cone on the floor in the west corner, some 20 feet high, was clearly seen. From this cone came the flow seen at 10 p.m. on July 14. Against the WNW wall there was a cone with a long E-W slot-like opening out of which lava was slopping. North of this there was a N-S chimney in the wall. Old Faithful was an open pool with active glowing lava at a depth of about ten feet below the adjacent surface. It was rimmed with stalactites. In it were bubble fountains playing continuously and moving from E to W, and occasional large fountaining movements. The E end of the Old Faithful pool was crusted over and surmounted by a low cone in which there showed a small opening. From the S cone came a loud, steady hissing noise. The base of this cone was still high above the floor on the talus. At the NE there were five open pots and cones. One avalanche was heard in the talus in the eastern part of the pit.

On July 17 there was good seeing a little after noon from near the O.R.H. Conditions were practically the same as on July 16. Most of the noise of eruption came from the S cone; a steady, sharp hissing.

In the afternoon on July 18 the seeing was not very good. From the S station conditions were seen to be much the same as on July 16 and 17. A triangular pot was noticed on the floor at the NE. The Old Faithful pool was smaller but it still showed active fountain action. The sounds of eruption were as usual.

In the early morning of July 19 the fume cloud was brilliantly illuminated with a steady light, punctuated with very bright flaring. From 10 a.m. till afternoon there was partial seeing from the N station. Old Faithful was an active fountaining pool the size of which enlarged considerably during the interval of watching. There was sound of steady hissing, probably coming from the S cone.

On July 20 in the early morning hours there was a very prolonged and very brilliant illumination of the fumes, with bright flaring, indicating, probably, a large flow of considerable duration. From about 4 p.m. until about 9:30 p.m. there was good seeing from the vicinity of the O.R.H. Before nightfall there were a number of prolonged intervals, some of several minutes duration, during which the pit was almost free of fumes. The floor area was covered with coarsely festooned, fresh, bronze tinted lava the surface of which presented a "checked" appearance somewhat like the check patterns in cross-sections of dry wood, or the bark of some trees. A very fresh flow, probably that of the morning, from the two cones at the north edge of the floor covered from two-thirds to three-quarters its area, extending to the edge all along the northern and eastern borders of the floor. This had almost obliterated, temporarily, the Old Faithful orifice

which now consisted of a narrow crack with an aureole of very small cracks marking its periphery, all evidences of a cone having disappeared. The central crack perceptibly enlarged during the watch but the pool did not re-open. There were two active "bee-hive" cones in a line NW from Old Faithful from both of which at considerable intervals small red hot lava fragments were ejected. Similar ejections took place from the NW and WNW cones, in the neighborhood of which were small fresh flows with complexly draped surface forms. There were several gash orifices in the floor along its ENE margin and at the N and NW. Besides these the high ENE chimney and an orifice a little lower down at the S were seen very distinctly. From this latter orifice a fresh lava cascade fell down the talus slope to and out onto the floor. Though well developed when first seen this cascade was still in action, and continued to work throughout the stay at the pit. Its action was very instructive. No description of such behavior has come to the writer's notice, though it must have been observed many times in former days at this volcano. The cascade was seen clearly by daylight and the surface color of its lava, where cooled, was strongly suggestive of a straw-yellow transparent color laid over a metallic bronze. Its surface structure, or miniature physiography, appeared as a system of tubes, probably from six to eighteen inches in external diameter, some leading in a fairly straight line down the slope, but many very complexly contorted and so arranged as to suggest a badly tangled knot of fire-hose or hawsers, all leading down fan-fashion to the floor and then out upon it, appearing there as a group of "toes" or "pushes". An incessant crackling sound, with a subdued tinkling note, proceeded from this cascade, due to the rending of cooled crusts as the action described below went on. First from one and then from another of these tubes tiny, sluggish flows were seen oozing out. These soon cooled over thus extending and complicating the tube system. Some of these outbreaks occurred at or near the ends of the tubes on the floor, others broke out higher up the slope forming new tubular segments branching from a small parent tube. The supply of lava welling up at the source was scanty, and it appeared to be very viscous, oozing slowly down the tubes. This action, while much less spectacular than a "waterfall of lava", and in no sense like such a down-pouring, was extremely instructive, illustrating clearly the mechanism and manner of formation of the tubular cascades so many of which may be seen in various parts of the main crater. An intermittent flame was flaring at the orifice at the head of the cascade.

A yellowish white luminous flame burned for some seconds at a small orifice in the surface of the fresh northern flow early in the evening. The usual blue flames were flaring from all or nearly all the well defined orifices. Rhythmic gas discharge sounds were heard coming from the S cone and a continuous surging sound punctuated with booming noises from all parts of the floor. Relative to earlier stages of the present revival of activity these sounds were not loud. A few very trivial rock falls occurred.

In the afternoon and evening of July 21 there were excellent views of the floor from the O.R.H. All the cones and orifices seen

on the previous day were seen clearly. The Old Faithful place had again become a small pool with incessant boiling and occasional doming-fountain action when large splashes of molten lava were thrown out upon the floor. Similar action was seen in the cone under the WNW station. Altogether there were fifteen orifices in the floor area in which boiling lava was plainly visible. Besides this there were many cracks in the floor, through which brightly glowing lava could be seen. More than at any time of late the appearance of the floor suggested a great lava lake beneath with a comparatively heavy "ice" of lava-crust breached by numerous cracks and "breathing holes". No flows occurred and no avalanches were heard. Steady hissing was heard from the S cone interrupted by loud puffing sounds.

In the late afternoon and early evening of July 22 there was good, but interrupted, seeing of the eastern part of the pit-bottom from the S and SE stations. Old Faithful was a pool of nearly rectangular form with rounded corners about 25 by 35 feet in dimension in which at a depth of six to ten feet below the adjacent surface there was incessant boiling with appearances of streaming from W to E. Occasionally at irregular intervals of more than one minute, there was the characteristic doming-fountain action, but no out-splashing was observed. Heavy stalactites rimmed the pool. Small, short radial cracks were seen leading from the high active ENE chimney. The gash orifices in the floor at the E and NE were as usual and the usual hissing and puffing emanated from the S cone. Brief glimpses of parts of the western part of the pit disclosed the conditions seen on July 20 and 21 without significant change.

Just before 8 p.m. a slight change in the wind drove the fumes up over the SE margin of the pit necessitating a somewhat prolonged exposure to them which fixed attention on the fact that the fumes from the pit itself are now much sharper, though thinner, than earlier in the year.

H.O.W.

Until the very end of the week under report there had been very little change in the eruptive behavior of Kilauea. But in the last two days, ending with July 29, avalanches in the talus were noted with increasing frequency of occurrence and large increase in the volume of rock fragments set in motion. Fitful glimpses of the E end of the pit bottom in the late afternoon of July 29 showed that the fresh pahoehoe in this area was traversed by ugly peripheral and radial cracks, and that large amounts of coarse talus blocks had run down upon and out onto the floor in this part of the pit. As most of the observed avalanching has been in the W part of the pit similar phenomena have probably taken place there. Such action is considered to mean sinking of the magma column. Such sinking is expectable in this part of the year. However, on this afternoon O.F. was a large open pool in which surging magma was seen, in size comparable with the magnitude observed on the previous day, mentioned below. The ENE chimney, high on the wall, also emitted its ^{usual} bright glow and seemed as active as ever. All the rest of the pit was hidden in the fumes. Large avalanches occurred at the W end at intervals of several minutes. A few tinkling rock falls occurred under the E wall. The eruptive noises were much as usual except that no rhythmic blasts were proceeding from the S cone.

During the past week work at Halemaumau has been hindered and interrupted by the heaviest fall of rain since the establishment of the Observatory -- a total precipitation of 20.94 inches for the week, with a maximum daily fall of 12.75 inches from 9:30 a.m. July 26 to 9:30 a.m. July 27.

In the evening of July 23 a small, fresh flow about 60 feet long by 30 feet wide was observed running from an orifice in the S cone out onto the floor. A smaller flow poured out onto the floor at the NE and a still smaller flow was seen in the center of the floor area. The entire floor area showed streaks of fire, and small jets sprang occasionally from many small cones, most of which were near the edge of the floor area. Both rumbling sounds and noises of blowing were very loud, especially the blasts from the S cone. Here a blue flame was flaming steadily. No slides were occurring. Late in the evening a considerable flow took place, illuminating the fume column more brilliantly for about 20 minutes than at any time during more than a year previously. This flow was crusted over and had apparently ceased moving before it came under observation. Incandescent streaks over its entire surface marked its area completely.

In the afternoon and evening of July 24 conditions, so far as observable, were as on the previous day, except that flowing was less in evidence. Yet small flows were seen.

In the afternoon of July 26 in the midst of the heavy downpour a clear view of the entire pit bottom was obtained. All the boiling pots and cones recently described were seen, most of them somewhat enlarged except for O.F.; in all but one or two, at the NW, boiling lava was seen, again strongly suggesting a great molten body thickly

crusted over at the bottom of the pit. At this time O.F. was no larger than several other openings in this crust. A few trivial rock falls occurred. Sounds of eruption were much as usual except that a distinct sizzling sound, doubtless due to the excessive downpour of rain, was added to the rest. So heavy was the rain at this hour that water in considerable volume was cascading down the terraces below Uwekahuna to the crater floor, a veritable waterfall. Steam was rising from the Perret cone in unusual abundance, and nearer Halemaumau the response to this unusual rainfall was very positive and interesting. Where the trail from the Volcano House divides, near the NE margin of Halemaumau, is a well-known region of peripheral crevasses from which steam and fumes of sulphur constantly arise. On this day the behavior along these cracks, from the trail or a little NW of it on to the region of the Devil's Kitchen and thereabouts, was much as usual. Little or no additional steam was issuing. Around the Devil's Kitchen, however, there was marked increase. And from the trail along the belt of cracks toward the motor depot the increase in steam emanation was very marked, the steam issuing so violently as to produce a roaring sound of considerable volume at a spot only a few paces eastward from the trail. At the WNW of Halemaumau, also, there was a region showing marked increase in steam output. In general there seemed to be increase in steam emanation along radial tracts leading NNE and ENE from the center of the pit. These observations were made during an interval when rain was falling at a rate surely of 0.5 inch per hour, with momentary showers far heavier.

On July 27 in early evening the O.F. orifice was again considerably enlarged and in it boiling magma was seen plainly. At considerable intervals molten lava was flung out on to the floor. The usual cone orifices were glowing brightly. No flows occurred. There were a few small talus slides chiefly at the S and SW. Rumbling and blowing sounds were quite loud particularly at the S cone. It was still raining plentifully though not as on the previous day, and the steam phenomena were much as described above. In addition it was noted that much steam was coming from a great number of cracks in the hanging 1912 shelf or platform under the S station.

On July 28 O.F. was still more enlarged, again measuring about 30 feet in the E-W direction by about 20 feet in the N-S direction. No change in its behavior was observed. A circular orifice about 15 feet in diameter was seen under the E station and in this molten magma was surging to and fro. The many small cones were glowing brightly. Rumbling and blowing noises were very loud but the pronounced blasts from the S cone were no longer heard, only a feeble wheezing. No flowing was observed. Very many short small slides took place at the S, SW and W. One was noted under the NE wall.

The phenomena observed in the afternoon of July 29 have been detailed in the opening paragraph of this report.

Day Thurs.

Date

July 30, 1914.

Fri.

" 31, "

July 30. - Rainy.

July 31 - Rainy. In evening only seeing from S.E.
O.F. and other holes, two avalanches heard.
Glow moderate from H. U. O.

J. A. J.

Day	Saturday	Date	August 1,	1914.
	Sunday		" 2,	"
	Monday		" 3,	"
	Tuesday		" 4,	"

Aug. 1. In the morning no seeing and no noises.

8 p.m. Northerly wind. No seeing. Some flaring. Splashing noise slight at E station. One slight rock slide. Fumes very dense and acrid. Smoke from E and SE fumaroles rose above pit in rapid puffs.

9 p.m. Dr. Brigham's party saw pit; saw O.F. pot boiling with stalactites around rim. Heard small talus slides.

Aug. 2. Strong NE wind. Pitt full of fumes.

Aug. 3.
11 a.m. From S and SE stations:
High NE wind. SE end of floor piled with talus. E chimney appears caved away. Southeast "V" of rock wall lower and talus there sliding. Faint puffing from floor. Continuous sliding SE. General effect marked subsidence. Cannot distinguish the S talus conelet.

Aug. 4.
9 p.m. Seeing poor. Weather calm. Indraght E and W. One glimpse from O.R.H. showed:-
Four NE pots, deep and surging; O.F. large, fountaining; deep walls; open pots at W and N rims.
Noise plashing. Flare on cloud strong. General appearance very low.

Sketch from O.R.H.

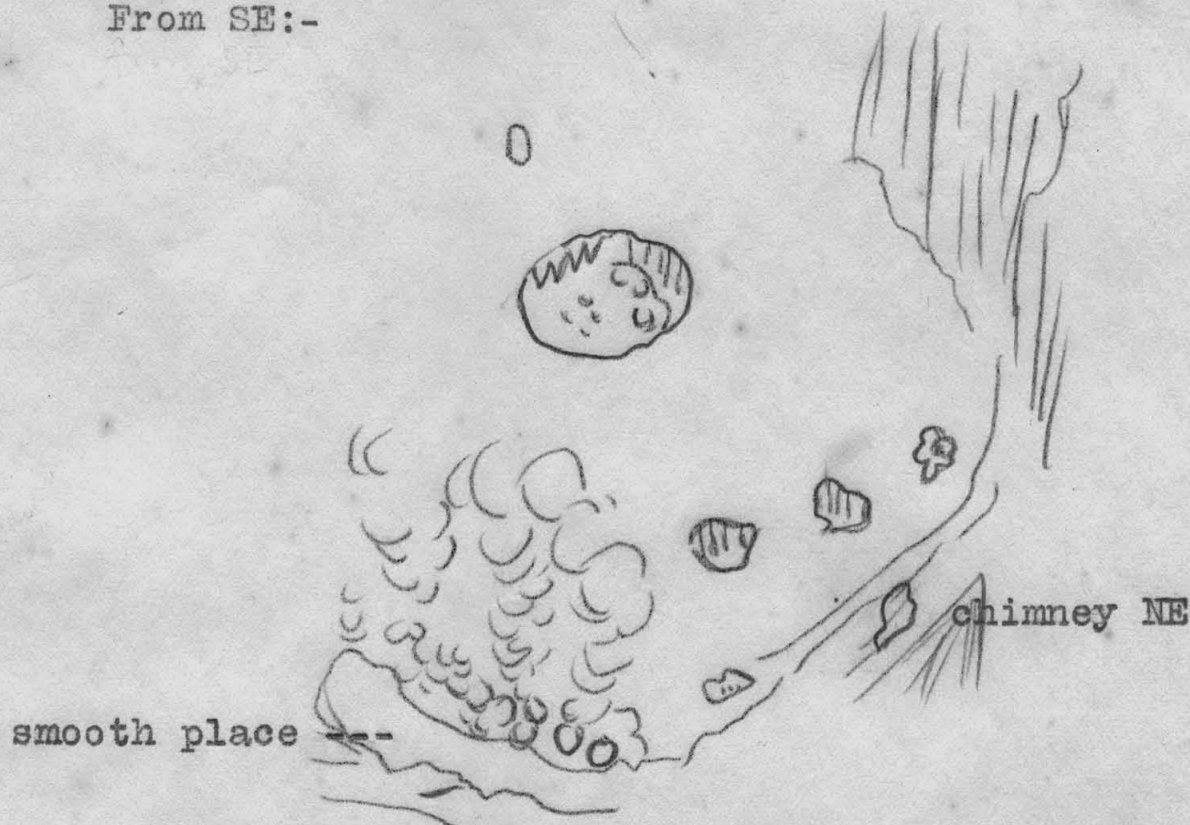


T.A.J.

Day Thursday Date August 6, 1914.
Friday " 7, "

Aug. 6.
6 to 7⁷ p.m.

Seeing at dusk S and SE. O.F. large and nearly round bubble fountains within. Streaming W to E. Large fountain broke at the usual intervals. Three deep pots near NE wall showed glare on their inner walls. One pot under ENE wall. E chimney glowing brightly. Flat place back of and above the SE fumaroles looks like gray lava washed bare. This new and hard to interpret. Can no longer see conelet in S. Big stalactites W side of O.F. pot hanging above lava. Dim view of a W pot. Plash noise from baby fountains in O.F. Heavy noise of O.F. large fountain. A puffing noise occasionally NE.
From SE:-



Mauna Loa.

4 to 6 p.m. Shows two or three places of apparent fumes nearer the summit than the place between the two uppermost cones.

T.A.J.

Aug. 7.
6 to 7:30
p.m.

About same from SE station. O.F. heavy stalactites all around. Streaming E. Bubble fountains. Occasional large fountain. S off three NE pits shows lava. Lava a little higher than yesterday. No avalanches. E chimney very bright. Bright flare and plash from O.F.

T.A.J.

8:30 p.m.

On Aug. '7 streaming in O.F. was from W to E and the lava was from 12 to 155 feet down. To-night a marked rise O.F. two or three feet down, a circular pot 50 feet in diameter. Streaming E to W. Explosions average 40 seconds (30, 35, 40, 45, 55). Bubble fountains between times. Thick skin forms before main explosions which are very heavy with surf noise. Hissing at W end. See two glow-holes W end and two in SW line from O.F. and two under N wall; four along NE wall; one with filagree cone near it under ENE wall. High bright chimney E. Fumes less than of late. Lava does not show in any pot but O.F. Sag down to O.F.? The large NE pot in floor nearly dark, a few sparks shooting up now and then. The others are jetting sparks. NE chimney very bright flame. Spears of blue flame at border of O.F. pot (the great dome explosions fill whole pot) and at other pots N. NE and SW. The S talus conelet appears to be definitely gone, probably knocked down by slides. SE fumaroles as usual but fumes thinner.



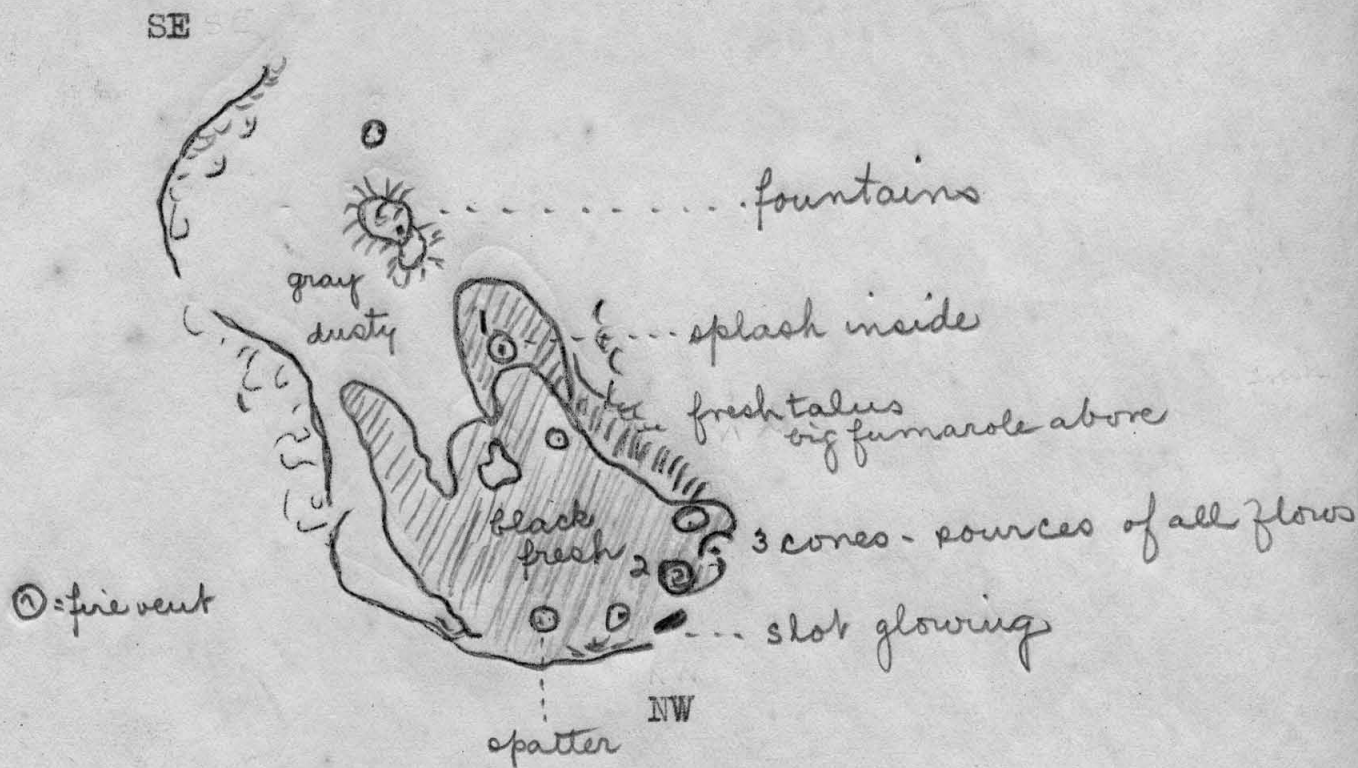
View from SE station.

T.A.J.

2 to 3 p.m.

Active overflowing from west end. New talus W, WNW, SW and NE. Great mass of new black flows from W end eastward. Rampart around Old Faithful pool which is oval in shape and measures 50 x 30 feet. Talus along NE wall with fire holes through it. Crater hole in WNW wall is obliterated. Noises are pounding, spatter fall, splash and puff. Small slide heard E; and at 3:30; and another SW. General revival like a month ago.

Outline from Old Rest House:-



T.A.J.

KILAUEA DAY SHEET

Day Wednesday Date August 12, 1914.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
p.m.								
2 - 3	NW	N	0					
"	NW	#1	-68 20	44 09		518	502	
	NW	#2	-104 43	52 06	-06	385	497	
	NN	#2	34 53	36 54		653	489	
	N	#1	62 55	42 57		538	500	
	N	NW	0					

#1 (middle hole) - 501 ft. below N rim.
 #2 (W cone summit) - 493 ft. below N rim.
 (Cone 8 ft. high?)

T.A.J.

no	pl	scr	stop	ex	cam

JOURNAL

Day	Thursday	Date	August 13,	1914.
	Friday		" 14,	"
	Saturday		" 15,	"

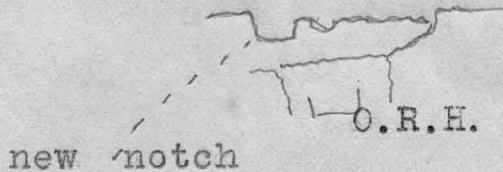
Aug. 13. Very bright glow after midnight. Probably more overflows.

Aug. 14, 9 - 10 p.m. From the Old Rest House twenty glow spots could be seen, all low. It was brightest at the W end. There were blue flames. Old Faithful was pounding among stalactites. It was low and narrow. There was a steady high glow and some sparks in vent W of O. F. Spitting at 1, 2 and 3. All the week past since the very heavy rains, there has been abundant steam in the domes midway between Volcano House and Halemaumau - the big domes.

From O.R.H. :-





Aug. 15, 3 - 4 p.m. As seen from the N station and O.R.H. conditions are the same as last night. The N pot shows lava streaming within. O.F. is very low. Hissing in the west. No new flows to be seen. Long avalanche from NE wall. Lava lowed by Avalanche material on the NE floor. Crossed the new steam area of the large domes and found very hot steam in numerous holes, and collapsed caverns steaming. Visitors to the pit at night report having seen the high mass of debris just below and to the left (E) of O.R.H. fall and form a new notch. Fumarole under N wall may account for fall.

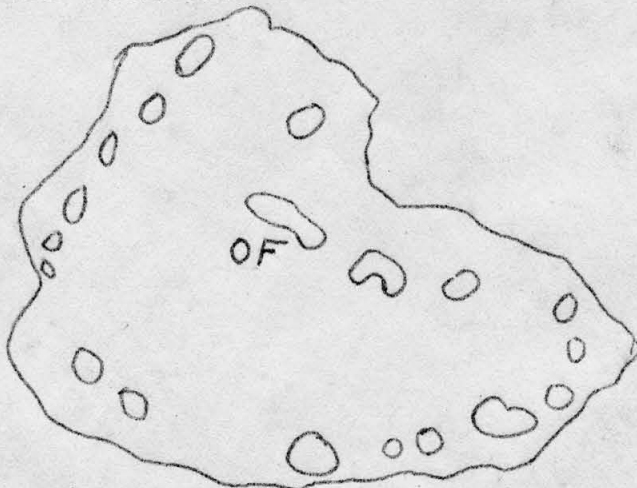


T.A.J.

Day	Date	August 16, 1914.
Sunday		
Monday	"	17, "
Tuesday	"	18, "
Wednesday	"	19, "

Aug. 16, 5:45 p.m. Pool is much the same as yesterday with the lava higher. O.F. is oval in shape with bubble fountains, higher lava and smaller stalactites. There is a cavity W of O.F. with a steady glow within. Hissing noises issue from the large cone in the W which is open to the N with stalactites showing. The larger NE pot has lost the small crevasse beside it of two nights ago and is now shaped like  instead of like . Heavy surges from the main fountain of O.F. No avalanches this evening, only one rock heard to fall in the E. See high E chimney - 18 places on floor. Count bulbs in cumulus which to-day rises very rapidly and brown E - ten bulbs to leeward. Is this a measure of rapidity of emission?

From O.R.H.:-



Note holes around border - outlining pool? Deep pots NE. Cones on floor W. Brightest W. Spatter W dome. O.F. some increase perhaps.



Sketch Halemauau showing 10 fume bulbs to leeward.

Aug. 17, Glow steady and moderate.


Aug. 18, 8 to 9 p.m. Smoky. Everything appears the same as on Aug. 16. O.F. flares. No avalanches. Slight spatter from W haystack which has two holes on opposite sides and the summit arch of cone separating them.


Aug. 19, 10:30 a.m. Blowing W. Splashing in O.F. somewhat louder than last night. Fumes. No seeing E or N. Bright in evening and flares at O.F. intervals. (40 seconds ±)


T.A.J.

JOURNAL

Day	Friday	Date	August 21,	1914.
	Sunday		" 23,	"
	Tuesday		" 25,	"
	Wednesday		" 26,	"
	Thursday		" 27,	"

Aug. 21, 7 p.m. Poor seeing SE station. Small glow hole in SE cone locality shaped  O.F. lava bubbling high in 60 foot

long pot pointed W and rounded E.  Streaming in O.F. eastward. Glow in NE E holes and chimney.

Aug. 23, 6 p.m. Fine view from S station. O.F. rounder, Streaming changed to S, to W and then to E.  SE locality oval pot with boiling lava within 30 feet long. A bright cave splashing inside on its N border. O.F. very active, lava a little higher there than in SE pot. Several cones dimly seen at W end and a constant blowing noise there. In a filagree cone NE is heard a prolonged hissing roar once in 6 to 8 minutes which dies away in a minute or two.

Aug. 25, 11 a.m. from S station. Lava in O.F. sunk 15 feet since Aug. 23. Flows around O.F. and to SE pot, filling latter and converting it into a blow cone with small glowing orifice. Bright blue fume from E chimney rapid and semi-transparent in marked contrast to dense white fumes of SE fumarole. Much talus on E and S floor. Thick white active fumes S talus. Remnant of the S spatter cone still stands, not up the talus, but on the edge of floor. O.F. has heavy stalactite wall overhanging lava beneath. Strong splashing noise from O.F. but no blowing heard. The 200-foot bench of 1912 SW has increased inward slope, fumarole in cracks at its upper end; - (F)
The new flows probably from W end, extend much farther E.



Aug. 26, 11 a.m. from SE. Conditions the same. Splashing without blowing. Dim view of O.F. and SE holes. No avalanching this week. Evening parties saw 5 or 6 holes, as usual.

Aug. 27, Lava in O.F. reported higher this night.

T.A.J.

6 to 8 p.m.

To-night most of the holes in floor spurting, seen from S and SE. O.F. rose and overbrimmed its pot during explosions.

At 7:45 p.m. a flow began at cone W end. Up to this time there was strong blowing W end which was replaced by gentle rushing sound of the flow. Glow from flow so great it could be seen from O.R.H. through the fumes which lay against that wall.

Flow poured from cone's S and N sides in two flows. S flow strongest and longest. Flowed 400 feet in half an hour from 7:45 to 8:15.

From O.R.H. :-

This was the most spectacular series of flows I have seen this year. From 9 to 10 p.m. the whole floor was well shown E and SE stations. The triangular hole W of O.F. was partially overwhelmed by the lava flood but maintained itself open by gas blowing with diminished size.

O.F. orifice became smaller by building itself into a flat cone with overwelling splashes which amounted to small flows in glowing leaf-shaped gushes on all sides.

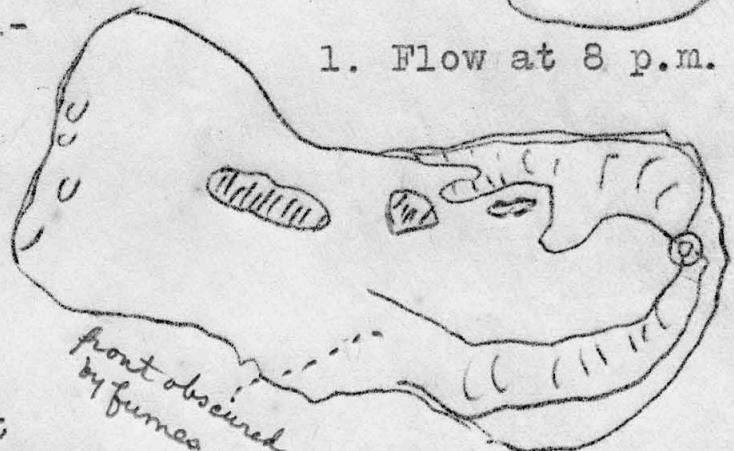
The E chimney was less glowing than of late. The NE holes were bright and blowing.

The streaming in O.F. was from N to S at 7 p.m. then changed later to W to E.

At 10 p.m. the northward flow from W cone could not be seen from E stations but the southward flow was pouring pulsations like meal from a sack, not nearly so rapidly as earlier when it ran liquidly like mercury.



1. Flow at 8 p.m.



2. Flow at 8:20 p.m.



3. Flow at or about 9 p.m.

11 a.m. From SE and S stations. O.F. down 10 or 12 feet at first. New flow all around O.F. leaving relatively small strip of E floor uncovered and showing talus blocks.

From SE:-



NE tumble of red talus

E chimney

11:30 a.m. Rock slide heard NE. The noises were blowing NE, pounding and splashing O.F., vague west.

12 noon A rise whereby the pots in SE cone and in O.F. were brimming. SE cone enlarged orifice by stopping away its roof. Renewed strong blowing was heard at W end at or near W cone. An ENE hole at base of cliff was blowing. The E chimney was seen distinctly emitting blue fumes but without evident glow in daylight. Two vertical gulches of undermining were seen in NE wall over blowing cones at edge of floor beneath.

T.A.J.

1:15 p.m. Good seeing from O.R.H. O.F. boiling and occasionally throwing out lava on the floor. W cone blowing hard and sometimes shooting up sparks. Nine glowing holes could be counted on floor.

Alex.

WEEKLY BULLETINS INSERTED TO COVER PERIOD
AUGUST 30 to OCTOBER 7, 1914,
during absence of T. A. JAGGAR in KAUAI.

During several days of the week ending with September 2 the surface activity in Halemaumau has been decidedly more spectacular than usual. Small sprays of molten lava have fountained from the cones, and numerous small flows have welled out from them onto the floor of the pit. Also in brilliant moonlight the fume cloud has been illuminated with a more persistent and lively glow than at any time since the revival of activity a little less than a year ago. But this manifestation of increased activity has begun already to decline.

It is interesting to note that this spasm of rising and increased surface action has corresponded almost precisely with a fortnightly maximum of soli-lunar earth strain, computed on the basis of a hypothesis which we are evolving and testing, which fell near the moon's first quarter. Such a correspondence is more than usually favorable to the hypothesis because, when the maximum falls near the moon's quarter its effectiveness is hypothetically less than when it falls near conjunction or opposition. Hence a definite increase and decrease in action when the variation in strain is hypothetically less effective indicates the probable reality of action according to this hypothesis in preference to others hitherto proposed.

It was reported that the molten lava was standing at a higher level in the O.F. pot in the evening of August 27 than on previous days.

On Aug. 28 lava was spurting from most of the holes in the floor that could be seen from the E and SE margins of the pit. During its explosions the lava in O.F. rose and overflowed the margins of the orifice. At 7:45 p.m. a flow from the cone at the W end began. Up to this time a strong blowing noise was heard here which now was replaced by the gentle rushing sound of the flow. The illumination produced was strong enough to penetrate the fumes rising as a curtain along the wall under the O.R.H. The flow divided at the cone into two branches, the larger and longer making along the S margin of the floor, the smaller along the N margin. The south branch flowed some 400 feet in about half an hour. The flows on this evening were considered by Director Jaggar to be the most spectacular witnessed by him this year. Later in the evening, from 9 to 10 p.m., the whole floor of the pit was seen clearly from the E and SE stations. A triangular hole W of O.F. was partially overwhelmed by the lava flood but it was maintained as an open orifice of diminished size by the action of gas blowing up through it. The O.F. pot grew smaller by the building about it of a flat cone by the cooling of the outwelling gushes or splashes, many of which amounted to small flows on all sides. The glow in the E chimney appeared less than usual. The holes at the NE showed brightly and were blowing. The streaming action in O.F., from N to S previous to 7 p.m., changed at about that time to W to E. At 10 p.m. the flow along the S margin was moving in pulsations like meal from a sack, not nearly so rapidly as earlier when it ran as a heavy liquid like mercury.

At 11 a.m. on Aug. 29 the lava in the O.F. pot was 10 to 12 feet below the surrounding margins. The flow had covered nearly all the floor except a relatively small strip at the SE. It had surrounded O.F. At 11:30 a rock slide occurred in the NE part of the pit. Blow-

- 2 -

ing sounds were heard from the holes at the NE, and pounding and splashing sounds from O.F. At noon the lava had risen to the brim in O.F. and the SE cone. The orifice of this cone had grown larger. Strong blowing was now heard at the W end. The E chimney was seen plainly and a blue flame was playing out of it. No glow was seen in it in daylight. Two vertical gashes were seen in the NE wall. These appeared to be undermining the wall here. They were immediately over blowing cones on the floor. In the early afternoon jets of lava were springing from the W cone and splashes were welling out of O.F.

In the early and middle evening of Aug. 30 lava flowing from cones and orifices at the W end of the pit covered all the floor, according to reports by visitors accustomed to the action in Halemaumau.

In the forenoon of Aug. 31 a good view of the floor showed a carpet of new lava everywhere. Lava was splashing out of O.F. At long intervals loud puffing and rumbling sounds could be heard. The E cone also was very active and from another cone, at the WSW, sprays of lava were jetting out. Very small rock slides were frequent, and occasionally a short, heavy slide took place.

On Sept. 1 in late afternoon and early evening the O.F. pit was still large and from it splashes and sprays of molten lava were thrown out on the floor. It was a surging pool of quadrangular outline possibly 40 feet across. All the holes in the floor were glowing brightly. Many long, glowing cracks were seen. No flows were occurring, however, and no evidence could be seen of flowing on the previous day. Evident decline in surface action had begun. Blowing and rumbling sounds were quite loud and a few small slides occurred from time to time.

On Sept. 2 the O.F. orifice had become nearly clogged. Sound of blowing had become very faint. However, rumbling and surging sounds remained quite loud. No slides were heard. All the usual holes in the floor were glowing brightly. A strong wind prevented more than momentary glimpses into the bottom of the pit.

H.O.W.

The activity in Halemaumau during the week ending with Sept. 9 has undergone little change; first was noted a slight gradual decrease in vigor of action soon followed by an apparently stationary stage with minor temporary increases and decreases. With the date of equinox only two weeks off it may be well again to draw attention to the fact that since the early part of July -- up to which time there was pronounced rising and increase of surface action, which then halted -- there has been little or no sinking of the magma surface and the decrease in surface activity, while sufficient to be noticeable, has as a whole been slight. This is construed to indicate a gradual increase in the action of Kilauea independent of the semi-annual variation and it encourages an expectation of pronounced rise and increase of surface action during the fall season. This is in no sense put forward as a prediction: it is simply a statement made to enable readers of these reports to comprehend our interpretation of the observed conditions in terms of our tentative hypothesis.

In the late afternoon and early evening of Sept. 3 views obtained showed the O.F. opening to be about 50 feet long, E-W, by 20 feet wide, and of a quadrangular shape. In it molten magma was boiling vigorously over a surface sufficiently high for small amounts of the molten material to surge over the brim occasionally. A small cone under the E station was throwing out molten lava spray at irregular intervals. Blowing noises and sounds of surging and swashing were quite loud. Small glowing holes and cracks were seen in all parts of the floor. No avalanches were heard.

On Sept. 4 general conditions had not changed, but the fountain action in O.F. was a trifle more vigorous; also, at the E cone, and at a cone on the floor between the E and NE stations molten spray was being ejected more forcibly. The noises, too, were louder. Early in the evening lava was swashing over the brim of a pot under the NW station.

On Sept. 5 it was observed that the O.F. orifice was much smaller. In other respects no change was noted. Twelve cones with glowing orifices were seen on the floor. Out of several of these molten spray was spurted at intervals. Blue flames were seen playing from them. The noises, if anything, were louder than on the previous day.

On Sept. 6 the noises had become very conspicuous -- not so loud as when the entire bottom was choked with talus but still very loud. More than at most times they took on something of a terrifying quality. The blowing sounds were very sharp and short and came from several different cones in so rapid succession as to seem almost continuous. The other noises were merely louder than usual. The small open pot under the E station was surging furiously, and almost continuously flinging very small amounts of lava over its brim. O.F. showed as a very small comparatively quiet opening. Several small cones along the N margin from the NE to the NW were almost every instant throwing out small, spray-like jets with obvious force.

In the middle evening of Sept. 7, after hard rain, a bright steady illumination of the fumes, indicating a flow on the floor led to an impromptu visit. When the rim was reached the flow had ceased. It was very small, covering only a portion of the floor in the vicinity of the eastern margin where many brightly glowing cracks marked its limit. The noises were very loud and could be heard very distinctly for about two hundred yards back to the NE from the margin of Halemaumau. There was only a light breeze blowing. In all other respects the action was as on the previous day.

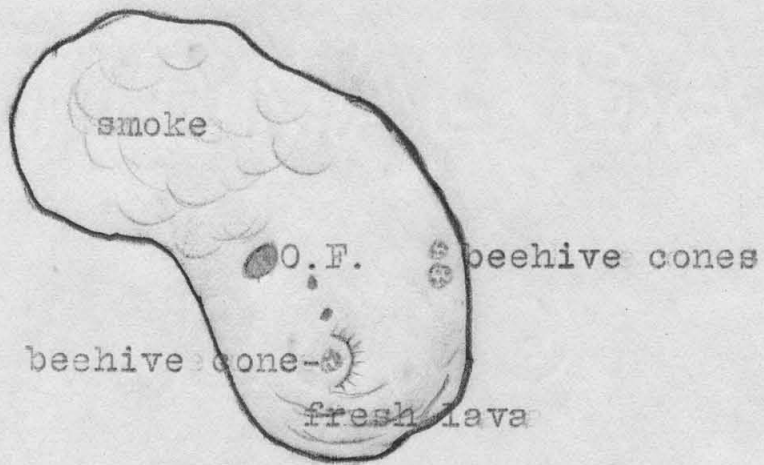
On Sept. 8 there was noted a slight decline in action in that molten lava was being thrown out from O.F. only, and then only at considerable intervals. Also the blowing and rumbling noises were less loud. The cracking sound of rock breaking from heat was heard.

On Sept. 9 small quantities of molten spray were being ejected feebly from O.F., and the magma was seen to be surging furiously in the pot under the E station where masses were frequently swashed out over the brim. This pot is now the largest orifice in the floor. The noises were still very loud.

H.O.W.

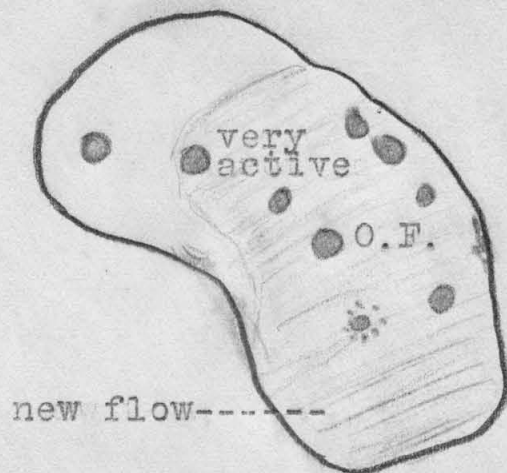
Sept. 13, 1914, 4 to 4:30 p.m.:-

N



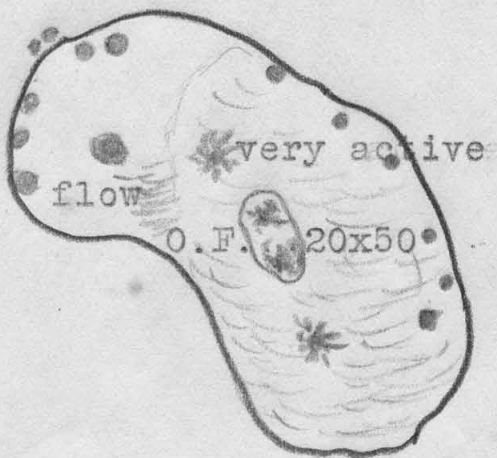
Sept. 14, 1914:-

N



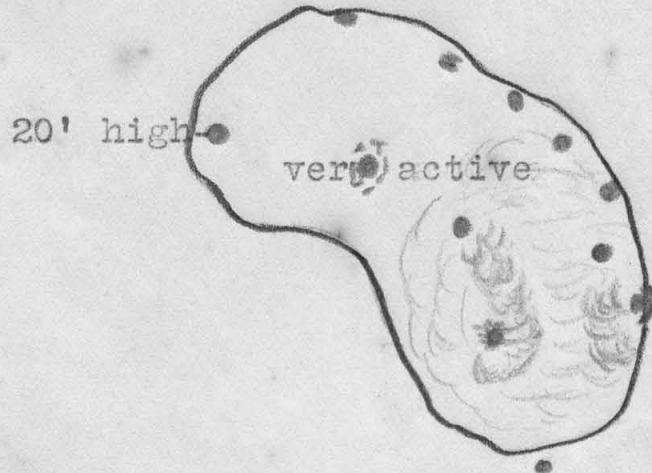
Sept. 15, 1914:-

N



Sept. 16, 1914:-

N



At Kilauea the week ending with Sept. 16 has been marked by a minor conspicuous increase in activity followed by a short lull which has given place to a further minor increase. These variations tally with expectable behavior on the basis of luni-solar stress control, the first subsidiary maximum of activity corresponding well with a declination stress maximum, the second with a stress maximum, probably of less effectiveness, due to the practically coincident occurrence of perigee and conjunction. In addition, as hitherto mentioned, there appears to be a slow, steady increase apart from these short-term fluctuations.

In the afternoon and evening of Sept. 10 symptoms of increased activity were observed. At the orifice of the cone under the NE station the magma was boiling vigorously and frequently splashing over the brim. The blowing sound from O.F. was very loud, its pot was boiling actively and now and then blue flames could be seen flaring from it. During the afternoon the sound of cracking of the lava crusts could be heard occasionally and in the early evening about half of the floor was marked by glowing cracks indicating that a small flow had taken place. Molten lava was jetting from several cones; from a small one under the E station about 100 feet out from the edge of the floor the jets were leaping 40 to 50 feet into the air. In mid-evening O.F. was seen to be larger, with an irregular opening about 60 feet E-W by 30 feet N-S. Rumbling became very loud.

On Sept. 11 lava was boiling and splashing out upon the floor from O.F. and the NE cone almost continuously, and this was happening also at all of a group of eight small orifices close together under the E station. Marked activity was apparent at all the open spots on the floor. Blowing and rumbling sounds were conspicuously loud. Also the high cone under the S station, which has been quiet for a few weeks past, was blowing feebly at intervals and glow holes were seen at its top. Although no flow occurred during this period of observation the action appeared more vigorous than on the 10th.

On Sept. 12 in late afternoon a small flow was seen running over the floor from the N and NNW margin toward the middle of the pit. Later it was seen that a larger flow, proceeding from the cones under the W to NW stations, had run all the way to the margin under the SE station. This flow, as indicated by glowing streaks, had a width of nearly or quite half that of the floor itself. At the SE margin it bent around and sent a tongue along the edge to a point under the E station. All the cones on the floor showed boiling lava which was slopping out almost continuously onto the floor. Every place in the pit was in unusually vigorous action. The noises were sharp and very loud.

On Sept. 13 there had come a lull in the activity. The O.F. opening was of much less size, still a pot with lava boiling vigorously in it some feet below the adjacent surface. No other boiling pot was seen but all the usual orifices showed glowing lava. Under the E station, smoking steadily, were two "beehive" cones whose domes

were transversed by cracks arranged in something like a mud-crack pattern. A similar cone stood about midway between O.F. and the SE margin. A single lazy jet of lava was seen to spring from one of the subsidiary orifices in the floor. The noises were subdued. Fresh lava in great folds was seen to cover the SE and E parts of the floor.

On Sept. 14 lava was splashing out onto the floor from O.F., and small jets were springing from the small beehive cones under the E station. The noises from O.F. and ^{from} these were quite vigorous. Elsewhere only boiling pots were seen. In early evening a heavy avalanche the rock tumbling continuously for upwards of three minutes, took place under the W station and a little later a short slide, only some four seconds long, but very heavy, started from the very brim between the E and SE stations.

On Sept. 15 activity was again slightly increased. Much molten lava was splashing out of the O.F. orifice, and the whole floor was marked by glowing streaks. In late afternoon considerable avalanches starting from the very brim between the E and SE stations broke through the crust and thus caused a small flow of short duration. A little later a larger flow, of slow motion, was seen running toward the ^{middle of the} pit from the NW station. Lava was seen boiling vigorously in all the open holes.

On Sept. 16 a considerable flow was seen moving on the floor of the pit at the E end, from the cone under the E station toward the SE. This flow, when first seen, was estimated to be some 20 feet wide and 70 long. The cone it started from was boiling over steadily. Small jets were springing up in many places. All the sounds were loud. Blue flames were playing above nearly all the boiling pots. No avalanches were observed but occasionally a few boulders would drop from various parts of the walls.

H.O.W.

During the week ending with Sept. 23 the activity in Halemaumau has undergone only slight changes. There have been no conspicuous increases or decreases, merely slight variations, in both directions, from day to day.

On Sept. 17 all the usual glowing orifices were seen, and out of several molten lava was splashing at intervals. No flows were seen and no talus slides were heard. Occasional jets were spurting up but without any great force. All the noises were loud. Blue flames were flaring conspicuously from several boiling pots.

On Sept. 18 while no lava was seen flowing there were other indications of a slight increase. The noises of eruption were much louder and molten jets were being flung out with much force, sometimes to estimated heights of 50 feet. There was no open pool on the floor but several of the orifices were much enlarged. At these places boiling lava could be seen vigorously splashing over the brim.

On Sept. 19 the activity, as regards most of the manifestations, was only ordinary, but a small flow occurred at the W end.

On Sept. 21 the noises were conspicuously loud, but no flowing or spouting lava was seen. Unusually large blue flame-banners were flaring from the larger orifices. These orifices were at the tops of well marked cones in every case. There was no pool on the floor.

On Sept. 22 a fine view of the floor region by daylight showed that several, small, short flows, proceeding from the cones under the NW to W rim, had taken place in previous days without being observed. Molten spray was issuing from these cones at intervals. Magma was splashing out of the top of the O.F. cone, now about 20 feet high and with a large top. Small amounts of lava were being flung from the cones under the E and SE stations, but only at intervals. Eighteen cones from 10 to 20 feet high were counted. The noises of eruption were very loud. Blue flames flared from many of the orifices.

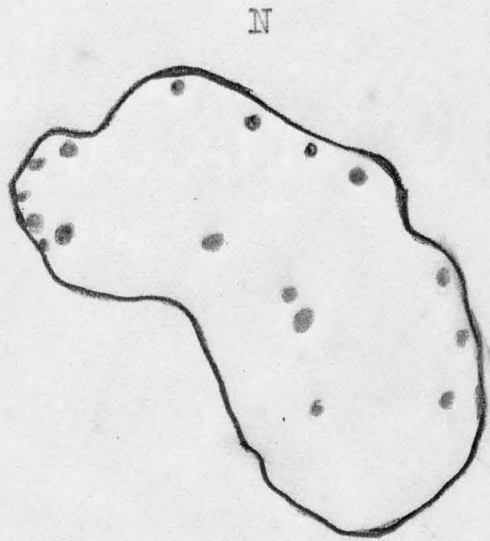
On Sept. 23 lava was splashing so vigorously out of the NW cone that at one time a small flow made away from it. All the cones at the W and S, as well as O.F., were blowing vigorously. The noises continued to be very loud. Flames were seen as usual. A few small talus slides were heard.

H.O.W.

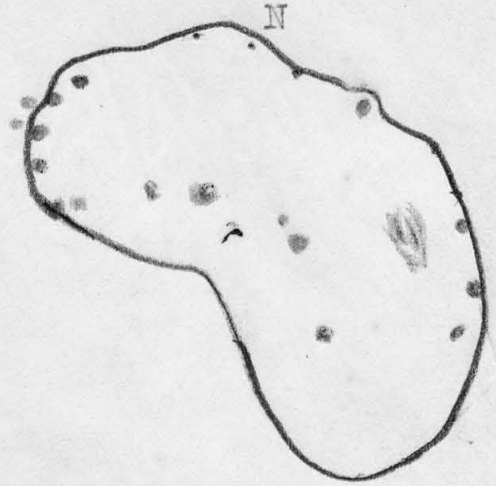
Day

Date

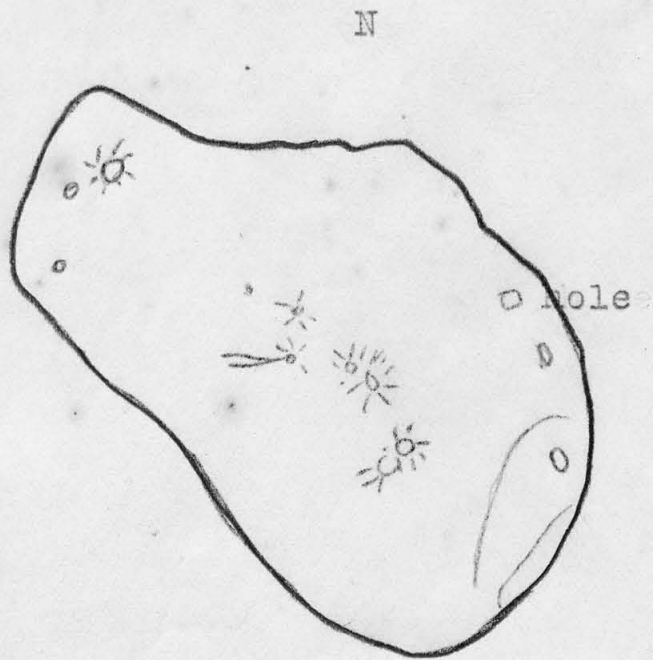
Sept. 23, 1914:-



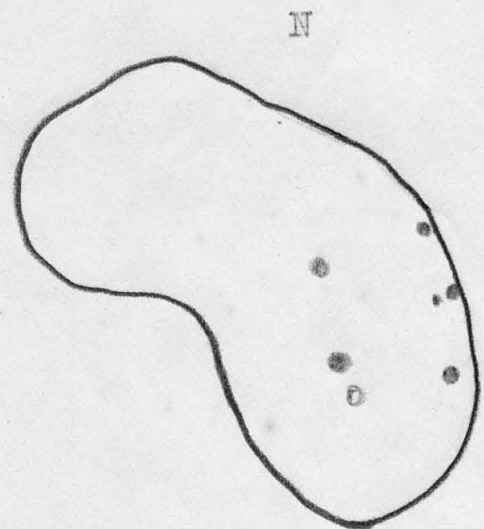
Sept. 25, 1914:-



Sept. 26, 1914:-



Sept. 28, 1914:-



During the week ending with Sept. 30 the activity in Halemaumau has stood still, nearly -- there has been no symptoms of increase and no well-marked symptom of decrease, though an interval of halt always seems to carry the suggestion of decreasing vigor of action. At this season such a stand is expectable.

On Sept. 25 there were no flows but lava was jetting from O.F. All the active cones were blowing loudly, and from several blue flame-banners were steadily flaring. Rumbling noises were very loud. No slides occurred.

On Sept. 26 there was no boiling lava visible in any of the breathing holes or cones, though the incandescent walls were plainly visible. No lava jets were seen, save one very feeble outburst from one of the minor cones under the NE rim. The blowing sound had decreased to a soft hissing, and the rumbling had become very deep-toned and far-away. These sounds were incessant. All the open holes were at the tops of cones from 15 to 30 feet high, from which thin blue fumes rose. Cave-like openings in the wall under the NE were seen fully 100 feet above the floor. These were dark. The high ENE chimney was glowing brightly. In general the fumes were thin.

On Sept. 28 sounds of blowing and rumbling were very low, and the molten lava was deep within the cones; but it was plainly visible. Only at the WNW was molten lava splashing out, with a loud boiling sound. Fifteen breathing holes, with flame-banners, were counted.

On Sept. 29 the sounds of eruption were hardly audible and the molten lava had sunk too low within the cones to be seen. No jets were seen. No slides occurred.

On Sept. 30 the noises of eruption had grown comparatively loud again and from the cones along the margin of the floor from E to NE blue flames were flaring, and molten lava spray was occasionally thrown out. O.F., and the cones to the S, were relatively quiet. Those from the W to the WNW were concealed by the fumes.

H.O.W.

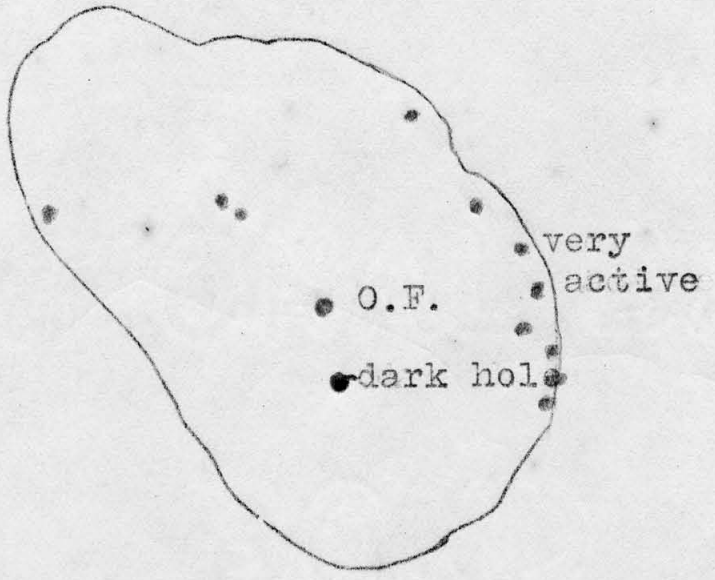
JOURNAL

Day

Date

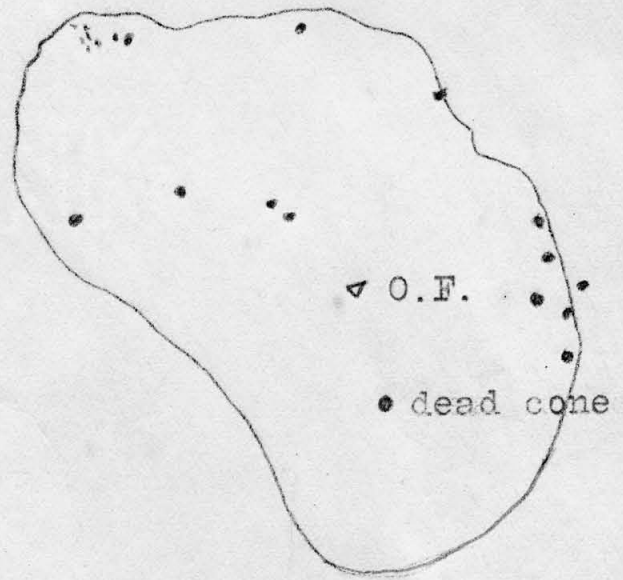
Sept. 30, 1914:-

N



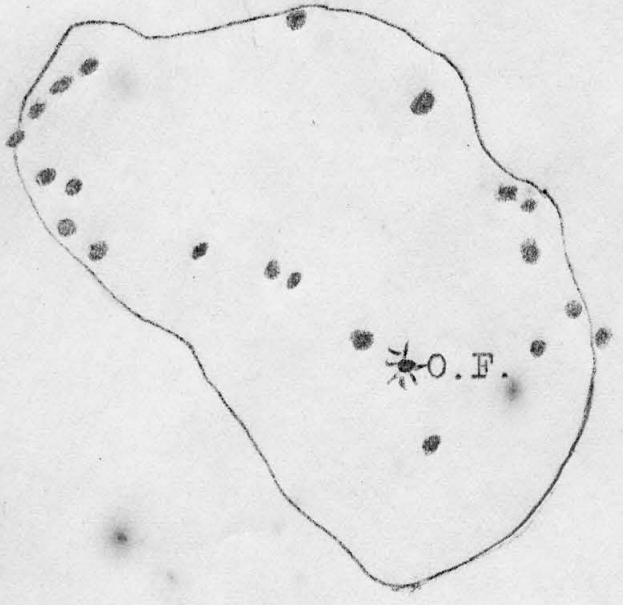
Oct. 1, 1914:-

N



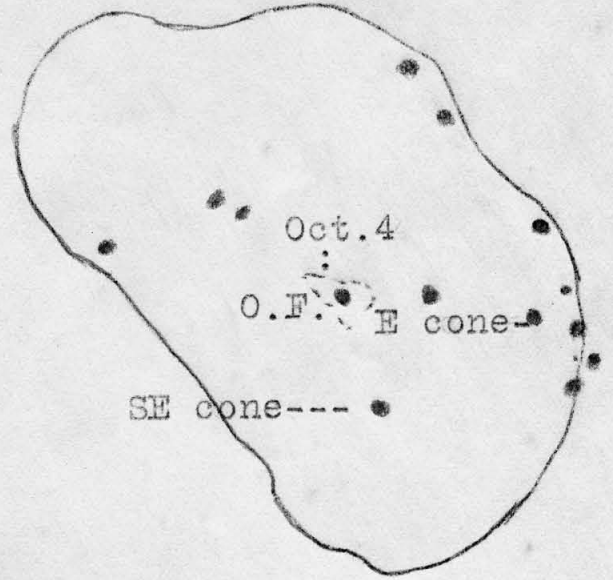
Oct. 2, 1914:-

N



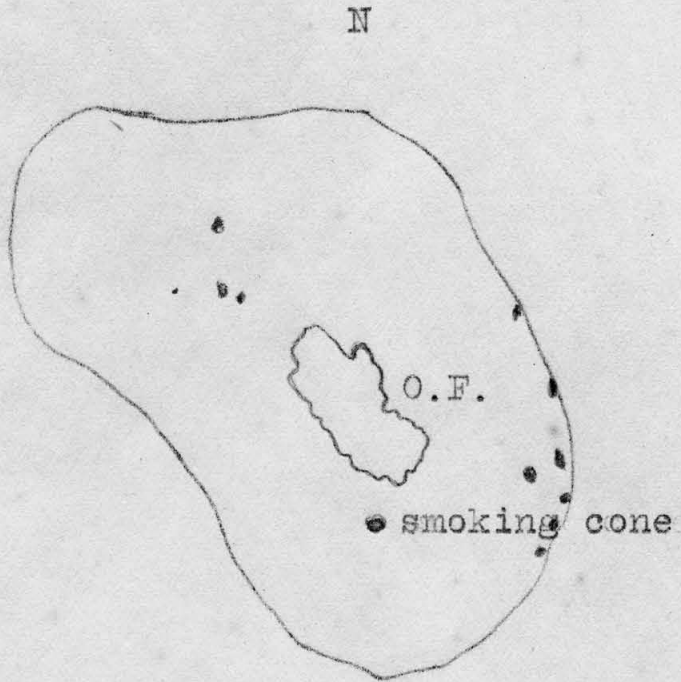
Oct. 3, 1914:-

N



Alex.

Oct. 5:-



Oct. 6:-



Alex.

During the week ending with Oct. 7, following the stationary stage described in the previous report, there has been a marked and apparently "permanent" increase in the action in Halemaumau. About the O.F. orifice as a center an open pool of magma has formed which has enlarged rapidly -- without symptoms of down-sinking, or of marked rise -- until at the date of writing it has become a small lake of the kind so well known in Kilauea, a semi-molten surface upon which thin black crusts form continually, only to be torn up and engulfed every minute or so by the uprush and fountain-doming of large magma lumps, or so-called bubbles. Also there are many small fountains in it, and a conspicuous action of surging against and up onto the banks of the spatter ramparts which confine the pool. No clear streaming in definite directions has been observed as yet.

Needless to say the opening of this "permanent" lake has made the scene much more spectacular and brilliant. In bright moonlight the fumes are illuminated by an unquenchable ruddy glow more fiery than in any previous displays since March 1913. A continued, fluctuating increase is expectable.

On Oct. 1 conditions were very much as described previously. Early in the afternoon small amounts of magma were being flung as spray out of the O.F. cone. Blue flames were flaring conspicuously in broad daylight from the cones under the E and NE stations, and from an orifice close by about 25 feet above the floor. Later on, in the evening, molten spray was being flung from nearly all the cones on the floor. The action had definitely increased over that of the previous day.

On Oct. 2 there was little change in behavior, but more orifices were seen than at any previous time in recent weeks. Twenty-two brilliantly glowing cones were counted. Blue flames were flaring from nearly all and many were spouting molten spray vigorously -- particularly the cones under the NW station.

On Oct. 3 the O.F. cone structure had collapsed, resulting in the formation of a pool about 50 feet long by 40 feet wide, of triangular shape with its sharpest apex to the W. In this the magma was boiling violently and splashing over the margin in considerable amount. Molten spray was being flung from the E cones. In all respects increase of action was noted.

On Oct. 4 the O.F. pool had enlarged, despite the active building of spatter ramparts, until its dimensions were at least 100 by 70 feet. It was still triangular with the sharp apex to the W. At intervals of no great length portions of the spatter banks collapsed into the pool thus continually enlarging it. Furious boiling and surging followed such collapses. The more or less regular fountain action of O.F. was going on as formerly. All the orifices, together with some newly-formed ones, were glowing brightly, but no molten spray was seen. A high orifice showing a bright, but deep, red glow was seen in the talus under the SW station.

On Oct. 5 the dimensions of the pool were estimated to be 200 by 100 feet. It had become egg-shaped with irregular boundaries. The action in it was very vigorous, but the spatter walls had grown so high that only occasionally were small amounts of the melted rock flung out beyond these onto the floor. The surf-like rushing roar had become very loud. In other parts of the pit the action was as usual.

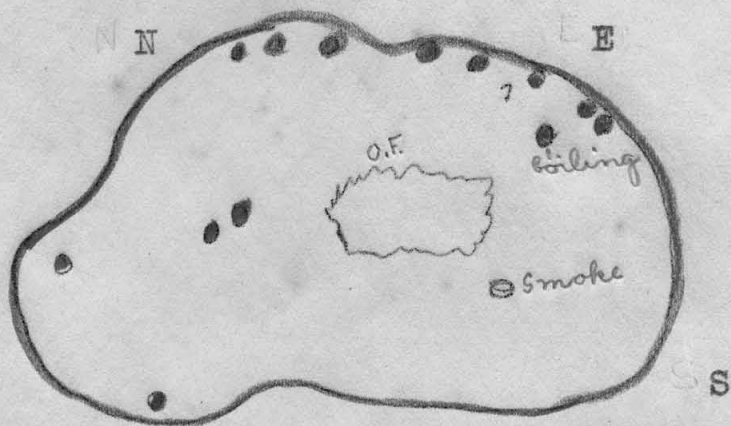
On Oct. 6 the roaring sound was still louder and, despite the spatter walls, a considerable amount of the molten lava was being flung out onto the floor. The lake area was still larger than on the previous day, but the increase in size was not so great as during the first two or three days after its formation. At the smaller orifices all was as usual except that no lava jets were seen.

On Oct. 7 a very high wind accompanied by rain made seeing impracticable. In the early morning hours of Oct. 8 the glow on the fumes indicated that the activity was undiminished.

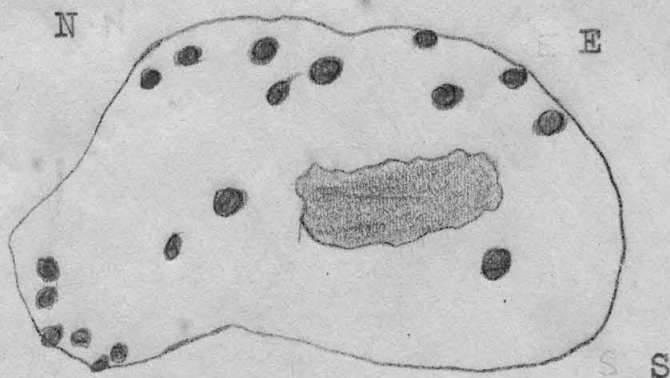
H.O.W.

Day Thursday Date October 8, 1914.
Friday " 9, "
Saturday " 10, "

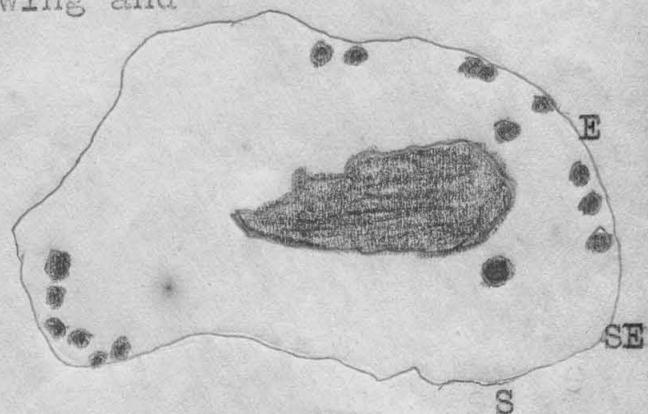
Oct. 8, 4:45 p.m. SE station. O.F. boiling and throwing out lava in all directions. No new flow nor slides.
6:30 p.m. O.F. rumbling very loudly and still very active. O.F. appears to be about 300 feet long and 150 feet wide. Fifteen glowing cones could be counted, all blowing and emitting blue flames.



Oct. 9, 4:50 p.m. From O.R.H. O.F. lava seen rushing back and forth and occasionally thrown over the sides with a loud noise. Cones still flaming. The one at NW shooting out lava spray.
6:30 p.m. Conditions remain the same.

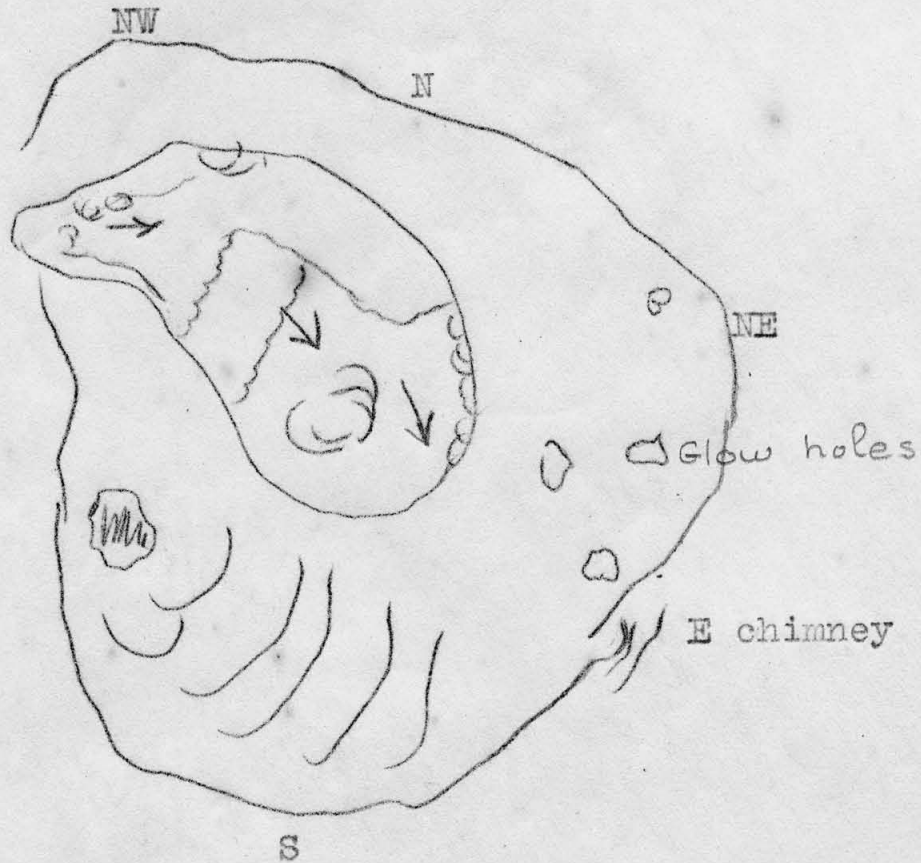


Oct. 10, 4 p.m. SE station. O.F. has been enlarged. Is now about 400 feet long. The width remains practically the same. Cones under the E station blowing and rumbling and showing much glow.
At 6:10 p.m. a travelling fountain was seen to start from the middle of O.F. and go straight toward the east bank, boiling and throwing lava high into the air.



Alex.

3 to 4 p.m. From SE station. Windy. Active pool 500 feet long. Streaming slowly eastward. Fountain noises heard. South floor enlarged by big fresh overflows. E chimney smoking. At 3:30 NW bank fell in with a crash.



T.A.J.

KILAUEA DAY SHEET

Day Monday Date October 12, 1914.

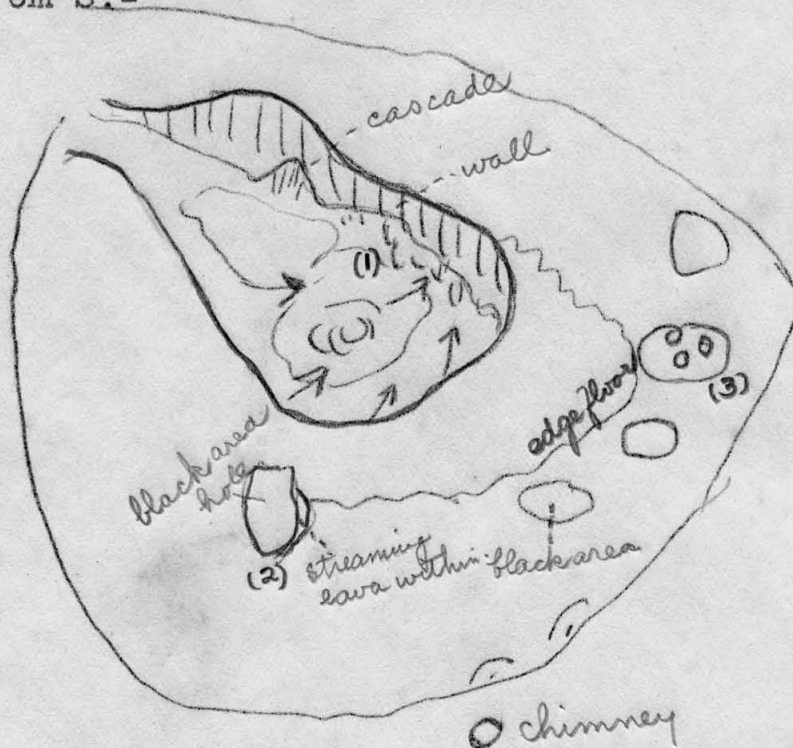
t	sta	pt	hor	vert	lev	dist	elev	h. i.
4:15p	SE	S	0					
	SE	1.N glow cavern pool	-86 26	38 51		572	460	
	S	SE	0					
	S	" " cavern "	52 17	34 44		721	498	
	SE	2.bottom glow hole S	-79 27	45 5				
		(Cannot see from S)						
	SE	3.NE cone on floor	-104 14	38 55		586	473	
	S	" " " "	42 29	29 11		842	468	
<p>Pt. 1 (N rim of pool) 498 feet below rim. Pt. 3 (NE cone on floor) 471 " " " Wall of pool 27 feet high.</p>								
			no	pl	scr	stop	ex	cam

T.A.J.

Day Monday Date October 12, 1914.
 Tuesday " 13, "

Oct. 12,
 4 to 5 p.m.

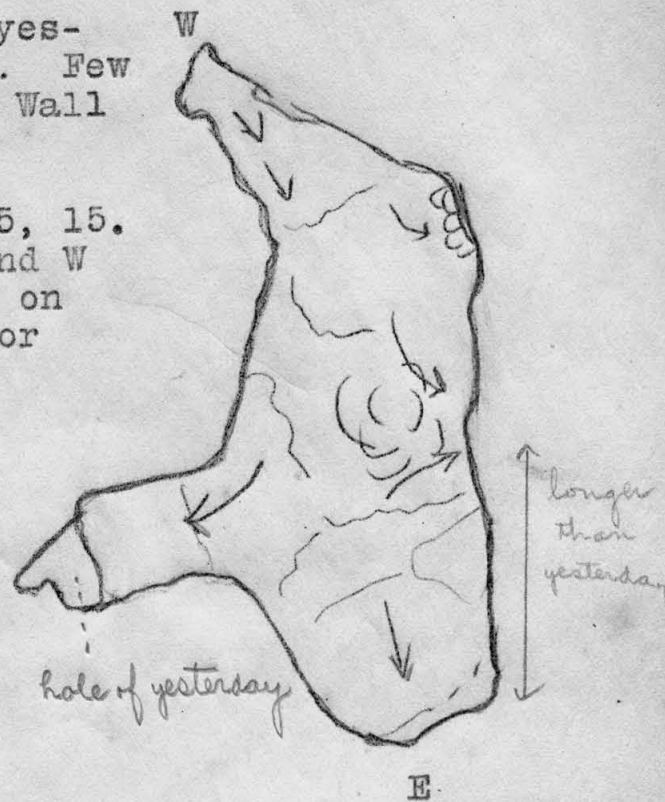
Much smoke going up NE wall. SE glow chimney appears much nearer floor. Twenty foot wall along N rim of pool with stalactites below. Bank here being pounded with lava streaming from the S and W. Large hole on floor S with streaming lava within.
 From S:-



Oct. 13,

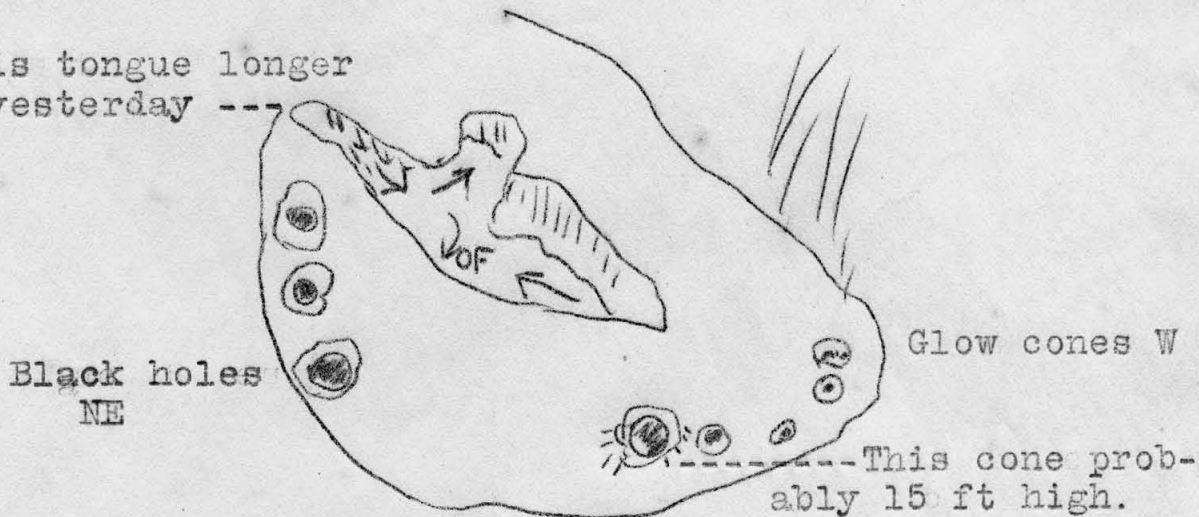
4:45 p.m. Pool larger than yesterday. Slow streaming skins. Few fountains. Splashing noise. Wall 30 or 40 feet high

6 p.m. O.F. intervals 35, 55, 15. Saw cave in wall of pool SW and W wall of new SE cove. Attack on wall and violent ebullition for 1 to 3 minutes after cave-in with streaming toward place of inbreak. Then stagnation and crusting. Very bright hole 10 feet across in E floor in line of E extension of pool. This extension appears to be the hole of yesterday. Whole pool a great river of lava W to E and S into new cove as in February 1913. Is it a rotary flow?



Oct. 14, 10 to 12 a.m. Incessant falling in off walls of pit. Walls 20+ feet high. Funnel crater in NW wall of Halemaumau gone now a vertical channel. Black cavern under W station gone. Floor still broad SW and N of pool. Much whitish stain around cones. View from NW station:-

This tongue longer than yesterday ---



E type of collapsed cone hole:-



"Doughnut" cone, fiery within, characteristic of W, present phase:-



10:30 a.m. From SE station. Wind strong. Pool more open, E and SE coves. Streaming W to E into E cove. Line of fountains up middle very active. Spatter rims of black lava on shores. Black lava skins. Looks risen since yesterday.

T.A.J.

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Massachusetts Institute of Technology

Hawaiian Volcano Observatory

KILAUEA DAY SHEET

Day **Thursday** Date **October 15, 1914.**

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

			no	pl	scr	stop	ex	cam
a.m.								
10:30	SE	E where stone has fallen	1	Seed		F 16	1/25	P
	SE	S fumarole	2	"		F 8	1/75	"

T.A.J.



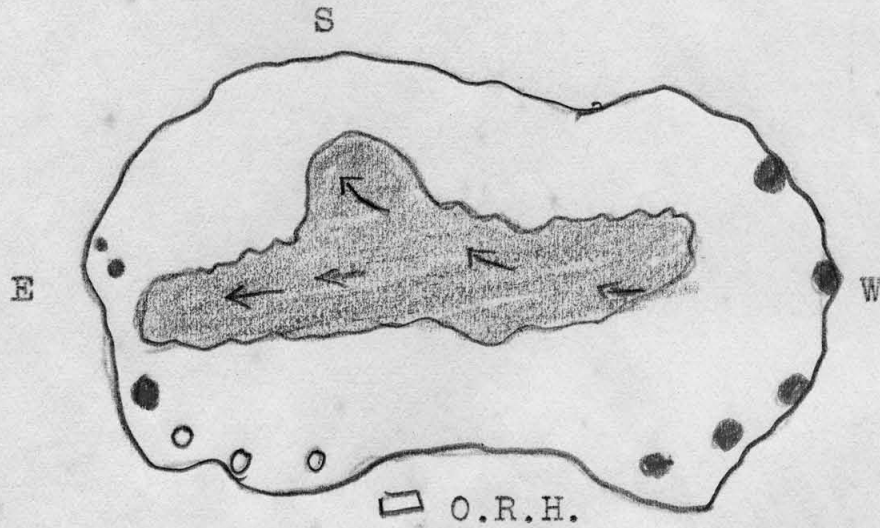
#1



#2

509

Alex' sketch of pit:-



JOURNAL

Day	Friday	Date	October 16,	1914.
	Saturday		" 17,	"
	Sunday		" 18,	"

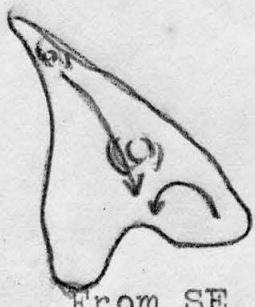
Oct. 16, 11:45 a.m. From O.R.H. Pool active. Streaming E and S. Seemed to be pouring into a cavity under the SE side. Some large pieces from the banks fell in making a loud noise.

Alex.

4 p.m. cavern closed; perhaps a rise.

T.A.J.

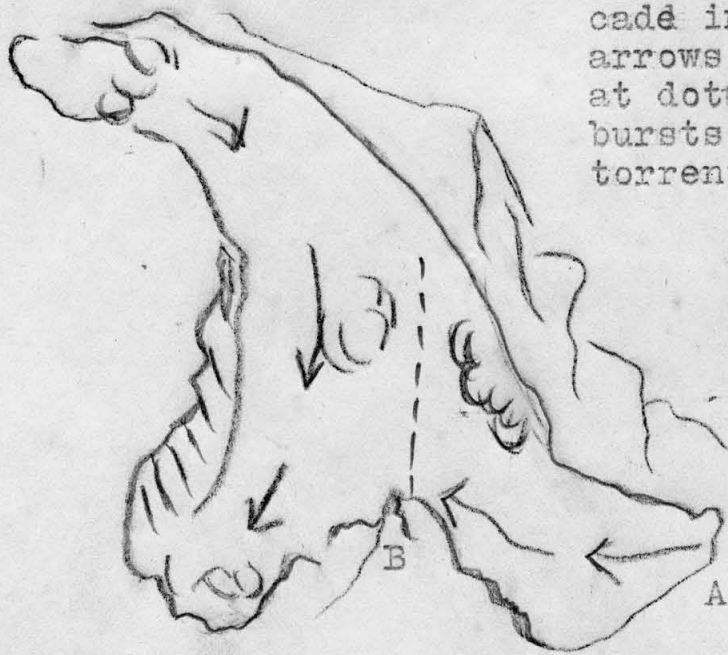
Oct. 17, 4 p.m. H.O. Wood reports the pool about 155 feet down inside its pit. Occasional rumbling. Streaming as shown. Some fountaining, occasionally very strong at W end.



From SE.

D. Lycurgus reported it to be a fine spectacle in the evening but very low.

Oct. 18, 8 to 9 p.m. From SE. For three quarters of an hour cascaded into A and under B as shown by arrows meeting east flowing current at dotted line. Scintillating bursts (flames?) on surface of torrent.



At 9:15 cascades began again, this time pouring under NE bank; flow into S cove stopped.



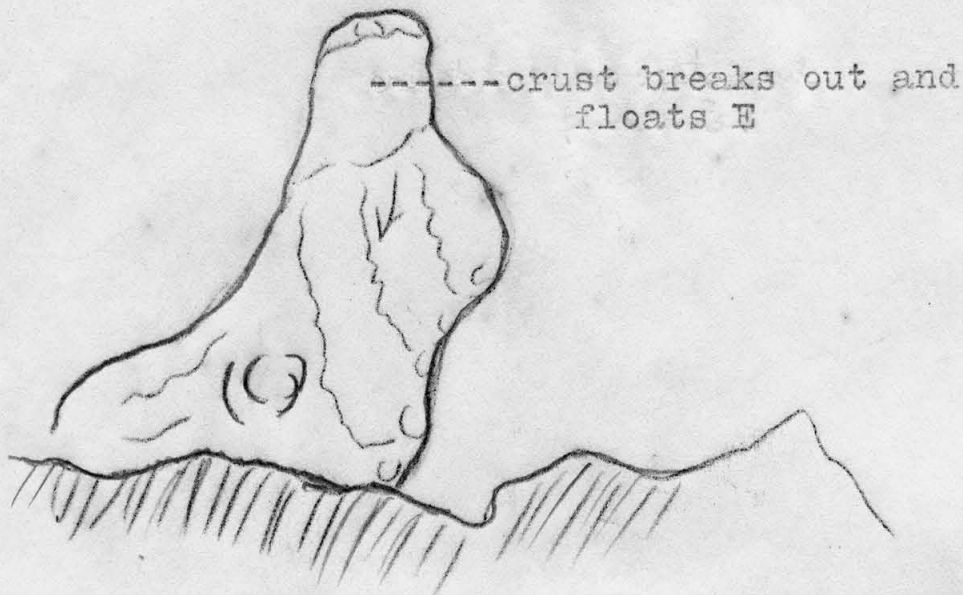
E cove

Small rock fall from fuming E wall. Banner of blue flame from hot pot under E wall.

T.A.J.

Oct. 19, Afternoon no seeing possible. Evening very bright like yesterday.

Oct. 20, 5:45 p.m. From E station.



Streaming W to E. No apparent rise. Pouring under N side of E cove.

From NW station.

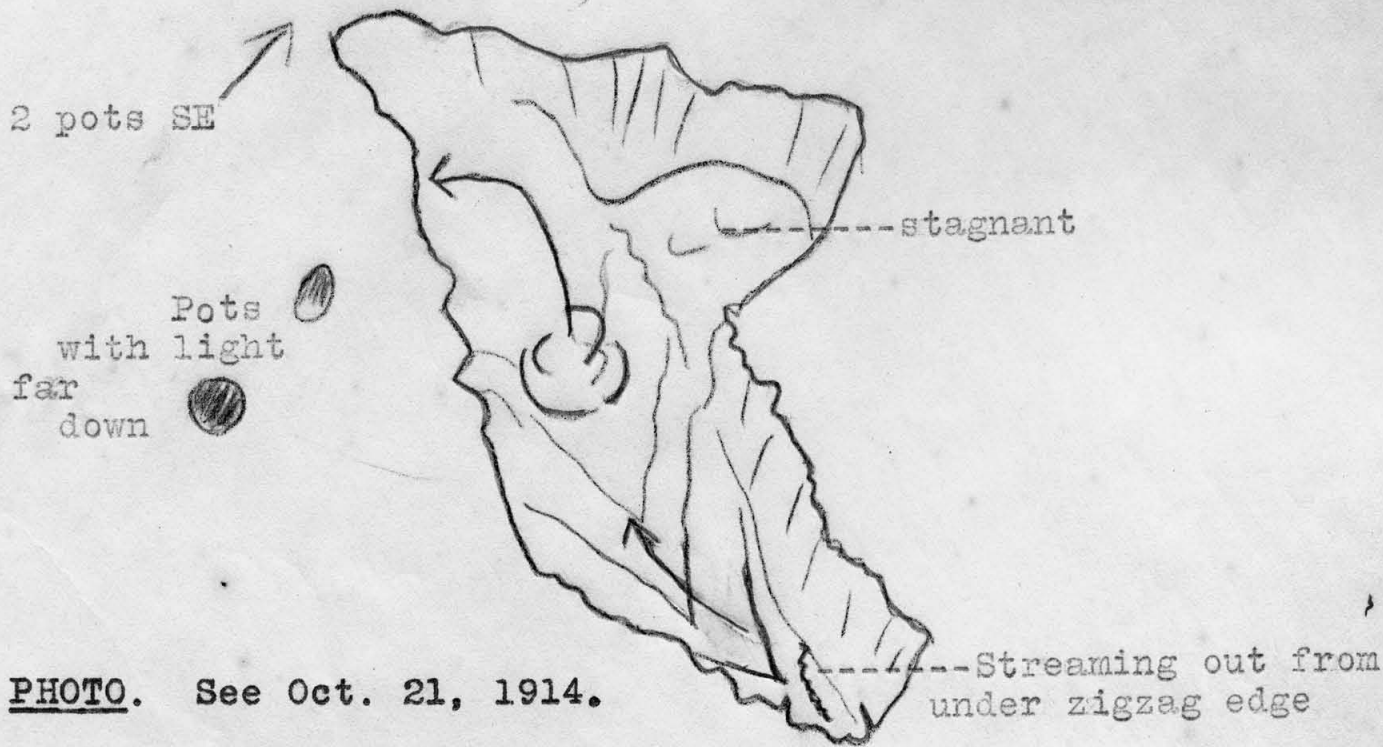
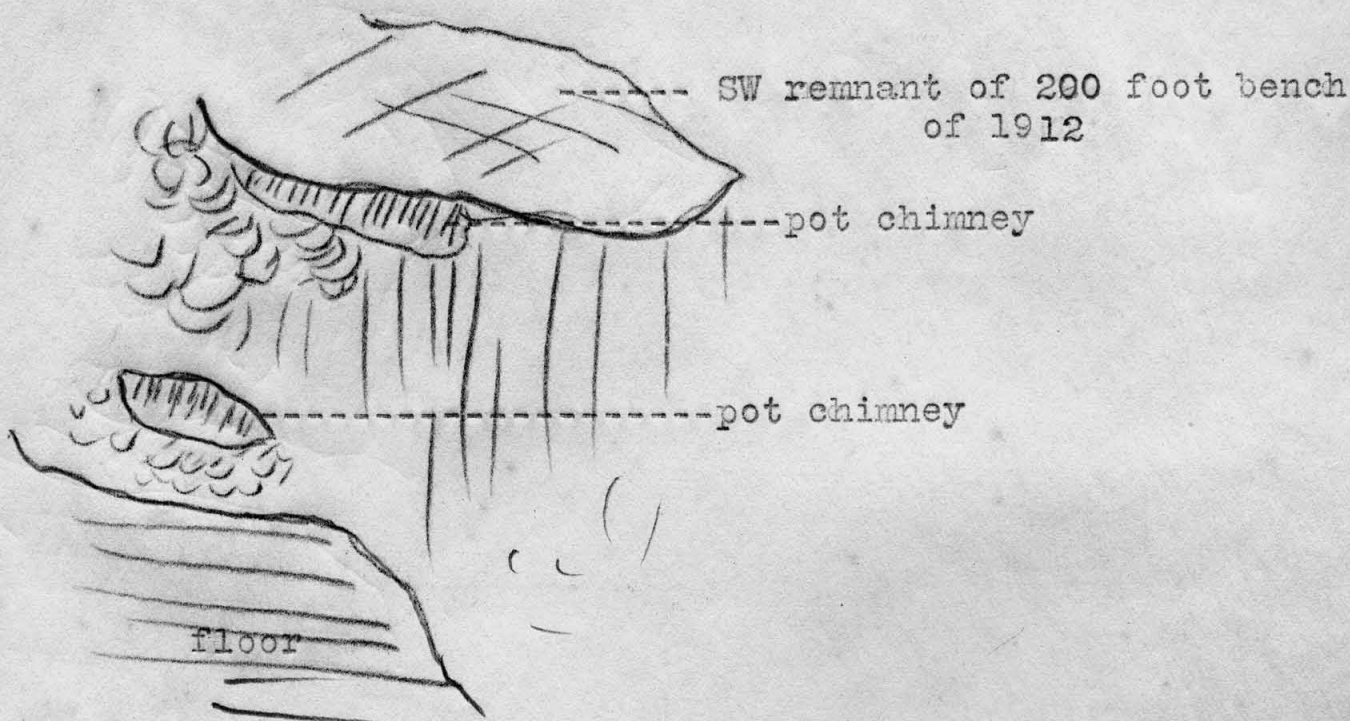


PHOTO. See Oct. 21, 1914.

2 p.m.

From N station. Pit clear. Pool higher. Wall looks lower. Many cracks on floor. End of E cove caving in with brown dust rising. Continuous fountaining about O.F. and E of O.F. where the stream pours under NE wall. Streaming from W and from E cove under NE wall. S cove rather stagnant. Spatter rims 6 or 8 feet above lava.

From N:-

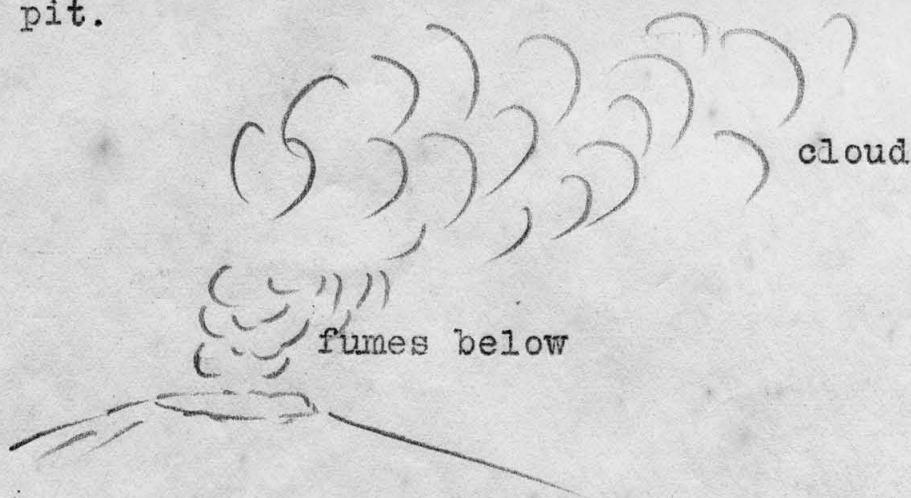


Two chimneys in talus of SW bench noted for the first time; one 15 to 20 feet above the floor and one much higher.

4 p.m.

Continuous boiling of two big fountains, one near O.F. and one in S cove, lasted some minutes. Heat on edge now distinctly felt.

This morning at 7 a.m. big convection rain cloud over and to leeward of pit.



KILAUEA DAY SHEET

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Hawaiian Volcano Observatory

Day Wednesday Date October 21, 1914.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
2p.m.	N	NW	0					
	N	Point bet. S & E coves	88	9 41	43		516	
	NW	N	100					
	NW	Point	-54	13 36	07		521	
These readings at lava level.								
Magnetic station A ₂ - readings for azimuth of line NW station to N station.								
N-NW-A ₂ -----			119	28	read from NW			
NW-N-A ₂ -----			16	22	" " N			
True azimuths								
NW to N -----			99	55				
NW to A ₂ -----			219	23				

Oct. 20.

no	pl	scr	stop	ex	cam
7 p.m.	NW	Alternations of flow and stagnation	W.P.	F 6.3	1 (fummy)
					T.A.J.



S.a.g.

Day Thursday Date October 22, 1914.

Friday " 23, 1914.

- 1 -

- Oct. 22, Conditions remain as in last report, with a change from sinking to rising.
- Oct. 23, 10 a.m. Very rapid rising going on. From SE station pool seen to be boiling vigorously. About 10-foot rampart W, less E. Sudden barometric change? S wind.
12 m. Lava up to the edge on the E, a low rampart left on W. Rampart built up by bombardment on N side of W end of pool. There is a "doughnut cone" under the NW station with lava seething and sputtering within, and throwing up spray. The opening is 12 feet across. The cones in the W are small holes, those in the N are half broken down and the E cones are wholly caved in to pots. Fumes acrid and hard to breathe. Pool rising so fast it could be seen to well up the edges. General slope of floor NW to SE brought out by this rise corresponds to general flow NW to SE. To-day the flow is from a blanket SE of O.F., to the W and to the E and to the S.

The SE corner only a few feet from SE the E wall. There is a black chimney from which no fumes rise on the NE wall. Wind veering S to SW and many changes in seeing. Best seeing N and NW.



rampart- NW

12:40 p.m. NW cone throwing out splashes of lava. Noises of puffing, fountaining, splashing spatter; puffing from fountains under skin half combined with rumble of bombardment like a manufacturing city. Streaming from under a broad E blanket westward. Heat strong on rim. Much Pele's hair about.

1 p.m. Pot NE near wall almost brimming full of red lava. Lava welling up NE between wall and edge of floor. Glow in half broken cone N.

1:15 p.m. Saw a tangle of Pele's hair float by fully 14 inches long and 5 inches wide.

1:30 p.m. Down 2 or 3 feet. Bombarding SW instead of NW. O.F. interval about 60 seconds. O.F. not very large.



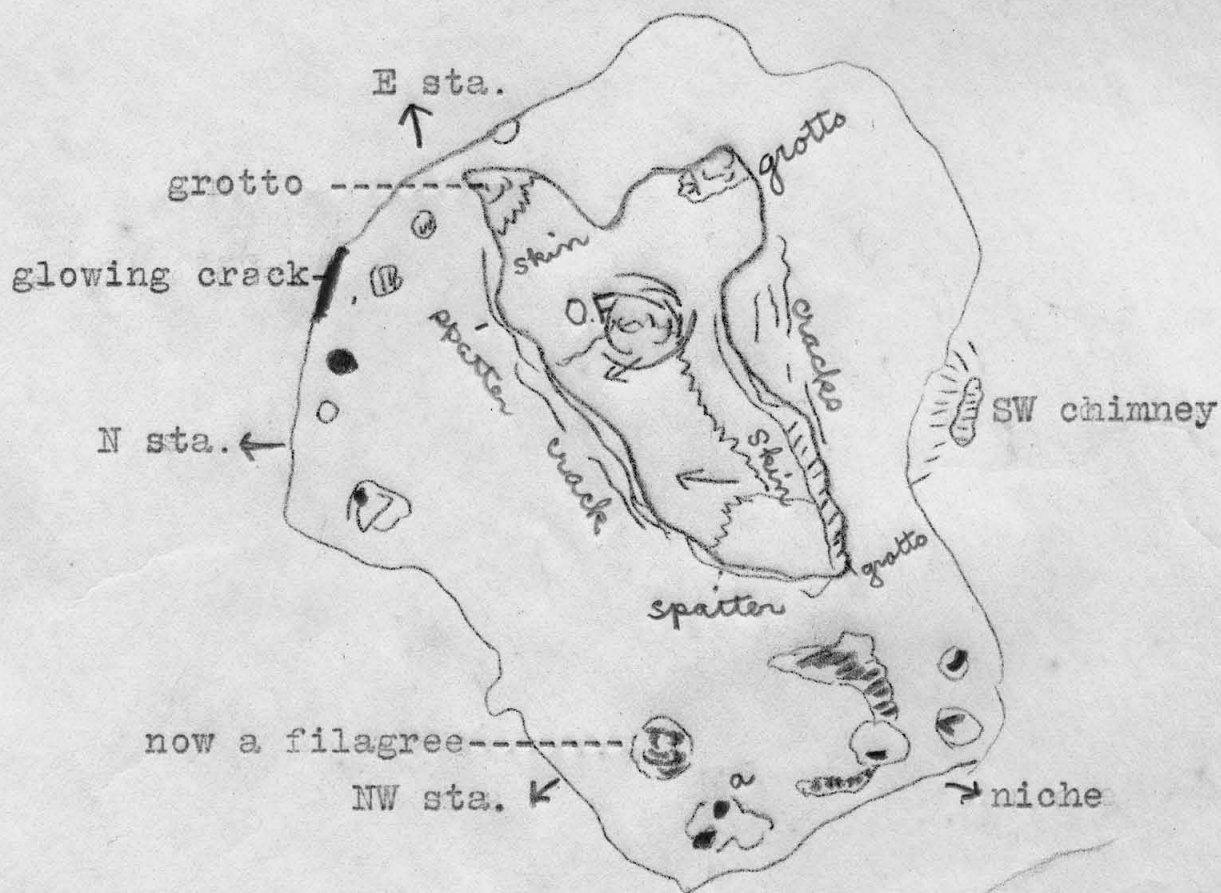
E W

1:45 p.m. Flow began from two sides of large NW cone (WNW) under niche. Small flow on wall side. Large on side of lake.

2:30 p.m. This flow had stopped at this time. Flow from W end and under N bank by O.F. consumed the patch of skin E of O.F.

T.A.J.

- 3:30 p.m. In small NE pot lava had sunk about 5 feet.
 4:00 p.m. Flow W again and rise in NE pot. Cones now blowing.
 4:30 p.m. Sketch of floor from NW:-



- 4:40 p.m. Lava 10 feet down. Streaming SW to NE.
 8-10 p.m. Fumes intensely acrid. Flames from over above grotto splash, from NW cone and other places; blue flickering flame at a. Tremendous noisy bombardment and rise 9 p.m. to 10. Rush into S and E coves. High E chimney still glows. Glow cone at extreme SW border, perhaps chimney. Some stones falling.

T.A.J.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
<u>SURVEY FOR LOCATION OF WEST STATION.</u>								
a. m.	S	SW	0					
	S	W (Top of post)	20 29	-0 56	+2			4ft4in
						Height of S post-		2" 7"
	SW	S (Top of post)		-17	+33	-4		
	SW	W	+134	14				
	SW	W (corrected) (Top of post)	+134	31	-1 41	+3		4" 3"
					elev.	dep.		
	NW	W (Top of post)	0		-52	-3	Height of W post-	2" 8"
	NW	N (Top of post)	+119	53	+36	+2		3" 5"
From these data laid off meridian on celluloid sheet.								
			no	pl	scr	stop	ex	cam

T.A.J.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
<u>SURVEY OF POOL.</u>								
a.m.	N	NW	0					
		Transit set up 3 ft. S of N station on edge of pit						
	N	WNW cone source of flow	34 22	35 21		448	448	
		(This practically NW border of floor.)						
	N	W end pool	57 46	40 01	-5		480	
	N	E end pool	98 33	41 12			412	
		(Loc. dif. from 2 stas.?)						
	N	S cove	85 48	37 0			492	
	N	N splash	85 2	44 53	(?)			
	N	NE lava pot	8? (9) 9 35	49 35			506(?)	
		(NE lava pot is about 20 ft. from NE wall, and E end of pool is about 10 ft. from E wall.)						
	N	NW glow cone (doughnut)	36 7	44 10			453	
	N	Cor. bet. S cove & W arm	78 8					
	N	Cor. bet. S cove & E arm	88 14					
	N	S talus	77 4	29 51			485	
	N	White stone SE border floor	97(?)					
	N	NW station			-4			
	N	W cone	37 32	32 59			441	
		W floor -----	460 ft.	down				
		Top WNW cone -----	12 "	high				
		Top glow cone -----	7 "	"				
		Top W cone -----	19 "	"				
		General level middle floor	470 "					
		" " lava -----	480 "					
		Level E end floor -----	480 "					
		Hence W end inner pit wall	10 "	"				
		Length floor E-W -----	660 "					
		Length pool -----	375 "					
		Width floor -----	550 "	±				
		Width pool -----	150 "	O.F.				
		Length E and S coves -----	80 to 90 ft.					
			no	pl	scr	stop	ex	cam

TTA.J.

KILAUEA DAY SHEET

- 3 - Day Friday Date October 23, 1914.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
	NW	N	0					
		Transit set up 3 ft. SSE of NW station.						
	NW	W end pool	74	32				
	NW	E " "	42	17				
	NW	S cove	59	05				
	NW	N splash (?)	57	56				
	NW	NE lava pot	39	40				
	NW	"Doughnut"	77	52				
	NW	W corner S cove	61	09				
	NW	W cone	103	51				
	NW	WNW cone	103	03				
	NW	E corner S cove	53	27				
	NW	S talus (about)	73	30				
	NW	SE white stone	53	15				
	NW	Tangent floor W	107	48				
	NW	" " N	29	23				
	NW	SW chimney (lower)	83	50				
	NW	S high fumarole	78	40				
	NW	High NE black hole	32	56				

			no	pl	scr	stop	ex	cam
p.m.								
1:30	N sta	Pool	1	W.P.	V	F16	1/2	P
to	" "	Flow W end	2	"	"	F11	"	"
2:30	" "	E end	3	"	"	"	"	"

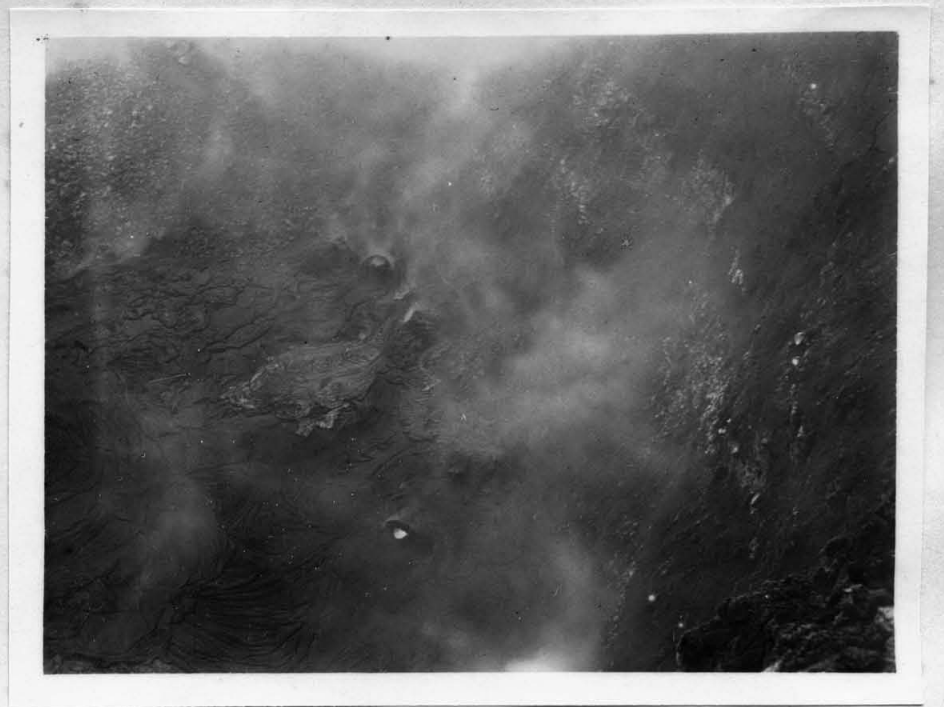
T.A.J.



#1



#3



#2

S.a.g.

JOURNAL

Day	Saturday	Date	October 24,	1914.
	Sunday		" 25,	"
	Monday		" 26,	"
	Tuesday		" 27,	"
	Wednesday		" 28,	"

Oct. 24, Evening. Pool up to edges and spattering over, and changing its streaming.

T.A.J.

Oct. 25, 3 p.m. S station. Spatter cone at S margin high. (original) E pots now cones. Pool large and active. 10 feet down W, 5 feet E. Flow area is floor. Looks like it slopes down from W cones to pool. Active fumarole in talus SE. Fumaroles SW high as in summer. Streaming W to E into coves.

In the evening collapse on bank made violent boiling.

T.A.J.

Oct. 26, 3:45 p.m. From O.R.H. Lake boiling in three places. O.F. active. Twice part of the bank fell in, once between the S and SW, making the whole lake boil violently. Lava down about 10 feet from rim. Alex.

Evening. Seeing poor. From SE saw N shore and E end being bombarded. Travelling fountains. Several flaming grottoes S cove. Harsh blasts from the fountains. Streaming W to E. Skin over W end. About 15 to 20 feet down. Action and shape otherwise the same. Blasts from grottoes?

T.A.J.

Oct. 27, Pit appears smoky. Reported the same.

Oct. 28, 10:30 a.m. SE station. NE wind. Poor seeing. Pool high and active. Seeing too poor to survey pool. Wind blows fumes down though they appear thin.

12 m. E end of pool seen. Streaming into S and E coves. Lava about 5 to 8 feet down. Bombarding S cove. No overflows yet visible. SE fumarole making a craterlet. Noise steady bubbling and occasional blowing in S grotto. T.A.J.

8:30 p.m. SE station. Pool active especially at the S. Appeared about 15 feet down. At 9 o'clock some of the bank between NE and E fell in and set the pool to boiling violently for some time. Alex.



#1



#2

S.a.g.

KILAUEA DAY SHEET

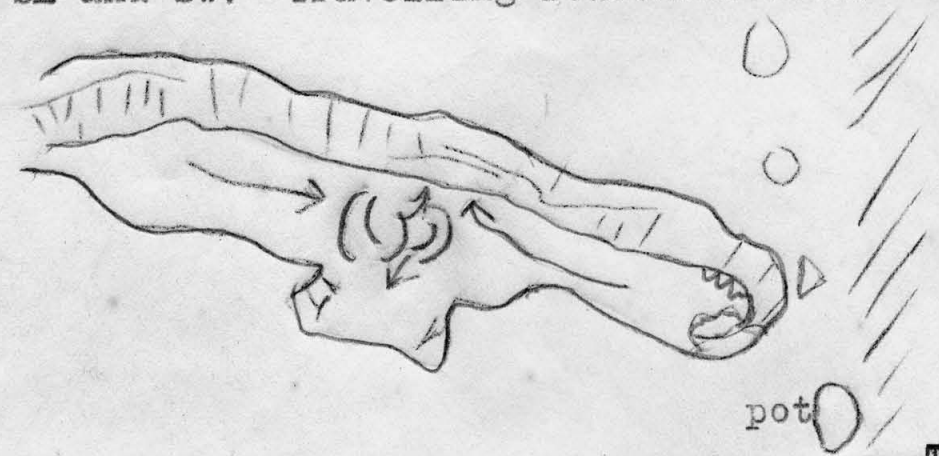
Day Wednesday Date October 28, 1914.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
10:30a	SE "	S SW high fumarole	360 328 6	255 20	T.A.J.			
			no	pl	scr	stop	ex	cam

Day	Thursday	Date	October 29,	1914.
	Friday		" 30,	"
	Saturday		" 31,	"

Oct. 29, 6:30 p.m. From S station. Good seeing here. Pool down fully 20 feet. Slow streaming W to O.F., E to O.F., into S cove and under N bank, with a dividing point E of O.F. Rumbling and splashing in O.F. district. Slow skins parting. Some tinkle of falling stones. Six flaming pots E and flaming cones W. Large E pot has blue flames flaring up steadily fully 8 feet. Stalactites under E end. Splashing in NE and S cove grottoes. Two flaming pots under E wall. Fumeroles active SE and SW. Travelling fountains seen.

From S:-



T.A.J.

Oct. 30, 12:45 a.m. From O.R.H. Pool down 20 to 25 feet. Streaming toward E and S. The NW cone and the W cone are blowing and rumbling but no fire could be seen in them. O.F. active.
 3:07 p.m. Had a good view from the NW station. Pool very active and noisy. Alex.

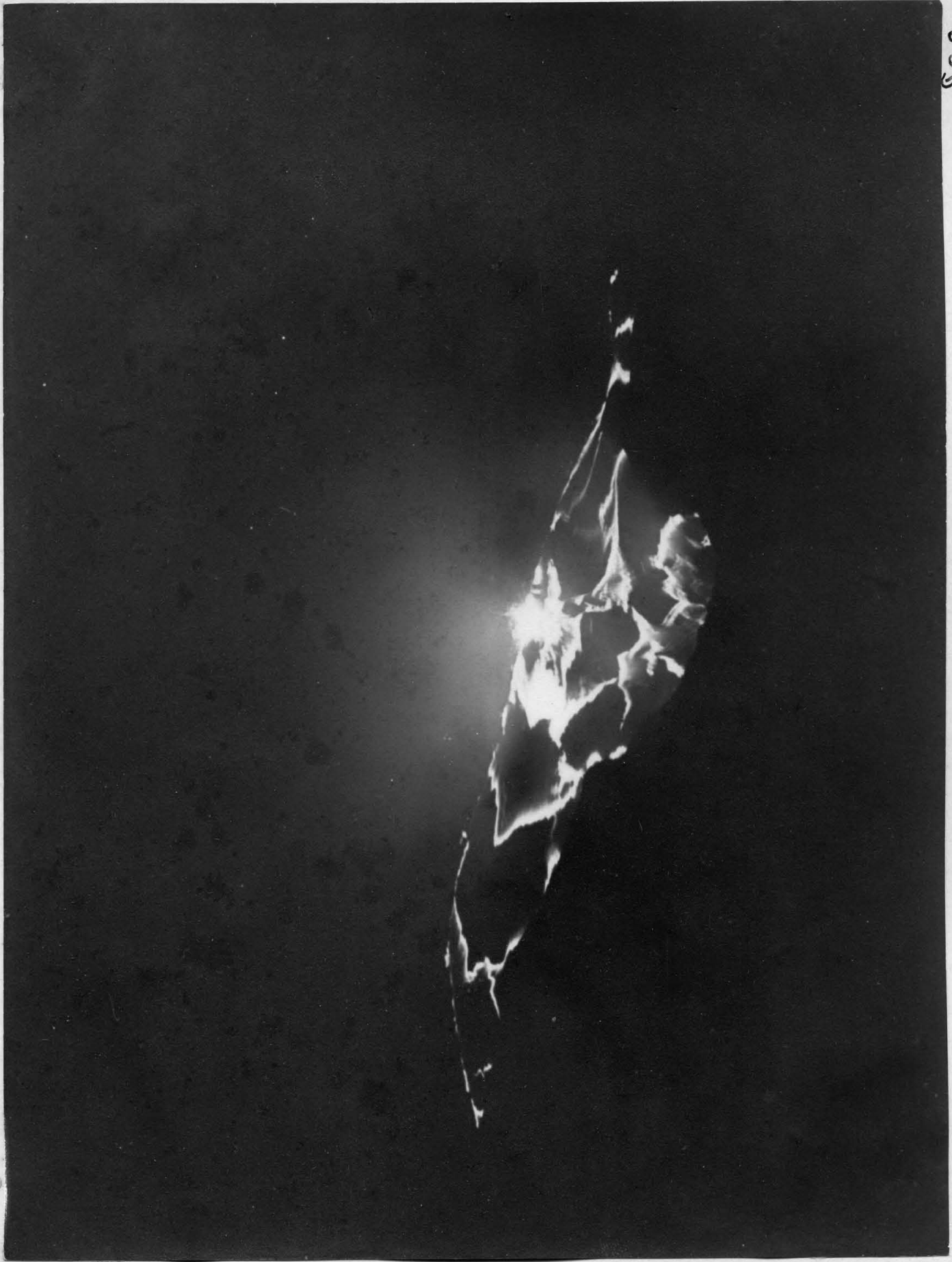
Oct 31, 1:25 p.m. From SE station. Lava in pool has risen. is now 10 or 15 feet below the rim of the pool. Streaming still toward S and E.
 3:10 p.m. From SE station. Pool boiling all over and throwing lava spray up on the banks. O.F. active and occasionally shoots lava high in the air.
 3:50 p.m. From NW station. Pool very active, with much sound like the roaring of the surf. The NW cone blowing lava out on to the floor. Other cones noisy. Alex.

KILAUEA DAY SHEET

Day Thursday Date October 29, 1914.

t	sta	pt	hor	vert	lev	dist	elev	h. i.	
			no	pl	scr	stop	ex	cam	
6:30p	S	Lakee		W.P.		F 6.3	2-3sc cap	T.A.J.	

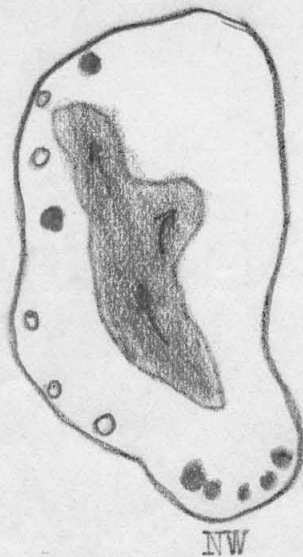
B. 0. 5



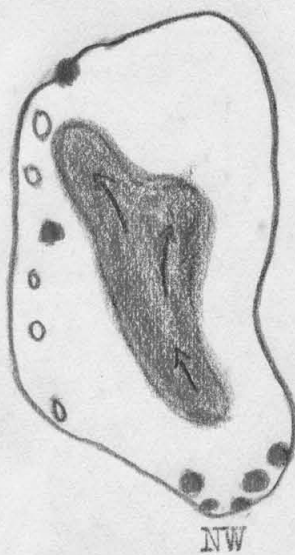
Day	Friday	Date	October 30,	1914.
	Saturday		" 31,	"
	Monday		November 2,	"

Sketches bottom of Halemaumau.

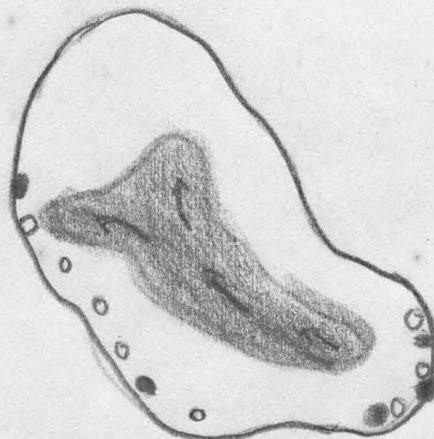
Oct. 30. From NW:-



Oct. 31. From NW:-



Nov. 2. From O.R.H.:-



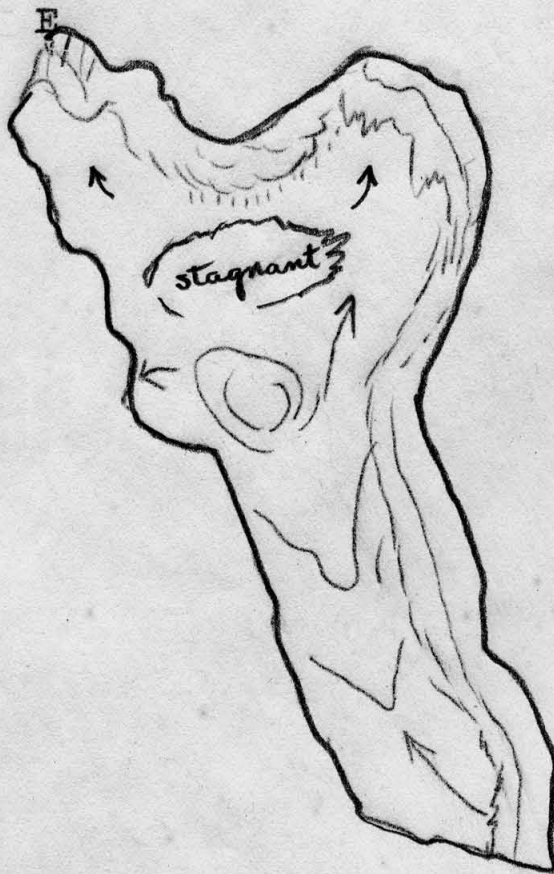
Nov. 2,

11:55 a.m. From O.R.H. No change in pool since last reported. One tumble of rock into pool seen.

Alex.

2:30 p.m. From N and NW stations. Lava appears about 20 feet down W and 15 feet E. Cove wall on the S side of E cove caved in. Streaming W and E. Continuous boiling and some travelling fountains in O.F. locality in addition to periodic explosions of O.F. Noisy boiling under bank E and S. Quiet outflow W. Black skins. Fountains travelling into S cove. Baby fountains at edge W. Fuming cracks on floor NE of pool. NW cone and the one N are glowing and flaming, the NW one occasionally spitting. Three NE holes dark. Heavy spatter border over pool in peninsula between E and S coves as though from long stationary lava. The point more rounded than before. Fumes rising rapidly and brown fumes hugging E wall. Glow cone in talus second W from NW cone (from "doughnut"). No fresh flows.

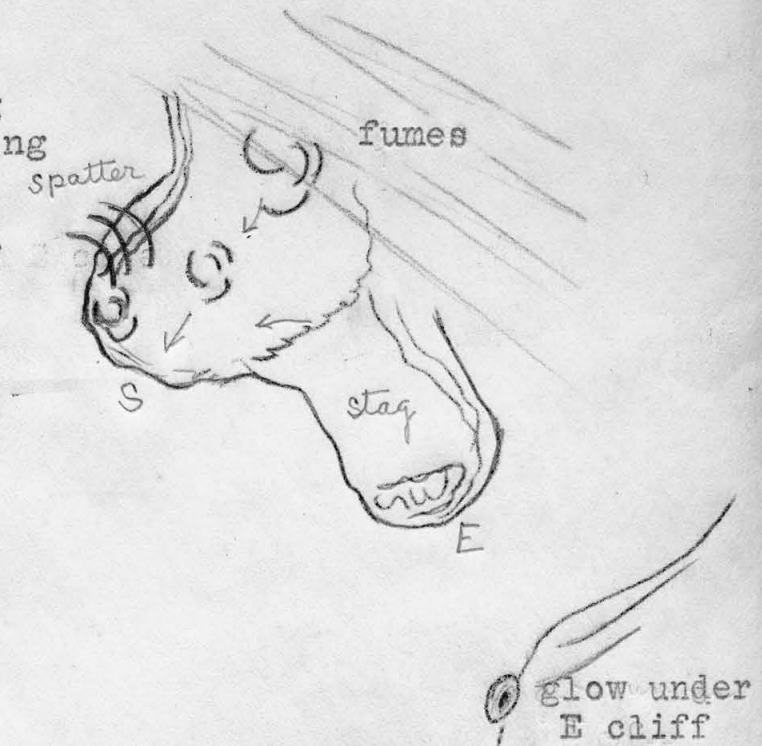
3:00 p.m. From I.H.:-



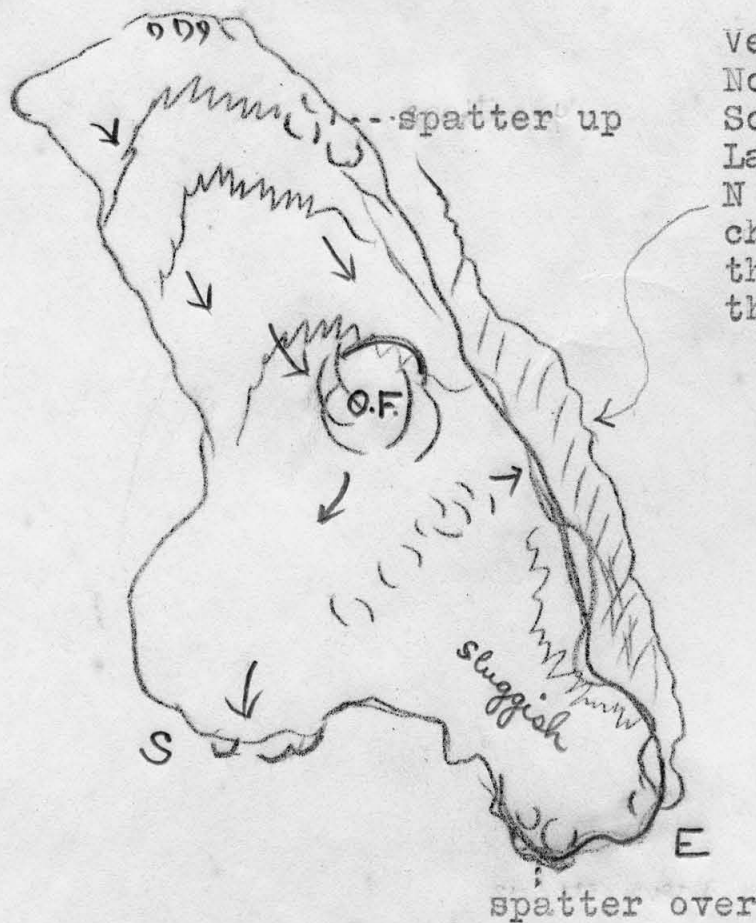
T.A.J.

Day Tuesday Date November 3, 1914.
Wednesday " 4, "

Nov. 3, 11 a.m. From SE station.
East cove completely crusted over, apparently high. Strong rapid flow with much fountaining from W into S cove. Bombardment into end of S cove. Flow from under zigzag edge of E cove into S cove. Lava only about 5 feet down in S cove. Baby fountains in end of E cove. Noise moderate - no rumble.



55 p.m. From SE station.



Very active in spells.
Not noisy however.
Some blowing.
Lava spattered over the N bank of pool during a change of current against that bank. At this time the S cove was stagnant.

Nov. 4, 1 p.m. to 4 p.m. Smoky - no seeing. Usual noise though rather less than yesterday.

T.A.J.

KILAUEA DAY SHEET

Day Tuesday Date November 3, 1914.

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

no	pl	scr	stop	ex	cam
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p.m. 6:30.	SE			WP		6.36	1	T.A.J.
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Sag.

Day Thursday Date November 5, 1914.

Nov. 5, 5:30 p.m. From E station. Dim seeing. Pool streaming from W end to S cove, E cove stationary, some bombardment in its grotto. Level high - only about 5 feet below the bank.

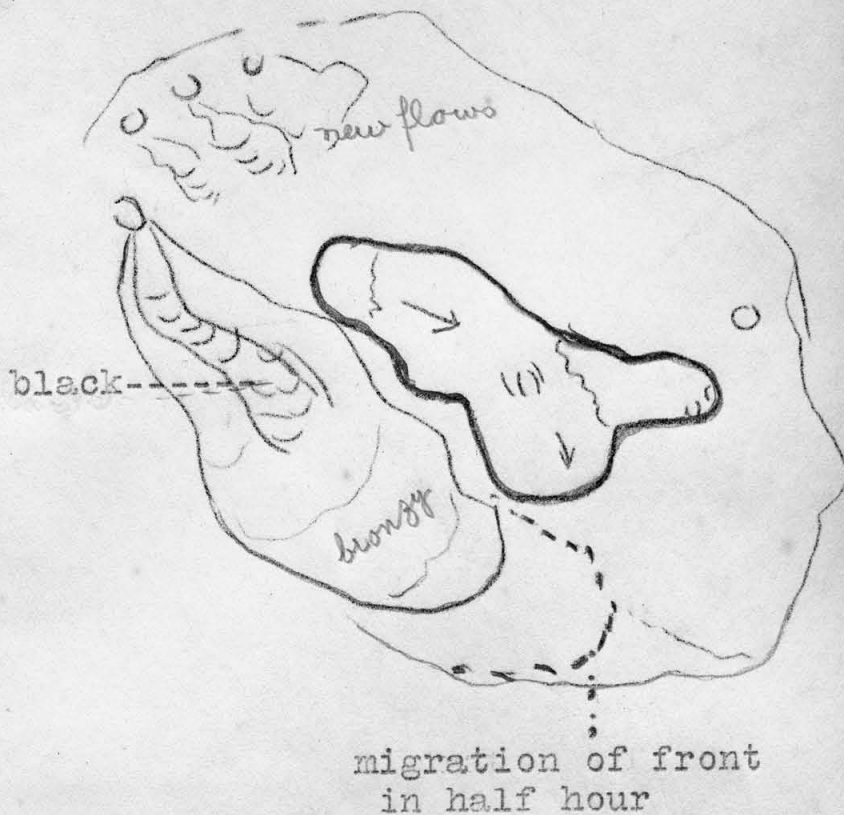
6:30 p.m. From O.R.H. The lava was rising and had become totally blanketed over W of O.F. Streaming E and S from under zigzag edge of skin. Travelling fountains and bombardment first violently in the S cove, then in E cove, then NE bank, then N bank. Rose until practically level with edge along bank between S cove and E cove.

7:30 p.m. From O.R.H. Good seeing. Maximum height was reached at this time and then subsidence until 8:30 of about 6 feet. With subsidence boiling increased, streaming grew more rapid, the western blanket broke up, and the whole pool resumed its usual aspect. A great accumulation of built up rampart almost the whole length of bank between E and S coves caved in with commotion. In the S cove such a rampart in front of the grotto had the aspect of a shell, with a small hole in its top perhaps two feet wide spouting spray. The spray blowing over the grottoes and the sputter phase of O.F. very pronounced this evening. Spray blown up thirty or more feet. The NE holes glow dimly. The W cones all very active, five of them glowing. The NW shows lava pool bubbling within. The one WNW has a large opening with a stalactitic screen across its N side which grew from the dribblets of fountains working below. Within could be seen here also the slowly streaming and fountaining lava. There were flames from all these cones. Quiet plashing during rising stage, plashing with rumbling during the sinking. South grotto open more during the sinking.

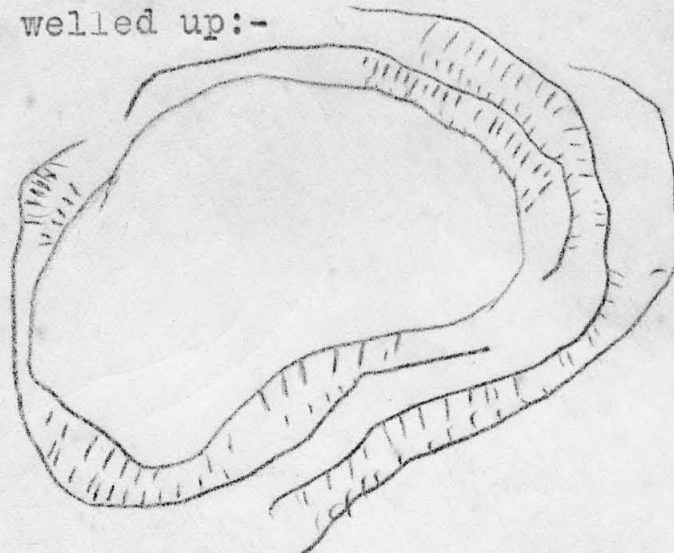
T.A.J.

Nov. 6,

4 to 5 p.m. From S station.
Pool brimming. Flow from cone
W corner. Flow over whole
SW part of floor. Small
flows from other NW
cones. East cove
brimming.

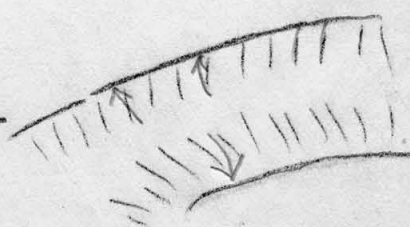


8:30 p.m. From S station. Lake very active. Rumble
and blow and splash. Rush into S cove and sometimes into
E. Blue flame base of E cliff. Large area in new flow
SW cracked up and foundered. Circular area 100 feet in
diameter. Lava welled up in a pudding and formed toes
around border with cracking and foundering of the crust
concentrically outward from the area.
Peculiar pattern as the lava welled up:-



Very slow streaming in main pool and sudden rush to the
coves.

Lava rising in crack --



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Hawaiian Volcano Observatory

KILAUEA DAY SHEET

Day Friday

Date November 6, 1914.

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

no	pl	scr	stop	ex	cam
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8p.m. "	S "	Lake "	1 2	WP "		6.3 "	3 1	
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T.A.J.



#1



#2

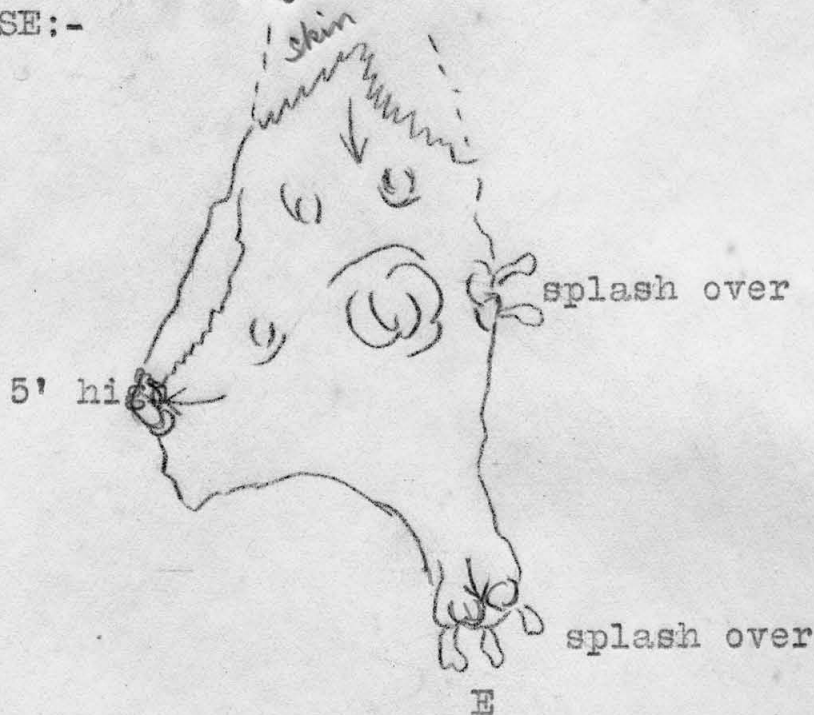
Sag.

Day Saturday Date November 7, 1914.
Sunday " 8, "

Nov. 7, Morning. Seeing poor. Wind SE. Pool high. Open W.
Flows W end not moving. Noise plashing.

2:15 p.m. Saw from SE. Pool down about 10 feet. Stal-
actites in S cove.

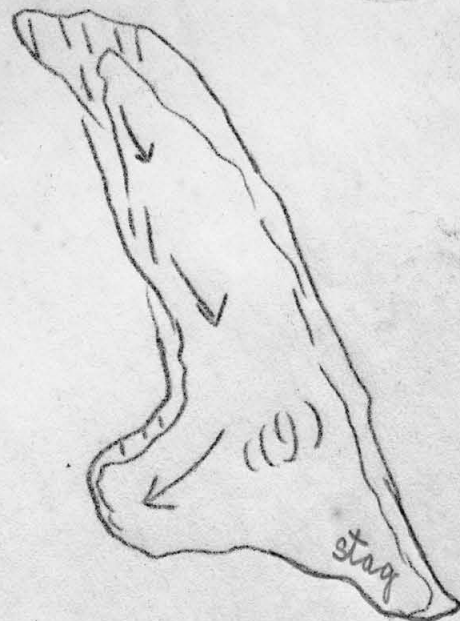
4:30 p.m. Rising again. E cove growing smaller. Skin
over W end. Baby fountains abundant.
From SE:-



Nov. 8, 3 p.m. Pool appeared down a little. Very active. Shore
almost straight line between E and south coves. Streaming
into latter. Blowing noises very strong and continuous.
Baby fountains around O.F. Glowing chimney in the SW talus
which is blowing.

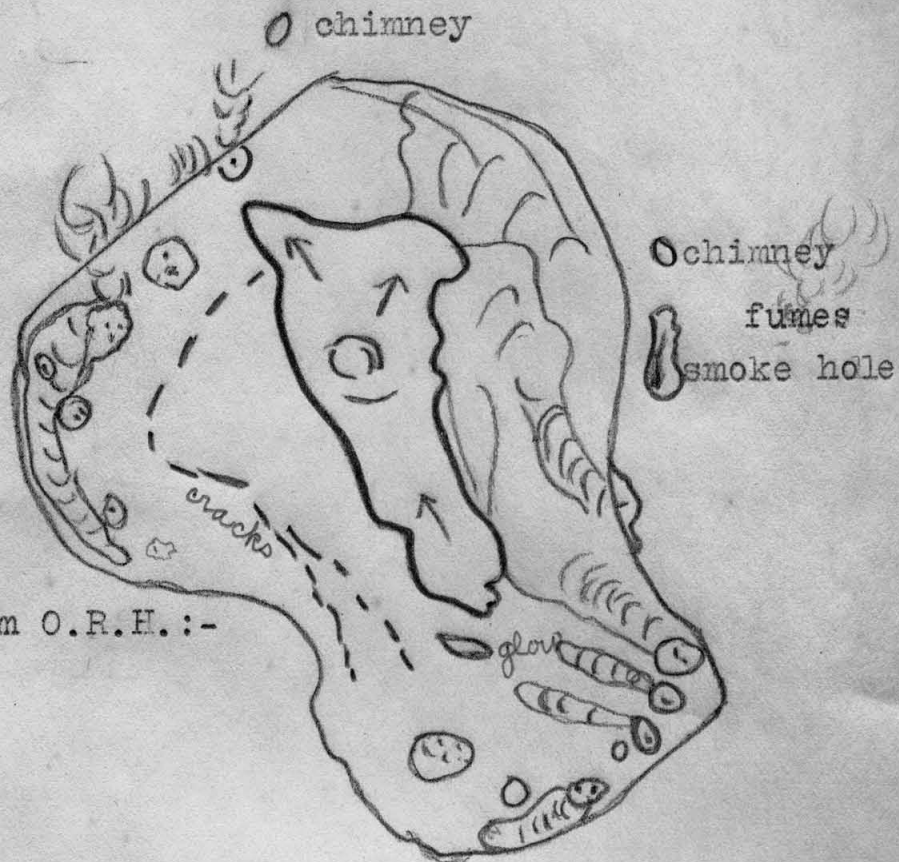
From SE:-

4 p.m. Rising pool. Quiet skins.
High wall W, lower E. Was W end
increased in height by the recent
flows?



Day Monday Date November 9, 1914.
Tuesday " 10, "

Nov. 9, 2:45 p.m. Clear seeing from N and NW. Six cones NE replacing pots. High chimney glows NE 50 feet up. Fresh flow from about middle of NE cone northward along wall. Big cracks along NE floor. NW cones blowing. New flows out from under three of them. The "doughnut" now a filagree dome. Streaming W to E and S coves. Pool about five feet down. Spatter rim all around.



From O.R.H.:-

Nov. 10, 2:30 p.m. to 4:30 p.m. Crater same as yesterday. Seven cones W and seven cones E. Streaming W to E and S. At 2:30 the level was lower and there was noise of splashing, rumbling and bubble fountains. At 4:30 the lava was higher, only five or six feet down, and the lake was very quiet.

From O.R.H.:-



KILAUEA DAY SHEET

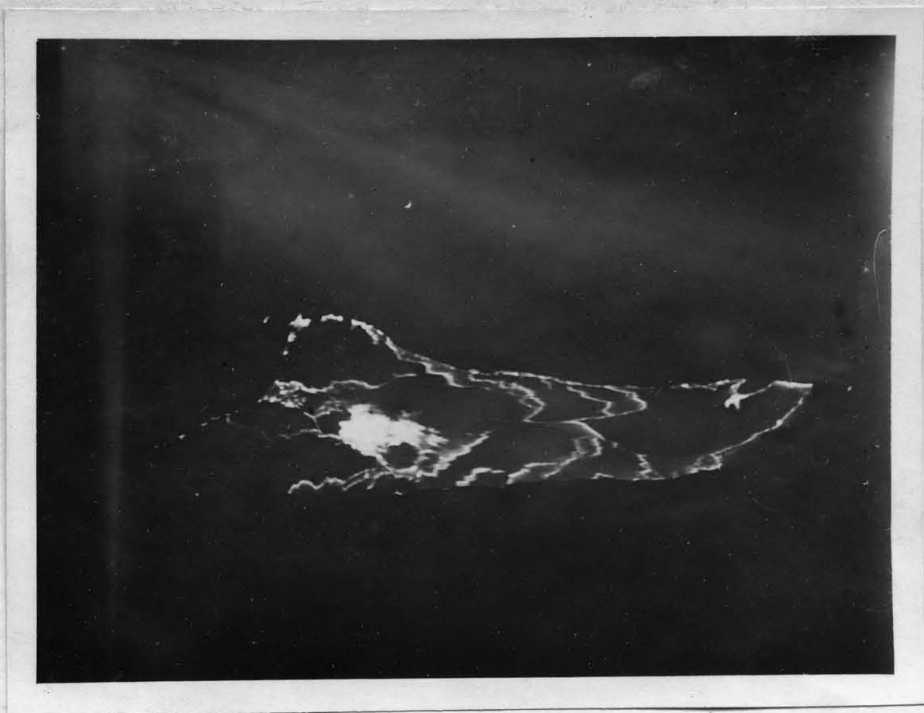
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Hawaiian Volcano Observatory

Day Monday Date November 9, 1914.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
p.m. 2:45	N	NW	0					
	N	S cove lava	85 19	31 ⁽²⁾ 19		635	468	
3:10	NW	N	0					
	NW	S cove	58 45	32 21		742	<u>470</u>	
						Average ----	469	

			no	pl	scr	stop	ex	cam
p.m. 2:30	N	Pool	1	WP	15x	6.3	1	
"	"	W cones	2	"	"	"	1	
3:30	NW	Pool (cloudy)	3	"	"	"	3	

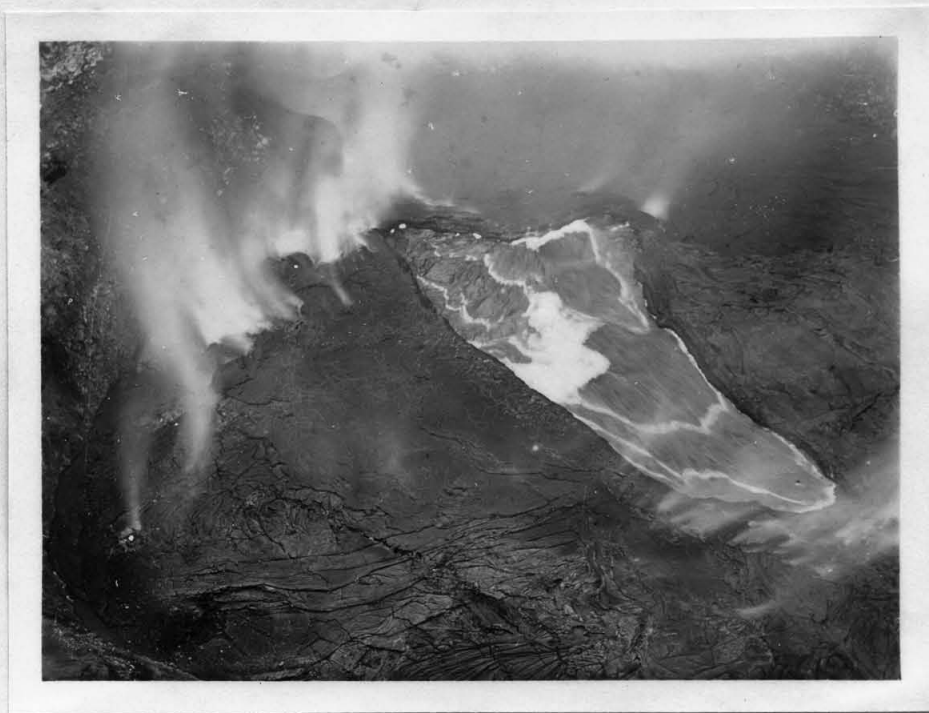
T.A.J.



#1



#2



#3

S.a.g.

Day Wednesday Date November 11, 1914.
Thursday " 12, "

Nov. 11, 3:30 p.m. Some seeing S, SW and W. Wind E. Pool 10 feet down. S cove appears somewhat deeper at its end. Streaming W to E and into S cove. Hissing noises S cove and W cones. NW cone with open top and splashing lava within. Felt earthquake last night. Shown in seismograms. Pool active same as recently.

Nov. 12, 2 p.m. From N. Pool very active and down 12 feet. NW and WNW cones have openings in top, the one WNW spouting. ENE cone has collapsed and is full of lava. E cove has widened greatly by collapse of its N bank whither the current streams under rapidly. Noise splashing, blowing and rumbling. N cracks in floor fuming.

NW cone is very large and high:-

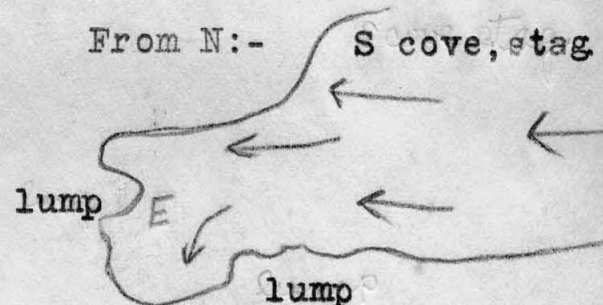
Fumes appear thinner to-day than for some time past. Fairly acrid. Wind SW



3 p.m. Pool only 5 feet down at W end. Fuming holes 8 or 10 feet back from edge of bank W end. Sulphur around pot at edge of floor E. Fuming all along NE cracks and cones especially between the full pot and the lake at E cove where the current pours under.



Tremendous bombardment of shores between E and S coves, at 3 p.m.



3:30 p.m. Brimming along W shores. Pool seems to lie in depression of floor.



Rumble noise from clouds over Mauna Loa all day. Thunder?

T.A.J.



#1



#2

S. J.

Day Friday 13 Date November 13, 1914.
Saturday " 14, "

Nov. 13,

3:45 p.m. Conditions much the same. Streaming W to S and E. About five feet down. Tremendous activity of travelling fountains from O.F. to E cove. E cone and large WNW cone both puffing and spurting.

4 p.m. Sinking.

4:20 p.m. Rising. Grotto roofed over with two spouting horns in S cove. Overhang with stalactites S side of E cove. Pool appears to extend under a 5-foot crust throughout region between E and S coves. Cracks in N floor growing in width and number. High E chimney glows.

7:52 p.m. Felt light earthquake at Volcano House.

From NW:-



Nov. 14,

4 p.m. From SE station. Down about 6 feet. Active W and S. Heavy spatter borders. Varying blowing and splashing noise. Pouring under E-S point. Larger spouting horn over S cove now a cone.

4:15 p.m. Rising.



T.A.J.

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Hawaiian Volcano Observatory

KILAUEA DAY SHEET

Day Friday

Date November 13, 1914.

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

no	pl	scr	stop	ex	cam
----	----	-----	------	----	-----

p.m.
3:45
"

NW
"

West cones
Pool

1
2

WP
"

zx5
"

6.3
"

3
5

T.A.J.



#1



#2

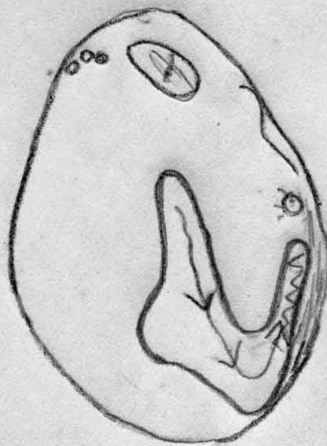
Ta. J.

Day Sunday
Monday

Date November 15, 1914.
" 16, "

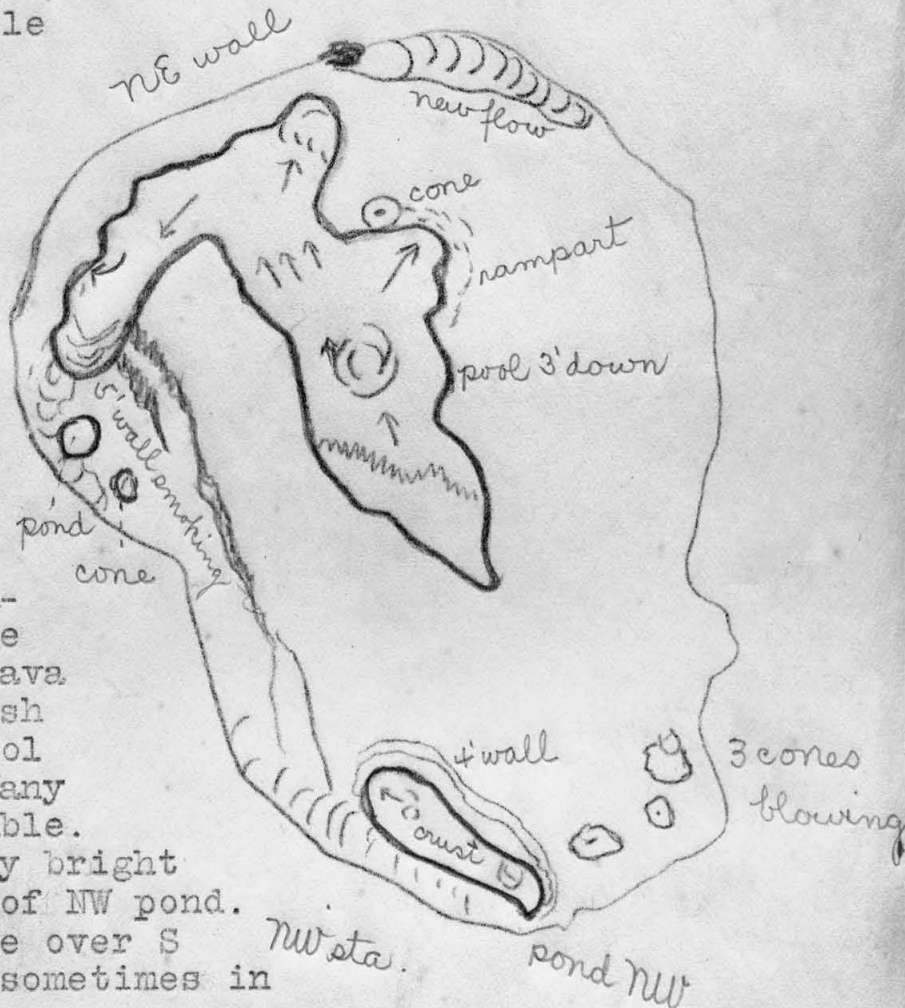
Nov. 15, No record. Prolonged vibrations after midnight (a.m.).

Nov. 16, From SE. Sketch by H.O. Wood:-



11 to 12 a.m. Variable SW wind. Smoky. Remarkable changes in the lake which confirms surmise that the border cone line was a crusted extension of the lake along the peripheral cracks the crust of which is now foundering. NW and NE the cones have foundered leaving an isolated elongate pond against the NW wall and a long narrow arm of the lake along the NE wall. Streaming S to N in W pond, W to E and S in main pool and S to N in NE arm of pool. Small ponds N of N end of arm, and great cracks. New wall flows NE to southward, end of NE arm to northward and end of NW pond to northward. Sag along base of walls of Halemaumau as though the floor were collapsing toward the center. Great cracks in N part of floor more gaping. Rise and fall every few minutes; rumbling and fountaining on fall, plash on rise. Blowing in W cones in puffs, some splash up them and occasional whistling puffs. New cove southward from former E cove. Spatter ramparts NE side of new NE arm and in S cove. New NE arm 150 feet long. Estimated length of pool 400 feet, of NW pond 100 feet. Little NE pond which is about 12 feet long, sometimes all black and crusted.

2:30 p.m. NE arm and E cove steadily getting larger. Blast W cone getting louder. Smoke blown down from high SW fumarole yellow - makes fountains whiter. Smoke from live lava W pond and NE arm red - makes fountains carmine or blood red. Is it two forms of sulphur? Saw NW pond break suddenly and crusts founder rapidly northwestward with bright yellow lava which rose with a seething in the NW grotto and then cooled and resumed slow skinned over streaming. Flames from all the cones and grottoes. A lava curtain in front of inrush grotto NE of NE arm. Pool down 12 or more feet. Many stalactites and much rumble. Heat on faces. E chimney bright flame. Oven over N end of NW pond. N cone glowing, also cone over S cove. Bubble fountains sometimes in the rapids. Not always.



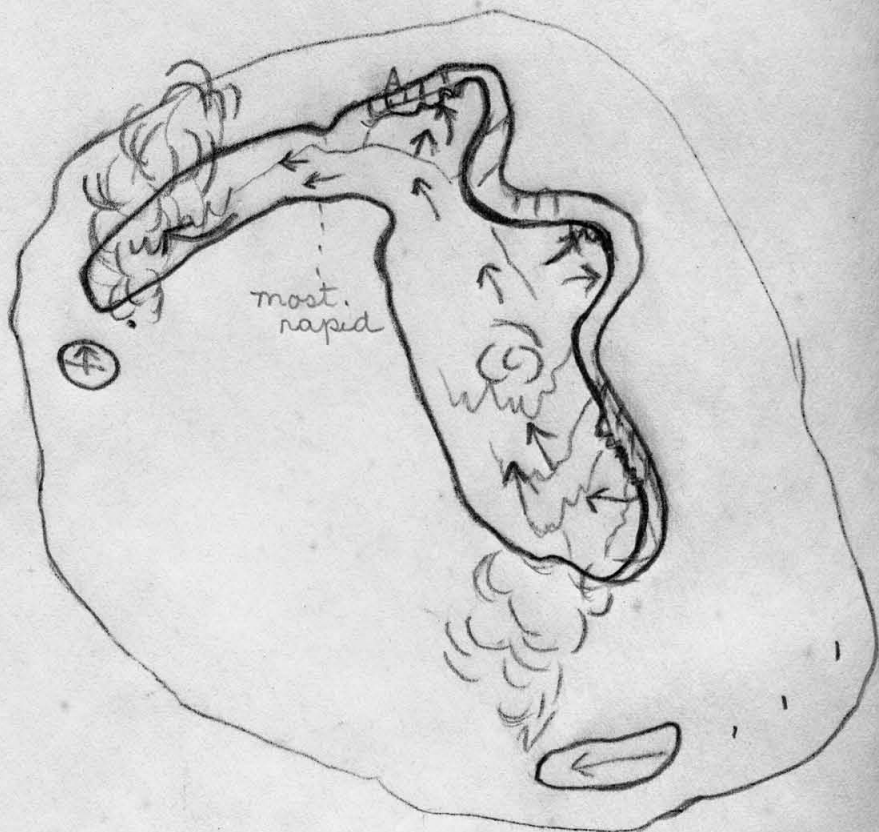
From NW.

From NW:-

○ chimney

9 to 10 p.m.

Undermining at A, actual wall, falling stones.



T.A.J.



#3



#5



#6

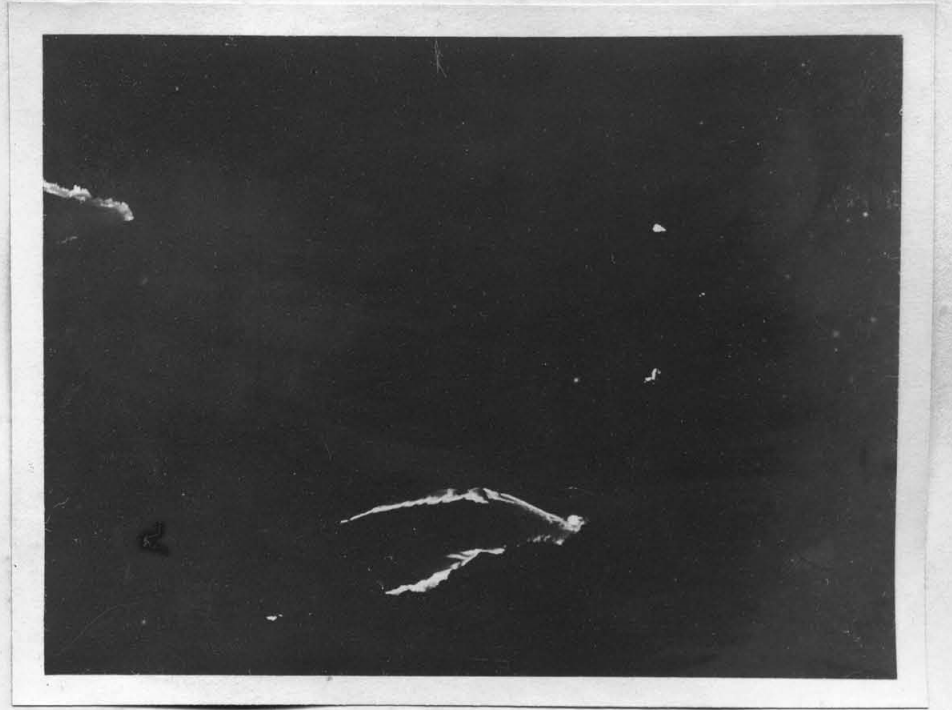
T.A.G.



#4



#1



#2

T.A.G.

181a

1914, Nov. 17



5.a.g.

#3

Nov. 18, No record.

Nov. 19, 10:45 a.m. Pool very active, with row of travelling fountains going toward the E cove and some to the NE. Streaming from W to E and S in main part of pool, and S to N in NE arm. Very rapid around the bend into arm. Surface of lava about ten feet down.

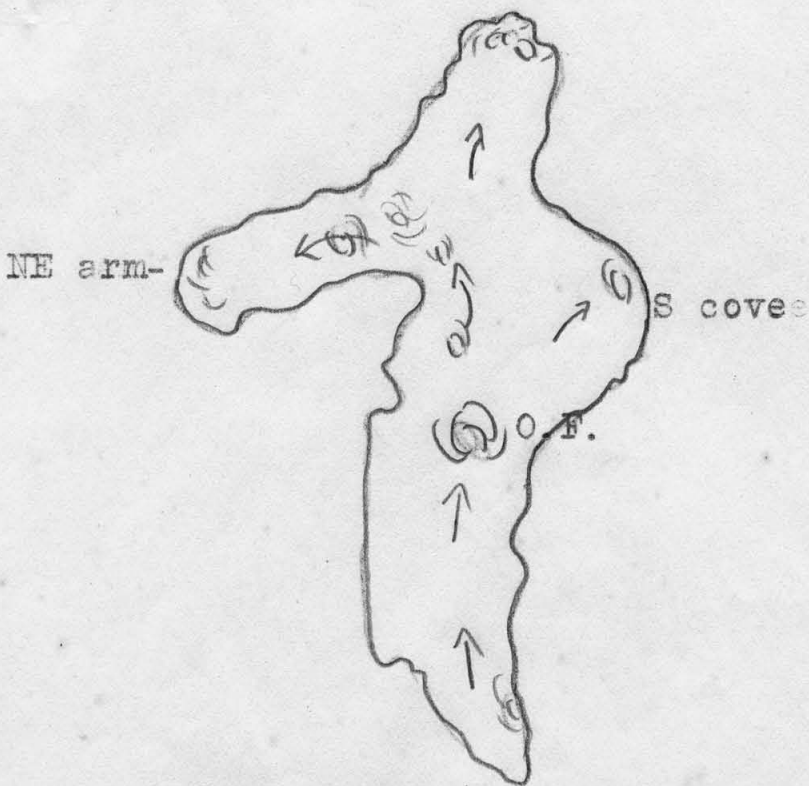
11 a.m. The lava has risen almost five feet. Great activity in pool.

2 p.m. Lava has sunk to the same level as it was at 10:45 this morning. Cove S boiling and blowing with lava dashing up on the bank. NE cove boiling and blowing loudly. The W pond is covered with a thin skin which can be seen to move slightly at times. No sound can be heard from this pond. There is a strong wind blowing which makes it difficult to hear the noises from the pit. W cone blowing occasionally but showing no lava spray.

5 p.m. From O.R.H. End of E arm longer. W end of NW pond has joined with next cone W. W part of main lake appears wider. Alex.

T.A.J.

From NW, 10:45 a.m.:-



Alex.

Day	Friday	Date	November 20,	1914.
	Saturday		"	21, "
	Sunday		"	22, "

Nov. 20. 8 p.m. SE and S stations. High NE wind. Clear. Pool appears down 10 to 15 feet. Streaming W to E and S, and under cliff E and NE about under the two ends of 1894 bench. High E chimney very bright. NW pond elongating eastward and apparently low within its walls. E arm elongated in the direction of meeting NW pond. Part of it under NE cliff straight as a ditch. Appears artificial. O.F. bursting in multiple domes at times and a group of small fountains plays incessantly at the O.F. locality. Fastest streaming in E arm at point of outrush under bank NE. No falling stones seen to-night. General activity suggests a subsiding phase, however; no sluggish skins. There is a very active fumarole back of a slab high above the E chimney. About half way up. Ten earthquakes on seismographs yesterday. Mauna Loa clear to-night and to-day after the forenoon.

T.A.J.

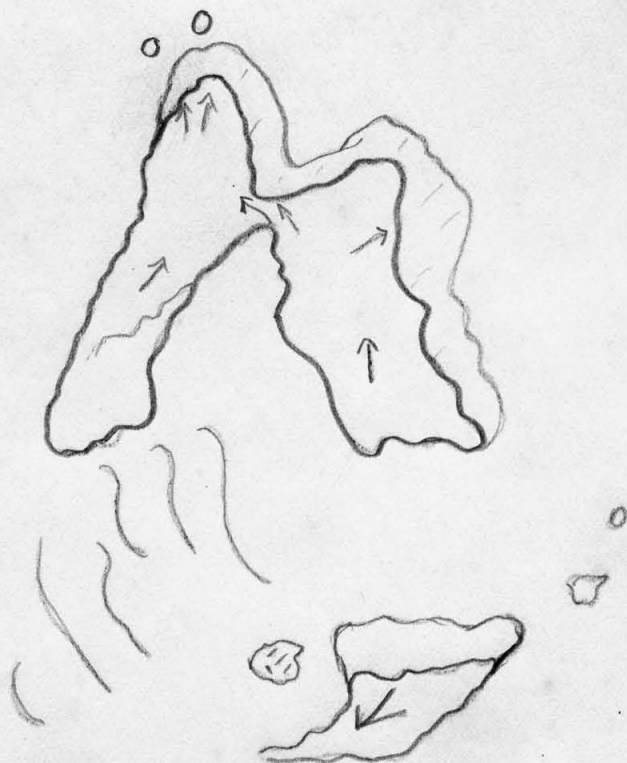
Nov. 21. 11:20 a.m. From SE station. Pool down about 20 feet below its rim. Very active and noisy. Several fountains playing at the same time, some travelling around the bend into the NE cove.

2 p.m. From O.R.H. Saw a long trench running from NE to N but having no molten lava in it. Many wide cracks. Only three places very active -- NE, E and in the middle at O.F. Lava has risen to five feet of the top. NW pond active, streaming slowly under cone. All the cones from W to NW blowing loudly.

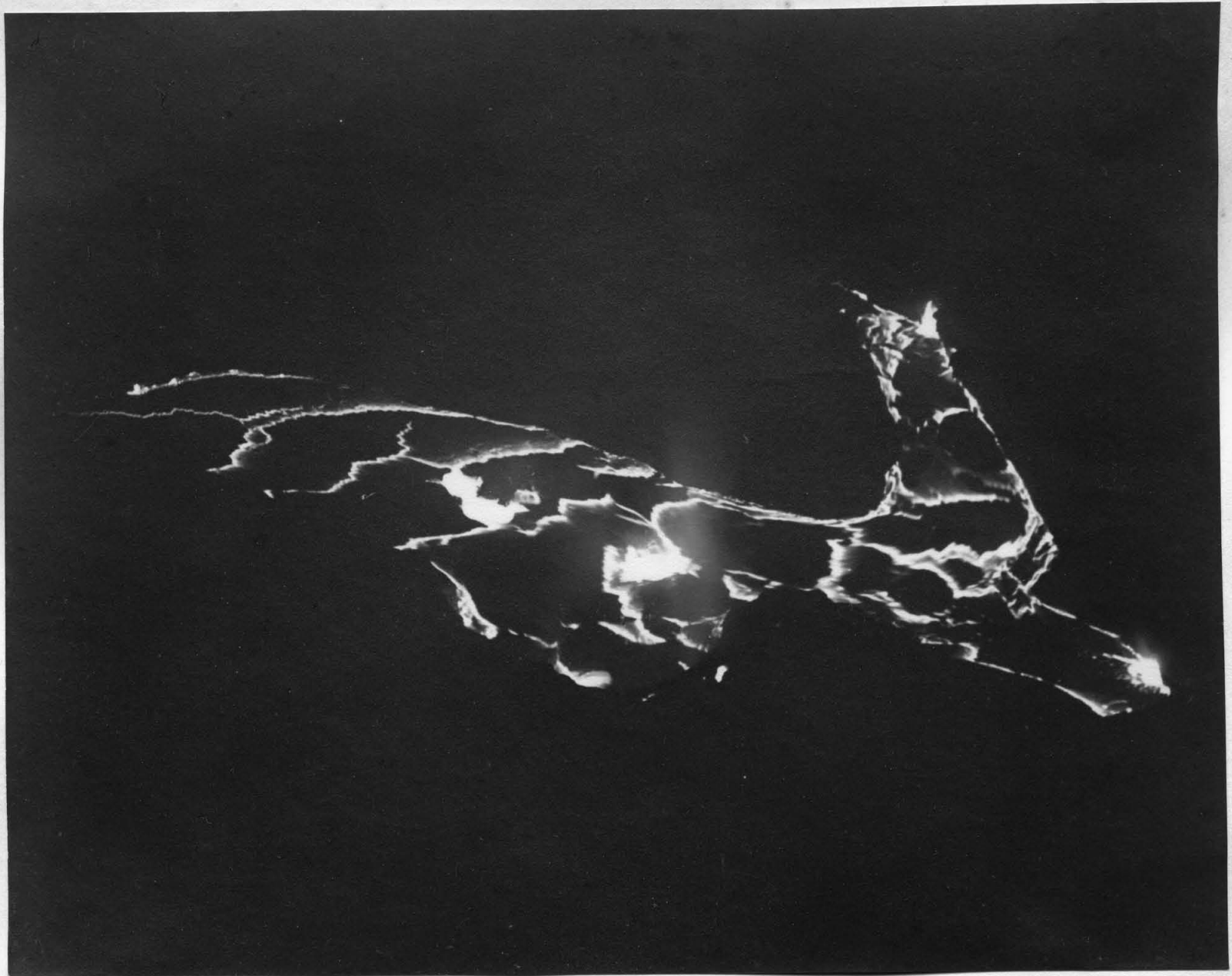
3 p.m. From O.R.H. Lava level has sunk about five feet. Pool active.

Alex.

Nov, 22. 2:30 to 3:30 p.m. From O.R.H. Pool down 10 to 15 feet. Otherwise the same, except reversal of streaming in E arm, temporary rise probably.



T.A.J.



#1



#2

J.A.G.

185a

1914, Nov. 20



#3

J.A.G.

KILAUEA DAY SHEET

Massachusetts Institute of Technology

Hawaiian Volcano Observatory

Day **Saturday** Date **November 21, 1914**

t	sta	pt	hor	vert	lev	dist	elev	h. i.
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no	pl	scr	stop	ex	cam
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11 a.m.	H.V.O.	Mauna Loa slope (FCZA lens) (vibration)	1	W.P.	10x	F106	24	G
2 p.m.	"	Summit Mauna Loa (FCZA lens) (tripod)	2	"	"	F64	25	"
2:30 p	"	Volcano House (FCZA lens) (solid stand) (Double exposure)	3	"	"	"	5	"

T.A.J.



Sa. g.

#1



8.05

2 #

R.O.S.

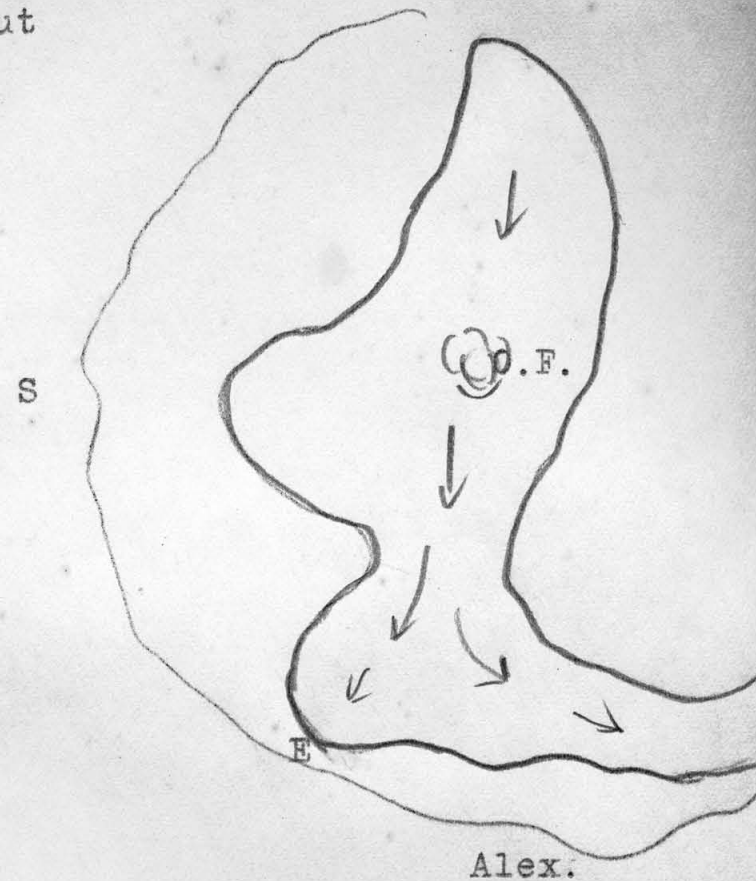


W #

Day	Monday	Date	November 23,	1914.
	Tuesday		" 24,	"
	Wednesday		" 25,	"
	Thursday		" 26,	"

Nov. 23. 1:20 p.m. SE station. Lava about 20 or 25 feet below rim of pool. Active with many small fountains all over surface. Still streaming around bend to NE. S cover very quiet.

3:15 p.m. No change. Still active and noisy.



Nov. 24. Conditions about the same as yesterday. Very little and dim seeing at 11:50 a.m. High wind and fumes. Photo. T.A.J.

Nov. 25. 2:30 p.m. SE station. Lava 25 feet below rim and active. Rumbling loudly. Travelling fountains working their way around the bend toward the NE. S and E covers and O.F. active.

4:45 p.m. Lava has risen 4 or 5 feet. Streaming rapidly to NE with many small fountains and occasional large ones.

Nov. 26. 11:20 a.m. Lava about 10 feet below banks of pool, boiling and rumbling and still streaming around bend. NW pond active and 5 feet down. W cone blowing.

Alex.

KILAUEA DAY SHEET

Day **Tuesday**

Date **November 24, 1914**

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

no	pl	scr	stop	ex	cam
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8a.m. H.V.O Mauna Kea
 (FCZA lens (solid stand))
 8a.m. " Pahala sugar fields
 (FCZA lens)

1

W.P.

10x

F64

10

G

2

"

"

"

20

"

T.A.J.

B.O.S.



#1

193

1914, Nov. 24.



805.

8
#

KILAUEA DAY SHEET

1914 Massachusetts Institute of Technology
Hawaiian Volcano Observatory

Day **Thursday** Date **November 26, 1914.**

t	sta	pt	hor	vert	lev	dist	elev	h. i.
			no	pl	scr	stop	ex	cam
9a.m.	H.V.O.	Mauna Loa fume column		W.P.		F 66.3	1/25	P
								T.A.J.

195

1914, Nov. 26.



S. a. g.

Day Friday Date November 27, 1914.
Saturday " 28, "

Nov. 27,

5:15 p.m. Heavy fountain action going on at wall-margin near SE end of narrow arm of lake. Streaming going on slowly, then rapidly, then slowly toward this fountain both around the bend from the larger part of the lake and also southeastward from the end of the narrow arm. Usual breaking fountains at and near O.F. place. Also fountaining of heavy sort under N margin of larger arm about midway between bend and W end. Subordinate streaming toward this. Swirling fumes exceptionally sharp at N.R.H. Continuous noise of heavy surf heard from O.R.H. Pool under WNW margin in general sluggish. But at intervals skins tore apart and were engulfed. Blue flames from cones at W and WNW. Continuous travelling fountain action - not high fountains but migrating boiling places - from near O.F. around bend. Occasional thudding sounds. No conspicuous increase, decrease or change of character of activity in response to outbreak of Mauna Loa. No photographable changes. No conspicuous rising or falling phenomena during one hour. Depth of molten surface 10 - 15 feet below top of encircling spatter rampart.

5:45 p.m. Heavy fountains under ENE wall slowly shifting toward end of narrower arm. All heavy fountains splashing with unusual vigor - that is, breaking and throwing molten spray in abundance and violently - so spinning Pele's hair. E cove rather sluggish except at intervals - then breaks into small innumerable fountains.

H.O.W.

Nov. 28,

A very heavy rain totaling 6.95 inches in 24 hours prevailed. The illumination above Halemaumau was very brilliant despite this heavy downpour, which a few weeks ago would have been sufficient to hide the glow altogether.

H.O.W.

Day Sunday Date November 29, 1914.
 Monday " 30, "

Nov. 29,

4:40 p.m. From O.R.H. No change in configuration worth sketching or photographing. Ebullition phenomena not so violent as on Friday. Molten surface 25 - 30 feet lower than adjacent spatter rim. Spatter margin not built up much above floor. Moderately strong fountain action at O.F. place and somewhat stronger under E wall of smaller arm near junction with greater arm. Crusts stream slowly toward this place from both arms. Also crusts stream northward under middle part of north margin of main arm. Fountaining under E wall grows more violent spattering showers of small fragments and spinning Pele's hair. Sluggish W pool crusts stream slowly toward NE with slow tearing. Noise of heavy surf. Orifices of cones at W end barricaded with network of spatter. Feeble jetting up to network adding to barricade. Heavy stalactitic curtains at E cove especially, and in general along margins of both arms. For a few moments at about 4:30 p.m. heavy fountains played vigorously with showers of "sparks" at W end of main arm but this was soon over.

5 p.m. Lake for most part crusted over with moderately rapid streaming to E in main arm and to SE in lesser arm tearing slowly. W pot very sluggish. Parallel cracks on floor S of main arm running N-S from which curtains or aprons of thin white fume, bent into curved banners, emanate. O.F. more in evidence than when there is more ebullition. Usual irregular intervals of from 10 seconds to more than a minute. Harsh blast like exhaust at long intervals from blow hole high at S opposite W end of main arm from O.R.H. General effect for first half hour, 4:30 to 5:00 p.m., is lower surface and less action than Friday. About 4:45 a very short view of the summit of Mauna Loa showed much snow and a thin fume column among drifting broken stratus or broken-up nimbus cloud fragments.

5:15 p.m. A very sudden spasmodic break-up of the crusted surface took place simultaneously with a sinking of a foot or two. The effect was instantaneous - almost explosive, especially the loud splashing which accompanied it.

5:20 p.m. Streaming slowly toward W near W end of main arm. At W end a sheet of crust being drawn under presented the appearance of a water wave combing very slowly. It froze while folding in in a very sharply curved fold so that it was not all engulfed. Usual blue flames were flaring through the spatter network over the W cones

H.O.W.

Nov. 30,

Reports from Halemaumau late afternoon and early evening indicate no significant changes of any sort.

H.O.W.

Day	Tuesday	Date	December 1,	1914.
	Wednesday		" 2,	"
	Thursday		" 3,	"

Dec. 1, 3 p.m. From east A frame. Configuration of lake unchanged. Surface action sluggish over most of area. Slow tearing streaming, not constant but is frequently changing direction and in several directions simultaneously in different parts of both arms of the lake. Changing so frequently that no description is attempted. Usual O.F. action. When fountain breaks it is vigorous but soon crusts over. Vigorous spatter fountain action at E margin of E cove. Depth of molten surface appears to be from 15 to 25 feet below the frozen platform. At intervals fairly vigorous spatter fountain action at W end of chief arm. Heavy surf noise.

H.O.W.

Dec. 2, 5:15 p.m. O.R.H. Observed that a surface flow had broken out from under the cliff wall at the W end beyond the W cones and flowed along the W and NW margins of the pit close to the cliff wall as far as the N talus. This was crusted over but glowing cracks were plentiful. This flow had flowed in part into the pool which was more sluggish than usual. In this pool the molten lava seemed to be nearly level with the new flow but the banks toward the lake were from 6 to 10 feet high or higher. The N pot was enlarged and a flow had flowed from somewhere (hid in fume) near the cliff near the E edge of the E cove for a short distance along the NE margin of the pit as far as the N talus. This fallen heap was all that separated these two flows about the N margin. When arrived at pit small arm was sluggish but soon became tremendously active. Spatter fountaining was very violent all along the shoreward margin of this arm, causing perceptible vibration at cliff edge at O.R.H. The E chimney was more brilliant than usual. Very vigorous fountain action back of stalactite curtain at the E end of the S cove near E chimney. O.F. was very busy. There was spatter fountaining under the N margin of the main arm. Unlocalized sound of heat-cracking of rock probably from crust of flows. Flame flaring steadily from NW cove not swamped by flow. Molten surface probably a trifle higher than yesterday but thin fumes make seeing a little too indefinite for good estimate. NW pool enlarged but sluggish. Streaming toward the E and NE banks and under the N bank of main arm. More surface activity than yesterday. Spectroscopically strong red, orange, yellow and yellow green, weak blue-green, no blue seen with certainty and no violet discernible. Fumes weakened. Red orange and yellow more than green. High cones at S more brilliant than usual. No photographable change in configuration and cracks of new flow too weakly illuminated. Misty, fummy, no brilliant seeing. Great activity, spattering, at W end of the main arm at about 5:45 to 6 p.m.

H.O.W.

Dec. 3, Crater not visited. Stormy.

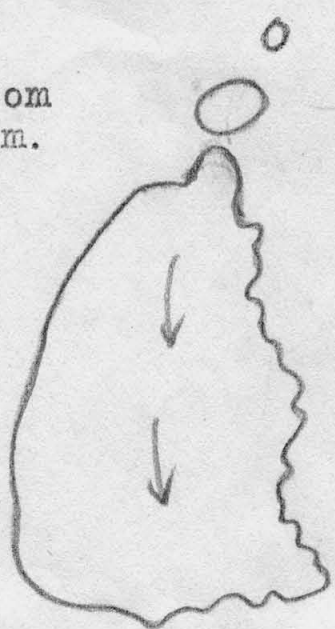
Dec. 4, 4:45 to 5:45 p.m. From east A frame, glimpse only. SW breeze. ("East A frame" is at SE station.) From NW station very dim seeing through swirling fumes. A splashing pool was seen to have opened within the gash of the high E chimney at level approximately of main lake. Semi-permanent crust over main lake at and around the bend between the two arms, making for the time being a central and a NE pool. From W station. A steady harsh blowing is heard from the NW cones. One of these has become a small pool with surging magma. Glowing cracks indicate either another fresh flow along NW margin or continued slow action of the one seen on the 2nd. Violent spatter fountain action under N margin of central pool in SE cove and under the E end of the smaller arm or NE pool. At about 5:20 p.m. semi-permanent crust breaks up and the recent configuration is resumed with temporary great activity. There is slow streaming westward around the big bend. The NW pool is broken up and its surface action is very vigorous. As on the 2nd a small flow in progress along the NE margin of the pit. There is a vague suggestion in the dim seeing that there has been further collapse of the floor around the pit margin from N to NW. A broad blue flame banner is playing from the entrance to the small pool in back of the gash-rampart of the E chimney. The usual noise as of heavy surf. Except that the smaller NE arm is crusted over more than usual the surface action is more intense than recently. As a spectacle the scene is as beautiful as I have ever seen it.
H.O.W.

Dec. 5, 2:45 p.m. From O.R.H. Pool active. S cove boiling and throwing lava high in air. Surface about five feet below rim. Great activity in small NW pool. Streaming in this pool from WNW to N. W cones blowing spray out on the floor. Under SW station about 50 feet above the floor is a cone sending out lava spray with a great noise. Streaming in the main lake toward the W.

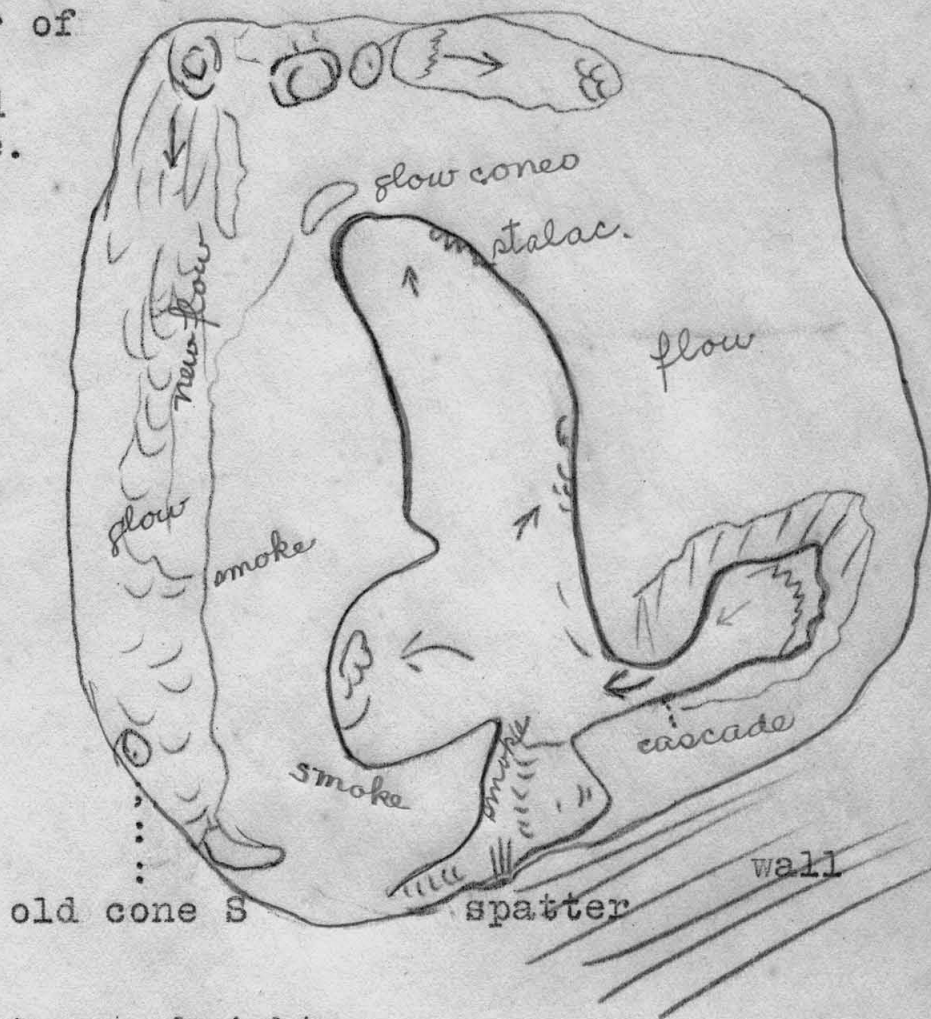
4 p.m. From O.R.H. Lava running from the NE cove around the bend toward the W cove with many travelling fountains. O.F. active.

Alex.

Sketch of pool from O.R.H. at 2:45 p.m.



3:15 p.m. SE station. Light rain.
New steely colored flow from
W cone. Whole SW border of
floor from W to E still
glowing. Reaches to and
around old border S cone.
About 500 feet long.
Lake has undermined E
wall and sent small
festooned flows be-
tween floor and wall
in a tongue of lake
10 feet below floor
level. Cascade pouring
from E arm into main
pool. SE cove crusted.
Noise plashing and oc-
casional sharp blast
from SW cone up on
slope. Glow cone SW.
Lake 10 to 15 feet
below floor.

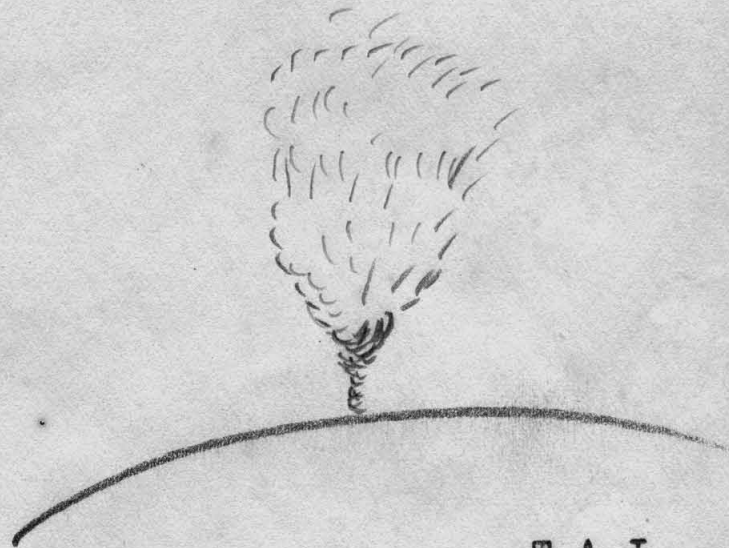


9:30 p.m. Glow over pit very bright.

Mauna Loa.

In clouds all day. Rain in
afternoon Volcano House.
9:30 p.m. cleared off.

Single column, orange yellow,
about same as Kilauea color.
Very rapidly rising. Glow
faint above the vapor to a
height perhaps 6000 or
8000 feet.



T.A.J.

KILAUEA DAY SHEET

201

Massachusetts Institute of Technology

Hawaiian Volcano Observatory

Day Sunday

Date December 6, 1914.

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

no	pl	scr	stop	ex	cam
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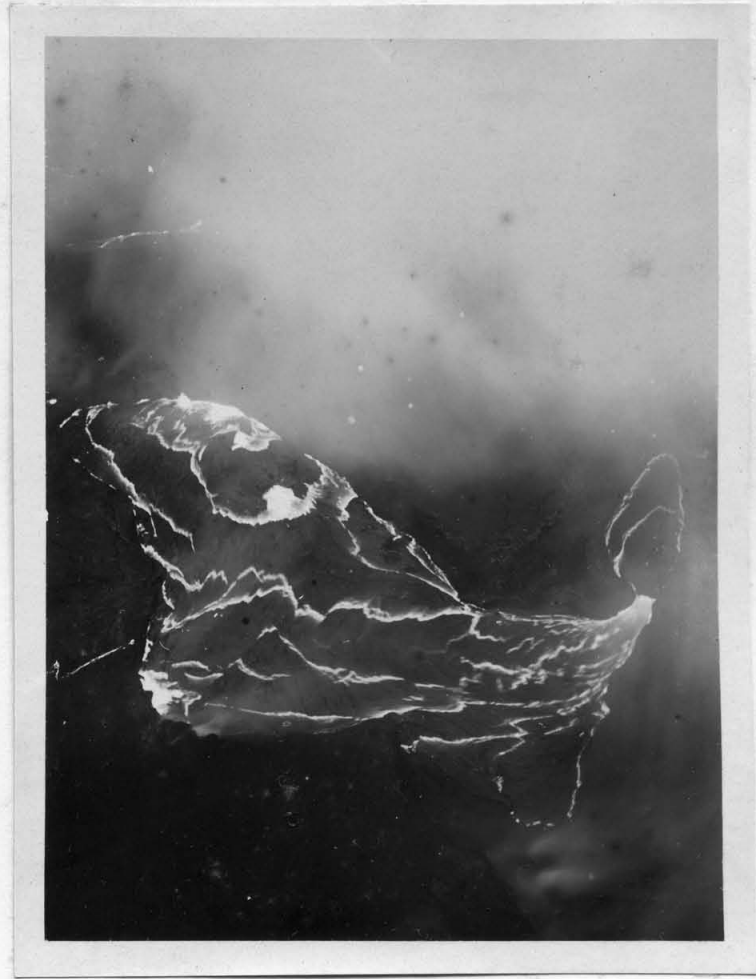
3:15 p	SE	Lake. (Rain 12 sec light)	1	W.P.	vzpl	6.3	1	
		New flow SW	2	"	"	"	"	
10p.m.	V.H.	MaunaLoa	3			6.3	40 min	

(Some mists. Lens misty at end.)

T.A.J.



#2



#1



#3

Sag.

Early and middle afternoon all around the pit. No really good view point, part of pit always hidden. There has actually occurred further collapse of the narrow margin and of a small portion of the central table along the N-NW arc. New lava occupies this with glow through cracks. This action has almost choked the N pool.

NW pool sluggish and then active by turns. Slight rising in it. NW and W cones as usual. High SW cone throwing lava fragments out in small quantities regularly. Usual lake configuration. Heavy fountain action near bend in small arm - pretty steady. Near O.F. and S cove also pretty steady. Occasionally at E cove and W end main arm. Pool in E gash as on the 5th. At times violent fountain action around bend. Thin new flow along SW part of floor platform clear to E end. Streaming toward fountain centers, hence most of time as usual but for some short periods in various directions. Surface not more than 10 feet below platform.

H.O.W.

Channel between E arm and W pond.

Mauna Loa.

8:15 a.m. From C cottage. Vapor column very faint. White. Some clouds. Wind SW. Light here. Column goes up straight.

T.A.J.





#1a

S.a.g.



#1

Haw.



2



3

H.W.

2056

1914, Dec. 7.



hair

H

5



How.

205d

1914, Dec. 7.



H. O. W.

6



Stow.

205e

✓

205f

1914, Dec. 7



Stow

8

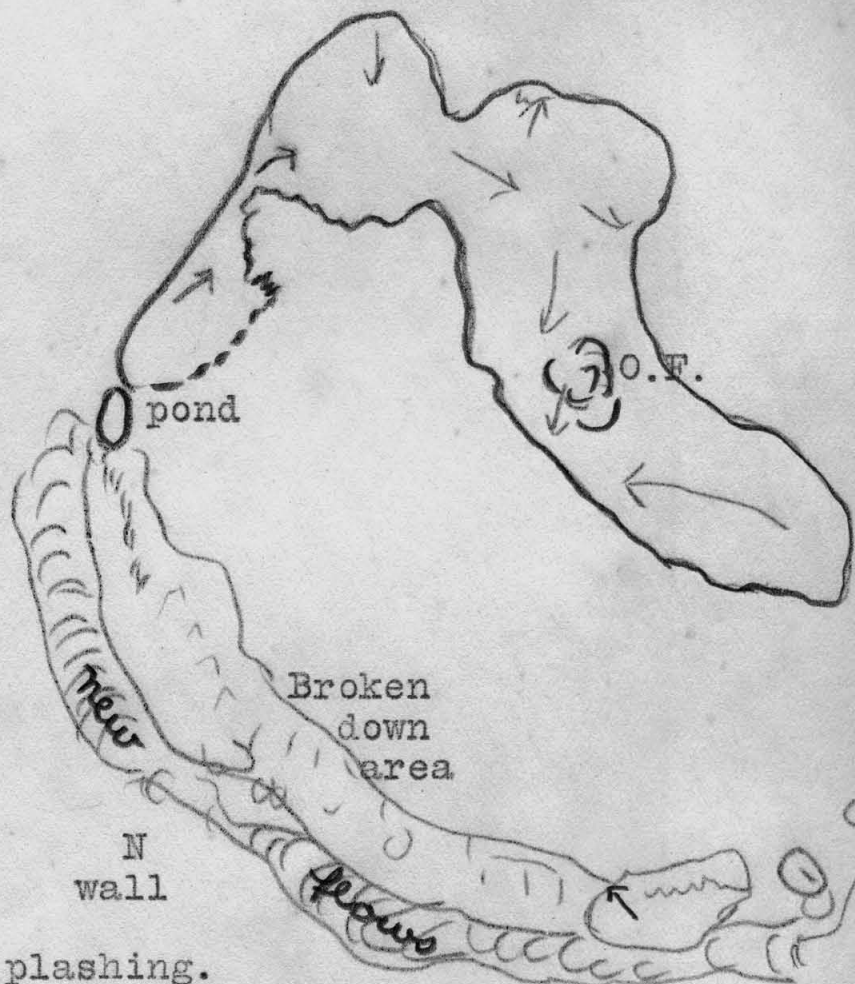


How.

9

205g

5 p.m. From O.R.H. Seeing poor. Wind SW.



5:30 p.m. From SE. Noise plashing.
 Narrow strait between E cove and main pool.
 Crusts which break up. Curtain over NW end. Spatter phase
 of O.F. strong. Streaming changes:- from a middle point E
 of O.F. goes E to the strait, S from the E cove, meeting the
 other at strait, S to S cove and W to O.F. Wall of pool fully
 30 feet high. SW cone puffs. Strong sinking in last two
 days.

Mauna Loa.

Last night no seeing Mauna Loa. This morning brilliantly
 clear and not the faintest trace of fume column on moun-
 tain.

T.A.J.



S.a.g.

#1



S.A. J.

2

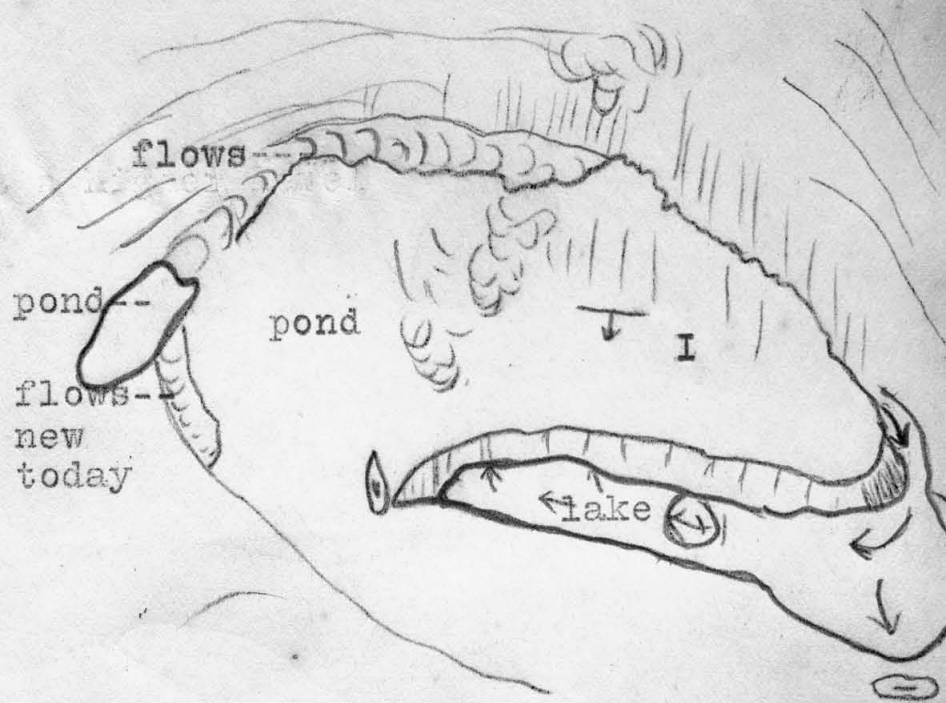


#3

F.a.g.

3 p.m. From SW station.

West pond appears to be at a higher level than lake. An island appears to be forming at I. Channel behind it. 25-foot wall around lake.

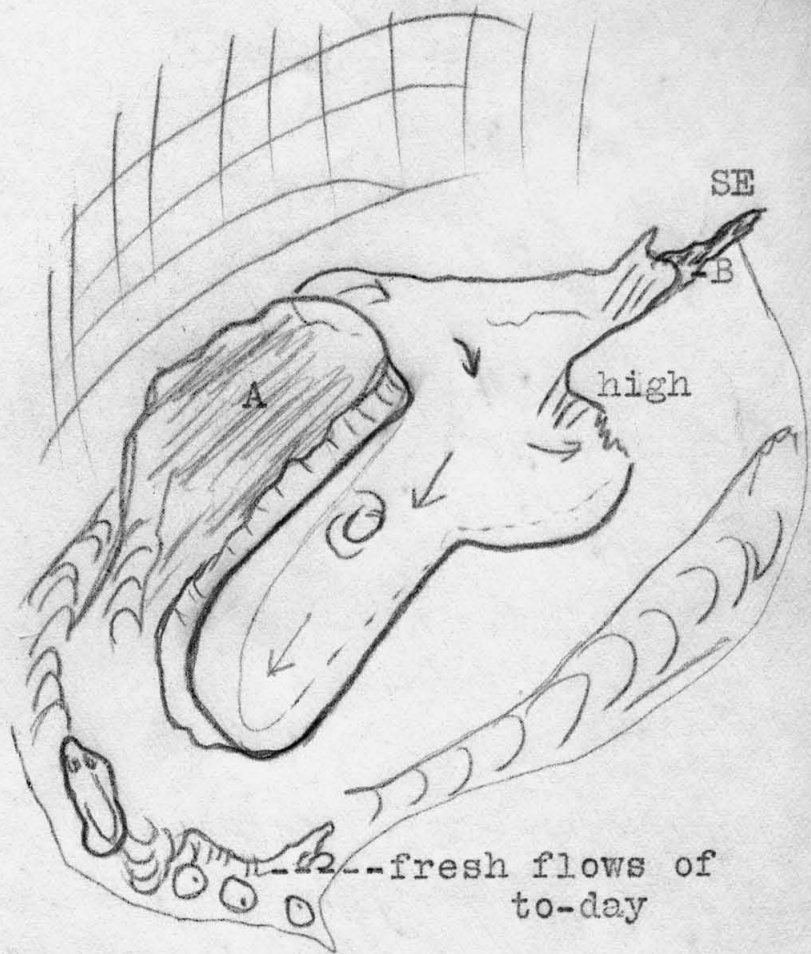


4 p.m. From W station.

Great changes are taking place at the E end. Crack cavern where E chimney was.

A - tilted block of floor.

B - crack in rock wall with lava boiling in it.



There are a number of thick squarish white bodies in the E and W walls of Halemaumau which appear intrusions of same type as the "Laccolith".

T.A.J.

KILAUEA DAY SHEET

Day Wednesday Date December 9, 1914.

t	sta	pt	hor	vert	lev	dist	elev	h. i.	plat.
2:45 p	W	SW	0					4 ft	3 ft
	SW	W	360						
	SW	N splash opp. O.F.	-66 22	29 44		783	446		
	W	" " " "	77 57						
	SW	S end spatter crack W end pool on floor	-53 47	34 6		649	440		
	W	" " " " " " " "	80 58			836			
	SW	E end NW pond	-43 52	27 56			441		
	W	" " " "	103 7						
	SW	Head flow W end NW pond	-35 25						
	W	" " " " " "	112 24			600			
	SW	W corner floor	-25 0	35 46			434		
	W	" " " "	107 3						
	SW	NW splash, pool	-56 07						
	W	" " " "	84 28						
	SW	Lump S cove	-80 08						
	W	" " " "	63 26						
	SW	Strait E arm	-73 38						
	W	" " " "	74 22						
	SW	Pt. W of S cove	-68 58						
	W	" " " " "	71 36						
	SW	Pt. entrance E arm	-76 03						
	W	" " " " "	73 19						
	SW	Pt. E of S cove	-79 46						
	W	" " " " "	66 46						
	SW	S limit SE cove	-85 36						
	W	" " " " "	63 46						
	SW	Top peak NE floor block which slopes to pool	-62 48	22 22		948	388		
	W	Same point above	87 53						
	W	Tangent floor SW	50 08						
	W	" " " N	115ca.						
		Length of floor E-W -- 750 feet							
		" " lake " -- 435 "							

			no	pl	scr	stop	ex	cam
3:30 p	SW	Pool and NE ledge	1	W.P.	vz	6.3	1	
"	"	W cones and pond	2	"	"	"	1	
4:30p	W	East end	3	"	"	"	1	

T.A.J.



#1



#2

Tag.

213a

1914, Dec. 9.



50.8

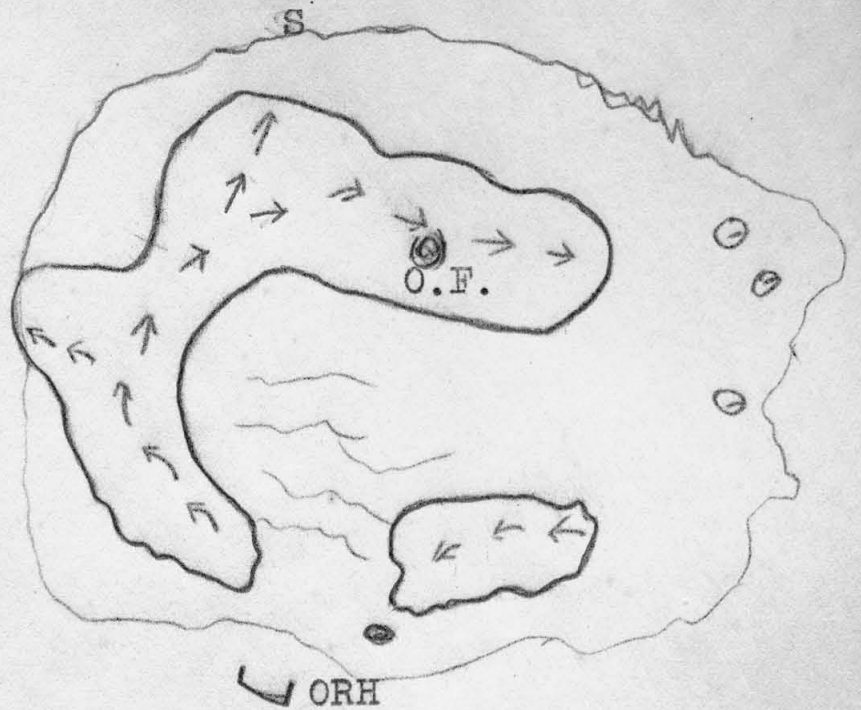
2

11:45 a.m. From O.R.H.

Surface of lava about five feet down below rim. SE cove boiling and rumbling loudly. SW cone 50 feet above the floor throwing out thick lava with a blowing sound. Many baby fountains in the channel.

1:30 p.m. From O.R.H.

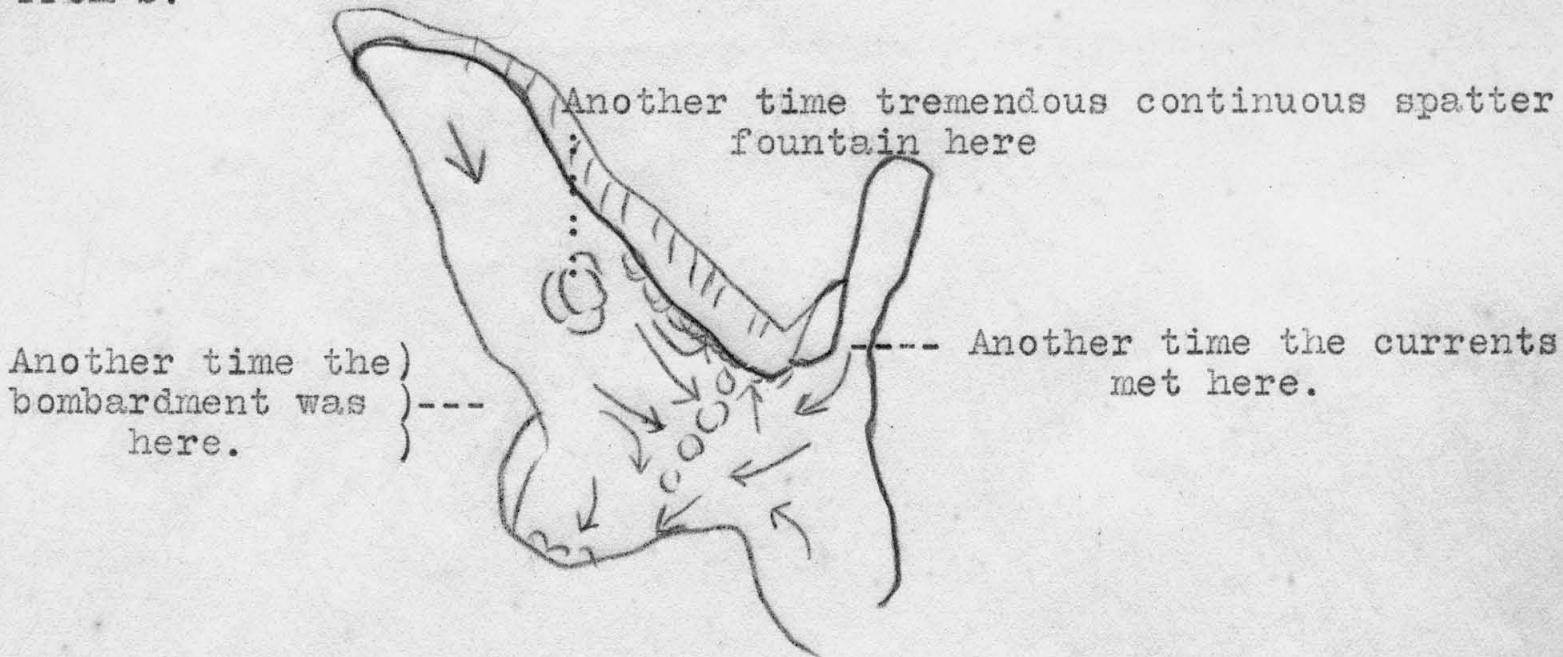
The three cones W and NW rumbling and blowing out lava spray. Pond very active. Streaming toward the N. About five feet below bank.



Alex.

3 p.m. About same but very intense fountaining activity occasioned by the meeting of opposed currents. Narrow strait entrance to E arm scene of one of these uproarious meetings. Then O.F. was a place of meeting. Tremendous continued bombardment SW bank; and W bank of S cove. Pool five feet down. Harsh puffs from SW cone. Streaming from center, E, W and S meeting S stream at entrance E arm. Then out of E arm westward. E arm not crusted over as yesterday. Noisy blowing, splashing and rumbling.

From S:-



3:30 p.m. S station. Tremendous fountain lines and bombardment to-day. First S, then N. Great blocks fall in along NE rampart. E chimney spitting. A flow from it along edge of floor southward. Meeting of currents make interference fountains again and again. Steady hiss from W cones. NW pond sluggish. Walls of lake about 10 feet high. But lake looks low and as though going down to judge by narrow E strait and violent action. Distinct chimney over the E gash resembling the one that has been there all summer. Very rapid erosion of the point next to great bend by the lava.

Postal rifts and Pele's Kitchen dense masses of brown fume rising very rapidly. Blowing noise continuous if you listen over the rifts. Fume rises in puffs - soft but continuous from individual vents. A little more acrid than usual. Fume strikingly blue at orifices of exit and brown as it floats off. Much yellow stalactitic matter in the rifts. (Light sinter - collected.) S wind.

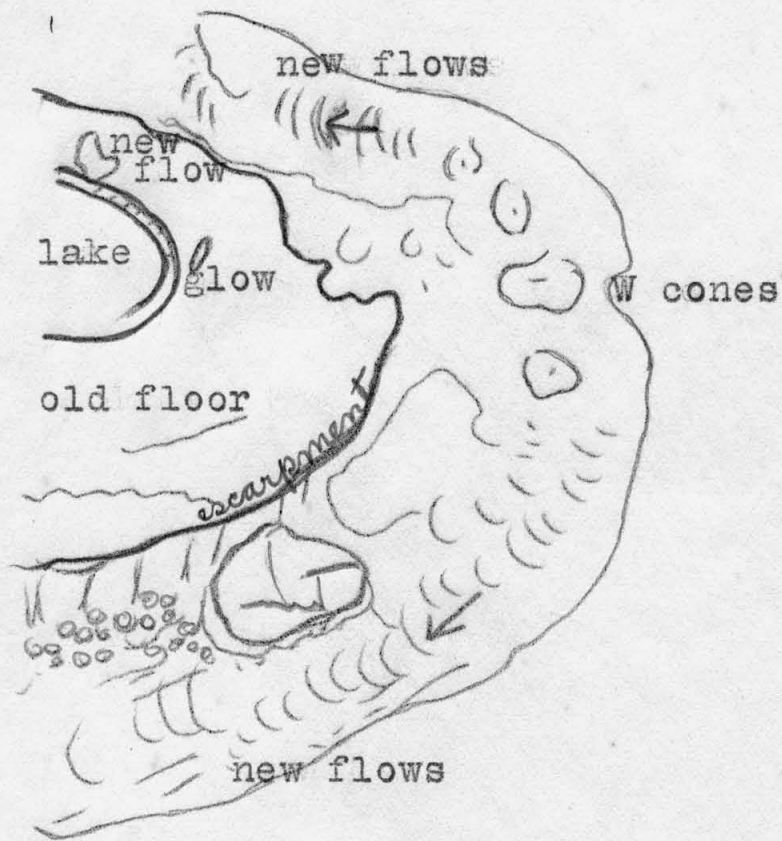
3:15 p.m. Temperature air - 16° C.

Postal Rift - 307° C.

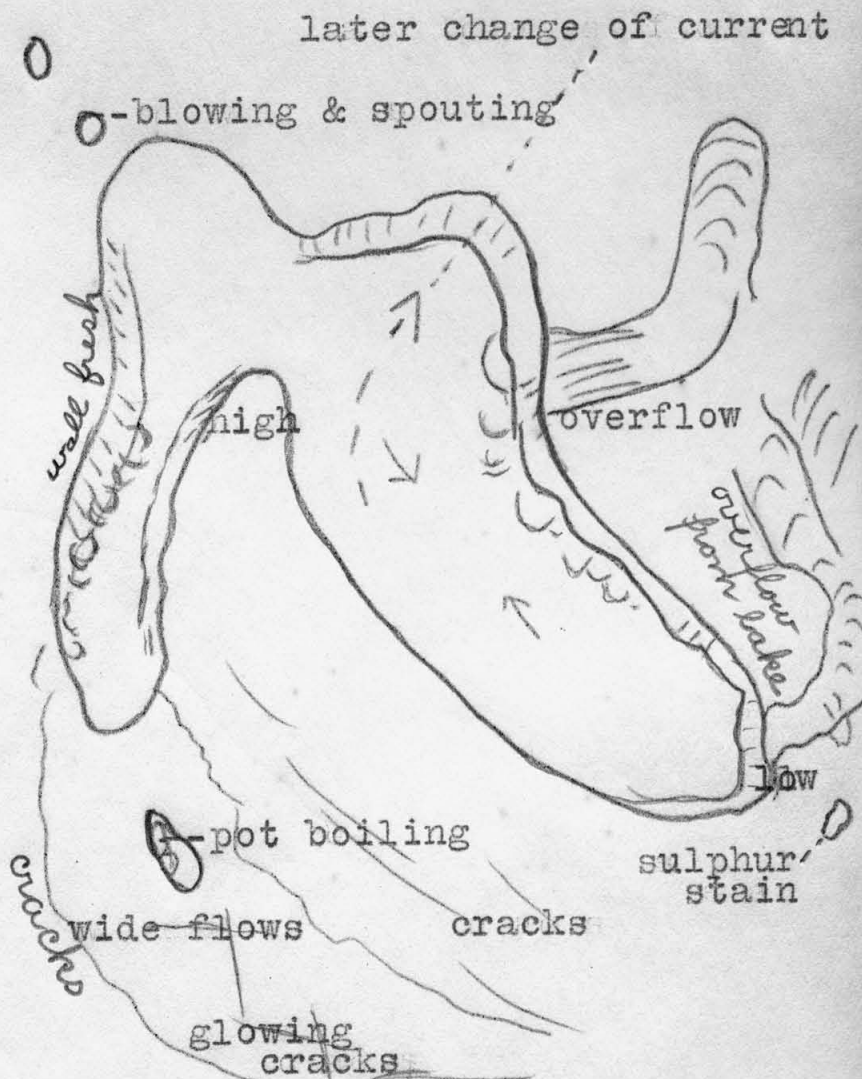
T.A.J.

10:15 a.m. From N station.

Flows along wall S and N from W end appear broad. The in-slope block of old floor farther from N wall. Edge of lake higher E end than W. W end only about three feet down - E end perhaps five feet. Continuous fountain-aining. Meeting currents in E arm, at O.F. and elsewhere on banks. On the whole the increase of continuous fountain activity must correspond to July, 1912. N.W. pond appears farther out from W wall with broad flow between it and wall. This and N pot bubbling.

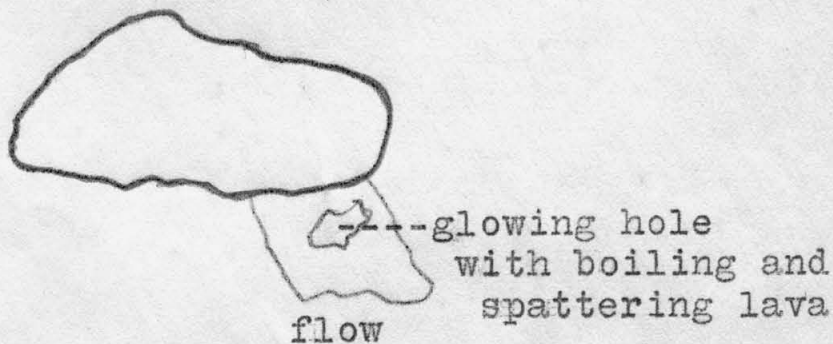


West end from N station.



Lake from N station.

Active rising is certainly going on - up to edge of W end. Steady hiss W cones. Blowing in E chimney and grottoes. Bubble fountains around the fountaining areas. Skins folding under and sinking rapidly seen several times lately. Marked overflows of last two days from W end and S cove.



Northwest Pond.

T.A.J.

KILAUEA DAY SHEET

Day Sunday Date December 13, 1914.

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

	no	pl	scr	stop	ex	cam
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10 a	O.R.H.	W cones	1	W.P.		F 8	1/20	T.A.J.
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S.a.g.

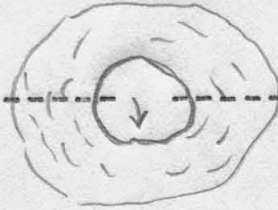
Day	Monday	Date	December 14,	1914.
	Tuesday		" 15,	"
	Wednesday		" 16,	"

December 14, 15 and 16 - Mauna Loa trip.

Dec. 16, 6:30 p.m. Halemaumau from O.R.H.

New overflows, glowing cracks SW wall. SW cone now in floor. No talus. Rock chimney SW. WSW talus mostly gone. Four W cones flaming and blowing. Boiling pot phenomenon at E end of NW pond.

yellow hot,)
boils within)
and spits)

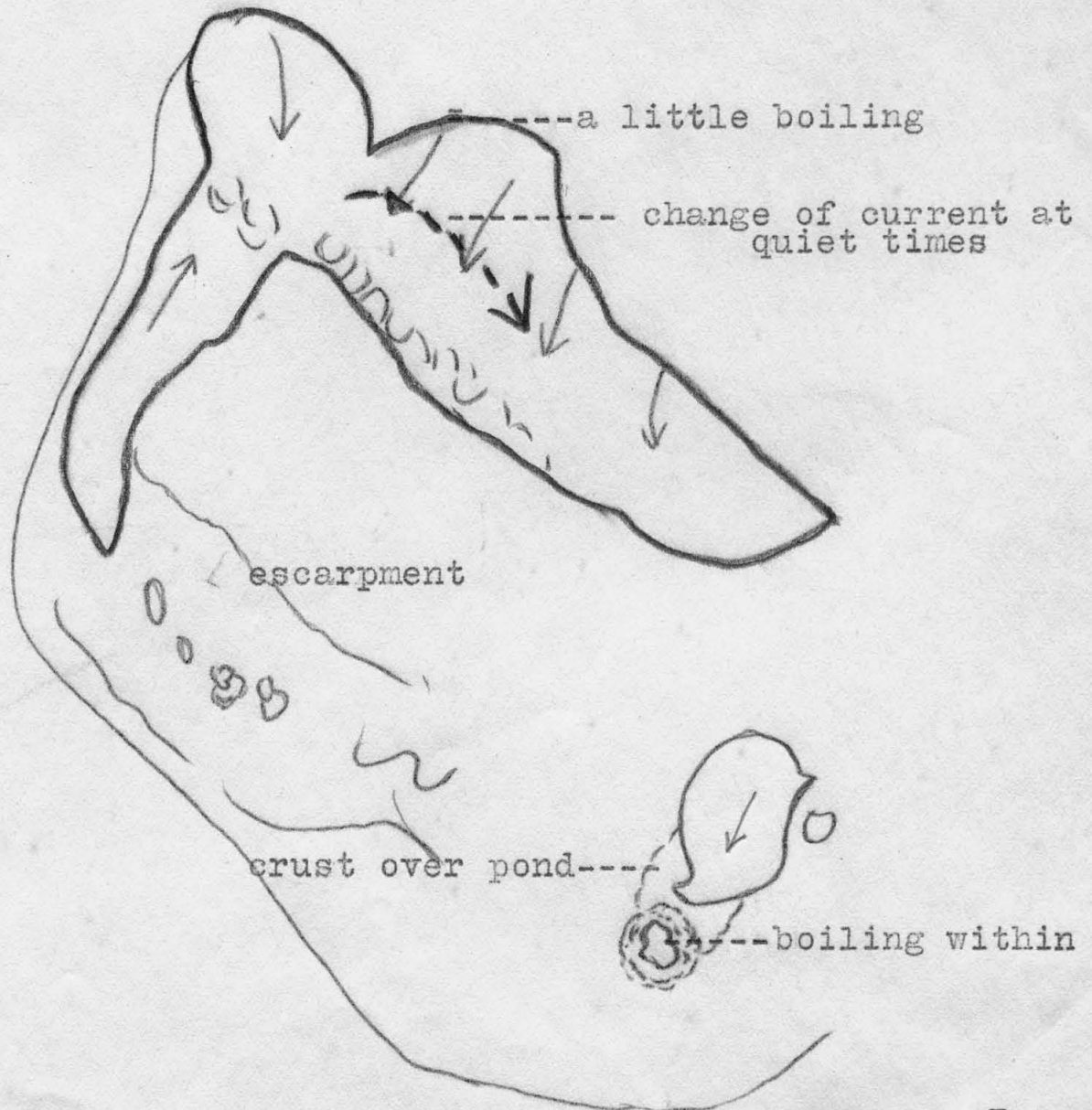


flames also and streams.

Filagree cone.

Flames W cones, W grotto main pool, SW cone (which blows at long intervals), E chimney and E grotto. Lake about 10 feet down. Marked heat felt from lake.

From O.R.H.:-



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

no	pl	scr	stop	ex	cam
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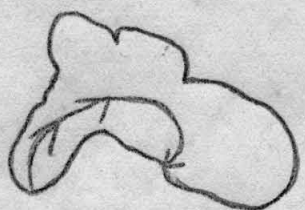
6:30p	O.R.H.	W end NW pond & cones
"	"	Middle pool
"	"	Pool

1
2
3

W.P.
"
"

6.3
"
"

10
1
60



#3-Circular streaming.

T.A.J.



#1



S.a. 8.

*3



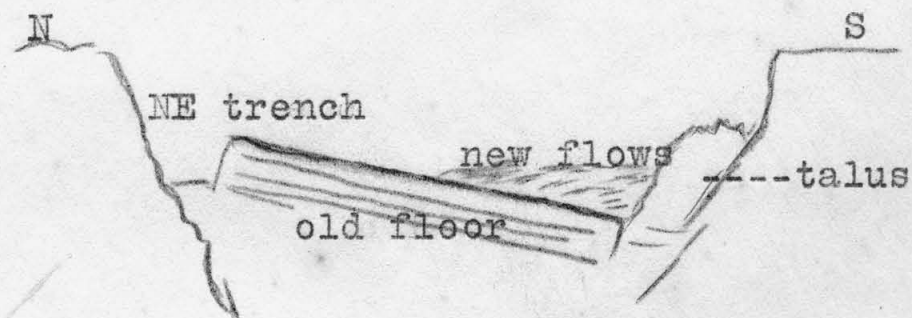
#2

10:30 a.m.

Bright and clear from N.W. to S.W. station. Light S.W. wind. No such great changes as thought last night. The north escarpment of upturned floor still high. West cones puffing. Lake down only 1 to 2 feet. Streaming westward. Wrinkled skins. Bubble fountains along shores. Much smoke from cracks in floor. West pond stagnant with pots W and N of it. New overflows from S.W. margin of lake. Biggest talus fumarole S. and S.W. East arm a deep trench. Pool-edge part of floor has sunk relative to S. and S.W. edges of the floor which slope inward with cracks like a beach. The pot which was open and boiling at E. and N.W. pond last night has two or three small holes only to-day and is making a blowing noise. East arm crust-ed. Usual alternations of down with rumble and up with splashing.

12:30 p.m.

Pool went down 25 feet at least in two hours and floor sagged down in part with it. S.W. wall chimney about on level with lake.



What has happened is explained by this diagram.. Weight of flows and talus S, side pushed floor up N. Lake went down 5 feet at noon.

T.A.J.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
<u>Survey for lengths, widths and depth.</u>								
10:45a	W.	S.W.	0					4 ft
	N.W.	S.W.	0					
	N.	N.W.	0					
	*N.W.	W. end of floor	15 11	40 20			323?	
	W.	" " " "	118 57					
	N.	" " " "		30 34				
	*N.W.	E. end of floor	48 00			1015	327?	
	W.	" " " "	55 8	24 7				
	N.W.	W. end of pool	24 3	39 59		270	411	
	W.	W. end " "	81 57					
	N.W.	S.E. cove E end pool	50 4	25 51		838	404	
	W.	" " " " "	63 59					
	N.W.	Escarpment	61 26	37 58		474	372	
	W.	"	88 12	25 2				
	N.W.	S.W. wall chimney	11 54	30 19		708	414	
	N.	" " "	60 52	60 52				
	N.W.	End E. arm	63 58	35 57		568	414	
	N.	" " "	95 39ca					
	N.W.	Point bend	51 59	31 4		628	378	
	W.	" "	76 00					
	N.W.	N. edge floor tang. N.	76 44					
	W.	" " " " "	93 37					
	*N.W.	S. edge floor 2 wh. st.	24 00			880	335?	
	W.	" " " " " "	44 43	27 33		643		
11:45a	N.	S. cove splash	87 77	33 59		633	426	
	W.	" " " "	63 50	29 55		783	449	
		Length floor N.W. to S.E.-----					920	
		Width " N.N.E. to S.S.W.-----					703	
		Length lake W.N.W.-----					451	
		Length E. arm from bend-----					138	
		Width lake bend to S. cove-----					178	
		Depth to edge floor W.-----		about			380	
		" " " " E.-----		about			390	
		" " lake-----					409	
		" " escarpment-----					372	
		" " top cliff at bend-----					378	

			no	pl	scr	stop	ex	cam
10:30a	N.W.	W. floor - sunlight	1	W.P.	vz	F 8	1/3	
	"	Pool shadow	2	"	"	"	"	
T.A.J.								



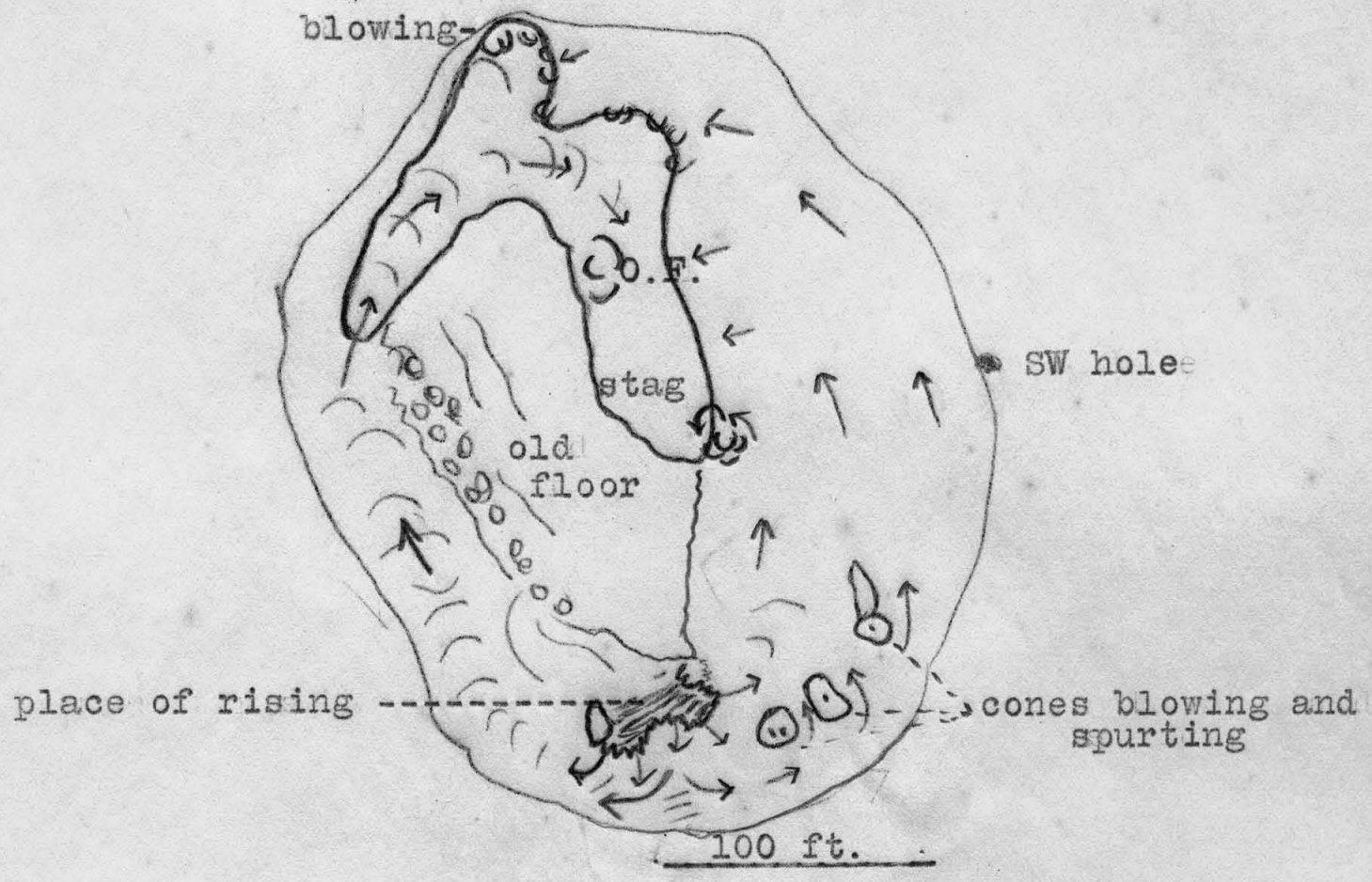
P. 303

#1



#2

3:45 p.m. From NW station.
Tremendous heat. Rapid rise from site of small pond NW. Flows streaming E along both walls. Big flood SW pouring into lake. Three highest W cones are islands in a river of melt. Blowing at E and W ends. Up to bottom of SW chimney hole in wall. Can still make out outline of lake but nearly gone. Tremendous fountaining along outline of SE and S coves.



Block of skin was seen to move 100 feet in 30 seconds, or two-fifths of a mile per hour. In the rapids say one mile per hour. Back from the edge a high steady roar and hiss heard.

4:45 p.m. From S station.
After one hour of flow, all is becoming normal. Immense flow puddle SE. Streaming E to W in lake. SE cove strongly marked and end strongly blowing. Fumes from rock E end but no deep cleft or chimney any more. All covered. General level raised to about level SW chimney. Cones W still high above freezing flows. Report from E end like pistol.

- 2 - Day Friday Date December 18, 1914.

4:45 p.m. From S station:-



4:50 p.m. Two west flows started again, pouring down vigorously over their predecessors.

5 p.m. North and south flows still flowing. W cones not spitting. SE cove hissing and crusted. Flows around the three W cones. The crag of old floor maintains its apparent height. Probably because the S flows are loading and pushing down its buried extension.

5:20 p.m. Flows almost as active as at first.

Mr. Gibb reports that flow began at 3 p.m.

The 5:20 flows ceased before 7:40. Began again about 10:40 and were going still at 12:45 with lulls in the interim. (Night)

Mauna Loa. Cloudless day. Wind WSW. Smoke on Mauna Loa; weak.

T.A.J.

227a

1914, Dec. 18



H.W.



2

276

227e

1914, Dec. 18.



How.



4

plee

227e

1914, Dec. 18.



with

5



6

227f

227g

1914, Dec. 18.



How

7



8

227h

227i

1914, Dec. 18.



hawk

9



10

227!

227K

1914, Dec. 18.



940100.

11



12

2278

227m

1914, Dec. 18.



1010

21



14

u l e e

10:30 a.m. From S station.

South cone all buried. Floor quiet. Blowing ceased and lake normal. Streaming W from SE cove, into S cove, out of E arm, into N bank and W in main pool. Big stalactites N bank. Crag block high. Wide margin of floor between E arm and wall, and between SE cove and wall. E wall smoking but no chimney hole. SW cone low, forming on floor.

Mauna Loa. During night December 18-19 dim glow on Mauna Loa seen by H. O. Wood from crater Kilauea.

T.A.J.

KILAUEA DAY SHEET

Day Saturday Date December 19, 1914.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
10:30e	SE	E	0					
	S	SE	0					
	SE	Floor point S cover	65 17	41 16		468	411	
	S	" " " "	50 23					
	SE	Lava N bank	51 30	37 21		543	415	
	S	" " "	47 38					
	SE	Big stone under S fum.	98 37	41 07		471	411	
	S	" " " " "	66 45					
	SE	Summit crag NE	44 21?	26 15		760	373	
	S	" " "	51 34ca					
	SE	NE bend flow in trench (limit NE)	38 10	26 23		851	420	
	S	" " " " "	49 37ca					
	SE	W end pool	68 10	28 00		738	382?	
	S	" " "	67 55ca					
	SE	SE end of pool	50 46			350		
	S	" " " "	35 16ca					
SE	N end E arm	40 47	32 07		659	413		
S	" " " "	46 02ca						
			no	pl	scr	stop	ex	cam

T.A.J.

5:15 p.m. after great south storm.
Big flow from larger W cone (second from S) into SW side of lake
and spreading to S floor.

5:20 p.m. NW pond begins to overflow. Streams S and N. S streams
join the stream from cone. N stream into trench. Crag as high
or higher than ever. E arm breaks crust. Streams from E to S and
W into SE cove. Steady flame from hole back of S cove. Crust S
cove breaks up. Bombardment N wall and E wall. Great flow pool-
ing S end floor, cracking and rising at the front. NW pond build-
ing spatter mound S side.

Evening the same. Flames to be seen. Puddle SE. View from S sta-
tion. Puddle SE is cherry red.

T.A.J.

KILAUEA DAY SHEET

Day Sunday

Date December 20, 1914.

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

no	pl	scr	stop	ex	cam			
5:15p	East ledge	1894	Pool & flow cascading into it	1	(too many fumes)			
"	"	"	"	2	W.P.	63	1	(fumes)
"	"	"	Looking down on E end	3	"	"	10 sec	
"	"	"	Same for splash	4	"	"	1/25	

T.A.J.

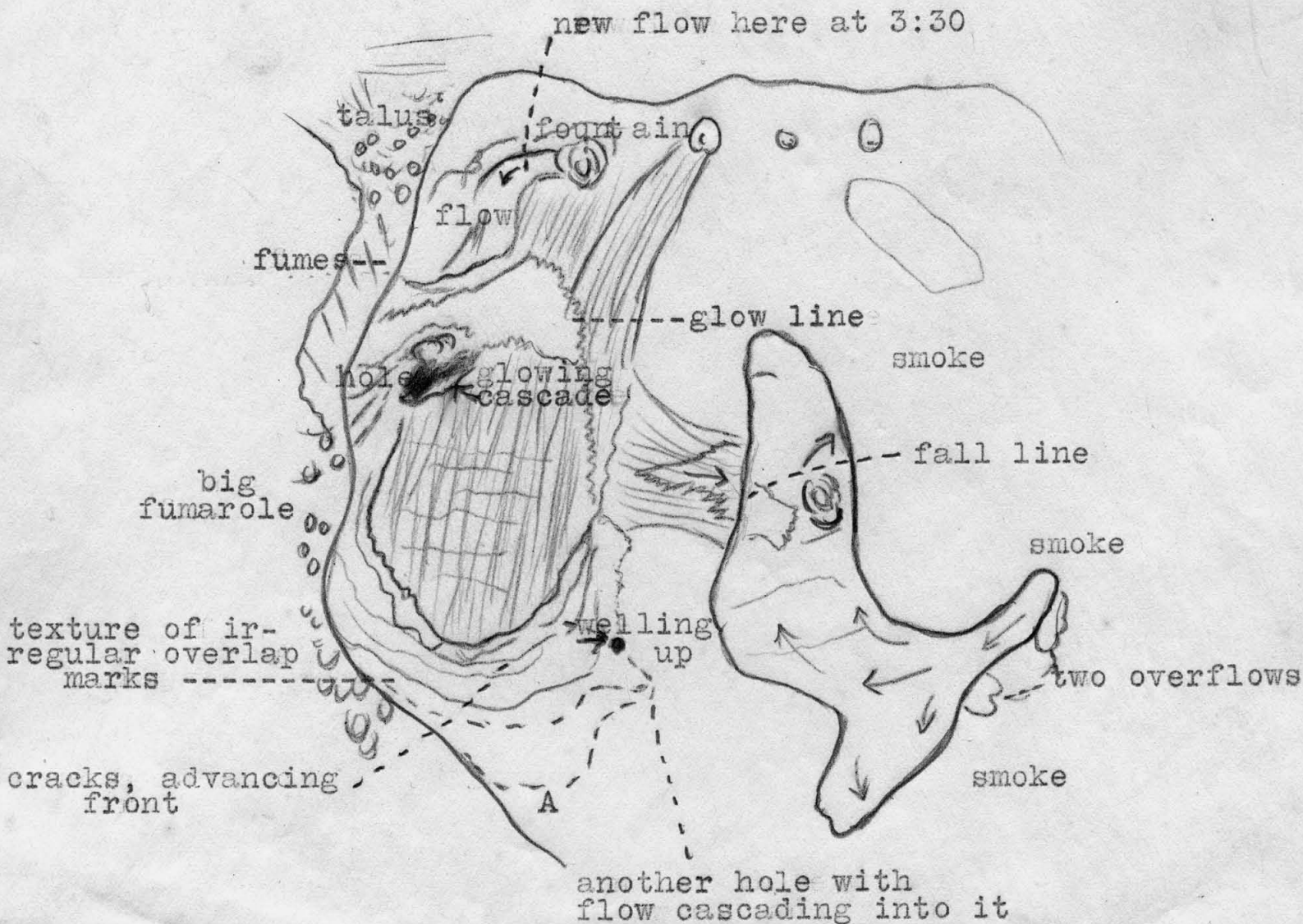
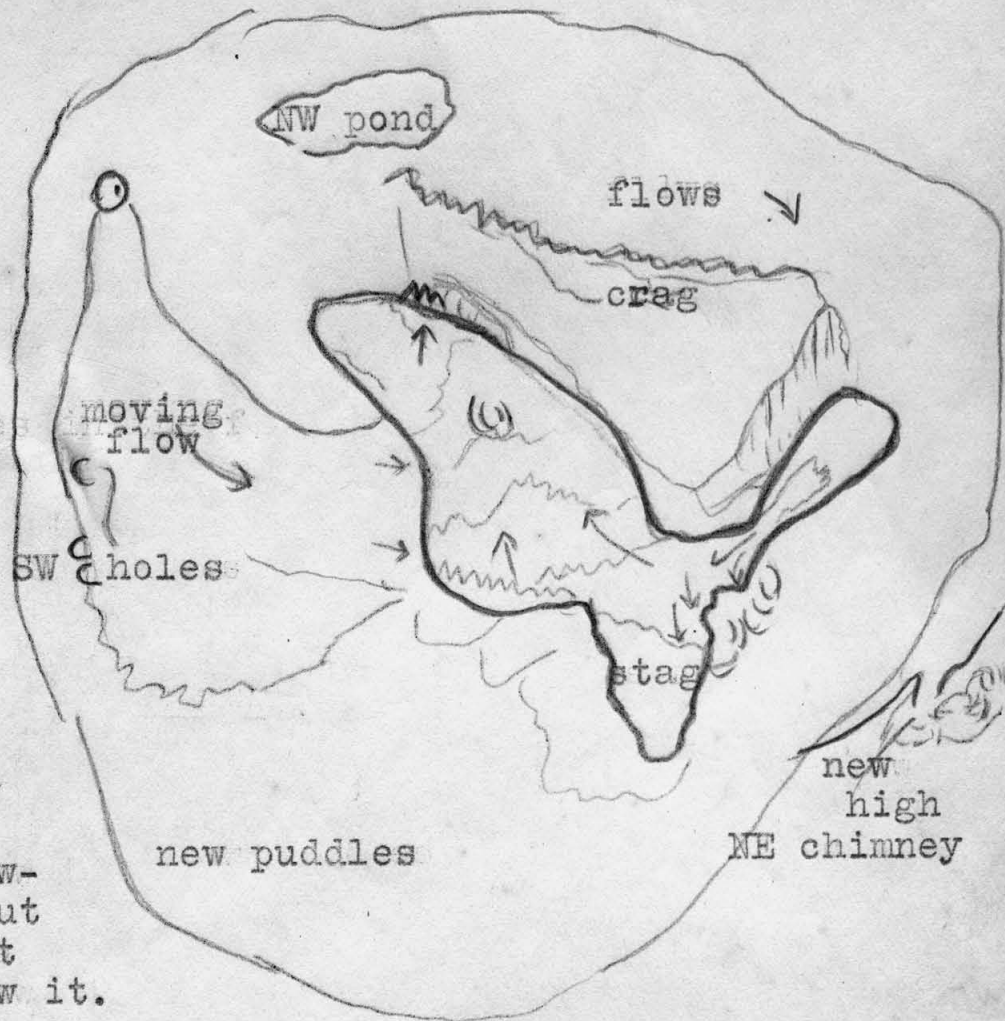


#2

Jag

3 p.m. From SE.

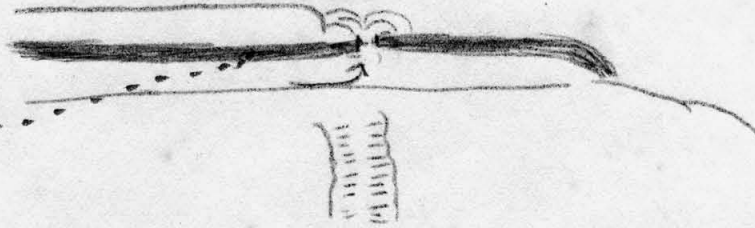
Lake brimming and broad lava fall flowing into it on S side, the brimming lake meeting the fall at same level and an equilibrium maintained. The cascades from this flow southwestward into holes that were formerly two S.W. fumaroles cones but are now holes in the floor. One of these nearest pouring continuously into a void perhaps three feet in diameter. The northern one after ten or fifteen minutes ceased as though filled up. The east arm cracks up and lava wells up the cracks now and then. A glowing chimney looks like hot coals in lower part of NE wall and one about half way up smoking and a great slab of wall standing out below it.



The larger west cone source of the great flow now a fountaining pot. Same with the one south of it. The next one north is quiet but the northernmost one spitting. Texture of the great flow is smooth lines in direction of flow.

The mechanism of the advancing main lobe of the great flow is what I saw in December, 1912, and thought was cracking floor and revealing lake beneath. It is not. It cracks the last previous layer of same flow over which the new layer is advancing by narrow slabs and these founder and the melt rises to add a new width to the new front.

What happens to
the foundered
slabs? Fused?



3:46 p.m. N.W. pond overflows N and S. Whole mechanism just the same as last night and before.

As soon as the N flow from N.W. pond got to going, the east arm overflowed to the east wall; i.e. east arm is a flow along border crack from west end and has been so from its inception.

Note: Where the longitudinal line pattern of surface texture ends and the transverse zone pattern begins in the great south flow, is the transition point where a newly overflowing layer ceased overflowing by slowing down, and began advancing by the cracking and upwelling method.

4 p.m. Three cascades into holes still going - one hour since observation began.

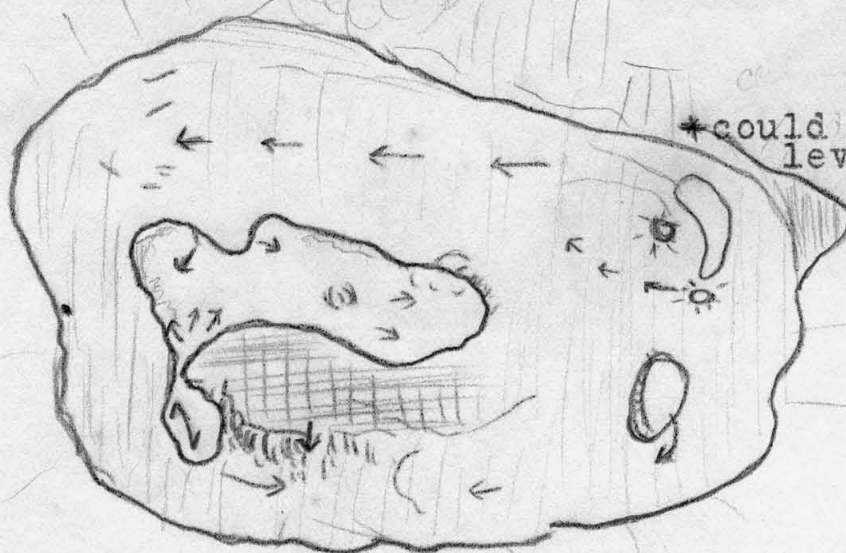
Mauna Loa.

2 a.m. Low cloud with brilliant glow over MaunaLoa.

7 a.m. Mauna Low covered with snow lower than ever. Fumes faint.

T.A.J.

10:40 a.m. to 4:15 p.m. From N station.



*could see no change of level on dark spot

10:50 a.m. Except SW ledge and small cascade cannot distinguish south outline of lake. E and W quiet, no bubbling or flows.

11:40 a.m. Pond just NE of old ledge crag forms and floods W for one-third length of crag & also southward into main lake.

11:55 a.m. Lake has sunk two feet by scale with people on pit edge.

12:05 p.m. Lake down four feet. N flow through tunnel into lake. Very sluggish. NW lake floods to N of island to point due N. West cone is becoming active (gas), blue, occasionally yellow, flame.

12:15 p.m. Main lake again high.

12:55 p.m. West cone pours flood all over SW end of pit and close up to E wall. W lake and main lake boiling in small bubbles and sinking. Cracking and pistol shot noises.

1:10 p.m. W. flow stops without cascading into lake. W and big lake rising with O.F. breaking unusually high. About ten seconds interval.

2 p.m. Lake about four feet down. W lake six feet down. W cone quiet. Cracking sounds. Surging E end of lake. Large quantities Pele's hair and tears and sulphur fumes coming up. Lake very sluggish.

2:10 p.m. West lake nearly full.

2:15 p.m. Big lake has no flow except slight pulling towards O.F. which is small. Slight boiling E and W banks.

2:20 p.m. Lake filling (5 feet deep SE ledge) and beginning to flow W. NE lake flowing into tunnel of lake which is broken down.

2:30 p.m. Cracking and snapping sound. Lake down again 6 feet SE ledge. Small NW lake down 6 feet under ledge. Sound of escaping vapor like safety valve on factory boiler E end. W cone inactive. O.F. seldom breaks (1½ min.) and small.

2:45 p.m. O.F. broke 30 feet high. Red crack formed all around N side of lake with some yellow flames; one stayed playing for about two seconds as large as ordinary coal gas flame.

W cone occasional spatter. SW cone two red spots only. NW lake four feet down. Main lake four feet down. Slight surging NW, and NE. O.F. mostly small bubbles. No cascades.

2:55 p.m. Strong flow from NE pond into lake; usual W flow; filling up; down. NE pond is boiling. W cone flowing to W of SW cone. Noisy cracking all over pit.

3:02 p.m. A few rock slides (10 or 12) off N wall of old ledge onto and breaks through crust. No glow on crust or slide. Lake down about two feet.

3:08 p.m. A few large rocks just rolled down off of NE main wall of pit (opposite high point of island) onto the crust below. Bedded in crust. Lake about 2 feet down SW ledge. Sluggish although boiling SW and NE edges. Slight flow from NE lake.

3:15 p.m. A few rocks (20 or 30) slide off NE main pit wall same place onto flow. Whole of NW lake boiling furiously. E edge boiling. Slight flow west over main lake. O.F. sluggish.

3:20 p.m. Flow appears to S of SW cone in all directions. W cone sputtering but no red lines connecting it with flow. NW lake boiling. Two feet down from edge.

3:40 p.m. Rocks slide off N side old ledge onto crust, no glow. S flow now well to E wall and can be seen coming from W cone, Lake 3 feet down from SE bank. NW lake sluggish. Flow to NW.

4 p.m. Lake 2 feet below SE ledge. Flow steady towards W. Splitting noises all over pit.

A. M. Hannon.

Note. "Flow" in lake or pond is used by Mr. Hannon for surface streaming.

12:30 p.m.

Strong blow. SW spatter cones on floor throwing out spatter fall. Lake appears ten feet down. Fumes opaque. Two small rock slides heard. Noise plashing and some rumblē.

From NW station can see E arm beyond crag.

In general sluggish. Activity O.F. and vicinity. NW pond sluggishly boiling. Most striking thing the tremendous puffs SW at intervals of thirty seconds, with a minor puff frequently in between.

NW pond ten feet down.

E arm more or less active. Streaming from E arm W.

Mauna Loa.

9 a.m. small fume column on Mauna Loa. Clear.

T.A.J.

KILAUEA DAY SHEET

Day Wednesday Date December 23, 1914.

t	sta	pt	hor	vert	lev	dist	elev	h. i.
10:15a	E	N	0					
	N	W	0					
	SE	NE	0					
	E	NW grotto lake	39 44	31 16		660	400	
	SE	" " "	38 58	28 13		745	398	
	SE	Top bank		26 57			377	(379 al-
	E	Crag	21 27	32 02		555	347	lowing 3 ft. back)
	N	"	41 09			317		
	E	N boil	36 25	37 57		524	409	
	SE	" "	31 44	32 09	+2	635	399	
11a.m.	E	Stalac. tip S grotto	53 42	39 19		472	407	
	N	" " " "	42 34	33 24		613	404	
12:30p	E	Bank over S grotto	55 11	39 18		478	391	
	SE	" " " "	43 43	37 06	+2	514	390	
	SE	Rock pt. SW edge floor	69 43	32 41	+2	605	388	
	N	" " " " "	31 49	24 59	+5	858	399	
			no	pl	scr	stop	ex	cam

T.A.J.

7

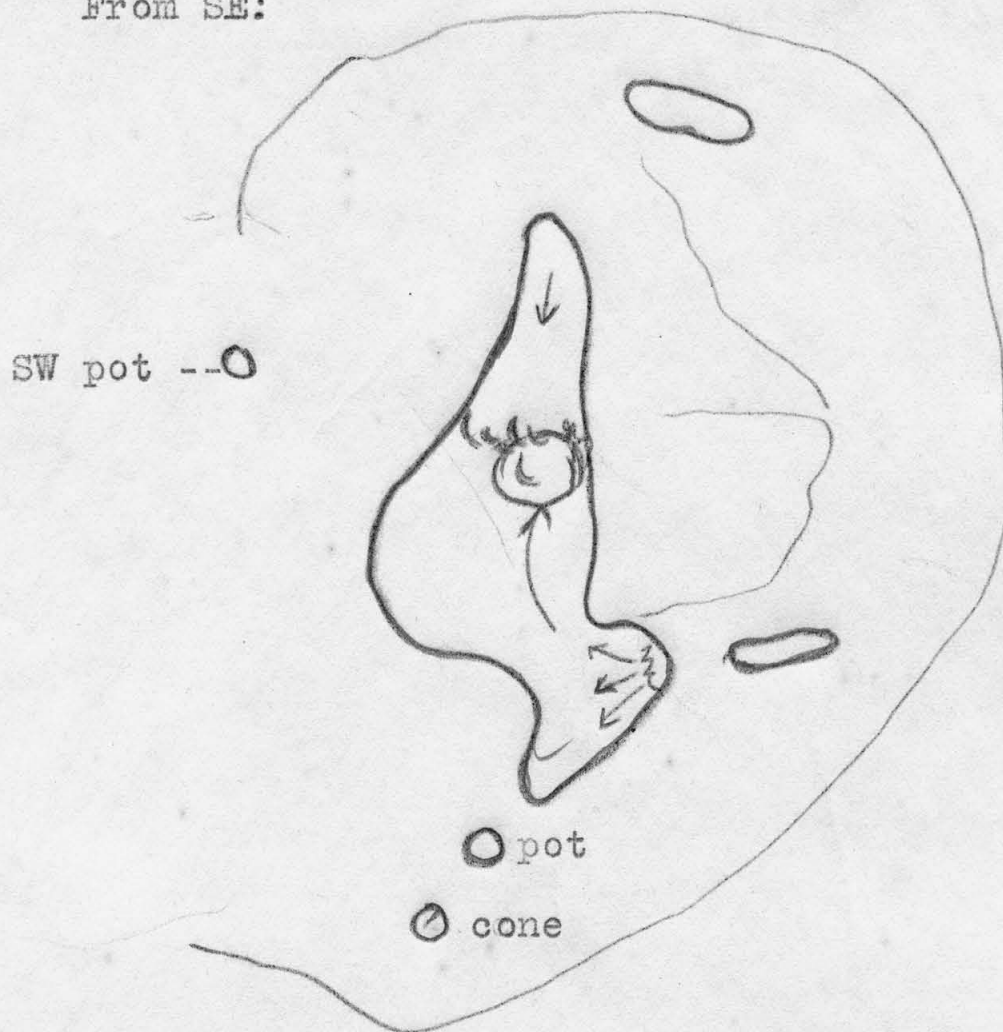
Day Thursday Date December 24, 1914.
Friday " 25, "
Saturday " 26, "

Dec. 24. Evening. Mc Clure reports fog and diminished activity but a good pool and conditions about as usual. No flows.

Dec. 25. Afternoon. Mc Clure reports flow on S.W.
Evening. Mr. Rock reports great flows joining N.W. pond and lake.

Dec. 26. 10 to 11 a.m. From S.E. station. S.W. wind and rain. Pit normal with hot flows nearly solid. Violent fountains across pool made by meeting currents O.F. Stream W from under arch over strait entrance to E arm. Splashing pots SW (where cascade was) and off end SE cove. NW pond active. Lake nearly brimming. No appearance of marked rise of floor. Crag looks lower.

From SE:

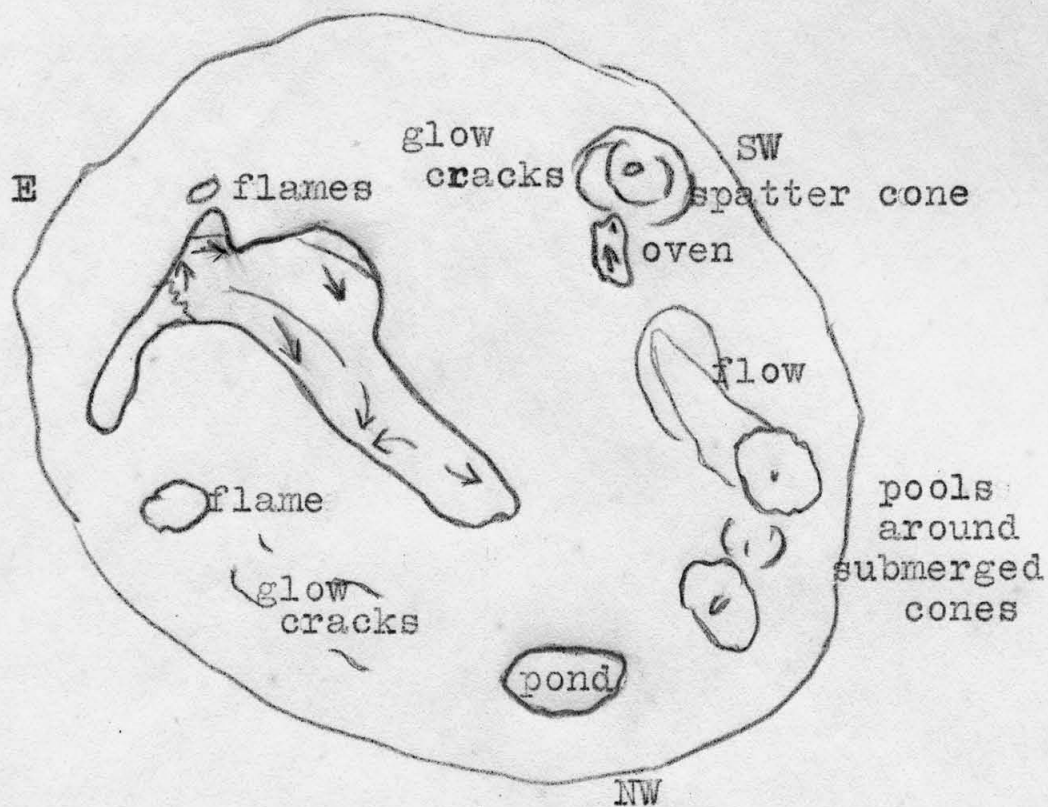


Flows afternoon and evening again pouring into SW pot by cascade.

Mauna Loa. Glow at night.

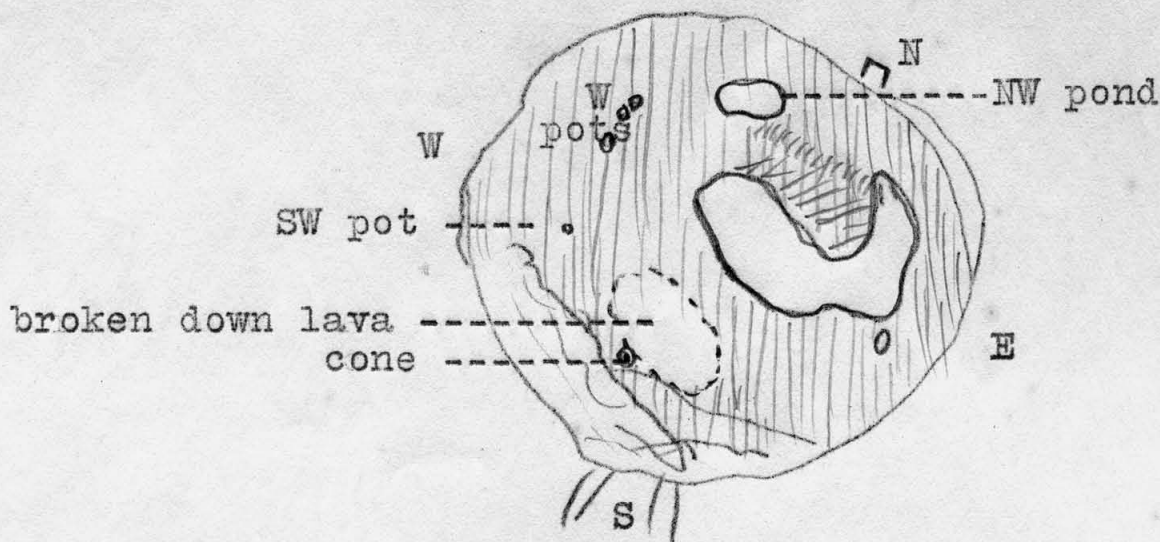
T.A.J.

8 to 10 p.m. From O.R.H.H.



O. F. large. Oven SW into which stream cascades and every minute or so a belch from within hurls out a great splash of lava repelling the cascade. Lava within at nearly same level as flow. With every belch tremendous spurts from cone hole above throwing up and out fifty feet. Small flows from W cone. Grottoes E, SE, S, W and N. East arm broke up and NW pond the same from time to time. Blowing E. Cones west submerged under splashing pools. Lake brimming; also NW pond.

T.A.J.



10 a.m. Slight surging SE cove., E arm and SW end of lake. W pot flows. NW pond boiling. SW lake bank has over a dozen yellow vapor vents. Seems higher than three days ago. Red crack against S bench spatters lava on top of bench (40 ft.?). Strong flow into lake from E arm. SE pot roaring like safety valve. Steady blue gas visible and gray fumes. O.F. breaks average 20 seconds during 40 minutes.

11:40 a.m. W pot flow stopped at 10:30 one-third the way SE. At 11:10 W pot started noisy vent with spatter. Rest of action continues same as 10 a.m. except white flakes on lake (up to 1' size) from E arm. Can see no change in level of lake. NW pond filling (was down about three feet). Lake back within one foot level with more vigorous flow from E arm.

12:20 p.m. Action pit same. Flow in S end started again from where it stopped; very small and slow but seems to find a channel under crust for a little. Appears just N of S vent crack, in the broken down lava field.

12:40 p.m. S vent throws thick lava 1 to 30(?) feet high, on average of once in five minutes (timed for half an hour, then later for half an hour). Lake is three feet lower, otherwise same. Vigorous flow into S broken down lava field. NW pond flowed slightly to east.

1 p.m. Flow continues into S broken down lava field. Yellow flames over cracks in lake become more numerous although no change in vapor or light to deceive the eye. Yellow white flakes on lake not caused by sun reflection because remain constant when crust revolves.

1:30 p.m. W pot violent eruption. Lava runs down all sides and flows to SW and NW. NW pond overflows to NW. S vent (old fissure 10 a.m.) now has built a cone. Flow continues into S broken down lava field. Lake 1 foot lower than 11 a.m.

1:50 p.m. S cone now steady vigorous gas vent throwing jets of lava and occasionally large spatter which flowed to N. West pot still vigorously flooding out lava on all sides (often jet 15 feet high).

1:55 p.m. Sudden burst of lava from old SW pot. Flows lava into broken down lava field

2 p.m. New vent breaks out just SE of new S cone. S cone flows lava into depressed lava field. W pot flow is well over toward E arm via N wall edge.

2:15 p.m. S vent breaking occasionally in many lava bubbles and has filled broken down lava field which is now overflowing half way to lake and half way to S station. This vent was at first a narrow red crack a foot long. Broken down lava field was about 6 feet deep, 100 feet long NW-SE and 50 feet wide SW-NE, with deep fissured edges.

3 p.m. NW pots still flow. Flow has kept to N wall edge and has reached E arm of main lake. S cone stops but SW pot is cascading into a cave formed in edge of now filled-in broken down lava field. Dr. Jaggard at SE station.

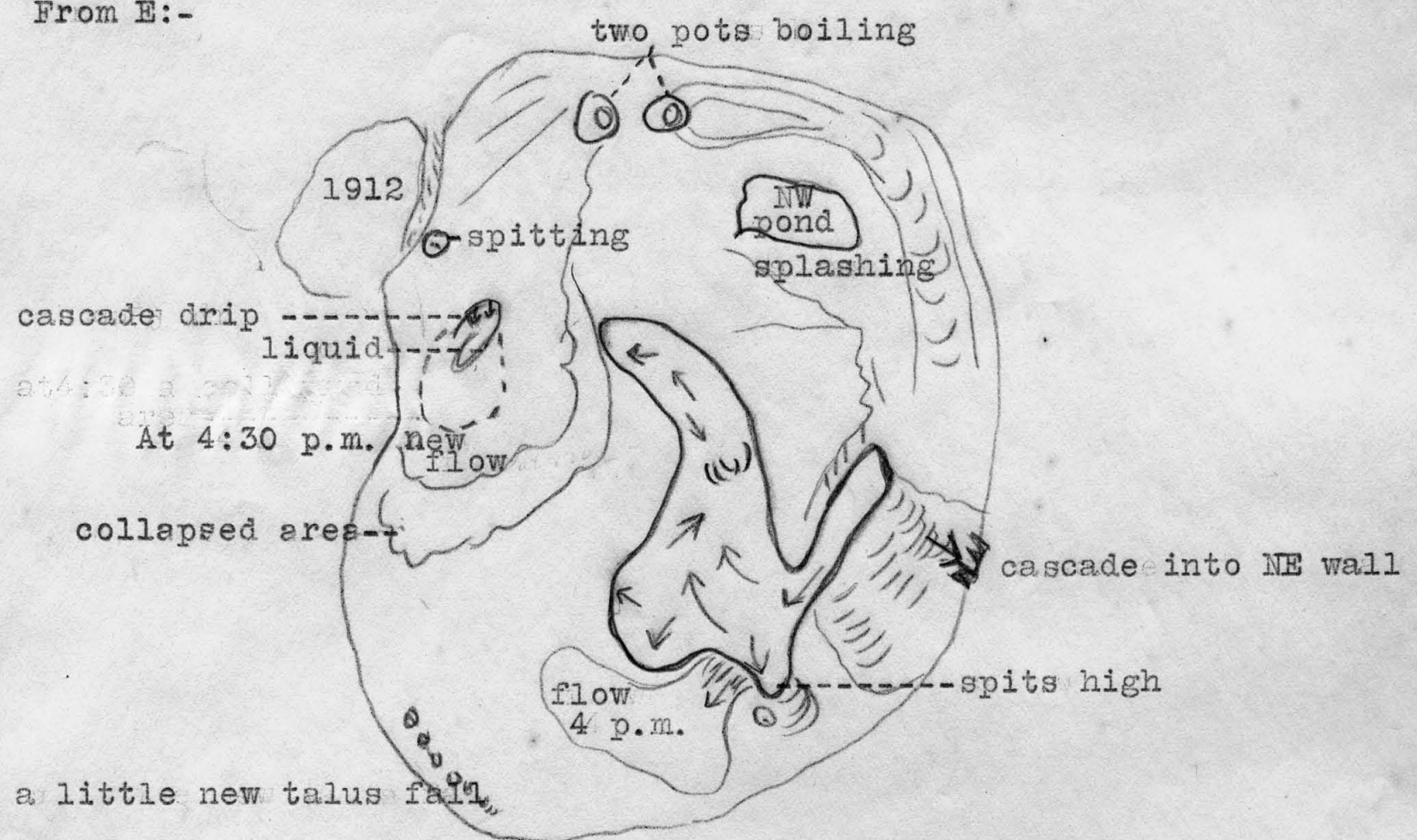
3:50 p.m. S vent cone splits with loud noise and new flow over old broken down lava field is splitting up and breaking down to near old level. Cherry colored lava on cavern floor is below old floor level. Lake 1 foot higher than 10 a.m.

A. M. Hannon.

3 p.m. From SE station. Flows from W cone N and S. Grotto SW with dripping cascades open southeastward. Lake brimming. Pot against wall SW. 200-foot bench of 1912 SW appears eaten away NW. Flow around N edge into E arm. E arm overflowing towards wall. Crust over neck to E arm. Cone and overwelling SE cove. Crag still high.

3:15 p.m. Heavy festooning flow whole length of NE arm toward wall. This flow into the NE wall is into the tube we have for some time observed there. The floor has risen to this level. This should be the equivalent of an intrusive filling in this tube. Crackling noise like a fire burning,

From E:-



4 p.m. Overflow southward from SE cove. The flow from E arm has cooled. Broad flood from SE cove over SE part of floor.

4:30 p.m. Flow from W cone still going N pouring into NW pond and beyond. An area of collapse like a pond E of the SW cascade grotto. Blowing from a crack S of it. E arm obliterated. One spitting hole. Small cone near wall E. Dominant westward streaming.

4:30 p.m. From SE station.



T.A.J.



#2



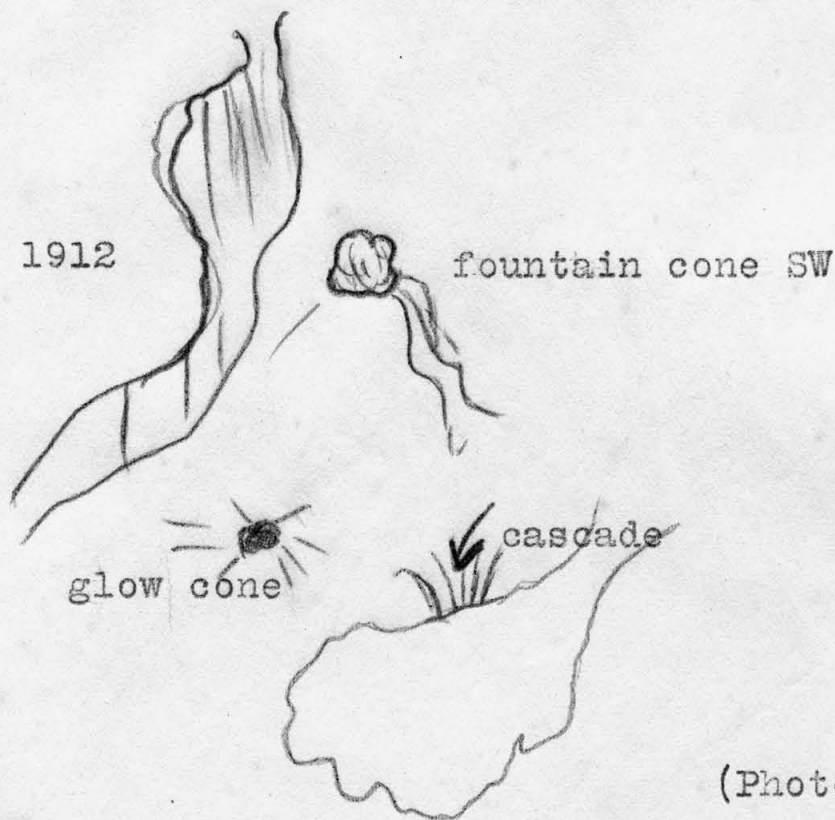
#1

S.A.J.

8 a.m. From the Volcano House the fumes over Halemaumau look thinner than ever this year. Wall shows through clearly. Clear, dry and NE wind.

11 a.m. Walked around the pit.

From SE station. Active rising has continued. Two great sheets of overflow from lake E and W of S cove over whole SE floor. Streaming from E arm W, S, SE and SW. Spatter cone higher SE, grotto pounding has ceased. Quiet hissing. Thin skins. O.F. ^{noise} occasionally. NW pond boiling hard. SW flow, new from W cones like a river, end stream or rill flowing, cascade-cave is buried up. Cone high with fountains on top SW, rills pouring NE down its slope and cascading into a hole at site of cascade-cave. Crag receding on E side, wide shelf between it and E arm. W pots quiet. S fumarole densest, next the crag fumarole. Fumes thin but diffused. Only good seeing S and SE. Some fumes SE margin and E wall. SE talus about gone, some still on the S under S fumarole.



Spatter cone on SW edge lake W end. Another on east side S cove. Cascade SW hole continued two hours and was still flowing.

T.A.J.



#1



#2



#3

Tag.

Box



#4



#5



Box

9

5:30 p.m. 1894 ledge E. Hot on face. Streaming from E arm W to SE, to S, to NW wall of lake. NW pond stagnant. Three boiling pots W. Flow near wall W end southward; new accumulations glowing. Fresh glowing flows all over SE part floor from SE and S coves. Newest a fan from point of S cove. E cone hissing. Big lump protruding into NE side of E arm, made by spatter. E arm largely skinned over. Fresh flows along N wall. SE cove skinned over - breaks up from time to time; so does E arm partially. Lake two or three feet down. Rumbling. Crack spurting SW.

T.A.J.



#1



#2

Ta. J.

8 p.m. Great activity. Fumes this evening so thin the sunset clouds show through and the S wall of the crater; humidity normal and all the steam jets of crater floor dense.

(Phot. 2) S station. SW cone spurting. Repeated spurts 80 to 100 feet high, and flame at the bottom. Festoon flow beyond. Moiré effect stream from E arm and the "seal", two divisions of the SE cove splashing (Phot. 3) Flame from hole to the right. Big flame left side of S cove. SE station. Two cascades W end of lake opposite sides of a flow pouring from NW pond into lake. Cascades steep with a curtain of skin between. Lake 10 feet down. SW cone spurting jets 100 feet into the air. New flows glowing everywhere. E arm crusted at first, breaks up at 9 p.m.

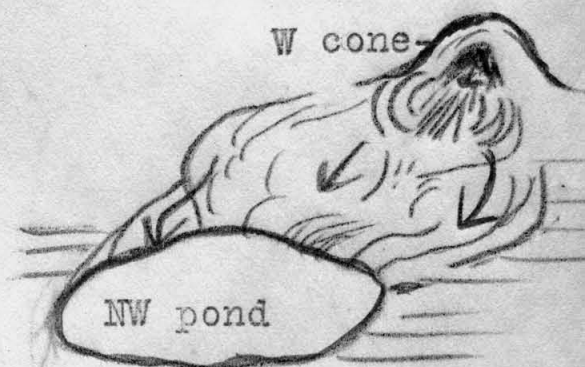
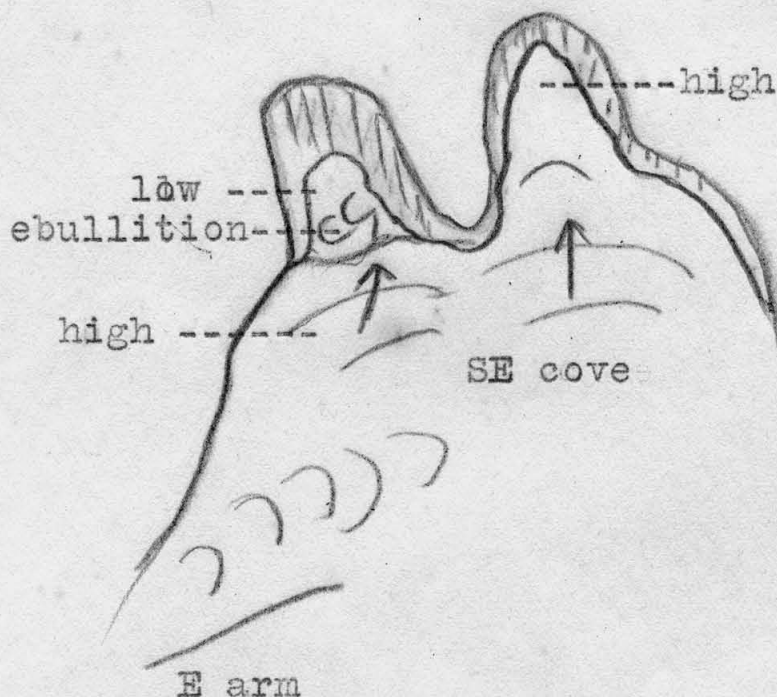
8:45 p.m. Large flow revived from W cones. SE cove in two lobes with lump between. Flames SE cove, S cove, SW cone, E cone, etc.

9 p.m. W cascades crust over but NW pond crust breaks up showing that the flow into lake came from there.

9:15 p.m. Westernmost cascade starts up again, band of flow outlined from NW pond to lake. Streaming into SE cove, S cove and whole length of lake westward. Flows E along N wall. Crag still in place. Cone with oven W end source of flow.

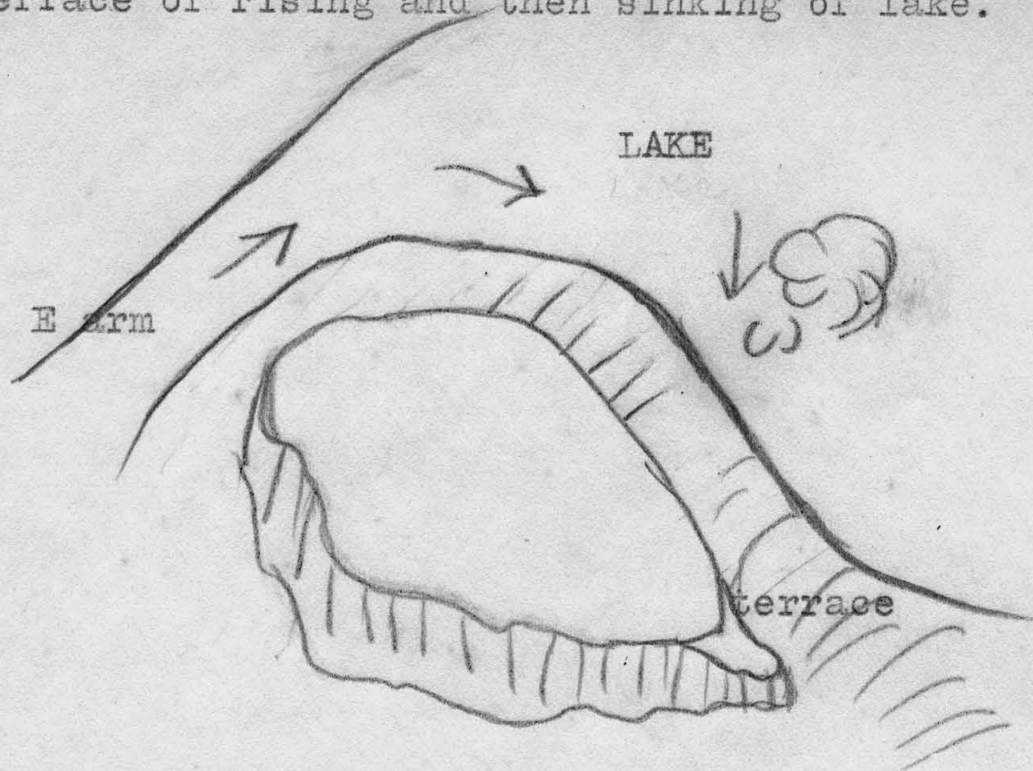
9:45 p.m. Two flows from NW pond, one toward E arm, other toward lake. Both cascades into lake revived.

10:15 p.m. From O.R.H. Flow from W cone into NW pond. Remarkable pot cove N lobe of SE cove keeps at lower level than main lake with ebullition and gradual migration of surface layer of lake into it against the ebullition. This probably differential convection with constricted vent for return of current below.



11 p.m. NW pond bubbling at edges. New flow skinned over except at vent, cascade flow skinned except at cascades. Great flows to NE wall from E arm. The crag is smaller and at foot of gentle

slope of crag on lake side a platform of overflow from lake, a flat terrace of rising and then sinking of lake.



From O.R.H.

At 11 p.m. the lake much higher, only two feet down. SW cone has become quiet, except for flame and occasional prolonged blasts. Much blowing to-night from grottoes and flaming pots.

T.A.J.

KILAUEA DAY SHEET

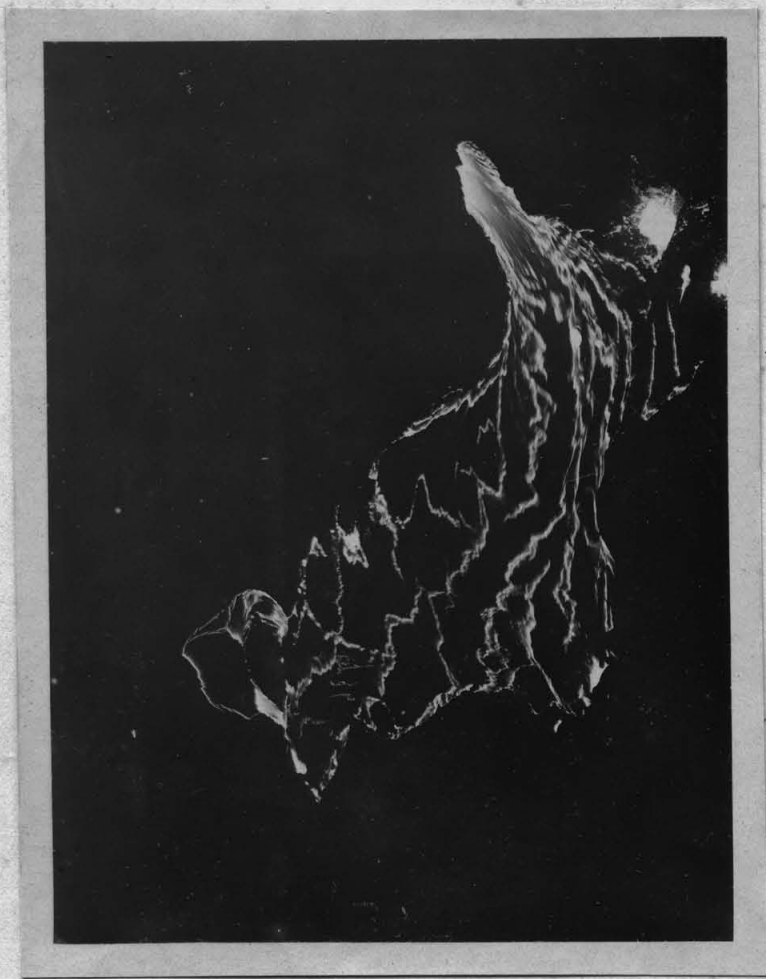
Hawaiian Volcano Observatory

Day **Thursday** Date **December 31, 1914.**

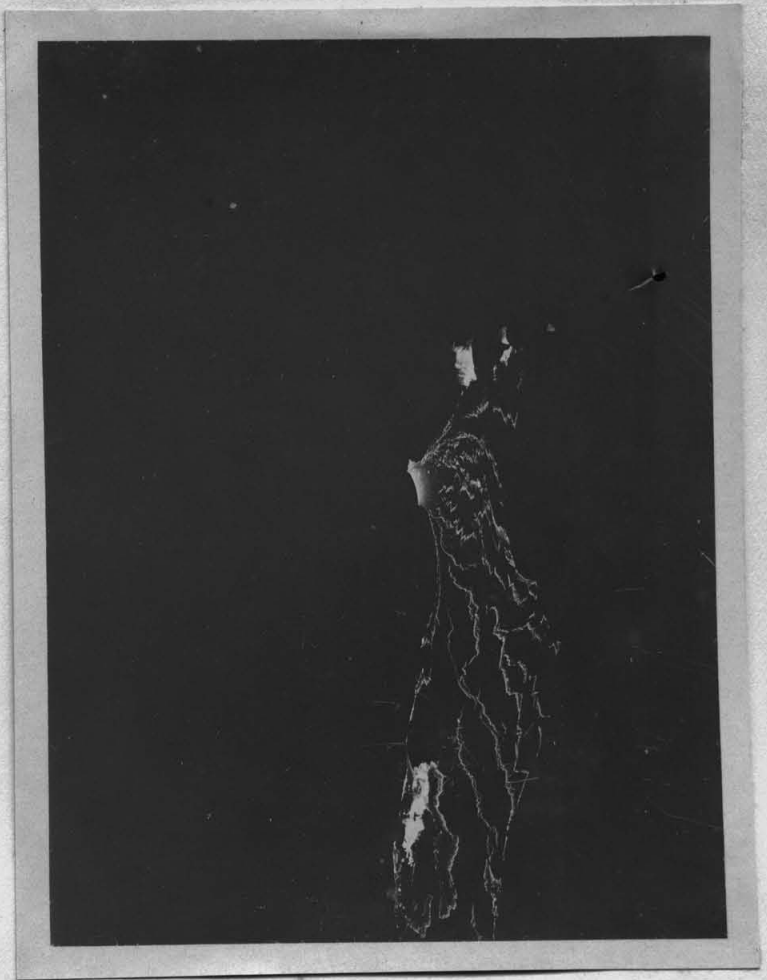
t	sta	pt	hor	vert	lev	dist	elev	h. i.

			no	pl	scr	stop	ex	cam
8p.m.	SE	Lake	1	W.P.		F 8	1	
	S	SW cones spurting	2	"		F 6	long	
	S	E end lake	3	"		F6.3	1/5	
8:30p	S	W end lake - SW spurting	4	"		F6.3	1/2	

T.A.J.



#1



#3



#4

S.O.B.

259a

1914, Dec. 31.



S.A.G.

#2