

# Hawaiian Volcano Observatory Record Book 1930

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. The scanned and photographed pages for this volume were then combined to form this digital version of the record book. Quality control and posting was done by Tim Orr of the U.S. Geological Survey Alaska Volcano Observatory.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

## JOURNAL

Day	Wednesday	Date	January 1, 1930
	Thursday		" 2, "
	Friday		" 3, "
	Saturday		" 4, "
	Monday		" 6, "

January 1  
2 p.m.

Pit bottom remains without changes, little steam rising from the various vents. Light NE wind and sky heavily overcast, with fog drifting in over Kilauea floor. Much steam comes from rim cracks all around.

Fine material lies thickly at foot of N wall but no new scars are seen at any part of wall.

R.H.

January 2  
9:45 a.m.

Halemaumau remains quiet.

T.O.

January 3  
8 a.m.

Much steam rising out of Halemaumau and blending with low-hanging clouds. Wind was SW yesterday with light rain, and heavy rain during the early part of the night.

Steam vents all over the Kilauea floor appear quite active. Wind is now light NE, and sky is heavily overcast.

R.H.

January 4  
9:30 a.m.

Much steam at all vents, particularly on S wall. No other changes observed. Halemaumau is quiet.

T.O.

January 6  
10:45 a.m.

Steam moderate from walls. None from floor. Sliding on 2 north taluses and a small new slide from north edge of Kau tunnel. Heard several loud reports from Mauna Loa way which sounded like blasting.

H.A.P.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

## Hawaiian Volcano Observatory

## JOURNAL

Day	Tuesday	Date	January	7, 1930
	Wednesday		"	8, "
	Saturday		"	11, "
	Wednesday		"	15, "
	Saturday		"	18, "
	Monday		"	20, "

January 7  
5:30 p.m.

L.W. Bryan, forester, with Martines, assistant, smelled spicy sulphur on Homaula land about elevation 7500 feet coming down from Hainoa crater, W Hualalai summit. Breeze from NW.

Martines observed same odor December 31 at summit of W Hualalai.

Bryan states he saw fireballs between Mauna Loa and Mauna Kea about 1st wks October from Waiakea Houselots. This was new to him. Direction was straight to Hualalai. Similar to what Ackerman and Stilman saw.

T.A.J.

January 8  
8:30 a.m.

Beautiful new snow coatings on Mauna Loa and Mauna Kea. Snow covers well down the slopes of the latter mountain.

Later during forenoon. A fair-sized avalanche cloud, rising from N side of pit, was seen from the Observatory. This is the first slide of consequence known to have occurred for many days.

January 11  
9:20 a.m.

Tai On reports "no change".

R.H.

January 15  
2:15 p.m.

Practically no steam. Few new slide scars along north and NW rim.

H.A.P.

January 18  
9:20 a.m.

Much steam was noticed on the crater floor from cracks, after heavy rain.

January 20  
9:45 a.m.

There is no steam down the crater floor. Noticed a fresh spot on the NE talus, and also a fresh scar on wall above talus.

Tai On

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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## JOURNAL

Day	Date
Wednesday	January 22, 1930
Thursday	" 23, "
Friday	" 24, "
Monday	" 27, "

January 22

Clear sunny day and nothing new visible from H.V.O. Considerable steam rising from various vapor jets on the Kilauea floor. Two vapor columns rise from Halemaumau at S wall and SW rim.

R.H.

11 a.m.

Noticed a fresh avalanche on the N talus. Practically no steam on crater floor.

T.O.

January 23

11:45 a.m.

Thin gray dust from an avalanche rose over NE corner of Halemaumau and spread, diminishing.

4 p.m.

Light avalanche dust rose on N side. (Powers states a slide occurred about 9 a.m. at the big sill between NNE and NE taluses.)

R.H.

January 24

6:15 a.m.

(From hotel) Dust from an avalanche rose from pit near tourist station.

7:30 a.m.

Same thing occurred. Both dust clouds were of fairly large size.

January 27

10:15 a.m.

No noticeable changes. Steaming on talus same as usual.

Tai On

2 p.m.

Dust rose from northern (Uwekahuna) side.

3:30 p.m.

More dust seen, probably several minutes after the slide, which caused it, for the dust had spread and was very thin.

(Both notes reported by H.Y.)

R.H.

## JOURNAL

Day	Wednesday	Date	January 29, 1930
	Friday		" 31, "

January 29  
1:30 p.m.

The wind today is extraordinarily strong, from the SW (as it has been for several days), the day is partly cloudy, and without rain.

The Halemaumau orifice is very nearly obscured by dust, and the Kilauea floor, beyond the pit, is also nearly hidden. The desert is very dusty, the wind has increased considerably since 8 a.m. The Hawaiian seismographs suspended on the S and W walls, record wind tremors continually, while the Bosch-Omori instruments, on central piers, are steady. (Later: Bosch show tremor, on looking closely)

January 31  
1:20 p.m.

Pit is quiet and no sliding. Steaming is normal and perhaps not so increased as might be expected after a Kona storm.

The walls are a very deep red from wetting, and ~~one~~ red mass of debris on the NE talus looks as though it may have fallen recently from the red patch above the near end of the big sill.

R.H.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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## JOURNAL

Day	Wednesday	Date	February 5, 1930
	Saturday		" 8, "
	Tuesday		" 11, "
	Wednesday		" 12, "
	Friday		" 14, "
	Monday		" 17, "

February 5  
3:05 p.m.

A few big boulders on bottom of SE talus. There is no steam on crater floor. A fresh streak of rocks noticed on the SE talus.

February 8  
9:24 a.m.

There are no changes in pit. Very little steam noticed.

Tai On

February 11  
1:30 p.m.

Much gray dust from an avalanche rose from Halemaumau, probably from the N wall as the dust was denser on that side. In a SW wind it blew towards Volcano House, and was noticeable for several minutes.

R.H.

February 12  
2:30 p.m.

The avalanche which was noticed from the Observatory on February 11 at 1:30 p.m. occurred at the W wall rim. Another reported by Mr. Gandy at 4:10 p.m. was from the N rim. Both were of considerable size as dust covered nearly the whole of the pit.

February 14  
8:15 a.m.

Convection cloud was hanging over pit.

Tai On

February 17  
9:30 a.m.

Large avalanche dust cloud rose on whole of NE side of pit; dust noticeable for about 10 minutes.

R.H.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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## JOURNAL

Day	Monday	Date	February 17, 1930
	Tuesday		" 18, "

February 17  
(cont'd)  
9:30 to 9:42  
a.m.

A large avalanche occurred on either Saturday afternoon or Sunday between the N and the NNE taluses. There is fresh scar to show that the slides were from the rim. Half of pit floor is thickly covered with fresh dust.

While making notes at 9:42 a.m. a big slide took place. It started from the rim, and it got bigger and bigger. A soldier reports there were three this morning at the same place.

Tai On

9:45 a.m.

More dust, rising near E tourist stand.

Later: Tai On, who visited pit, says these slides all occurred from N rim, where there is a big slide streak. He saw the 9:45 a.m. slide which made much noise.

R.H.

4:30 p.m.

Increase green copper salt SE 4:30 p.m. Avalanches all day and slides still falling. Band of dust stain clear across floor from source between N and NW taluses. Small new talus here built. Wall scar all the way to top. Appears to be preparing to gully the W side of buttress which is deeply gullied above N talus. Dust is gray and wall streak is pink, buttress is darker red. Steam jets on top of cliff just over slide quite active. Rocks trickle all the time. Some fresh dust on W side of N talus. Dust on floor to cone tip of 1927.

T.A.J.

5 p.m.

Other slides made dust during the afternoon.

R.H.

February 18  
9 a.m.

Dust from slides is nearly continuous this morning, on the N side. Not rising in great quantities. H.Y. reports much noise from a slide which he heard while at Uwekahuna just now.

R.H.

February 18  
(cont'd)  
11 a.m.

Avalanche quakes abundant on seismograms. Wall between N and NW taluses now peeling on NW talus side. Gulch above NW talus eating in up to top making a double buttress ready to fall between N and NW taluses. Whole floor now stained with dust and the sulphur stains are covered. Dust over pit much of the day. Considerable slide at 11:23 a.m. New talus merging with NW talus cone. Kona reports only one small seismograph record, no felt shocks, therefore last night's quakes were not Kona. Upper wall NW notched back strongly.

T.A.J.

4 p.m.

Slides have occurred all day. At noon observers saw continuous small rock falls.

February 19  
8:45 a.m.

One large cloud of dust from a slide rose compactly at the N rim.

R.H.

2:15 p.m.

The Halemaumau pit seismograph shows a lot of avalanches registered on Tuesday. The crater floor and the north wall are covered with fresh dust of the recent slide. Rocks are continuously falling from the rim. Steaming from the S. Very little talus steam.

Tai On

2:30 p.m.

Measured cracks. All show a slight widening since December 4, 1929 and No. 14, north of 14-ton boulder, has widened 1 3/4 ft. Also all this area has settled, shows new cracks, has an unstable appearance. No. 14 point is about 50 feet from E rim and 75 feet from end of crack, which runs into pit.

R.H.

5:41:50 p.m.

Hilo--We recorded an earthquake starting at that time and lasting for about 8 seconds. I would record it as moderate plus.

The time is not absolutely certain. Last time I reported a quake a few days ago my watch was estimated by Mr. Schatzmayr as 23 seconds slow. At the present time the watch is 3 seconds slow of the first chime of the First Foreign Church. I will make correction and notify you if there is any great difference.

R.I.B.

JOURNAL

Day	Thursday	Date	February 20, 1930
	Friday		" 21, "
	Saturday		" 22, "
	Sunday		" 23, "

February 20                      Large dust cloud from an avalanche reported by J.N.Gandy. Other  
6:45 a.m.                      dust seen later.

February 21                      Dust rises north, indicating N wall is still unstable. Other  
8:30 a.m.                      dust seen earlier.

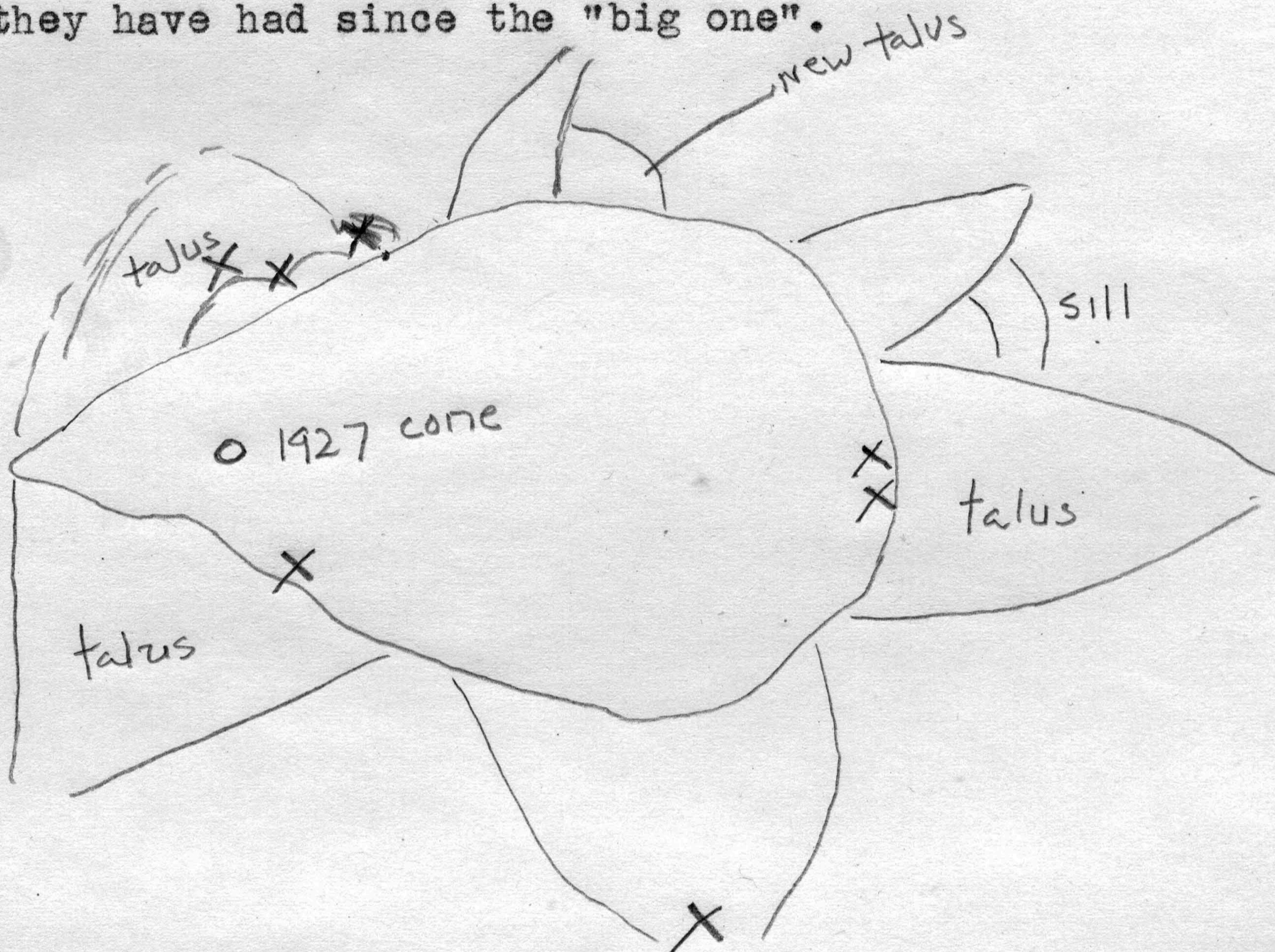
R.H.

~~XXXXXXXX~~

Mrs. Powell reported from Pahala that several quakes have been felt during the past fortnight (more and stronger than in any period since Oct.) and that the one at 5:45 p.m. February 19 was very sharp. Biggest one they have had since the "big one".

H.A.P.

February 22  
10 a.m.



In spots marked x moisture has discolored the new kahki dust mantle to a deep greenish brown. Dust still thick. Very little steam.

H.A.P.

February 23  
12 noon

Large dust cloud filled the pit after a big avalanche.

R.H.

## PHOTOGRAPH RECORD

Day **Thursday**Date **February 20, 1930**

time	sta	subject	no	pl	scr	stop	ex	cam
<u>February 20</u>								
9:30 a.m.	E	Pit floor, covered with dust	1	W.P.	G	f/32	5	6 $\frac{1}{2}$ x 8 $\frac{1}{2}$
		Tai On measuring large crack with caliper.	2	"	"	"	"	"

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day Tuesday Date February 25, 1930  
Wednesday " 26, "

February 25  
9:40 a.m.

Dust on crater floor is washed away by rain. Avalanching is quiet.

Tai On

February 26  
12:30 p.m.  
1:08 p.m.

Dust indicates an avalanche.

Same

H.A.P.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date
Saturday	March 1, 1930
Wednesday	" 5, "
Thursday	" 6, "
Saturday	" 8, "
Sunday	" 9, "

March 1  
10 a.m.

No noticeable changes. Very little steam compared to usual.

March 5  
2:34 p.m.

No changes in Halemaumau except one big scar from a slide at the N rim. While changing the seismograph the roar of an avalanche was heard. Later at the pit another large noisy avalanche was seen. Both slides made considerable dust. Mr. Craig, labor foreman, reports he saw about  $\frac{1}{2}$  dozen slides occur during the day.

Steaming on S talus as usual.

Several avalanche tremors registered by pit seismograph. About 12 recorded during the past eighteen hours.

3:15 p.m.

Dust from avalanche N. Others later.

March 6  
11:40 a.m.

Dust rising from Halemaumau pit, indicating a considerably large avalanche. Another occurred 11:15 a.m.

Tai On

March 8

Halemaumau started slides at the north and NW today with the drying of the weather and the appearance of sunshine. Earthquake felt in Hilo near 11 p.m.

T.A.J.

March 9  
9:35 a.m.  
10:50 a.m.  
11:40 a.m.  
12 noon

Slide NE seen by H.Y. from U.O.

One very large dust cloud seen from HVO

Another

Another.

R.H.

Slides continued in Halemaumau. Pit has dust hanging over it during the forenoon. Big slide made large cauliflower cloud at 4 p.m.

T.A.J.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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## JOURNAL

Day	Monday	Date	March 10, 1930
	Tuesday		" 11, "
	Wednesday		" 12, "
	Thursday		" 13, "

March 10  
 9:00 a.m.  
 9:20 a.m.  
 9:27 a.m.  
 10:25 a.m.

A small slide reported seen by Yasunaka from U.O.  
 A large dust cloud seen from H.V.O. on N rim.  
 Another  
 Two slides occurred while at pit. Dust cover about  $\frac{1}{4}$  of N crater floor thickly. Pit seismograph registered many avalanches during the past three days. Steaming on S talus as usual.

Tai On

March 11  
 11:25 a.m.

Pinkish dust rose in compact puffs up north wall of Halemaumau, followed in a few seconds by thin dust on the east side. The whole spread out and hung in the air several seconds. Probably the dust was from a single large avalanche, air currents separating the cloud. (Wind was S early; is now still)

March 12  
 1:14 p.m.  
 1:30 p.m.

Dust from an avalanche N rose out of N corner of pit, blown somewhat steadily by SW wind so as to resemble smoke.  
 More thin dust N.

R.H.

2:15 p.m.

Dust on pit floor is washed away a little by rain, or blown by wind. Just a thin coat is on. Lot of steam noticed on the S talus. Noticed no new scars from recent avalanches.

Tai On

8:35 p.m.

Large avalanche heard by J.N. Gandy. Visited pit and saw large scar top of N wall.

March 13  
 9:30 a.m.  
 9:50 a.m.  
 10:50 a.m.

Thin dust rises N  
 Ditto  
 Another  
 Several in afternoon

R.H.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day	Thursday	Date	March 13, 1930
	Friday		" 14, "
	Saturday		" 15, "
	Monday		" 17, "
	Tuesday		" 18, "
	Wednesday		" 19, "

March 14                    Three noisy slides N reported by Ranger Christ, and continuous  
6:30-7 a.m.                sliding between for 22 minutes.

2:30 p.m.                    Quiet at Halemaumau. A rock fell SW, with echo from NE wall.  
It must have been in caverns as it did not slide.

2:35 p.m.                    A few rocks fell NW. Scar of slides of this morning is at N rim,  
is dusty, and contrasts with rest of the wet pit walls. Walls are quite  
dark from the heavy rains. The dykes NE and SW show plainly.

There is very little steam now though much arose early this morning  
after a night of hard rain. Faint steam visible near tops of W and S  
taluses, also on rock tongue SE.

2:45 p.m.                    Light fall of stones near caverns.

2:50 p.m.                    Light fall of stones NW.

R.H.

March 15                    Lots of steam coming out through cracks of Halemaumau pit.floor.  
9:45 a.m.                    Especially around the July cinder cone, after heavy rain.

March 17                    Some fresh rocks noticed on right of N talus.  
9:30 a.m.                    No steam is seen on bottom of Halemaumau floor.

Tai On

March 18                    Avalanche dust rose N or NW. Seen from south of Uwekahuna.  
10:35 a.m.

March 19                    Light dust from a slide rose N  
12 noon  
1 p.m.                        Ditto

R.H.

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date	March 20, 1930
Thursday	March 20,	1930
Saturday	" 22,	"
Wednesday	" 26,	"
Saturday	" 28,	"
Sunday	" 30,	"
Monday	" 31,	"

March 20

9 a.m.

No noticeable changes.

March 22

9:30 a.m.

Steaming as usual on the S talus. There is a big scar above the NW talus.

March 26

2:45 p.m.

A few fresh rocks on bottom of N talus. Steaming as usual. The pit seismograph shows a few avalanche tremors.

March 28

9:15 a.m.

Halemaumau remains quiet. No fresh avalanches noticed, and no tremors recorded on pit seismograph. Steaming on S talus is less than usual.

10:30 a.m.

A little dust is seen from HVO at NE of Halemaumau.

Tai On

March 30

3 p.m.

Some avalanche dust has risen today. Dust now fresh on NW buttress. Fresh dust triangle on floor below this point. Notch deeper and extends higher in wall above N talus.

Floor mostly washed bare. Wide area greenish-white stain edge of floor S. New boulders on floor E. Talus higher between N and NW taluses.

T.A.J.

March 31

9:20 a.m.

There are no noticeable changes in Halemaumau.

Tai On

2:35 p.m.

Avalanche dust N-same place as many others during the month. Other dust dimly showed once or twice previously.

3 p.m.

Avalanche dust NE a little larger than the others.

4:15 p.m.

Small dust cloud NE. (Probably more E, but over NE talus)

R.H.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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## JOURNAL

Day	Wednesday	Date	April 2, 1930
	Thursday		" 3, "
	Friday		" 4, "
	Saturday		" 5, "

April 2  
4 p.m.                      Some avalanche dust seen NE from HVO.

R.H.

April 3  
9:25 a.m.                      There is a fresh strip of rocks on the NE talus.  
Steaming on S talus is very little.

Tai On

April 4  
2:45 p.m.                      Mr. Allen reports gigantic slide over NE talus, tipping of 14-ton  
boulder, and great change in area there due to increased cracking.

2:50 p.m.                      Avalanche dust NE. Heard that cracks are wider in 14-ton boulder  
locality. (above)  
Much dust; it also rises.

R.H.

April 5  
8:25 a.m.                      Slide NE.

H.Y.

10:15 a.m.                      No steam in pit. (clear, dry day) Number of large stones on floor  
in E corner from big slide from rim a little NE of 14-ton boulder.  
This ~~1/2~~ slide recorded in afternoon of April 4.

H.A.P.

10:25 a.m.                      Slide dust NE.

R.H.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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## JOURNAL

Day	Date
Monday	April 7, 1930
Wednesday	" 9, "
Saturday	" 12, "
Monday	" 14, "
Wednesday	" 16, "
Friday	" 18, "

April 7  
10:30 a.m. There are a few big rocks on the E of pit floor which had fallen from the E rim on Friday as reported by Mr. Allen.

April 9  
2 p.m. There is a big scar on the E wall right below the 14-ton boulder. More of fresh slides on that section.  
The sulphur stain on Halemaumau floor has changed to a whitish color. Very little steam on S talus.

April 12  
9:30 a.m. There is no change in Halemaumau pit. Steaming as usual.

April 14  
10:09 a.m. There are a lot of big boulders on E of Halemaumau floor from the recent slides.

Tai On

11 to 11:30 a.m. Measured remaining crack points of those established by Wilson July, 1927. Five remain available from the original 15 points, most of which are along a single crack paralleling ESE rim. Some have fallen in, others have broken, and No. 14, a few yards N of 14-ton boulder is in a place that looks too dangerous. It has widened to six feet and hard to measure with calipers.

The boulder has tilted farther over the weekend and is ready to fall into slowly widening crack behind.

R.H.

April 16  
2:30 p.m. There are no changes in Halemaumau pit.

Tai On

April 18  
3:15 p.m. Much vapor rises from Halemaumau. A light rain has fallen since the forenoon. The steam is dense, fills the entire orifice, and blends with low hanging clouds.

R.H.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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## JOURNAL

Day	Date	April 19, 1930
Saturday		
Monday	" 21,	"
Wednesday	" 23,	"
Saturday	" 26,	"
Monday	" 28,	"

April 19  
9:35 a.m.

More loose rock and boulders are seen on the E of Halemaumau floor which wvidently have fallen from the rim near the 14-ton boulder.

Steaming is very dense, but there is none noticed in crater floor.

Tai On

10 a.m.

The boulder shows no change since Monday. No changes seen in pit. (With Mrs. Ruth Taylor White, artist from Haw. Tourist Bur.)

R.H.

April 21  
10:45 a.m.

A few rocks were heard falling on the N talus from the N rim. Pit remains very little changed. Steaming as usual.

April 23  
2:30 p.m.

Halemaumau crater is very quiet. Notice no changes.

April 26  
9:45 a.m.

Noticed very little steam on the S talus.

Tai On

3 p.m.

A few slides occurred N just before this, making whitish dust.

R.H.

April 28  
10:05 a.m.

A few rocks were heard falling from the N rim. White sulphurous spot on the SW wall. S talus steams as usual. No big slides occurred.

Tai On

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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## JOURNAL

Day	Date
Monday	May 5, 1930
Wednesday	" 7, "
Saturday	" 10, "
Sunday	" 11, "
Monday	" 12, "
Wednesday	" 14, "
Thursday	" 15, "

May 5  
10:30 a.m.

Steaming on the S talus is usual.  
There is a little fresh streak of fresh spot on top of N talus.

May 7  
2:40 p.m.

There are no changes in Halemaumau.

May 10  
10 a.m.

There is no steam on S talus.  
No fresh avalanches were noticed, although a few boulders were heard falling on N wall.

Tai On

May 11  
12 noon

Pit quiet. Many boulders lie about perimeter of frozen July lava.  
One small slide just occurred N.

R.H.

May 12  
10 a.m.

Steam very light on talus and walls. Few new slides on north talus but all small.

May 14  
4:10 p.m.

Raining, but no change and little steam.

H.A.P.

May 15  
4:30 p.m.

A small cumulus cloud hangs over Mokuaweoweo; another larger, was to the south slightly. Sky is otherwise clear.

R.H.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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## JOURNAL

Day	Date	May 17, 1930
Saturday		
Monday	" 19,	"
Tuesday	" 20,	"
Wednesday	" 21,	"
Saturday	" 23,	"
Monday	" 25,	"

May 17  
9:35 a.m.

There is very little steam on the S talus.

May 19  
10:15 a.m.

No fresh slide is noticeable and steaming on S talus is as usual.

Tai On

May 20  
2:50 a.m.

(Telephone message from Hilo Memorial Hospital, Miss M.R. Campbell.)  
Felt "moderate" shock appearing to have E-W motion. Was awakened;  
estimated duration about 10 seconds.

6:52 p.m.

Slight shock felt by fellow workers.

R.H.

May 21  
2:05 p.m.

There is very little change in Halemaumau pit. Very little  
steaming on S talus.

May 23  
9:45 a.m.

There is a fresh strip on the E talus. A few rocks were heard  
falling on the N wall. Very little steam on S talus.

Tai On

May 25  
4 p.m.  
8:17 p.m.

No vapor visible in pit. Dry sunny. Everything quiet.  
Wide greenish white stain SE edge floor.  
Earthquake (strong). All instruments dismantled; Uwekahuna pens  
came back quickly.  
No preliminary.  
HVO (Earth moved down, south and east.  
(Earth tilted south and west.  
Strong in Kau, from Waiohinu to Kapapala.  
Much stronger in Keaau (Fisher's ranch) than the Sept-Oct shocks,  
1929 (Hualalai)  
Swaying, then strong jerks, first NE, then SW in Empire Theatre, Hilo.  
Audience ran out. The Oct 5 shock of 1929 was slow swaying, more  
alarming because prolonged.  
Puuwaawaa reports long shock, but not excessive. Seis at Kealakekua  
a strong preliminary.  
Kona the same: Puu Anahulu not very strong. Roar like thunder at  
Honokahau.  
Hamakua not so strong as October.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

JOURNAL

Hawaiian Volcano Observatory		May 25, 1930
Day	Sunday	Date
	Monday	May 26, 1930
	Tuesday	" 27, "
	Wednesday	" 28, "
	Saturday	" 31, "

May 25  
(cont'd) HVO very heavy fling off of vertical instrument: no preliminary on any instrument: sensation sudden short jerks soon over: quite different from Sept-Oct quakes.

T.A.J.

May 26  
10:20 a.m. Practically no steam coming out from the S talus. 14-ton boulder remains the same after the crack widened. A few rocks were heard falling from E wall.

Tai On

1:45 p.m. Avalanche dust NE.

H.A.P.

3:30-4 p.m. Frequent small rock falls N while measuring cracks.

May 27  
8:30-9:30 p.m. Numerous small rock falls on N wall, with some noise and dust. This was likely continuous during the night. Much fine material lies piled against foot of N wall between the two taluses.

Reestablished two crack-measuring locations, Nos. 11 and 12 on main crack. Marked three new locations S of pit approach, and called them Nos. 16, 17, 18.

2:30 p.m. A small cloud of dust rose N from pit rim, larger than the small dribbles that seem to be prevalent at this time.

R.H.

May 28  
2:10 p.m. Very little steaming on S talus. No new slides noticed.

May 29  
4 p.m. HVO. A small cloud of dust rose from S of Halemaumau pit. Seen from

Tai On

May 31  
10:30 a.m. Nothing -- steam very light.

H.A.P.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date	June 3, 1930
Tuesday		
Wednesday		" 4, "
Thursday		" 5, "
Saturday		" 7, "
Monday		" 9, "
Saturday		" 14, "
Monday		" 16, "
Wednesday		" 18, "

June 3  
4:54 a.m.      A light earthquake was felt distinctly by a few persons at and near the Volcano House.

June 4  
6:32 p.m.      Earthquake felt here; partly dismantled E-W on Bosch.

June 5  
11 a.m.      Absolutely no steam at any of interior vents in pit. Steam is same as usual back of W rim. Strong NE wind.  
Before last eruption there was no visible steam. Can another be impending? No change in cracks measured.

R.H.

June 7  
9:30 a.m.      No changes in Halemaumau pit. Very little steaming on S talus. Noticed no new slides. A few little tremors were recorded on the pit seismograph.

June 9  
9:20 a.m.      There were a few rocks heard falling on the N wall followed by a little dust.  
5:30 p.m.      A little cloud of dust rose from Halemaumau pit. Seen from H.V.O.

June 14  
9:20 a.m.      S talus has practically no noticeable steam.  
A reddish scar is on the N wall but there is no fresh slide on talus.

June 16  
9:45 a.m.      There is very little steam on S talus and Halemaumau remains without changes.

June 18  
Practically no steaming on S talus. Few rocks heard falling from N wall.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date
Friday	June 20, 1930
Saturday	" 21, "
Saturday	" 28, "
Monday	" 30, "

June 20  
10:25 a.m.

A little dust rose from Halemaumau pit. Seen from HVO.

June 21  
9:20 a.m.

A little steam on S talus. But there were no other changes.

Tai On

June 28  
9:30-9:50a.m.

Measured cracks. All quiet in pit. No sounds heard and no steam seen on the bottom.

A small scar near top of W wall is likely the location of the bit of dust seen a day or two ago from HVO.

R.H.

June 30  
10:25 a.m.

There was a new little slide on the E talus and a new scar on the N wall. The sulphur stain S of Halemaumau floor shows a little whitish color.

There is a little steam on top of S talus.

Tai On

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date	July 5, 1930
Saturday		
Monday	" 7,	"
Wednesday	" 9,	"
Thursday	" 10,	"
Friday	" 11,	"
Saturday	" 12,	"
Monday	" 14,	"
Wednesday	" 16,	"

July 5  
10:15 a.m.      There were no changes in Halemaumau pit. Little steam on S talus, and no new slides.

July 7  
9:45 a.m.      The sulphur stain on S of Halemaumau floor remains whitish colored and seems to be spreading out a little. Practically no steaming on S talus.

July 9  
2:16 p.m.      No changes and nothing new to be seen.

Tai On

July 10  
2:50 p.m.      Light-colored dust rose from a slide probably north.  
3:25 p.m.      More thin dust observed.

July 11  
11 a.m.      Pit is sunny, dry, and still. One very small slide occurred at N corner of big sill.  
Wall area over W talus, noted last week, appears more widely dusted.  
No steam seen at any of interior vents.

R.H.

July 12  
9:20 a.m.      A small slide occurred on the N wall. Rocks heard falling.  
No steaming on S talus.

July 14  
10:15 a.m.      There are no changes in Halemaumau pit.

July 16  
2:30 p.m.      No steam on S talus. Heard a few rocks falling<sup>on</sup> the north wall, and a small slide was seen there.

Tai On

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

## Hawaiian Volcano Observatory

## JOURNAL

Day	Thursday	Date	July 17, 1930
	Saturday		" 19, "
	Monday		" 21, "
	Tuesday		" 22, "

July 17

3:30-4 p.m.

Measured cracks. Used inches tape as the old tape (in tenths and hundredths of feet) has been breaking from time to time.

Pit appeared quiet. One small rock fall heard in north corner by big sill. No steam to be seen.

A big rim section has fallen at 14-ton boulder; do not know when this occurred, but since June 5. The boulder is now perched ready to tumble in. Took some  $2\frac{1}{2}$  by  $4\frac{1}{4}$  snapshots. (R.H. camera)

July 19

10:20 a.m.

Avalanche dust, white, rose on east side of Halemaumau. Dust remained in air some minutes.

10:30 a.m.

More dust arose from same place. Went to pit for inspection.

11 a.m.

Arrived at pit. All quiet. Breemaghin, Ranger, says slides were made by soldiers dropping rocks--observed them with glass from U.O.

Ranger says the slab by the 14-ton boulder fell in 10 a.m. July 15.

Took a few 116-pictures in good sunlight.

R.H.

July 21

9:45 a.m.

A little steam is seen on the S talus after recent rains.

A fresh streak of slide noticed on the N talus. May have been caused by soldiers.

The pit seismograph registered a few small tremors, and there is a little E tilt to each one of them but one tilted towards the pit.

No change at 14-ton boulder.

Tai On

July 22

1:53 p.m.

Earth quake felt slightly at hotel and 29 miles. Quite perceptible in Hilo, strongly at Kohala, Puuwaawaa, and Kealakekua.

Mrs. Lucas said on telephone that pictures and trees swayed.

Augst said strongest since October.

Capt. Woods was in seis. room and saw registering begin before he felt the motion. Instrument duration about 10 minutes and one pen partly dismantled. Heard things rattle.

At HVO, E-W pen dismantled but no motion felt. N-S partly dismantled but shook back into place.

No damage reported done.

R.H.

## PHOTOGRAPH RECORD

Day **Thursday** Date **July 17, 1930**  
**Saturday** " **19,** "

time	sta	subject	no	pl	scr	stop	ex	cam
<u>July 17</u>		Some $2\frac{1}{2}$ x $4\frac{1}{4}$ snaps with R.H. camera.						
<u>July 19</u>		Took a few 116 pictures in good sunlight.						R.H.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

## Hawaiian Volcano Observatory

## JOURNAL

Day	Wednesday	Date	July 23, 1930
	Friday	"	25, "
	Saturday	"	26, "
	Monday	"	28, "
	Wednesday	"	30, "

July 23  
2 p.m.

No steam noticed on S talus. A considerably large slide occurred on N side. Saw rocks falling from N rim. 14-ton boulder remains the same.

Tai On

July 25  
9-9:35 a.m.

All quiet and still at Halemaumau. Pit is sunny and clear. Took a few experimental views at 14-ton boulder with Reflex camera.

R.H.

5:50 p.m.

Saw a cloud of dust rise from SE of Halemaumau. Gradually covered nearly half of pit. Viewed from H.V.O.

Tai On

July 26  
10:30 a.m.

Very heavy rain at pit. Steam is very dense on S talus and NW rim. Also noticed steam coming out from cracks on Halemaumau floor, near sulphur stain on S.

July 28  
10:15 a.m.

There are no changes down pit. Sunny and dry. No steam on S talus.

July 30  
2:15 p.m.

Halemaumau pit is still very quiet. No steam on S talus. Sunny and bright at pit.

Tai On



## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

## Hawaiian Volcano Observatory

## JOURNAL

Day	Friday	Date	August 1, 1930
	Sunday		" 3, "
	Tuesday		" 5, "
	Saturday		" 9, "
	Monday		" 11, "

August 1  
2 p.m.

There are no changes at Halemaumau pit. Very little steam from S talus. Very sunny and bright.

August 3  
9:30 a.m.

The sulphur stain on the S of Halemaumau floor seems to be spreading a little and the color is more whitish. Steaming on S talus very slight.

Tai On

August 5  
8:35 a.m.

Perceptible earthquake at Uwekahuna. Not felt at HVO but dust from a large slide was noted a few minutes later.

R.H.

9:45 a.m.

Saw a cloud of dust from HVO north of Halemaumau. Avalanche occurred on the E wall. Fresh streak noticed on E talus. No steam on S talus.

August 9  
9:15 a.m.

Very little steam on S talus. The sulphur stain on S Halemaumau floor is getting yellowish in color more than usual and also spreading a little.

August 11  
9:55 a.m.

All crater walls are wet after heavy rain and tremendous steam comes from every crack on Halemaumau floor. A few unseen rocks ~~are~~ heard falling from rim.

August 13  
10:30 a.m.

Steam from cracks are gone except for one spot at sulphur stain which is still coming out strong. Slide is heard from north sill.

Tai On

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

## Hawaiian Volcano Observatory

## JOURNAL

Day	Date	August 13, 1930
Wednesday		
Thursday		
Friday		
Saturday		
Sunday		
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Sunday		
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Sunday		

August 13  
10:30 a.m.

All steam from cracks are gone except one place from sulphur stain coming out pretty strong. A slide is heard from N sill.

August 16  
9:20 a.m.

No change at Halemaumau pit. There is still a little steam coming out from cracks at sulphur spot.

August 18  
9:30 a.m.

Still no changes at Halemaumau pit. Steaming at S talus.

August 19  
3:15 p.m.

Halemaumau pit remains very quiet. Very little steaming on S talus.

<sup>4</sup>  
August 21  
9:30 a.m.

The sulphur stain is getting yellowish colored. No steam on S talus. More little rocks fell from wall between W and NW taluses.

August 23  
10 a.m.

No changes occurred at Halemaumau pit. No steam on floor and on S talus.

August 26  
3:15 p.m.

No changes in Halemaumau.

August 28  
9:30 a.m.

There was an avalanche from N wall. Don't know whether it was artificial or not. No steam noticed on crater floor or S talus.

August 30  
9:50 a.m.

A few slides reported in the morning about 7:30 a.m. on N wall. A little steam on S talus, don't notice any at bottom of pit.

Tai On

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

## Hawaiian Volcano Observatory

## JOURNAL

Day	Monday	Date	September 1, 1930
	Tuesday		" 2, "
	Thursday		" 4, "
	Saturday		" 6, "
	Monday		" 8, "
	Wednesday		" 10, "

September 1  
8:30 a.m. Pit almost devoid of steam. Few rocks falling now and then. Saturday P.M. at 3:32 (?) a fair sized "sliver" of the rim between the 14-ton boulder and the Pit fell in leaving records on all seismographs and making quite a noise.

H.A.P.

September 2 No changes at pit. No steam from S talus or cracks of crater floor.

September 4  
9:30 a.m. No steam on S talus. 14-ton boulder remains the same. A little streak of fresh rock on N talus.

September 6  
9:30 a.m. Big slides occurred on N rim. It shows a large scar. The pit seismograph recorded a considerably large avalanche tremor and several small ones. The time recorded was 9:40 p.m. on Thursday night. Numerous avalanches seen continuously from HVO all day Friday. Lots of rocks falling still and dust rose from pit on Saturday morning. The 14-ton boulder is seemingly sagging a bit. Crack measurements did not change much.

September 8  
9:35 a.m. 14 ton boulder remains the same and no changes have been noted after the avalanches of the day before.

September 10  
8:45 a.m. Large cloud of steam rose from Halemaumau pit after heavy rainfall. View from HVO.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

## Hawaiian Volcano Observatory

## JOURNAL

Day	Thursday	Date	September 11, 1930
	Saturday		" 13, "
	Monday		" 15, "
	Wednesday		" 17, "
	Thursday		" 18, "

September 11  
9:15 a.m. The whole of 14 ton boulder area went down. According to the pit instrument record the first slide occurred at 9:35 p.m. September 10 and 14 considerably big ones followed. Two biggest at 10:30 p.m. Evidently shows that they were the biggest slide and probably the 14 ton boulder went down with it. A few big rocks seen on the edge of the lava floor.  
No steam on S talus or pit floor.

September 13  
9:40 a.m. No changes at Halemaumau pit.

September 15  
10 a.m. The pit instrument recorded 33 avalanche tremors. The first one was at 5:40 p.m. September 13th. Brumagen said that he saw the avalanche take place by the 14-ton boulder area. That recorded one of biggest tremor in the group at 3:30 p.m. September 14th.  
No steam on S talus. Saw dust rise from pit at 10:45 a.m. View from HVO.

September 17  
3:15 p.m. A lot of big slides occurred on the SE side of Halemaumau pit, near the 14 ton boulder area. Reported by the Hawaii National Park working gang. That area seems ready to fall into the pit anytime.  
A lot of steam came out from the cracks by the sulphur stain spot after heavy rainfall. Also on S talus.

September 18  
9:45 a.m. The area which was mentioned in the previous note had fallen into the pit during the early hours of 18th. The pit instrument recorded 22 avalanche tremors on the 17th and 29 on the 18th which six of them were the largest. Lot of big boulders are seen on the edge of the crater floor.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day	Date
Monday	September 22, 1930
Thursday	" 25, "
Monday	" 29, "

September 22  
10:00 a.m.

No changes at pit. No steam on S talus. Very clear and sunny.

September 25  
9:45 a.m.

A little steam from S talus and pit floor after rain.

September 29  
8:45 a.m.

There was a big slide on NW talus which started on wall above. No steam at S talus but lots around pit and in Kilauea area.

Tai On

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

## Hawaiian Volcano Observatory

## JOURNAL

Day	Thursday	Date	October 2, 1930
	Saturday		" 4, "
	Monday		" 6, "
	Saturday		" 11, "
	Thursday		" 23, "
	Saturday		" 25, "
	Thursday		" 30, "

October 2  
9:45 a.m.

Heard a few rock slides on N wall.

October 4  
10 a.m.

Heavy rain at pit. Lots of steam coming out from cracks in Halemaumau floor.

October 6  
9:34 a.m.

Much steam from S talus and pit floor cracks during rain.

October 11  
9:15 a.m.

No changes at pit.

Tai On

October 23  
9:30 a.m.

Light steam from S talus. No other steam in pit. No conspicuous new talus material.

October 25  
9:45 a.m.

Drizzle at pit. Crescent crack and vertical crack on west talus slightly damp and beginning to steam a little. S talus light steam. No new slides of any size.

H.A.P.

October 30

A few rocks were heard falling from the N wall. No steam on S talus.

10:30 a.m.

A considerably good sized avalanche occurred from the N of Halemaumau pit. A cloud of dust rose and lasted quite a while. View from HVO.

Tai On

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

## Hawaiian Volcano Observatory

## JOURNAL

Day	Monday	Date	November 3, 1930
	Saturday		" 8, "
	Thursday		" 13, "
	Wednesday		" 19, "

November 3                      No changes at Halemaumau pit. Practically no steam on taluses.  
10:15 a.m.                      No sign of any big slides.

November 8                      No changes at pit.  
10:20 a.m.

November 13                      Some of the sulphur stain on S of pit floor is washed off by  
10 a.m.                      heavy rain. There is some steam coming out through cracks near the  
stain spot.

Tai On

November 19                      Biggest fountain thru old sulphur stain shooting about 200 feet  
4 p.m.                      in air. About six small ones halfway between big one and 1927 cone.  
All thru lava floor. Two small fountains thru floor about 200 feet  
in front of north grotto (1929). Main flow from big fountain in fan  
about 3/4 across '29 floor. Floor cracks steaming near advancing  
edge of flow. No abnormal steam on talus. Six small fountains gradually  
merged and drowned out until only two were blowing at 6 p.m.

6 p.m.                      The big one steadied down to jets not often over 100 feet high but  
kept producing strong flow of lava. Two near '29 grotto covered themsel-  
ves over with a spatter cone and by flooding.

8 p.m.                      By 8 p.m. the big fountain had built a grotto (crescent shaped)  
about 30-40 feet high and was still flowing strongly. Only one foun-  
tain remained of the six groups and the two near '29 grotto were only  
breaking their caps with an occasional spurt. They were still pro-  
ducing a small flow of lava as was the one SW cone.

12 midnight                      The big flows from the main fountain were still strong and the  
other 3 fountains still feebly yielding lava. The flow from the main  
fountain is gradually building a rampart to form a lake roughly rec-  
tangular with the long axis NN E by SSW. It is constantly  
overflowing both on the NW side toward the old 1927 fountains and on  
the SE toward the 19th hole. Now and then it sends a flow over the  
NE end most distant from the fountain.

November 20

Yasu report large avalanche from west rim.

5:45 a.m.

7:30 a.m.

Small fountains still smoking vigorously but not spouting much lava. Big one same strength. Two main rivers one SE and one SW, are near same place and speed as main rivers last night. A number of small ones not as consistent. Floor covered to old ridge around inner depressed floor. New ramparts built also to form a large central lake about 1/3 area of old floor. Lake is more than 30' deep as all of old piles and 1929 cone are buried.

7:45 a.m.

Little fountains threw out some slag.

H.A.P.

8:30 a.m.

The large fountain still has lots of pressure. All the small fountains have ceased. Thick sulphur smoke coming out from the fountain between the large one and the 1927 cone.

10:05 a.m.

A little dust rose from the N side of pit. View from H.V.O. Much thicker fume rose now and then.

11:05 a.m.

Pressure is still very strong. The July cone peak is covered by lava. It rose to cover the point between the S and the W talus. There is a streak of yellow sulphur stain along the end of the SW talus. There are two streams of lava moving under crust towards the 1929 grotto. Ranger Christ reports that the large fountain had nine noisy explosions within a few second interval.

11:20 a.m.

A large avalanche occurred from the W rim.

11:23 a.m.

Two small fountains started between the large fountain and the 1927 July cone, for about 15 minutes.

2:35 p.m.

A large stream of lava coming out from the large fountain under the crust. East talus. Lava pressure is still strong.

8:15 p.m.

A little avalanche occurred at the E talus. Pressure is still strong.

## JOURNAL

Day	Friday	Date	November 21, 1930
	Saturday		" 22, "

November 21  
11 a.m.

Pressure is still strong. Pit floor is covered by new lava over the old floor. except a little section at the NW.

There are two large streams of lava flowing to the E. One starts about 200 feet from main fountain, the other starts about 400 to 500 feet away from the main fountain.

11:45 a.m.

The main has two distinct fountains. Lava is shooting higher than usual.

12:30 p.m.

Fountain shooting stronger and louder.

2:45 p.m.

A new stream of lava broke out east of fountain.

Tai On

November 22

Group of spraying fountains of Mauna Loa type SSW of center. Lake with ramparts around it and NE of it oval in shape. Flow pouring down hill to whole NW side of bottom. The flow was fanning like delta to N in forenoon, to WNW in evening. The lake is a rampart pool on top of a slagheap. Smoke rises abundantly from areas where first fountains had been W and SW of present fountains. The flows are pahoehoe above, half-aa below. The lava is coky. The fountains are sometimes noisier than at other times, but as a whole are quiet. They puff up brown fume at times. They are continuous and average 50 to 60 feet high. The occasional spurts go higher 100 feet or more. Very light pumiceous fragments for they float down slowly. In the evening there were glow edges under W ramparts of lake. There were toes lapping the talus all along W edge. A little fan shaped flow broke out between lake and 1929 niche. There are 3 or more crust islands in lake and irregular elevations in lava W of lake. The 1930 lava had just barely covered the 1929 lava at north side of bottom and some 1929 lumps and terraces still showed. The big niche west of 1929 is still high above the border of 1930 flows.

Powers keeps track of heights and dimensions by survey.

Clear day light S and SE airs. Smell of SO<sub>2</sub>.

T.A.J.

3:45 p.m.

Pressure is still strong. Lava covered the old pit floor. The lava has almost reached the point between the S and W talus. Another cascade started about 400 feet from the main fountain, moving towards the NW.

Tai On

November 23

Fume and cumulus over pit were big yesterday. Blue fume. Brown trail of smoke from S to N as seen from Hilo. Cumulus bulb seen from Hilo. This morning small cumulus and small fume, rising from W side of pit. Glow at times quite yellow, other times rosy, and bright last night. Large crowds of people.

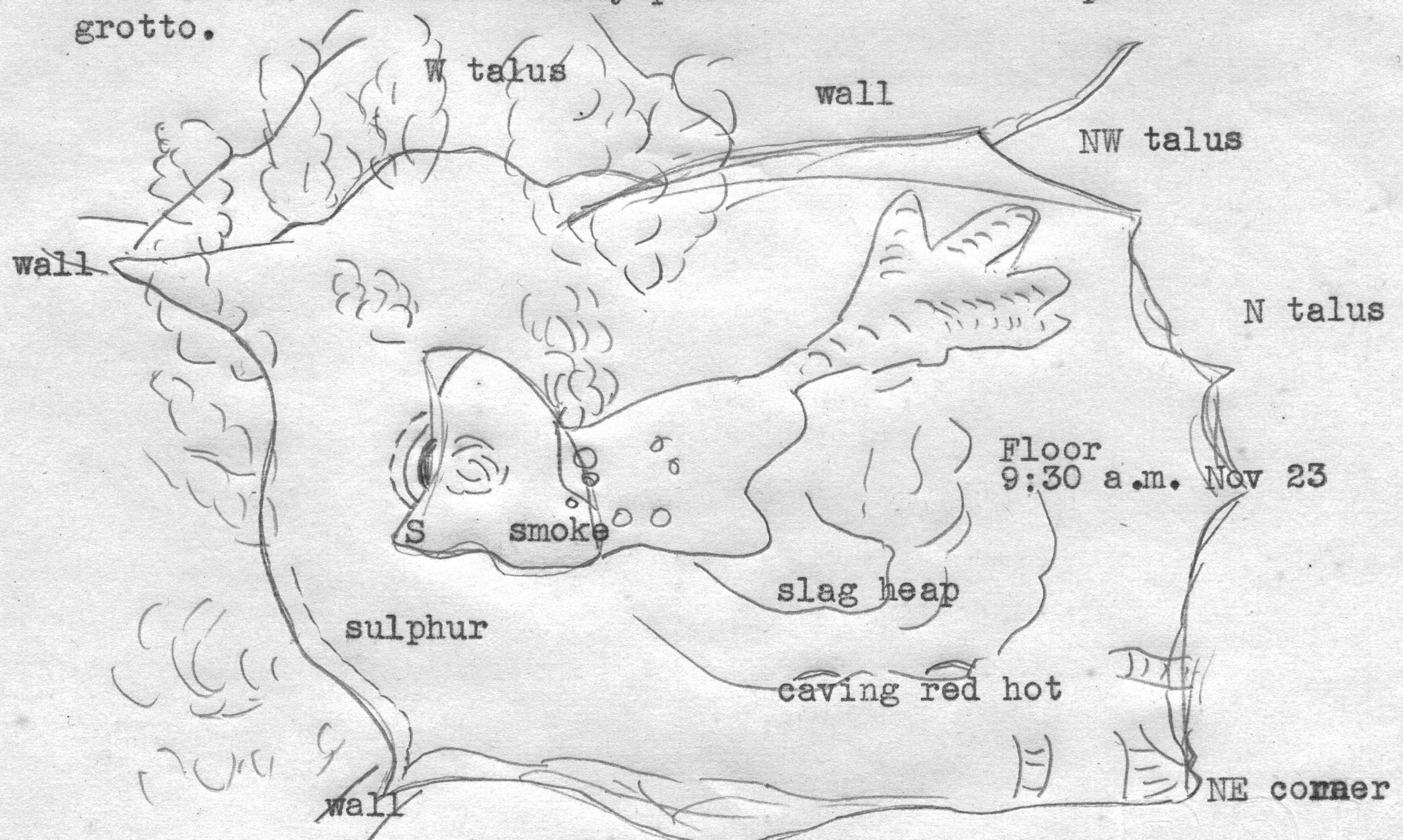
9 a.m.

Fountain continues. Deep rumble and occasional very high spurts. Front of NW flow of yesterday all aa. Scar up wall above W talus under big steam patch. Crist says avalanches there Thursday and Friday. Grotto back of fountain fall in continuously. Lake very full, overflow back of big fountain grotto and overflows to NE as well as big river to NW. Toes along edge of floor NE. Slag heap extends lake dome NE. This caves off red hot aa. Fume all around ftg part of lake, mostly edge of floor, in semicircle S of lake. Fume at lake rampart S and W. Yellow sulphur stain bright along steaming rock at edge of floor S of lake. Floor against wall of pit now SE, between W and S taluses and between W and NW taluses (as before). The big heap of the lake dome has breakdown terraces of semi aa all around E, N and NW. Some islets of 1929 (4) in NE part of floor. Bluish white salt at steaming cracks in slag heap 7 places away from lake edge to the NE and NW.

Rift tunnel of 1920 has opened new cavities in lower part and shows a new dike surface in a branch W of main tunnel. This appears due to recent movement and cleaning off the wall by slides.

Apparently the "islands" are terraces, and the lake has dwindled to a small strawberry with the fountain at the stem.

Puffs of hot brown fume thru the fountain all the time, turning blue above. Greenish mossy pumice on the backslope of the fountain grotto.



## PHOTOGRAPH RECORD

Day Saturday

Date November 22, 1930

time	sta	subject	no	pl	scr	stop	ex	cam
<u>November 22</u>								
11 a.m.	E	W wall & bottom (turned down strongly)	1					PK
"	E	Bottom (turned down strongly)	2					"
5:15 p.m.	E	Pit X	<del>3</del>	roll film			2	5 x 7
"	"	"	<del>4</del>	"			"	"
								T.A.J.

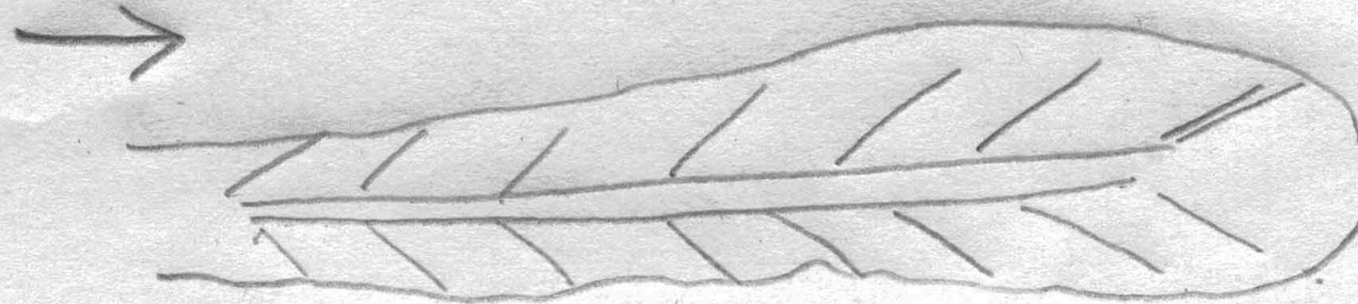
November 23

(cont'd)

5 p.m.

Fountain continues vigorously without apparent change. The NW river has changed from a band to open V-shaped streams here and there. The rest of river course is very bright glow lines like the lake, with no apparent motion. The lake is covered with bright lines in a flow pattern where the individual flows take their origin at the fountain. The ft. differs from the old Kilauea in that there is very little surging of a deep pool. There is no inward streaming of crusts. The lake behaves as though it were stiff right up to the fountain. The puddle around the fountain is thinly liquid on the side toward the grotto. It there shows a little shallow surge. Otherwise the fountains are like a hose jet of rather "dry" quickly congealed material they rise occasionally into a high spire of fragments 150 feet high.

The northeastern slag dome extension is all aglow in a crack pattern different from the lake. From it there is an aa flow to the NE talus. This flow and its toes is a still golden pattern of forked fungus, or like a lycopodium. Now and then an outbreak of flowing makes a "herring-bone" pattern, but I noticed the midrib of the herring-bone has its lateral branches inclined from it downstream,



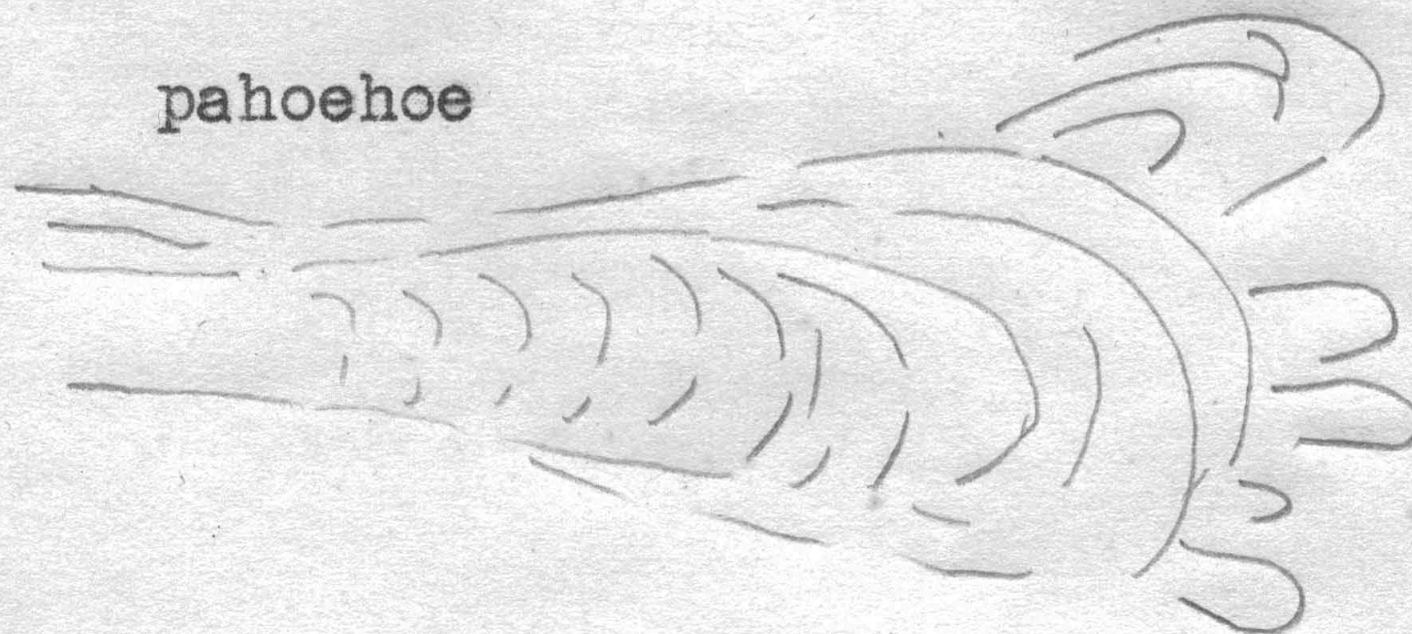
like a feather. This is quite the opposite from the festoons of true pahoehoe. These flows when they congeal remain glowing like a coal.



aa pattern

Then there forms a feather pattern of cracking from the frontal lobes inward over the glow surface. This is surely aa. It is utterly different from the behavior of pahoehoe. Pahoehoe crusts over black, with only a glow pattern of outlined festoons and frontal toes, and a loop golden pattern with side curtains in the swift band.

pahoehoe



November 23  
 (cont'd)

This night the whole floor looks rigid but very bright. It is certainly in motion, but slow. There is no defined lake in the glow-pattern. It is a fan of flows to NW and E, with somewhat the shape of a big lobster with two huge open claws as the two streams, NE and NW. Glow clear to edge of floor NW. Intermediate dark edge N. The breaking down of the rampart next to ft. is like half melting candy and the blocks do not founder in liquid but roll over and ground in shallowness.

There are dark areas W and S and N. The pit remained very bright all night.

T.A.J.

November 24  
 noon

Measurements

Lake 90 ft. new lava- about 10 acres equals about 40,500 sq. meters - equals 435,600 sq. ft.

Old lake and deepest flow area averages 40 ft. deep. about 30 acres - equals 1,306,800 sq. ft. equals 121,300,000 sq. meters.

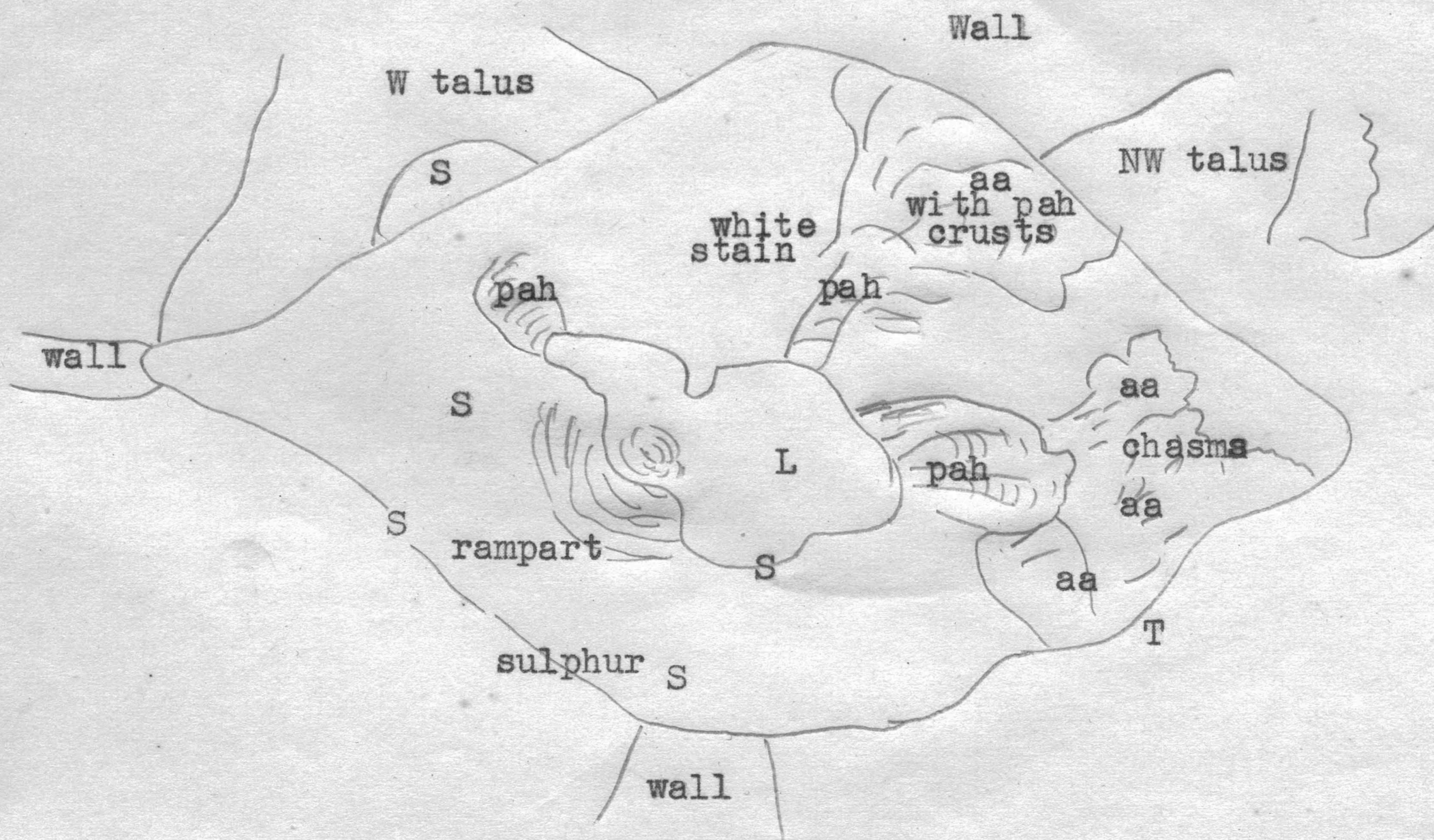
Edge flows - avg. 15 ft. thick covers 15 acres equals 653,400 sq. ft. equals 60,700 sq. meters.

93,000,000 cu. feet or 2200 x 1800 ft. diameters.

H.A.P.

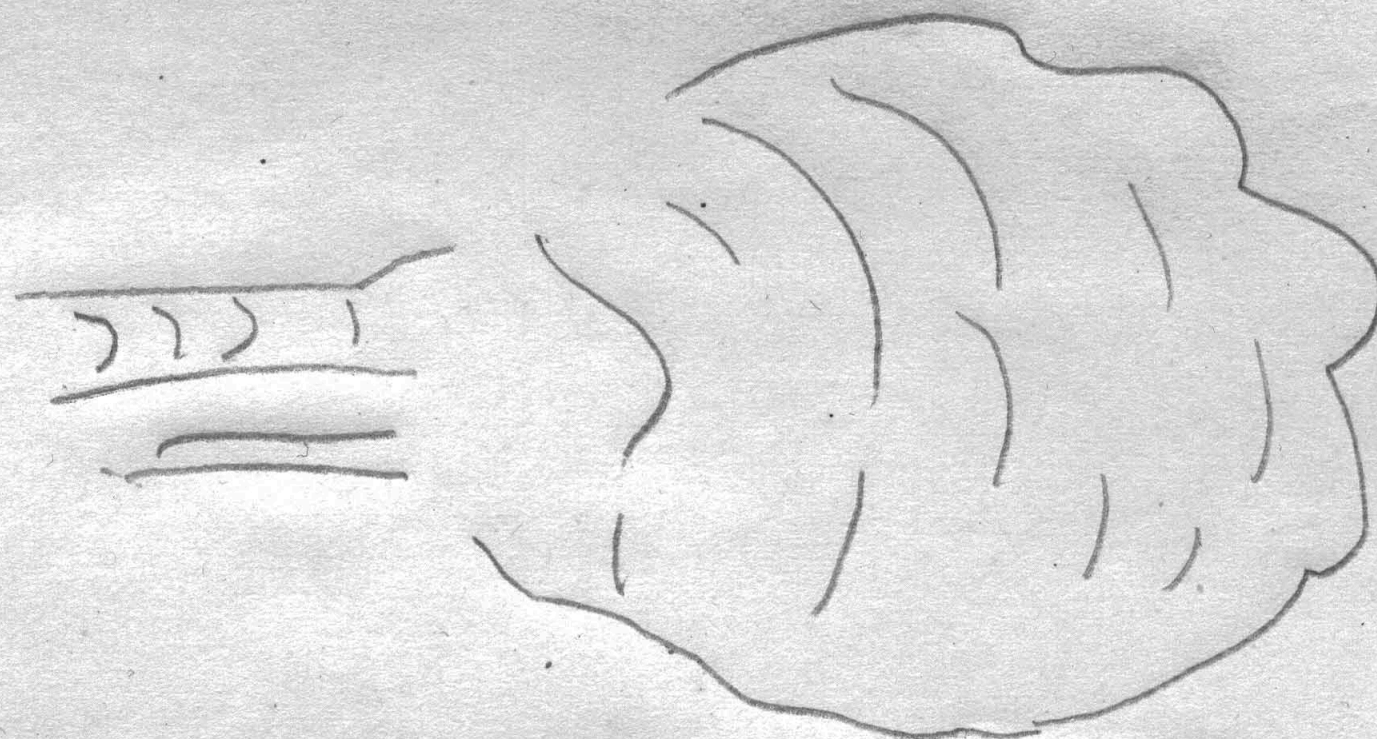
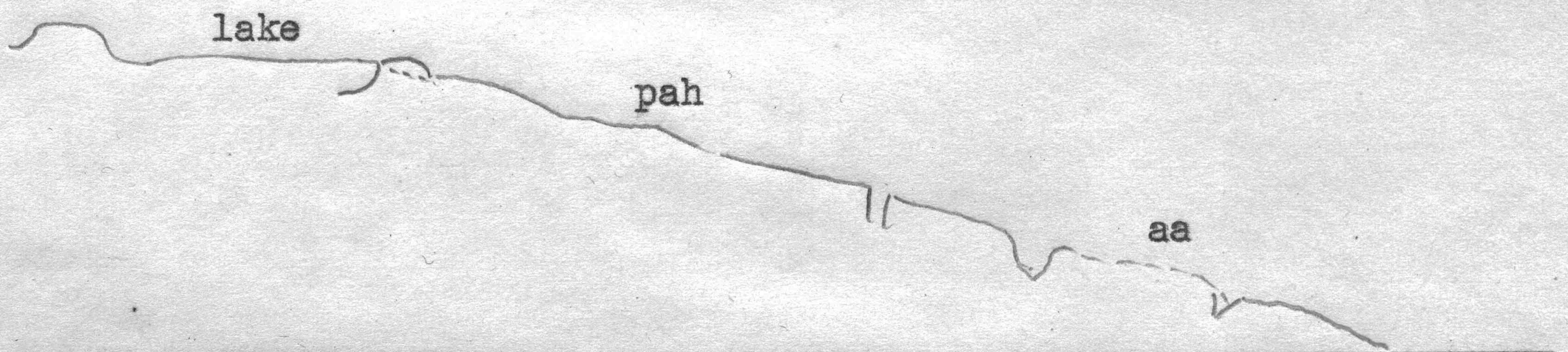
10 a.m.

From SE - 10 a.m.



November 24  
(cont'd)  
10 a.m.

Fountain continues. Building two new sloping ramparts with channels between on outside of ft. as tho a cone were closing in the ft. Ft. large and becoming more pahoehoe with glistening black glass spatter. Lake covered with satin pahoehoe skins and pahoehoe pattern. Festooned pahoehoe flows in volume pouring to NE. Farther down the slope to N typical aa stream and aa delta. Semi aa deltas wide and lobate making wide areas at fronts of NE flow and NW flow. Cracking and foundering crusts at edge of lake and at pools in fronts of pahoehoe flows. The two great flows distinctly change from pahoehoe to aa with broken pahoehoe crusts at their deltas.



The whole activity today is like 1917 or 1919 with continuous fts, but not of the Mauna Loa type.

All the 1929 floor is covered except the big W niche. Marked heat on edge.

5 p.m.

Glow pattern darker than last night. This probably due to more pahoehoe. Fresh flows in motion against talus at SW cove, W niche of 1929, and all along E and NE edge of floor. Streaming across lake very slow. Festoons on thin skin can be seen glistening by light of fts. Ft. goes down and then spurts high. When down it consists of multiple domes. The ft rampart is building up. One of the adjacent spatter islands is joined to rampart. Cracking and foundering of crusts is going on at edges of lake and in a wide flow SW. The pahoehoe flows NW and NE not so strong as in forenoon.

T. A.J.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

## Hawaiian Volcano Observatory

## JOURNAL

Day	Monday	Date	November 24, 1930
	Tuesday		" 25, "
	Wednesday		" 26, "
	Friday		" 28, "

November 24  
(cont'd)  
6:40 p.m.

Pressure is still strong.

At 6:50 p.m. several explosions were heard and lava noticed shooting higher at the same time.

Several small fountains along the east side of main fountain in the same area.

Tai On

November 25  
4:15 p.m.

Pit sluggish. Fountain same. Flows on surface less long than yesterday. More or less glow spots all over. Floor has built up against wall of south cove and against 1929 niche west. Boulders covered NE show that edge is deepening. Ft. rampart building inward and ft shifting to W.

November 26  
6 p.m.

Flows more active than yesterday. Fountain the same. New flow from lake pouring to the NW. Fresh lava in S cove. Fresh lava all along E and N E edge. Pahoehe from lake. Ft. niche a bigger armchair.

T.A.J.

November 28  
2-2:30 p.m.

Wind variable so that fumes were almost constantly spread over the entire pit.

Main fountain only occasionally visible from 19th Hole due to partial closing in of the top of its grotto. From the NW side the fountain was entirely visible inside of the grotto. Its activity waxed and waned but never ceased entirely and often threw slag over 150 feet high. Discharge was all thru a narrow gap in the grotto wall on its north side. Level inside grotto was maintained higher so that a constant slope was present between grotto and lake level. One main flow crossed the lake to the NNE and weakly spilled over the lake rim. An occasional spill occurred over the NW lake rim but not much activity along southeast rim.

JOURNAL

Halemaumau

Day

Date Nov. 25, 1930  
9:30 a.m.



B-3905-II-PS.A.C.T.H.X.II-25-30-9:30A.D.C.12-3000D HALEMAUMAU IN ACTION, KILAUEA VOLCANO HAWAII, T.H.

## JOURNAL

Day	Saturday	Date	November 29, 1930
	Sunday		" 30, "

November 29  
a.m.

Grotto still screens some of fountain activity so that only higher spouts are seen. Flow of lava seems somewhat weaker than Friday afternoon. Spill takes place over southeast wall more often than north west wall of lake. Fumes are still rather bad.

Easternmost lake of lava field has crept up 50 feet higher on the talus, and a point one third the way in from it toward the fountain shows a fill of 64 feet. Lake level is still about 30 feet above this level (ie. 90 feet above old floor).

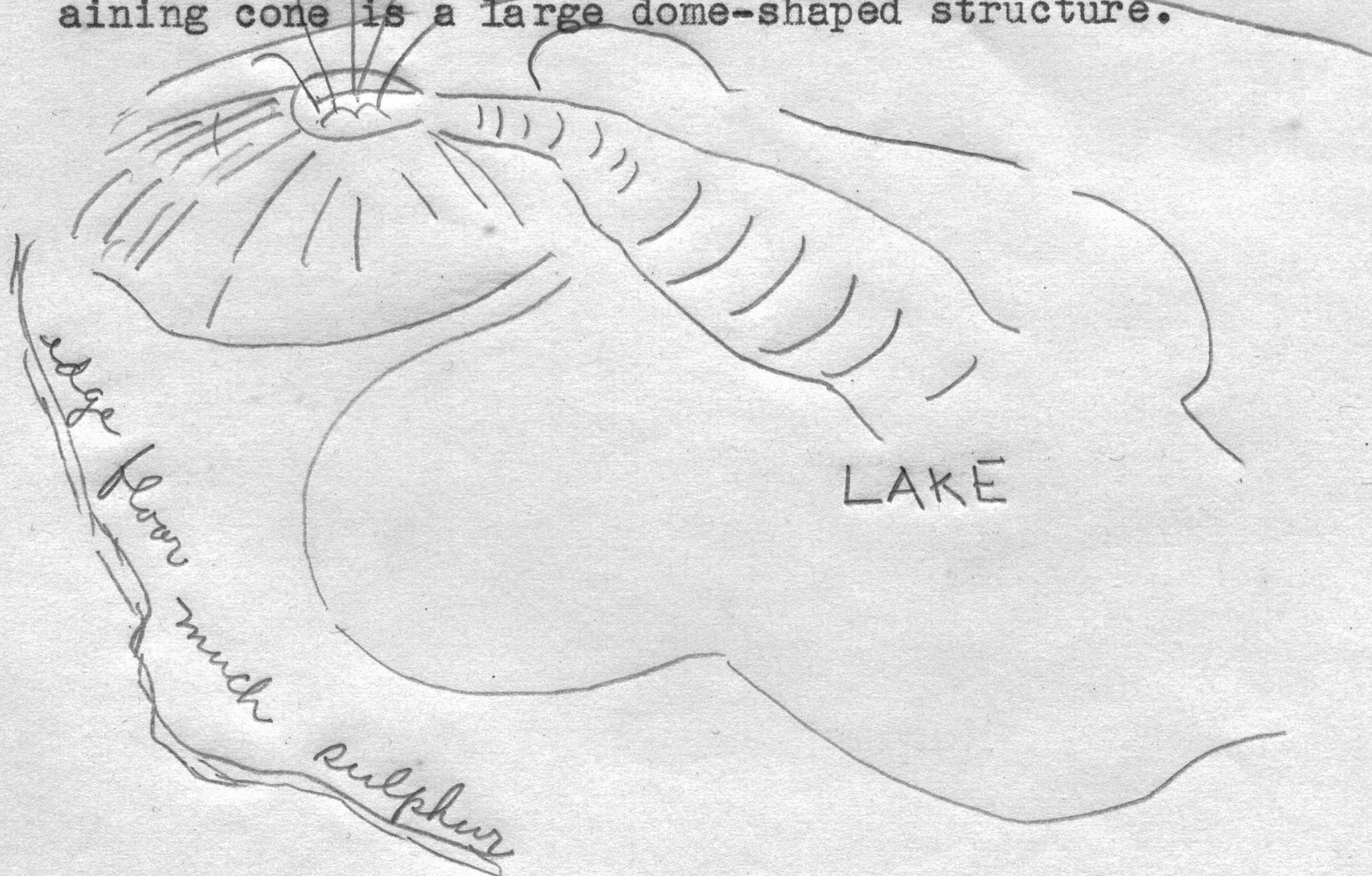
H.A.P.

evening

To pit with James Dole and family 8:30 p.m. Fountain now enclosed by large horseshoe cone 200 ft. high with opening west, and frothing pool within cascading steeply out of western opening. Lake clover leaf with stem south and middle frond north. Present cone is inside former ft rampart which makes an outer crescent ridge south. Fountain spurts sometimes very feeble, sometimes high. Glow around edges of floor west and north and a long edge of glow NE. Flow breaks out from hole in ft-cone on NE side. A dull flow pattern of wide extent from lake across floor northeast. No pahoehoe flows from lake over floor. One small flow broke through lake rampart east. Small falls of rock from wall of pit heard at north and south, probably artificially started. The activity appears less and the night glow on vapor cloud is less. Blue fume in small clouds rises thinly from pit.

November 30  
11 a.m.

With Dole family and Giacometti. From northeast edge the new fountain cone is a large dome-shaped structure.



Heat and glow at SE edge of pit much less than 6 days ago. The lake is leaf shaped with festooned streaming across it but without any fresh flows away from its edge. The floor is a very large slag heap mostly semi-aa away from the lake. The edge of the floor has risen markedly on the 1929 west niche, now about 80 feet high, and against the walls of pit at WNW, SSW and at SE. The increase of steaming sulphur stain at crack along SE edge of floor is marked. The ftg activity about same as last evening with dwindling spells: the fling of blobs goes outside to base of dome occasionally. The cone recalls the N Alike cone of 1919.

T.A.J.

12 noon

Activity seems to have lessened slightly in that height of fountain was less. However volume of river flowing out NW side of cone shows little change.

5 p.m.

Fume has lessened and there is little reflected glow as twilight approaches.

R.H.

8 to 10:30 p.m.

Some of the top of the grotto had fallen in so that the fountain was visible at all times from 19th pole. It was variable in strength but never completely stopped. Flow thru the narrow channel was weaker. No good overflows spilled over the rim of lake. A good sized area by 1929 grotto was being fed thru tunnels and a similar patch on the east edge of the pit glowed and moved constantly. Two or three small patches around north margin glowed constantly.

H.A.P.

Tilt for November: seven day means

Oct 27-Nove 2	0.72"	-	N
Nove 3- 9	0.48"	-	S
Nov 10- 16	1.57"	-	NE
Nov 17- 23	1.20"	-	SW

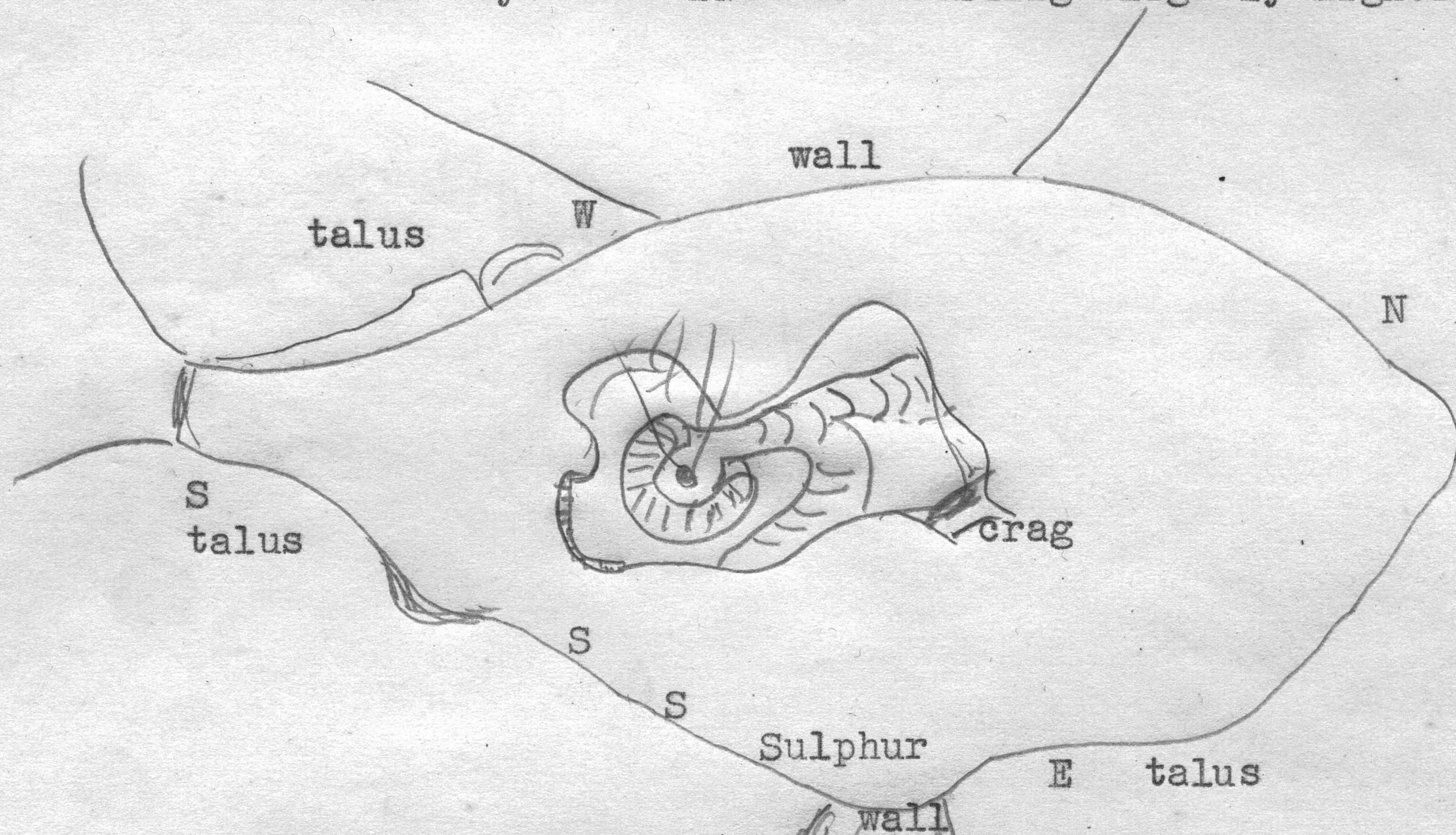
## JOURNAL

Day	Monday	Date	December 1, 1930
	Tuesday		" 2, "

December 1

Fountaining has been continuous all day-somewhat variable in vigor. At 10 a.m. its grotto formed a complete circle but about 11 a.m. the "flow" side was beached again. By 2:00 the circle was closed again so that the lava left the fountain thru a tunnel all afternoon. The volume of lava coming out is about the same as it was Sunday. The lake remains nearly 10 acres in size but it is flooded and its crusts founder first in one part then in another. Seems to be no new flows along the edges of the floor all day. The lake is building slightly higher.

H.A.P.

December 2  
2:30 p.m.

Fountain continues same action of spurting, and the pool in horse-shoe cone continues to cascade into the lake, and a stream of pahoehoe continues to flow in a loop to the east in the lake. No flows in motion on the surface appear beyond the lake. The active cone appears even farther NW from its "somma" ridge than before: steam and fume rise from inside the "somma". Fume over the pit is thin. Light felt quake last evening 8:50 p.m. Glow at night varies. Cracking and foundering crust at lake edges. Crag NE of lake.

T.A.J.

9 p.m.

Fountaining was rather variable. Now very high (200 ft.) and now only a low bubbling. Lava flow seemed fairly constant about same volume as of December 1. Some small flows on NE margin of pit floor, and one or two intermittent overflows on SE rim of lake. Lake crust cracking and foundering at short intervals and festoons constantly moving on main stream from fountain.

H.A.P./

Day Wednesday Date December 3, 1930  
 Thursday " 4, "

December 3

Data at end of first 2 weeks

Max. diam. of new lava--2300 feet roughly a circle 1800 feet in diam.  
 Min. diam. of new lava--1700 feet  
 New lava covers 62 acres, 2,710,000 sq. ft., 252,000 sq. meters.  
 Deepest fill at fountain and lake -- 100 ft. -- 30.5 meters  
 Shallowest fill at edge opposite fountain-- 50 ft. 15.2 meters  
 Volume of molten lava--Total--229,000,000 cu. ft.  
 1st. 3 days, 75,000,000 cu. ft.--2,124,000 cu. meters -  
 25,000,000 cu. ft. per day. rest of 2 weeks 154,000,000  
 cu. ft. 4,360,000 cu. meters--14,000,000 cu. ft. per day.  
 Weight of new lava slightly more than 15,000,000 tons or about  
 15,250,000,000 kgs --13,608,000 milliers (metric tons)  
 Lake and fountain--roughly 500 by 800 ft.  
 Cone about 100 feet high and 200 ft. in diam.

1-5 p.m.

Fountaining was rather weak at first--then an increase in strength about 2:00 p.m. which lasted 15 or 20 minutes. Crust of lake was cracking and foundering moderately all afternoon, then at 4:30 whole surface of lake foundered within space of five minutes.

A moderate sized flow worked all afternoon against the south edge of the west talus pile (behind old '27 cone). One small overflow from the large lake over its SE margin and several overflows from a small secondary lake about over the old '27 cone.

Three islands of crust slabs were built across the lake from east to west and lava flowed from fountain across near half of lake then between these islands as rivers into the far half.

H.A.P.

December 4  
9 a.m.

Ft in cone is splashing steadily cascade out of cone is crusted.  
 V-stream across lake to N is as before.

Lake is again a small crab-like affair with 2 claws enclosing the cone. A rampart of slabs has done this athwart larger lake. N coves of larger lake are collapsed pahoe.

Streaming across lake to E overflows in sluggish toes at lake edge.

Cone has broken down around edges enlarging its rim diameter, the broken blocks clinging inside and ft makes glistening spatter on them. The outer somma smoking strongly and ragged. Sulphur stained edge of floor SE smoking strongly. Smoke over pit this a.m. much more than yesterday.

Day	Thursday	Date	December 4, 1930
	Friday		" 5, "

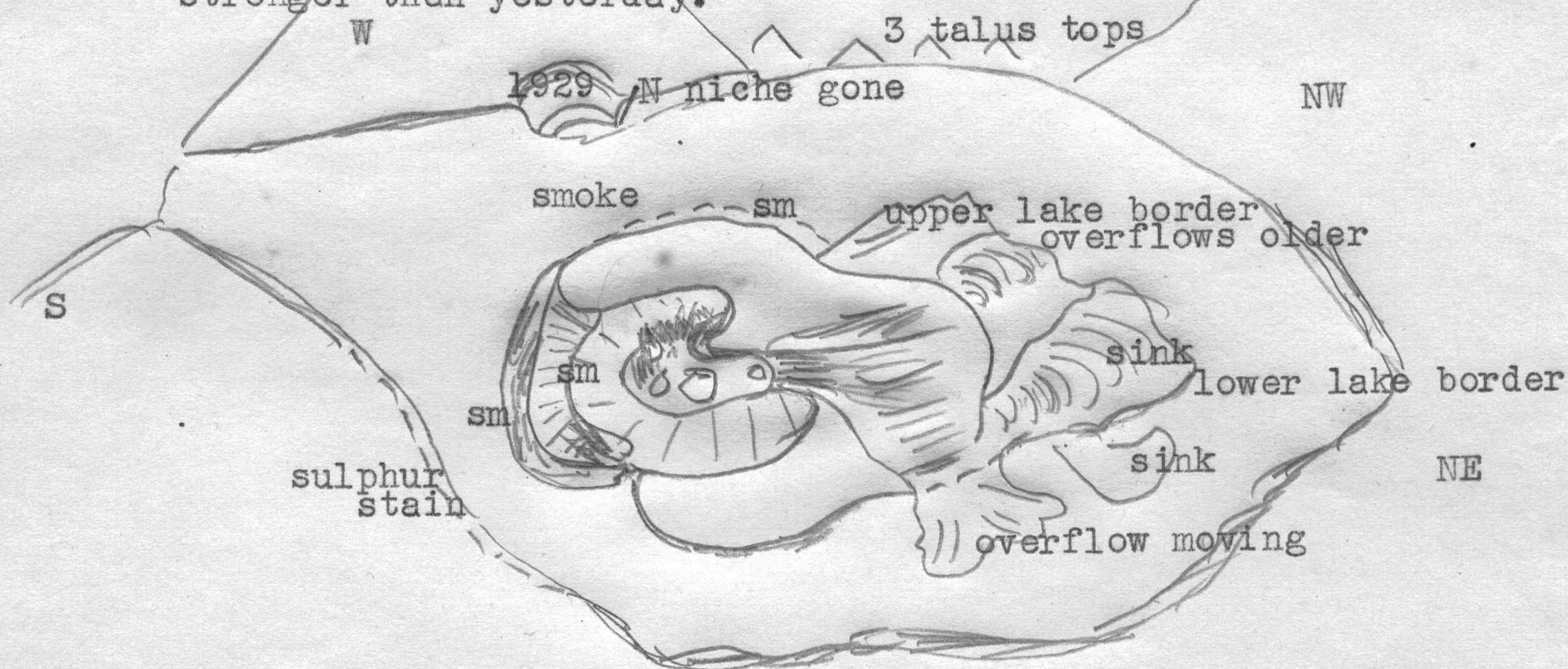
December 4  
cont'd

Fresh flows from smaller lake through the terrace of slabs to N cove of older big lake. Action in lake same as recently.

Powers points out that N lobe of 1929 niche was buried several days ago.

10 a.m.

Cracking and foundering hot and rapid in SE cone of lake and W cove of bigger lake. Ft. has increased. Satiny festoons. New flows on N cove of big lake. Evidently the crack and founder process is at work over whole lake area at intervals. Stream rapid out from tunnel foot of cascade. Inner bench of cone has subsided farther or been covered with spatter. No sign of let-up. Tremors pit seismograph stronger than yesterday.



December 5  
2:30 p.m.

Last night even glow over pit. Fume thin but hot. Ft as high as usual. Cone has caved in more and enlarged diameter of its rim. Gas rush noise and fine crackle of crack and founder action a single V of bright streaming to N. Remainder of lake crusted.

Sulphur bright yellow SE edge floor. At S sta spicy sulphur and SO<sub>2</sub> smell.

<sup>2</sup> At 2:40 p.m. new stream from inside cone cascaded down where the crusted cascade had been. This forked at bottom of cone slope.

At 2:45 cracking and foundering reopened to the rise represented by this cascade. This spread with great rapidity, with seething across west cove of lake and revealed under the crust. 3 torrents pouring down like waterfalls westward.

BOND

December 5  
(cont'd)

Then this chilled slowly and the crack and founder process spread to the SW cove past the foot of new overflow of cone. Again this cove revealed itself as a river pouring in direction of S cove of floor. This remained glowing as an open stream. The ft occasionally flung blobs of melt very high. The ft puffs. Cracking and foundering less active, appeared in N cove of lake. The east cove overflowed its E edge.

This cracking and foundering reveals the fact that a big body of melt is moving away from cone under crust all the time. The ft is merely a gas vent kept open above a feeding cauldron which by way of the lake is sending a great volume of lava to the slag heap; probably through tunnels.

Note: The line of sulphur cracks at edge of slagheap nearest to the ftg conduit. Compare the line of sulphur and heat and buried sulphur bank at SE edge Kilauea floor. Cf the sulphur bank at VH at NE edge of old Kilauea floor. Each of these lead down to a near conduit of aforetime? So with sulphur at edge of Mokuaweoweo and at the several rifts.

Note: The mechanism of present slagheap compared with Mauna Iki history, Builds up, squashed down, rises aa at edges.

At 3:10 p.m. crack and founder starts at N edge of inner smaller lake. Cascade again pouring down cone. Crack and founder started at E cove: but neither of these developed any general spread.

T.A.J.

8-10:30 p.m.

Fountain action consisted of continued vigorous bubbling with only an occasional spell of spouting strong enough to throw slag outside of the cone. Two slabs from the inner wall of cone fell in at different times. The lava left cone thru an open channel and did not form a tunnel again during this time. A second stream broke over the low NW horn of the cone but only flowed for ten minutes.

The lake showed small spells of cracking and foundering its crust all evening, but about 10:00 p. the whole surface of the NW lobe of cracked and foundered in a few seconds. There was a little pahoehoe advance on the edge of the floor under the Kau tunnel and several tiny spots around the north and northeast margin.

H.A.P.

BOND

## JOURNAL

Day	Date
Saturday	December 6, 1930
Sunday	" 7, "
Monday	" 8, "

December 6  
9:40 a.m.

The lava flow over the cone rim towards the north was very speedy and strong. Up to 9:50 a.m. Fountaining stopped and flowing also, and lava in cone was very still for several minutes. Then came several explosions and fountain shoots up pretty strong for awhile. At 10:03 a.m. fountaining very little but lava lake has strong waving motion and flow continued.

Tai On

6 p.m.

Fountain low with one small revival during an hour. A popping noise when the base of cascade at foot of big cone broke open and a flow fanned out on surface of lake. This spread to NE in an oval. Then some cracking and foundering spread moderately rapidly in E cove. After dark only the lake showed glow streaks. A few points of glow appeared in NE heap and at N border of floor.

The volcanic tremor is dying. The smoke over pit quite thick in afternoon.

December 7

Ft a pit said to be dying. Little glow night before, none night after.

Some fume from W side of pit and an umbrella of moisture cloud over it at sundown.

Volcanic tremor dead. Rangers report slight ftg in morning, none afternoon when pool in cone, and lake appeared dead.

A little glow visible in cracks in daylight, and more seen at night.

December 8

Steam from sulphur crack and steamy fume from cone and crusted areas W of lake. Lake sagged. No glow. Cone filled with aa, whitish spots near cone and on floor. No great sagging yet. Sulphur activity same as ever.

T.A.J.

Day	Monday	Date	December 8, 1930
	Saturday		" 13, "

December 8  
(cont'd)  
11:10 a.m.

Smoke coming out from the side of the ceased fountain and also from the southwest side of crater floor. The bright yellow streak of sulphur spot also smoking.

The pit seismogram show no sign of tilting into the pit when the lava fountain ceased; but recorded lots of small tiny tremors.

Tai On

8 p.m.

No glow over pit from distance. Fume very slight. Plenty of fume rose in afternoon. Now the lake area glows most in orange colored cracks with one spot at NW making a trail of light on fume, like an open grotto.

Small glow spots SW and W at edge floor. Some at edge floor N and NE. Nothing identified especially as the ft cove. No noise.

The tremor at pit seis died slowly during December 7 without any tilt.

T.A.J.

December 13  
9:50 a.m.

Smoking near the main cone and the sulphur stain is still strong.

Northwest of cone, lava seem settle or sinking a bit.

Very little steam on S talus.

The pit seismograph record a quake center at pit with a strong tilt away from crater. The time was 3:45 a.m.

Tai On

evening

Chauffeur reports glow in cracks still visible on floor of pit. Fume still rises above rim of pit.

T.A.J.

## DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

## Hawaiian Volcano Observatory

## JOURNAL

Day	Monday	Date	December 15, 1930
	Tuesday		" 16, "
	Saturday		" 20, "
	Wednesday		" 24, "
	Friday		" 26, "

December 15  
10:20 a.m. Smoking is very little, at the edge of cone and at the far and SW of the sulphur stain.  
The pit recorded one very feeble earthquake with no tilt, otherwise was very quiet.

December 16  
3:15 p.m. Some steam coming out from cracks after rain. Still there is smoke by the cone and sulphur spot.

Tai On

December 20  
4:25 a.m. Felt shock with slight E-W motion vibrating windows, duration about 3 seconds. Pheasants squawked.

9:45 a.m. Tai On reports no changes at Halemaumau. Steam has increased at sulphur stain at a new . Fume has lessened slightly. Rainy and cold.

Earthquake of 4:25 a.m. shows decided tilt away from pit on Halemaumau seis.

R.H.

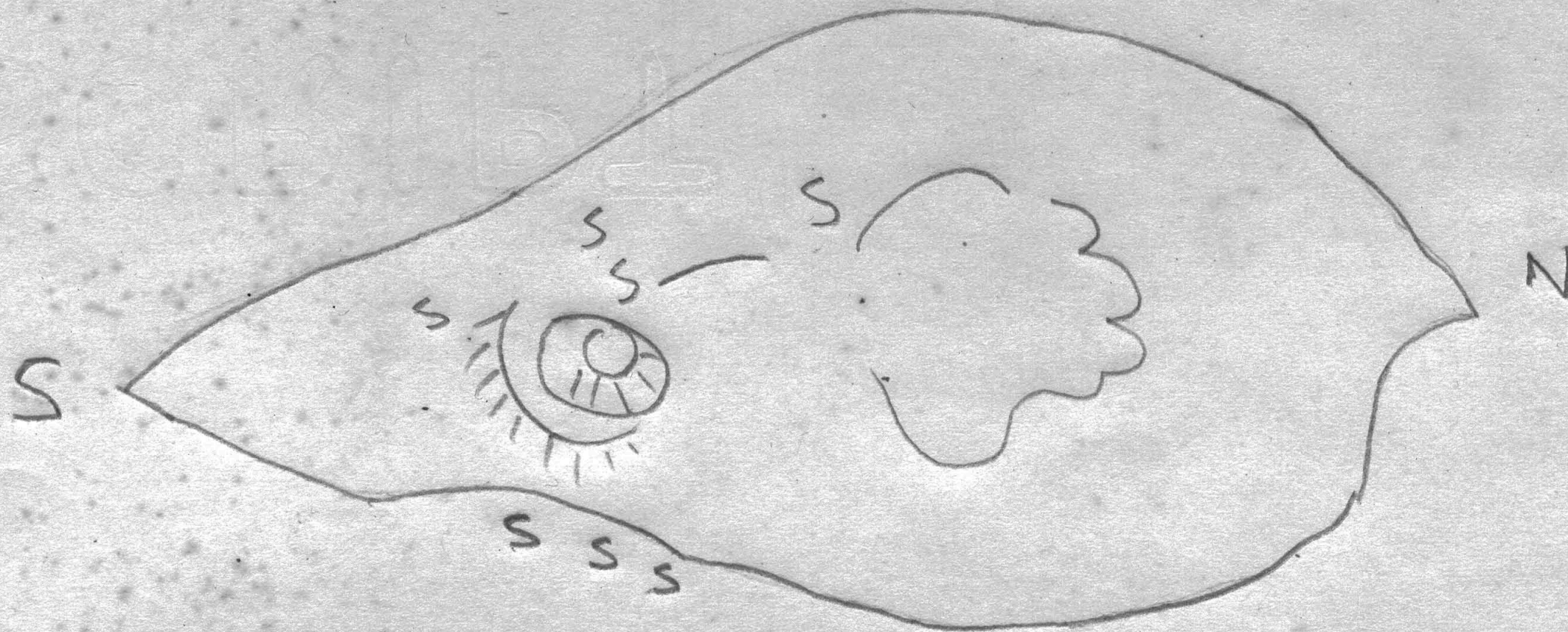
December 24  
9:15 a.m. Very little fume coming out from side of cone and sulphur stain.

December 26  
10:05 a.m. Very little changes at pit. There is still a little fume come out from sulphur spot and edge of cone. Lava seem settling and cracking by the aa area. No avalanche for quite some time.  
The pit seismograph shows tilt away from pit strongly.

Tai On

December 28

4 p.m.



North and East taluses show fresh red debris. Blue fume above rim of pit as seen from a distance. This comes from the sulphur spots shown s above. Lake area slumped as much as loss of gas would produce. Yellow sulphur at SE edge getting greenish, fuming at S end. The other sulphur places whitish. The most active fumarole is at base of somma of the cone. The outer ridge.

No sounds heard. S talus steams as usual. Cool and cloudy, the outer cracks around pit steamin: SE cracks are warm.

T.A.J.

December 31

10:15 a.m.

Little smoke from fountain area. Almost no steam anywhere. Wind still making huge dust clouds s.w. of pit and in desert.

H.A.P.