Hawaiian Volcano Observatory Record Book 1925

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.

1925

Jan. 1	
	Remarks on 1790 terrane
Mar. 4	Notes on structure as shown in walls
Mar. 10	Berkey and Morris
Nov. 17	Stone at Daly laccolith

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day Thursday Date January 1, 1925
Saturday " 3, "
Sunday " 4, "
Monday " 5, "

January 1

Visited pit at 11:30 this morning; it is about the same. Possibly some purring. Occasional slides N and W.

Note that there are two kinds of steaming in talus--dry and wet. The dry is certainly the hotter. Up the SW talus in the middle a wet streak is steaming idly. Up the S talus a dry streak is steaming hotly, sulphurously, and densely. Same with dry steam jets W pocket, center floor and E edge of lava. In N talus the steam is probably less hot and the ground at the steam vents is wet.

January 3
9 a.m.

Slides occur now and then. Heard noise of big ones about 10:30 a.m., and 12:15 p.m. The N talus continues to heap up. Marked greenish areas of solfataric decomposition both N and NE high walls. Bottom changes but little.

January 4
6 p.m.

Dusk light, dark enough to see glow if it existed. No sign of it detected at base of E talus, S talus, fume crack, W pocket in floor, or in N or W intrusives. No glow. Steam jets are numerous. More at mouth of pit than in the daytime.

Tumbles of noisy large rocks S and N. The S locality sounds as though at SW tunnel; the N over middle of the big sill.

An odor from pit different from H_2S. Suggests carbon bisulphide.

January 5
2:15 p.m.

A rainy day with NE wind. One or two rocks heard falling. Much steam. Several jogs in W wall have developed at S base of NW talus. Above the middle of N sill there is a section of altered and discordant rock like the E side of a "U" section, in addition to the marked solfataric zone of unconformity vertically above the E horn of the sill.

TAJ

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day Wednesday Date January 7, 1925
Thursday " 8, "
Friday " 9, "
(1) Saturday " 10, "

January 7
11 a.m.

Made circuit of pit S and W. Rainy. S pinnacle gone, all that is left of it being a slender spire below rim of pit. The SSW rim has a new slab-pinnacle hanging out, showing that there have been several falls from the wall near S station. There may have been some falls of the rim rock NW also, as the steam cracks there are now inconspicuous, whereas a week ago they were persistent for a long distance. One avalanche seen from middle of N sill. Note that the SW talus is becoming covered with bowlders again, after the stripping it got in the landslide.

Examined the steep NE cavern. Its roof is all of broken wedged bowlders. Cannot see any stalactite or glaze surfaces. The roof and sides are too loose and dangerous for going inside, but there was some appearance as though a horizontal cavern from the pit northward crossed below.

The SW tunnel rift in wall of pit appears to have fallen away in its lower part: There is the upper arcade at least 80 feet high; below there are two cavernous openings.

The bottom of the pit showed nothing new. Much steam, especially voluminous W and S, and blue fume with the steam in those places and at the E.

January 8

January 9

Northeasterly rain storm. Thunder and lightning Thursday evening. Said to be intense at Hilo. Snow down to 10,000 feet on Mauna Loa. Seismographs indicate little avalanching activity at the pit. When seen pit has usual vapor cloud characteristic of rainy weather.

TAJ

January 10
10 a.m.

Windy and sunny. Pit has an abundance of steam on bottom. Notably little sliding of rocks. One fall at SW tunnel seen. The most rapid and hottest-looking and most voluminous cluster of steam tails on bottom is at W pocket of floor under N side of W boss and S of NW talus cone. There is steaming in great volume outlining the front of the landslide-terrace. The walls of pit are wet, and vapor from the wall is notable up the tangent cracks above the SW talus, which steam so much on top, and also up NE wall, where also there is steaming on top. N sill looks dryer than other parts of the walls.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

(2) Day Saturday Date January 10, 1925
Sunday " 11, "
(1) Monday " 12, "

January 10

Examined the wall at SSE corner where the S pinnacle had fallen. The slice of rock on face of wall which had supported the pinnacle remains. There are two slender spires remaining. The ledge there is flat and the several benches look favorable for descent with ladders; only the southernmost spire is very topply and right over the most favorable place.

January 11
9:30 a.m.

Abundant vapor w pocket and S talus, and a line of jets up talus at N corner. Yellow salts are reappearing at base of SE wall. No rocks falling heard, and the seismogram yesterday showed not a single avalanche tremor. Pit appears stationary. Tilt tendency is NE. Weather is cold. Snow on Mauna Kea abundant.

TAJ

January 12
Noon

Wind is light SW so that odor of H_2S is perceived at the observatory, the gas coming from the pit. This gas is undoubtedly mixed with the bottom steam. The sunlight now shows that steam is bluish at the hottest dry places, notably along E border of lava floor, at S and W pockets in talus near bottom, and across middle of floor from S to N. Walls are rather wet and steam is abundant this morning. Single rocks are sliding occasionally at N wall and at W wall and SW rift cracks in wall.

The pit in plan is spindle shape with flat ends. In profile the flat ends NE and SW are the walls nearest vertical. The two walls NW and SE are curved in plan, and terraced below. W wall is characterized by the red boss. SW corner by steam cracks at rim and big talus. SSW wall by the rift and verticality and talus under the rift. S corner by an angle in plan and talus below, and dense sulphurous steam at the bottom. SE and E walls are a continuous curve in plan, with little talus and numerous terraces of rock. Between SE and S at base are the gulches made by oblique protuberances of the wall below. At the bottom of pit opposite SE and E walls lies the biggest unburied remainder of the July lava floor, the E talus margining it being yellow with sulphur and steaming hotly. At the very base of the SE wall there is a rock bank smooth and sulphur stained.

January 12

NE there is another corner, the E horn of the sill and a vertical belt of solfataric stain. Next comes the very steep NNE wall, the big sill below, thickest at its E end, with the buried talus over its W end. Next the N corner, stained white below.

12:15 p.m. At 12:15 in the afternoon there came a whistling noise, seemingly from the W pocket, as a short blast, followed by light sliding of rock N and SSW. Blowing heard again at 12:18 o'clock from same place, and there was a light N slide: Another at 12:21, lighter slide N; at 12:29 was another puff; at 12:35 another prolonged puff; another at 12:35.

Continuing the description: This whitened N wall is greenish yellow above, and is right where the blue smoke was from June to November. There is no blue smoke there now. At the base there is a broad talus under the W horn of the sill. Up through the middle of the sill NNE comes the rift dyke extending three-fourths of the way up the wall above.

The NW wall is characterized by an S-shaped talus, winding about a promontory and originating above in another buried talus section in the wall, about the same height as the N one, but smaller. This wall has a niche and veneer of old pit-section near the top. At the bottom the NW talus reaches the edge of the hot, dry, densely steaming flat called the W steam pocket. Here the cauliflower nodes of steam are dense and rapid-rising. Possibly volutes this morning can be identified corresponding with the puff noises.

Out in front of the W pocket is the landslide terrace or lobe of bowlders and gravel with its steaming front, which covered the former cone and three-fourths of the lava flat. The densest steam of this front is at a patch of yellow stain in the lava floor, apparently nearly the center of the pit.

The steam at the W pocket does not show the blue sulphurous edges shown by that at both sides of the S talus. But it is excessively hot, rises from the largest of the dry heat patches, and its volutes rise in bigger units than from anywhere else.

Vapor cracks at the upper rim are at the SW and NE corners, and all along S and SE.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY
Hawaiian Volcano Observatory

JOURNAL (3) Day Monday Date January 12, 1925
Tuesday " 13, "

January 12
6 p.m.

Made a second visit to the pit to observe puffing. Heavy rains in the afternoon had made water puddles all over the gravel flats where the fine ash of 1924 in old impact pits made an impervious bottom. Found pit just as in the morning; air very still, and no sound of puffing was heard. There was very little movement of rock slides. The jets of vapor in the bottom rose silently. For the most of 15 minutes the pit was completely quiet. Owing to the still air a vapor column rose very high above the pit, condensing and rising quite rapidly, the estimated angle from the observatory to the top of the column being 35 degrees (distance 2.1 miles); elevation of pit edge 3,700 feet, elevation of observatory 3,981 feet.

The NE steam cracks at edge of pit sent a cascade of vapor over the rim and down to replace the upward convection in center.

In the evening at 9 p.m. the odor of H_2S from pit again noticed at observatory.

At dark no glow whatever in pit could be seen from its rim.

January 13

At noon and thereafter noticed a very high vapor cloud condensed above pit; mouth of pit mostly clear. SW wind. Shreds of vapor rising from pit diffuse and leave a blue fume. Odor of H_2S at observatory. Thought I heard a noise from pit once or twice in forenoon. No dust seen.

At 2 o'clock the pit was the same as yesterday, but no blowing noise. Southerly wind makes the eddy draw all the steam jets southward. This gives the alignment of jets across bottom of pit the appearance of extending from SE to NW, from the S talus to W pocket. Blue fume with steam very conspicuous all along E side of bottom. The vents E of lava flat have discolored much of the talus salmon pink, as well as yellow.

Note that the whitening of wall with salts (kieserite or gypsum) extends all across the upper contact of N sill with big patches covering a large face of wall E and W. The E patch is the larger. The W patch is where the blue fume was formerly. The The efflorescence of the salts lies in sub-horizontal streaks mostly. There is some near the W boss, but not much of it elsewhere. There is some above the NW intrusives. Are not these intrusives still centers of gas emanation?

Falls of rock N at 2:10 and 2:30, SW at 2:20. All small.

Noticed at road terminus that the Ford car, when exhaust fume started, made the steam cracks to the leeward of the car vapor densely by nucleation for a distance of 100 feet±.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day Wednesday Date January 14, 1925
Thursday " 15, "

January 14
9:30 a.m. Pit appears same as yesterday. Wind is still in the south. Small slide of rocks at N heard. The yellow salts at foot of SE wall are again becoming bright-colored. Tilt changed January 12 and 13 to SSW, whereas before it was NE.

January 15
5:40 p.m. Thunder storms and heavy rains this afternoon. The walls of the pit are wet. Slight dust at pit in the morning. Very calm. Less volume of steam in the W pocket. Steam in the bottom is mostly idle. Two avalanches in 15 minutes from the N wall. Hear in calm weather the echoes from avalanches before the noise of the slides themselves. Sounds like blowing. This was what I heard Monday: An illusion?

The pit is very quiet. No blowing. No condensation above pit except high up.

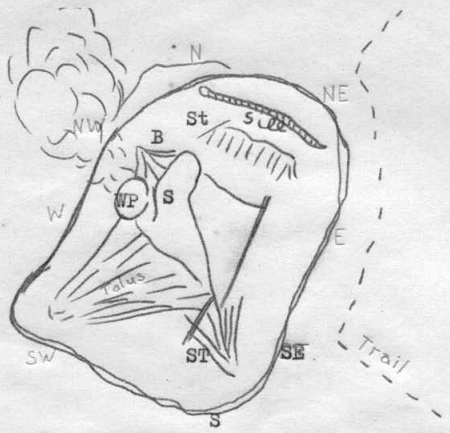
TAJ

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY
Hawaiian Volcano Observatory

JOURNAL

Day Friday Date January 16, 1925

January 16
5:15 p.m.



B Bank
St Steam
S Center Sulphur Pocket
WP West Pocket
ST South Talus

At pit from 5 to 6 o'clock. Conditions seemed much like the day before. The walls were wet. The plan of sulphurous steam jets is in a line to the NNE, less sulphurous at the W pocket, as shown by the black lines on the map as lines of jets.

The noise like blowing appeared this evening to be a real thing, something new, and not blowing at all, but a deep sliding of talus ribbons. It was observed that these noises came every 5 or 10 minutes. There were some real avalanche sounds. The wind was NE. The puffing noise came and filled the pit with sound. When rocks fell from the wall, at the N, or at the SW tunnel, the echo was quite different. But the blowing noise became prolonged into a clatter of rocks. It was surely ribbon sliding. Steam was dense where it was going on, at the line of jets up the W side of N talus, and at the NW talus where it reached the W pocket. On no occasion did I detect the moving rocks, but the noise was big.

Now come in the banks marked B on the map. For several days I have seen these gravel scarps. One faces W on the W side of the landslide. One faces NE in the N corner of the bottom. Possibly there is a sort of crater pocket about where the old lava craterlet was. These scarps or dirt cliffs I thought were unworthy of note when I first noticed them. I now suspect they are new features, due to caving of talus into cracks forming below. I think the sliding of talus ribbons may be into wall-cracks that are opening, perhaps by lift of bench-magma below, or into grabens formed by the beginning of a new collapse. The noise is certainly general talus sliding in ribbons and is a new feature.

8 p.m. Big, noisy avalanche heard from the observatory.

TAJ

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day Saturday Date January 17, 1925
Sunday " 18, "
Monday " 19, "

January 17
10-11 a.m. Brisk wind blowing, so that no noises save from small avalanches from the N and SW walls were heard. The steam from the W floor area was voluminous and rising rapidly, though the humidity was low.

January 18
7 p.m. In the course of a half-hour there were many small slides and one large slide from the N wall. What at first sounded like a hiss with an echo was later found to be due to puffs of wind.

January 19
5 p.m. Steam was rising briskly in three lines running N and S across bottom and along a line lengthwise of SW talus. To the N of recess in W wall there is a cracked line running down with a southerly dip above the gray body at N base of W wall. Considerable gray coloring above E end and to the W of N intrusive, apparently sulphates.

RHF

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY
Hawaiian Volcano Observatory

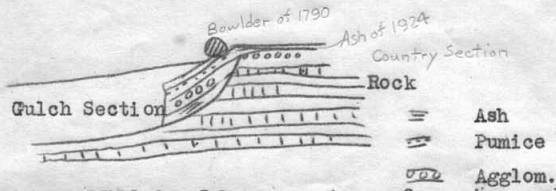
JOURNAL

Day Tuesday Date January 20, 1925

January 20
10:30 a.m.

Pit is much the same. Notice blue edges to fume in center, not in the vapor of W pocket. Fresh break in wall at top NW talus. Flocculent dense steam at W pocket, more than at S talus. Slight falls mostly at SW rift. Notice one fall there from upper wall, deepening the notch of the rift. Sulphur patches at base of SW talus.

Went over SW and followed rift. No movement along rift line in new ash. Numerous steam holes, cracks, and pits and clefts, and big depression where the 1920 slag heap was. Hot steam but not superheat; possibly 60° C. Climbed up gulch in SW wall of Kilauea Crater. A pumice covered fan cone is on floor at foot of it. Top cirque of gulch a waterfall-pit from drainage of upland, scoured vertical sides, cylindrical, with V-shaped gullies above now dry. Down-bending thick section of ash, bowlders, and pumice head of gulch, much thicker in the depression than outside the depression, hence a depression-fill.



Note the 1790 bowlders on top of pumice, which is in places three feet thick, the pumice being over agglomerate with bowlders. Apparently this proves that fiery fountains accompanied the 1790 explosions, and that the membraneous pumice is 1790 and not later.

TAJ

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day Wednesday Date January 21, 1925
Thursday " 22, "

January 21
2:15 p.m.

Fresh NE wind. Vapor on bottom is less abundant. Notably flocculent steam at east margin of floor. Fresh bowlders on E edge of lava floor. E station and flag is gone. Cracks fresh in dirt and newly opened chasms are back of E rim beginning a short distance N of SE trail terminus. E station was on an unstable block of the rim.

Slight falls of stones mostly N. Increased whitening of wall with salts W of west end of N sill, and also whole wall above E end of N sill. Still higher these walls are yellow and decomposed.

January 22
2:15 to
3:15 p.m.

Vapor jets are much thinner. Dry sunny afternoon. Note S talus jets in shadow are more flocculent and dense than the central and W pocket jets. Latter two are quite thin. All that region seen and nothing remarkable as seen from the SE appears suggesting a crack engulfing talus. Bottom of W pocket is a flat saucer and muddy. There is a yellow sulphurous steaming patch in the midst of new talus E. This E talus is the freshest and the hot sulphurous cracks there the talus had covered up. Small avalanche slides NNE and W, and rock trickles occur from several places. Air above pit is quite clear.

Very white salts stain the walls like chalk on a ledge in the S bottom wall and on the higher S wall in a spot; and the N wall where the blue smoke used to be, and the NE over the E half of the big sill are increasingly whitening. The sill itself is stained in places and shows more wetness in wet weather as though it were less hot. The S talus is dark and wet from condensation at the sides, and dry up the middle where the dry steam comes forth.

TAJ

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY
Hawaiian Volcano Observatory

JOURNAL

Day Saturday Date January 24, 1925

January 24
11 a.m. Halemaumau quiet. A few rocks moving in different places. At 11:13 o'clock dusty avalanche N corner. Note sulphur yellow on gravel at foot of N talus in steam at front of landslide lobe. Also white salts at bottom of steaming W pocket. Slides NE and SW. Steam hottest and most flocculent S, NE, and W. N slides from the intrusive sill itself.

9:15 a.m. TEMPERATURES WITH MAXIMUM CENTIGRADE THERMOMETER

Cracks at road terminus 2,000 feet SE of Halemaumau. Cracks parallel to rim of Halemaumau.

Crack No.	Crack Width	Thermometer Insertion		Temperature Centigrade		Remarks
		Depth	Time	Air	Crack	
1	1 in.	10 in.	5 min.	18°	87°	White salts, wet ash, and moss. Temperature for one minute insertion the same.
2	1 in.	5 in.	3 min.		83°	
3	3 in.	2 ft.	2 min.		75°	Same crack as No. 1, only farther S.
4	2 in.	4 in.	2 min.		80°	
5	1 in.	5 in.	2 min.		87°	Broken vent 300 feet S of road terminus. This has much moss and appears an old vent, probably a wall-crack vent of Kilauea Crater deeper down.

JOURNAL

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY
Hawaiian Volcano Observatory
Day Saturday Date January 24, 1925

TEMPERATURES WITH MAXIMUM CENTIGRADE THERMOMETER

January 24
10:05 a.m. Cracks and vents at solfatara on boring road, wall-crack of Kilauea below Halemaumau road terminus, and Keanakakoi Gulch. Hot vents where Allen collected salts. Ash solfatarized, alum and ferrous sulphate, and other sulphates cover the ground; both ash and lava are altered.

Crack No.	Crack Width	Thermometer Insertion		Temperature Centigrade		Remarks
		Depth	Time	Air	Crack	
6	4 in.	4 ft.	3 min.	21°	90°	Vent in ash bank, purring with steam pressure.
7	1 in.	2 in.	2 min.		90°	Vent in rock base of ash. Alum bed. Thermometer thrust inside decomposed matter.
8	1 in.	2 in.			89°	Crack in lava of crater floor.

10:45 a.m. ESE region of Halemaumau.rim.

Crack No.	Crack Width	Thermometer Insertion		Temperature Centigrade		Remarks
		Depth	Time	Air	Crack	
9	5 in.	6 in.	3 min.	22°	73°	Steaming hole in wet ash 100 feet ESE of trail to Volcano House ESE of Halemaumau.
10	3 in.	2 ft.			76°	Crack 100 feet from rim at SE. Steaming.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day Monday Date January 26, 1925
Tuesday " 27, "
Wednesday " 28, "

January 26
9:30 a.m.

Drizzling with light SW wind. Vapor much more condensed in bottom of pit and in lines up taluses. Greatest flocculency at W pocket. No noise of blowing. Rocks working on the walls a little at NE sill and SW talus region. Stones of bottom are dark and wet with rain. Steam vents across middle from S to N are hot and dry.

January 27
9:30 a.m.

Wind is NE; weather is fair.

Walls of pit are wet. The large patches of white salts are almost entirely washed away. They were a product of the dry spell. Walls N and NW are making small slides. A black, gaping crack one or two feet wide in wall above N sill 20 feet W of central rift dyke. Almost in the middle of the NE wall. Probably a loose spall or slab. Taluses are wet, and steaming zones through the taluses are dry. This is true of the middle zone of SW talus, as well as the others. The most dense flocculent vapor is at the W pocket, next comes S talus, next the SW talus. A yellow sulphur crack is at SE edge of floor, different from the pale colored salts on the bank above.

The greenish brown decomposed areas in wall N (where the blue fume was formerly) and NE (at half-way down place over E horn of sill) are both the same color, the N higher than the NE. Both are over end horns of the sill. The N one is under the general region of old postal solfatara; the NE one under the old trail solfatara.

January 28
9:30 a.m.

Pit is the same. Drizzle, and NE wind. Rocks are trickling from NE wall. There are now three places with sulphate salts at base of walls S and SE; eight places in talus or bottom of talus W, SW, S, SE, and E; and two places in floor area center and N.

Vapor is abundant. White salts are reappearing a little on walls.

TAJ

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day Thursday Date January 29, 1925
Friday " 30, "
Saturday " 31, "

January 29
5 p.m.

Cracks one-half an inch wide, more or less, in the ash over the steam fissures across trail 100 feet back of rim SE, are new. They appear to represent an extension southward of those noted back of E. station. One or two noted back of S. station. Evidently the whole E. side of pit has been working a little.

Nothing remarkable in pit. Steam denser after rain. Walls wet. Some rocks moving, but pit mostly quiet.

January 30
5 p.m.

Slides NE and elsewhere. Vapor jets on bottom voluminous. About 7 p.m. a roar was heard, and an avalanche tremor recorded on seismographs. No change observed in cracks back of SE rim.

January 31
2:30 p.m.

Wind light SE. Pit much drier and jets thinner. Slides small at middle of N sill and E of SW rift--as though the rift zone were working. Denser vapor is at S talus and E talus base. At E talus base is bright yellow-green fresh sulphur. One slide at NW talus. Blue fume filters out of vapor rising above S talus. White salts are reappearing on walls. It is remarkable how completely the blue fume has disappeared from N wall, where now there is only a stained area. No trace of the fume below.

Noticed slight fresh cracking in the dirt over fissures parallel to rim, just N of trail terminus SE.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day Sunday Date February 1, 1925
Monday " 2, "
Tuesday " 3, "
Wednesday " 4, "

February 1 — A sunny day. Pit clear. Dust rising from pit in thin veils, showing that avalanching occurred.

February 2
9:45 a.m. — Three quakes on seismogram, two of them avalanche type. Now see evidence that a big notch has been made in SW wall next E of 1920 tunnel. Talus below is fresh. There were two flags SW, one emerson's H.V.O. flag, the other about 300 feet farther W placed by Schatzmayr. Schatzmayr's stake has fallen in.

All SW rim region shows fresh cracks in the earth parallel to rim: 100 feet back they are one-eighth inch, near rim one inch.

To one sitting on SW rim, there is a perpetual shower of course sand blown by the NE wind up the newly broken face of the cliff below.

For 50 feet back this rim is heavily crevassed most of the way to the WSW corner of pit from the SW station, all the crevasses showing new motion.

Rocks now sliding a little SW, W, and N. N.talus shows fresh fallen debris, but evidently the biggest avalanches of past 24 hours were from SW. Bottom covered with brown dust, and the sulphate patches are dusty. During the past three-fourths of a year we have now had avalanching and cracking back of the rim all the way around the bit, but least at the SE. The SW station is now in a precarious position.

About 1 p.m. I saw dust rising from SW wall; high wind.

February 3
11 a.m. — Fair weather. Pit dusty, still obscuring the sulphur and sulphates. Steam thin on bottom, except S and W. Some more matter has fallen from near SW tunnels. Pit now very still, hardly any rocks sliding, and though day is windy less dust is blowing up SW wall.

On these sunny days I notice that the gravel and sand fields NE and SW of crater, seen from Keanakakoi, are white with salts: this is not seen from here E and SE of pit.

February 4
9 a.m. — Fair; NE wind. Fresh debris on talus from W horn of N sill. Sulphates begin to reappear at bank at foot of SE wall. Maximum of flocculent vapor is at S talus and W pocket. White stain reappearing NE, N, and S. A few rocks sliding N and NW. S station still in place. Line of steam jets up S talus, though hot dry ground, for width of 10 feet ±; slope wet on both sides.

T.A.J.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day Friday Date February 6, 1925
Saturday " 7, "
Sunday " 8, "
Monday " 9, "
Wednesday " 11, "

February 6
3 p.m. Dry. Yellow sulphur patch conspicuous at steam vents of E talus. NNE wall notched back on W side of rift dyke. One avalanche there seen, and several small slips. SW flag still in place.

February 7
1:15 p.m. At 1:15 p.m. there was a noisy avalanche from N side and dust up SW corner: 1:17 another: 1:26 another.
2:30 p.m. Sunny and dry. Two places coated with bright yellow sulphur crystals at base of E talus. Fresh debris on NE talus; walls whitened N, NE, and S. Slides seen E lower wall; also N and SW walls. Pinnacle is at rim of SW wall W of rift.

February 8
2:45 p.m. Odor of free sulphur at E rim rising from the yellow patch E. This patch is bright. Is free S, replacing H_2S, and if so does it mean rising lava? Slight slides lower cliff SE, and more signs of breaking away of W horn of N sill. Fresh cracks in dirt SE near pit.
Earthquake felt at 1:35 p.m.

February 9
3:45 p.m. Odor of spicy sulphur from pit, and no odor H_2S noticed. Strong NE wind and clouds of ash dust on desert and on Kilauea floor. S and SW stations still in place. Rattle continuous of falling stones SW and W. Wall stripped more on SW, next to tunnel, on W side of rift, and fresh talus below. Fresh debris on N talus under W horn of sill. No fresh cracks back of rim SE, S, or SSW.

February 11
9:30 a.m. Light SW wind. Clear. Vapor hot and dense at the usual places, dust on bottom, fresh avalanche material on SW and N taluses, some rocks heard moving, mostly NW. SW notch bigger (next to tunnel rift).
Marks on talus under middle of N sill like a zigzag trail up the slope: breakages due probably to slip of lower portion: incipient landslip. White stain decreased owing to last evening's rain.
An interesting thing not noticed before is the opening of two vertical cracks in the upper part of the big sill NNE.

February 11 These extend up and down for 50 to 100 feet. They are about 75 feet apart. They lie 125 feet E of the big rift dyke. They are thus in the same region relative to the rift as the new avalanche notch E of the rift on the SW side. They suggest new rift cracking athwart Halemaumau. They appear to gape one or two feet, and the one nearer the dyke shows signs of breaking the wall down to the talus level. Not far from this, below, are the zigzag breaks in the talus. At least one crack in the floor corresponds with this fracture line. It corresponds to the sag in the talus between the NE and N conoids.

If these are really deep cracks, they are working just as the rift crack did in 1919, December; that is, they gape downward and are closed above.

There are other smaller vertical cracks close to the dyke on E side and in the red oxide notch W of the dyke, here in the beds above the sill.

The dyke has recently been cleaned off by avalanching both NE and SW walls. It appears to be composite in the NE wall, thinning above, with light rock at the side and dark down the middle. It does not show composite structure in SW wall. It there is massive, gray, fine-grained rock. It is split up with several parallel small dykes beside it. It appears in floor and roof of the upper big tunnel, and follows the E side of the lower tunnel. The zone of the petering dyke above the upper tunnel is partly made up of cracks, but no definite gaping cracks E of the dyke appear in the SW wall to correspond with the fractures in NE wall.

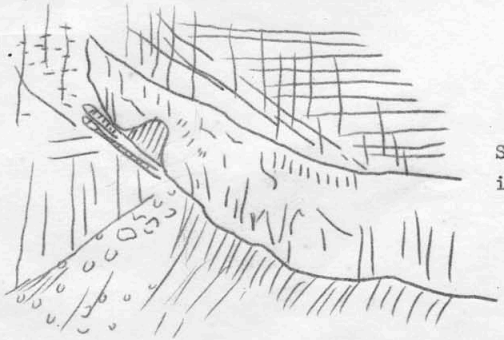
Avalanche at NW talus 10:10 a.m.

The crack in floor NE-SW above mentioned, if extended, would pass through the stained sulphurous steam area of the center.

There is a breakage notch in the overhanging bottom ledge of the W horn of the big sill. Light colored rock has broken away and lies on the fresh talus below. The rock revealed by the notch appears to be all part of the sill, but it is dark gray, while the sill is pinkish.

Odor H_2S at S station.

10:24 a.m. Another small avalanche at the NW talus, making red cauliflowers.



Sketch of notch in W. horn of sill.

February 11

In the absence of any live avalanching there, the intrusive rock at W boss is getting the same greenish tarnish as the low NW intrusive has.

11 a.m. Some small slides NE, S, and SW. The sunlight on the red streak extending W from the small red boss NE, in the midst of the widest part of the big sill, shows the red matter to form a rounded shoulder or bench. There is intrusive above it, apparently overlying it geologically. On the other hand it appears like a scored and worn top edge to the intrusive below. It has the aspect of a wall-crack veneer.

There is a cream-colored stain in hot steam at the shoulder of rock where the NW talus bends toward the W pocket.

11:30 a.m. There appears to be a big protuberance of cliff ready to fall away S of the top of NW talus. At 11:30 a.m. was sliding almost continuously. Noisy slide at 11:34 a.m.

T.A.J.

February 12

2 p.m. Cloudy day. Coloring in pit is striking. Marked red color to walls at lower part of SW rift tunnel section. Some small slides. The crack observed yesterday in NE wall, today in cloudy light, looks like a red dyke in its upper part, but below it is a dark crevice. With field glass it appears all the way down to the talus. Talus is very fresh under SW rift. No change observed at SE edge.

T.A.J.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY
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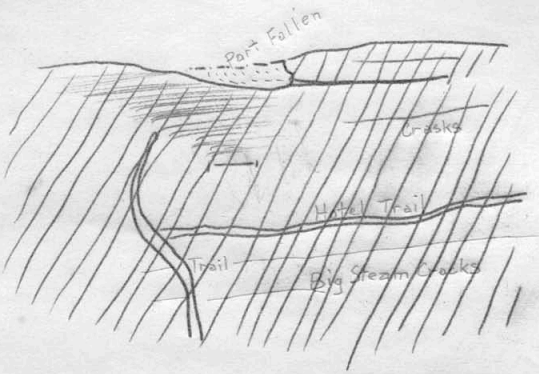
Day Saturday Date February 14, 1925
Sunday " 15, "

February 14
9:30 a.m. The inner ledge with loose blocks, a few feet below rim at tourist station SE, has fallen in. No fresh cracking appears back of that rim.



Plan of Station.

Steam is abundant S and W localities. Nothing new in pit observed. No slides heard.

The block that has fallen SE is in the same relative position to main edge as was the S pinnacle. That is, it is a slab detached, thinning southward, and the thin end has fallen.

February 15
4 p.m. Light southerly wind and fog. Pit full of vapor.

Can see a new crack in the promontory S of NW talus. Crack is vertical and about 150 feet long. Clatter of rocks N., and a little sliding SW.

Nothing new on bottom, and no change in N crack at sill or in the SE rim.

T.A.J.

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Hawaiian Volcano Observatory

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Day Tuesday- Date February 17, 1925
Wednesday " 18, "
Thursday " 19, "

February 17
9:30 a.m. Pit is steamy and appears to have had rain as the salts are not much in evidence on the walls and steam covers lower S wall and tops of taluses. Very flocculent, numerous, steam tails across bottom. Bright sulphur patch in a new place, in talus just N of SE sulphate bank.

9:41 a.m. NW wall working steadily where crack was seen Sunday. Avalanche there. Wall peeling above and southward from NW talus. SW wall E of tunnel is notched deeper, but SW flag is still in place. NNE talus is higher under middle of big sill.

Curious how hot and dense steam is at S talus and W pocket, in dry gravel, without depositing sulphur, whereas along E edge of lava floor the vents deposit it. A definite gray dyke is now above tunnel and shows SW to within 50 feet of the top rim. At 9:50 came rock falls not seen, and then a spell of noise like breathing or purring, as though general
9:53 a.m. sliding of talus occurred. At 9:53 and 9:54 were two avalanches NW. Some slides at N wall. This revival of avalanching goes with SW tilt now in progress.

February 18
9:25 a.m. Steam is very abundant, although no rain. Especially at S wall and all up SW talus. Small new pile of fragments of sill rock NE. SW station still in place. Odor of H_2S noticed at Observatory. Wind S. No rocks moving, and place that was cracked NW is stripped. Possibly slight noise of steady blowing.

February 19
2:45 p.m. NE wind. Very dry day, no cloud over crater in forenoon. Steam thin on bottom. Five sulphur patches, three bright yellow at E talus, and two pale yellow at landslide front of N; sulphate bank SE white, yellow, and brown streaked vertically. NW talus notch now has three jagged abutments on S side of the slide. White salts on walls. There is some freshening by fracture of upper wall over W boss. Little rock motion. Whitish sulphates at center.

T.A.J.

February 20
8 a.m. Small avalanches frequent from N wall. Faint hissing from pit bottom audible. Odor of hydrogen sulphide distinct at SW.

R.H.F.

3:15 p.m. Inspection of Halemaumau from Uwekahuna. Small rock fall heard 3:20 p.m. Note from this viewpoint fresh stripping of NE wall. Note on all sides of Kilauea sink, six or seven downbreaks from Halemaumau outwards. This is very noticeable to the WSW, the Halemaumau wall, wall of Kilauea, and four walls back of that in the Halfway House direction. There are five or six walls at Uwekahuna. There are at least seven at Keanakakoi, and several in the country S of Cockett's Trail. There are traces of six in the forest from Kilauea to Kilauea Iki. There are eight from Kilauea floor to the last pali behind Volcano House, and there are at least five terraces of faulting from Kilauea to the upland back of the Military Camp.

A very impressive thing is the enormous volume represented by the 19th century fill of the sink: and still more so the enormous void if the space were conceived as full to a rounded dome, which is now represented by air within the downfaulted sink. This air volume is not represented by explosive deposits in the geology of Kilauea. Therefore it must be represented by either shore or submarine outflows or inflows which have drained what was formerly full. Compare the mull cone sheets and their dynamics.

(Note on the projected airplane landing-field W of Uwekahuna road.) Visited 10 or 12 large bowlders three to five feet in diameter on this field. They are partly vesicular and are more covered with lichen and crust than those near Keanakakoi. The surface of ground everywhere shows the membraneous pumice mixed with and covered with pebbles. But not one bowlder shows an impact pit like those near Keanakakoi. Wash rills are abundant with sandy deposits. Every bowlder is embedded a foot or so in the ash and pumice, which look as though they had drifted and embedded themselves against the bowlder after the latter was in place. This may account for the absence of bowlder pittings. This set of bowlders may be the first thrown out in 1790. There are others in the golf links. Then came the lava fountains and pumice, and the accompanying explosive ash and gravel, obliterating the impact pits. Finally came the last set of bowlders to the east, making impact pits in the earlier gravels. Last came the showers of gravel of the gravel flat (old airplane landing-field SE of Halemaumau), which destroyed whatever pits were there.

Query: Where is the meeting ground of the impact-pit-bowlders to the S and these without impact pits to the NW?

Day Friday Date February 20, 1925
Saturday " 21, "
Sunday " 22, "
Monday " 23, "

February 20
8:45 p.m. Heard three deep detonations.

February 21
3 p.m. Vapor jets rather thin, sulphur patches plainly seen at E talus, outlining the edge of lava floor buried beneath the talus. No blowing noise detected. Very little sliding. White stains on walls.

February 22
5:30 p.m. Light easterly wind. White patches of salts in center floor and base of SW talus. Chalky salts NE, N, W, and S walls. Vapor dense and hot up dry zone at middle of S talus. Salts on SE bank wet and less yellow than before. Small slides NE and NW. Steam at top of all the taluses. Very quiet.

February 23
5:30 p.m. Wind SE. Vapor in pit moving S and W. The dyke above SW tunnel is double and reddish; country rock between the two fillings. The thick dyke below the upper tunnel is massive and pinkish. At foot of N talus there is a mud-flat stained yellow-white with salts. Across center today the vapor along the landslip front is less dense than at the S talus and W pocket. The deposits at N front of landslip debris and at foot of S talus are greenish with sulphur, not bright yellow like base of E talus.

There are three mud-flats, one at base of SW talus, one at base of NW talus, and the one just mentioned at base of N talus; the last two are stained.

One small slide NW. Vapor all along top of taluses S and SW and the wall above. Not so NE, N, and NW taluses. This is in the direction of the bottom wind drift, which is away from the N.

Today a distinct steaming wet crack in the talus at bottom NNE trending NE appears, almost under the rift dyke. There are three other such cracks in the top of the N talus, cracks parallel to each other in planes at right angles to the wall behind the talus.

South talus steam very hot and no sulphur: E talus steam makes much sulphur.

T.A.J.

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Day Tuesday Date February 24, 1925
Wednesday " 25, "
Thursday " 26, "

February 24
11:30 a.m. Fumes thinner. Dry air. Yellow sulphur spots E conspicuous. Pit very still. Several slides SE, N, and W.

Made half circuit of pit to S, and examined wall at SW corner over big talus. Appears best place for a descent. Wall there is now fairly stable.

I note that the cracks tend to restore the circle.

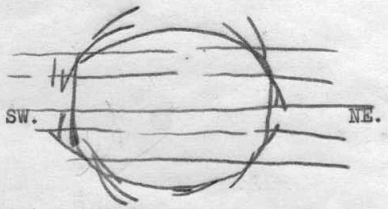
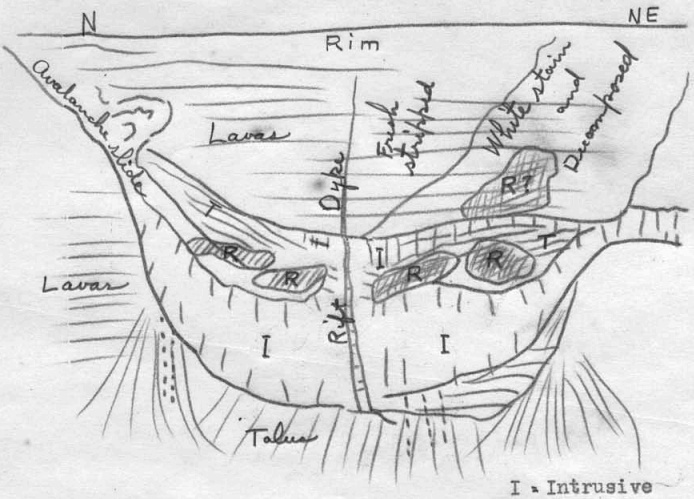


Diagram of cracks, pit, and rift belt.

February 25
9 a.m. Cool morning. A little sliding N. Steam on taluses, and abundant at the four main bottom localities, S, E, center, and W. Much chalky stain at W boss, as well as S, N, and NE walls. Estimate depth to top of SW talus 365 feet.

February 26
3:15 p.m. Pit dry and vapor jets thin. There are six main sulphur spots at E talus. A little sulphur stain at steam vents at the very top of the E talus. Such staining is absent in the much denser steam of S talus and of W pocket. At noon there was avalanche dust over pit. Now a few little slips N and NW. Can count 10 caverns around pit, all in the upper 50 feet of walls. There are only the two rift caverns below.

T.A.J.



I = Intrusive
T = Talus (old)
R = Red masses
----- Feeding dykes

Sketch NE wall
Feb. 28, 1925

February 28
10 a.m.

After a little night rain, northeasterly wind, the vapor vents of bottom are making denser steam than before. There is hardly any sliding of rocks. The pit is as nearly stationary as it has been since May. Seismically also the ground is quiet.

The foregoing sketch of the N sill seen in cloudy light shows red bodies on both sides of middle of sill. There is an obscure red body in the wall above sill NE. There are some signs of fossil talus around the eastern red bodies, and a big fossil talus above the western ones.

Between the two the intrusive rises and spreads out mushroom-wise. Above the western talus the intrusive horn becomes obscure and merges into something that looks like an anticline.

The east lobe of the mushroom extends clear across above the two lower red bodies east and merges with the thinner sill into which the big sill bends.

Considered as the cross-section of an old pit, and comparing the history of past 10 years:

The horns are the wall crack feeders for the lava flows above. The central mushroom is also.

May not the red bodies be remnants of old bench magma or crags? The western boss in Halemaumau, merging downward into the light-colored massive intrusive rock may well be a crag and the under paste.

February 28 With all the conspicuous part that the crags have played in the history of Halemaumau, it seems likely their fossil remains must be trapped in the walls on a priori grounds.

These big oxidized bodies are the most likely objects for them, and the sills are the substance of the lake bottoms crystallized. If so, the circular graben or collapse of Halemaumau should be a main shaft that left apophyses in sill form behind when it collapsed. Halemaumau may be over a multiple mushroom of sills with a shaft up the middle: (cf Holme's section and Two-bit Region in Black Hills). Perhaps this is the structure of Mauna Loa.

T.A.J.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day Sunday Date March 1, 1925
Monday " 2, "
Tuesday " 3, "
(1) Wednesday " 4, "

March 1. 3 p.m. Vapor jets thin. Sulphur stains dull, probably from dust. Dust blowing on Kilauea floor and in desert. No fresh avalanche scars or talus. Little movement.

March 2 9:15 a.m. At this time there was no change. High NE wind. Sulphur patches and SE sulphate bank dull and wet. No motion of rocks seen. Conditions are as completely stationary as they have been yet since May. SW flag is still in place. There are flags now S, SW, NW, and the SE tourist station.

Noon There was squally NE wind and dust was blowing on the SW Kilauea floor, in the desert, and in the pit. It kept coming up in the pit, but not as sudden avalanche clouds. The orifice simply appeared steadily dusty. As a matter of fact, avalanches had started at the NE.

March 3 6 p.m. Misty and raining. Sliding more or less continuous toward the N. The NE talus was all covered with fresh red fragments. A new notch in the wall revealed decomposed red rock above the eastern bend of the N sill. Up and down appeared a fissure-like jointing trending in the Keanakakoi direction. The notch was rounded and corresponds in its general habit with the slide above the W horn of the sill, but the E one is steeper.

March 4 10:45 a.m. Only a few small slides occurred.

The whole NE wall has been freshly stripped lately. The sulphur and sulphate patches are dusty at bottom of pit. Sulphates on the walls are lacking because of recent rains.

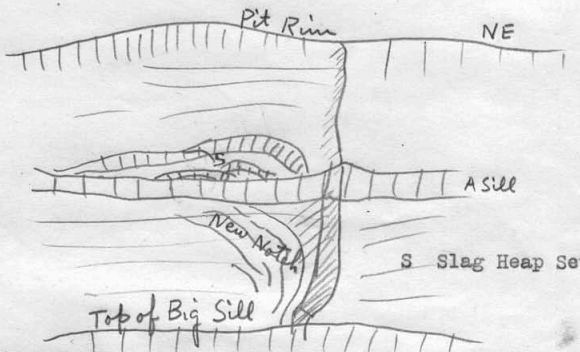
The new notch NE just above E horn of sill is dark red hematitic looking earthy rock, with traces of bedding. At top of notch the caving away has revealed veins and thick irregular masses of greenish brown and white mineral. The whole notched area looks solfataric in origin, but it is not steaming.

The jointage resembles an upright rift not representing a U-contact trending NE like the W horn; but rather a wide fault zone traceable from the top of talus two-thirds of the way up the wall and striking east. This zone goes right through the bend or crook in the sill, where it makes off into a narrow high intrusive sheet in the E wall.

March 4
Cont'd

In the morning light the jointing in the SW and NE walls appears to show traces of up-and-down continuous breaks all across these two steep walls. This vertical jointing going through all beds alike, apart from their individual columns, suggests the Kau Desert shear zone. It is a jointing parallel to the rift dyke. It does not show on the E and W walls, which are themselves parting-planes more or less on this NE-SW system of joints.

In the upper NE wall was observed what appears an old slag-heap section:

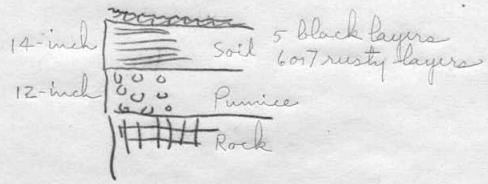


March 5
2:45 p.m.

Cloudy and dry. Vapor jets thin. Note some yellow stain in the lowest sulphate patch at bottom of SW talus. The stripping of the wall above NW talus extends all the way to rim at a place just where the Postal Rift cavern trench is. There has been fresh stripping in upper part of slide above W horn of N sill. The bedding there is confused, both E and W of slide. The new NE notch is very bright colored in reds, yellows, pinks, buffs and orange tints. The freshly stripped area NE extends all the way to former E. station, above the small E. wall extension of N. sill.

No slides in progress

Limu and soil, new road cut near Kilauea Iki.



DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

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Day		Date	
	Sunday		March 8, 1925
	Monday		" 9, "
	Tuesday		" 10, "
	Wednesday		" 11, "
	Thursday		" 12, "
	Saturday		" 14, "

March 8
4 p.m.

Steam abundant. One line of rising steam crossed the July fill and was continuous clear to the top of the SW. talus.

Except for a few spots especially at the NE. the walls were strikingly red.

March 9
5 p.m.

Pit very quiet save for occasional rock falls. There was a white coating on the wall above W. horn of northern intrusive. The 1924 ash on the outher floor had an increased blossom of white salts.

March 10
12:52 p.m.
5:09 "

This has been a day of numerous avalanches. One at 12:52 p.m. sent up large cauliflower clouds above rim of pit. Another large one at 5:09 p.m. sent large, hard cauliflower clouds across bottom of pit, but they did not reach above rim except after being diffused. Most of the large avalanches were from above the W. end of north intrusive. Red dust covered the NE. talus. The odor of hydrogen-sulphide was faintly perceptible. The pit was approached from the Kau side with Dr. Berkey, Mr. Morris, and Mr. Roberts.

Dr. Berkey and Mr. Morris both agreed that the banding in some of the rock both old and 1924 ejecta was due to alteration by gas heating along cracks. They found no objection for applying this theory to banding that was unmistakably in strata that at one time at least was horizontal. They were much interested in the collodial silica theory of ash cementation, and thought that some of the white coatings on 1924 ejected rock was collodial silica.

March 11
11 a.m.

No avalanches were heard. A very quiet pit follows days of numerous avalanches, showing that the wall material after avalanching is quite stable. There had been some avalanching from the SE. wall as shown by debris over SE. sulphur bank.

March 12
5 p.m.

Thunderstorm in progress. Pit so full of steam that the bottom could not be seen. There were no noises from avalanches nor rock falls.

March 14
10 a.m.

No rock falls from the walls. Steam appeared to be rising from bottom with a greater velocity than common. Hard cauliflower outline persisted for some distance up from floor. Steam crack at SE. rim along the trail was slightly hotter than common.

R.H.F.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day		Date		
Sunday		March	15,	1925
Monday		"	16,	"
Tuesday		"	17,	"
Wednesday		"	18,	"
Thursday		"	19,	"
Saturday		"	21,	"
Sunday		"	22,	"

March 15
5 p.m.

Temperature measurements of crack along S. and SE. rim of Halemaumau where there had recently been movement gave:

On the trail 171° F.
To right " 173° F.
" left " 183° F.

Jostling of blocks that reveal such temperatures indicate that in some places the underground temperature must be high. It might be that at the south there was a fill of plastic material that yielded and caused a slump in 1924 (cracks were observed all the way from Halemaumau rim to the present parking place). The heat is exposed by opening of cracks.

March 16
4 p.m.

No noise of avalanches heard. Abundant steam from bottom, but all rose slowly with no hard outline. There have been some small landslides from SE. wall.

March 17
10 a.m.

The pit was very quiet. H_2S odor quite plain. The sulphur stained place at SE. is again visible after having been buried by the avalanches of March 10-11.

March 18

Since last observed there have been some small avalanches from N. and NE. walls. The sulphur stained patch at SE. is again prominent through the fresh talus.

March 19
3 p.m.

Rainstorm. Could not see into pit on account of steam cloud. No noises were heard.

March 21
9 a.m.

Pit walls all quite red except points above E. and W. horns of northern intrusive. An avalanche composed almost entirely of material from E. end of northern intrusive had recently taken place.

A show for the benefit of tourists, based on offering and prayers to Pele was staged at SE rim of Halemaumau starting at 5 p.m. Pele was defied as well as asked to come back. During the ceremonies a very small rock fall caused a great many people to start away from rim.

March 22
4 p.m.

Pit quiet with no evidence of any material avalanching since last observed. Steam was rising abundantly. The steaming line up the SW talus was very distinct.

R.H.F.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day Monday Date March 23, 1925
Wednesday " 25, "
Friday " 27, "
Saturday " 28, "
Sunday " 29, "

March 23 Steam in the pit abundant. The walls had lost some of their redness. The steam lines up the SW talus and across the center of the July fill were notably dry as though quite hot.

R.H.F.

March 25
2:20 p.m. Fresh NE. wind. Sunny afternoon. Rocks sliding a little on NE. and N. walls. Fresh talus in a high cone NE., against base of the crook at E. end of N. sill. The NW. talus gorge has lost all the promontories of rock on its S. side; that place is now a smooth rock slope.

Steam on bottom is moderate in volume. The sulphur spots E. show plainly. There is a dyke or fracture zone up SW. wall 200 ft. W. of SW. tunnel. Fresh avalanche dust on wall above SW. talus W. of pit corner. Base of SW. talus more salts.

March 27
4:15 p.m. Rainy weather, walls wet and red, and much steam from bottom of pit, that from the S. talus showing the blue edges of sulphur gas. Bank of sulphate SE. shows no color. Some upright bands athwart the N. will, notably a wide one near its W. end, remain dark gray and wet, whereas the adjacent rock is drier and lighter. This is due to joint faces in one direction.

No rocks were observed sliding, and the talus and walls show no fresh breaks or debris. The SW. flag is still in place. The dyke below SW. tunnel protrudes a little as a ledge. Bottom of SW. talus is much stained white.

Seismically and otherwise the pit is in repose.

March 28
11 a.m. Weather a little drier, steam still abundant; no slides heard.

Approached pit by Keanakakoi gulch. At the sulphur holes along drill road no alum on surface owing to heavy washing by recent rain. Big new wash fan at mouth of Keanakakoi gulch and deep erosion, probably due to new ash as cutting agent for rills and as impervious surface layers to increase the run-off.

On passing Kilauea Iki, noticed near W. end of floor numerous white spots which are accumulation hollows filled with 1924 ash mud.

March 29
2-4 p.m. Went around pit by S. and W. More or less rainy day. Slight slides heard twice. Walls wet bringing out color. Note that red oxidation is most brilliant in N. and W. walls over the intrusives. Two well-marked gray dykes observed in SW. wall W. of SW. tunnel. NW. flag still in place. The smooth surface of SE. sulphate bank at base of pit wall appears as though it might be the outcrop of top of an intrusive mass or of an old veneer. Much steam, including some at top of N. wall. The steam at W. cracks back of rim, however, is less voluminous and less hot than it was. The cavern descending steeply NNE. of pit in the cracked ground back of rim has caved in, and the region between it and pit has fallen in so that the remains of the opening are close to rim.

March 29 Cont'd

Here observed the fresh pahoehoe in a fault wall in comparison with the rocks thrown out in May, 1924. It is totally different. The few vesicular rocks thrown out appear less glassy, and many of the fragments are mottled like amygdaloid, as though the vesicles had been filled. Then there are the banded rocks, seemingly showing gas fluxing along the glassy bands. Does not all this and the intrusives show that the vesicles like the caverns become filled when buried? Filled either by gas fluxing or magmatic percolation.

March 30 4:30 p.m.

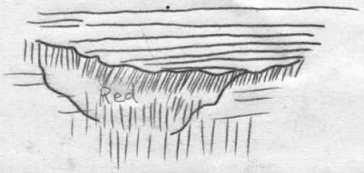
Rainy and windy. Pit full of vapor. No slides heard. Only glimpses of bottom obtained. Steam jets dense as is usual in wet weather.

March 31 11:40 a.m.

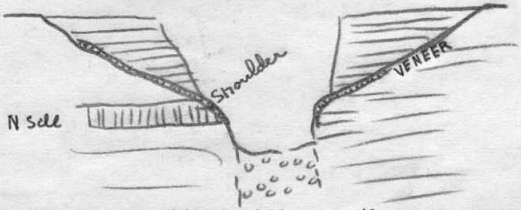
Sunny and clear. Walls of pit wet, but one spot about 200 feet across is dry; this is N. wall near top exactly where the blue fume was in 1924. The middle of the dry area appears yellow as though with sulphur, but no fume can be detected. Apparently this is still a hot spot.

Usual vapor jets on bottom. Some fresh red talus northeast from a very red area over the E. crook of the N. sill. No rocks heard sliding.

Notice today that most of the red areas are also vertically scored shoulders as though parts of slopes overlaid by the beds next above, thus:



This is true of the red boss, the three red patches in upper part of N. sill, a reddish slope W. of SW. tunnel. Another at base of S. wall, and probably the sulphate bank at base SE. wall is in same class. All these and some other places have the aspect of veneered walls of a larger funnel containing the beds piled up to fill it, and the present collapse has sectioned these in a circle with steeper walls, revealing the shoulder of the wider and flatter funnel, thus:



The vertical scoring or sliken-siding on these appears to extend in under the beds overlying. This may have been made by wedge slip-faulting of the fill acting on a wall-veneer of bench magma.

T.A.J.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day Wednesday Date April 1, 1925
Thursday " 2, "
Friday " 3, "
Sunday " 5, "
Monday " 6, "
Wednesday " 8, "

April 1
9:30 to
11 a.m.

Only one small slip of rocks heard, in vicinity of SW. tunnel.

Note that there is a dry zone up cliff from top to bottom above SW. talus, S. side of W. buttress, where the W. steam cracks emerge in vertical elevation on wall of pit. Probably dryness due to their heat, though no steam appears on wall at this time. Sunny dry day.

There is a yellow sulphur patch in NE. wall over E. horn of N. sill, about same height as the hot dry one N. This NE. one is also a vertical shear zone. Probably these two and the SW. tunnel are the three main radial cracks, leading to Sulphur Bank, Kilauea Iki, and Kau Desert rifts, respectively.

Steam maxima on bottom at W. pocket, S. talus, and NE. sulphur patch. The NE. talus has gray rock fragments over the red ones of yesterday.

April 2
2:30 p.m.

Pit quiet and unchanged. Usual steam and sulphur patches. Some whitening appears on walls and SW. talus and SE. bank. W. end of N. sill appears to have been sliding a little, to judge by dust on wall and fresh talus.

April 3
4:30 p.m.

Pit very quiet. Some appearance of fresh breaks in the wall NE. Find that flag stakes have been pulled up S. and SW.

A belt up the SW. wall appears dusty.

T.A.J.

1:24 p.m.

Small avalanche dust cloud observed S. part of Halemaumau.

R.H.F.

April 5
3 p.m.

Pit quiet. No noise of even individual rocks heard. At the base of and a little way up the steaming line in SW. talus there is a white deposit, probably soluble salts.

April 6
3 p.m.

Despite a low relative humidity the cracks at SE. rim were steaming voluminously, though there was no noticeable increase in temperature. The air in the pit was more or less dusty from the frequent small avalanches, mainly at SE. during observations.

April 8

Small avalanches from N. wall. Salts on floor and at bottom of talus slopes less conspicuous. Hydrogen sulphide odor not detected. The middle of N. intrusive body appears as though it were cut through to shalified lava behind, and this makes the N. intrusive body appear as a broad side view of a rather thick dyke.

R.H.F.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day	Saturday	Date	April 11, 1925
	Sunday		" 12, "
	Tuesday		" 14, "
	Wednesday		" 15, "
	Friday		" 17, "
	Saturday		" 18, "
	Sunday		" 19, "
	Monday		" 20, "

April 11
4 p.m. Pit quiet with no evidence of avalanching to accompany the earthquakes of this day. Steam abundant.

April 12
5 p.m. Evidence of a small avalanche from E. end N. intrusive body noted. There was a large dark place as though wet on the wall to the E. of SW. fissure tunnel.

April 14 Landslide debris gave evidence of recent movement at E. end of N. intrusive. Small but frequent avalanches were noted from W. wall. The SE. sulphur stained area has progressed toward center of pit floor and is now on the July, 1924, lava beyond the talus slope.

April 15
11 a.m. Brisk wind blowing and heavy dust clouds in desert; light ones on crater floor. Odor of H_2S faintly perceptible. The middle section of N. intrusive that appears to be nearly cut through is rapidly becoming ocscured by avalanches.

April 17
4 p.m. Rainy day. Pit full of steam. Could not see into it at all. Faint odor of H_2S.

April 18
5 p.m. Pit quiet. No avalanches observed. Distribution of steam vents is largely along three lines trending SW-NE.

April 19
4 p.m. Odor of H_2S noticed 1,000 feet back from rim. Steam abundant from pit floor. Evidence of small avalanches from N. wall.

April 20
4 p.m. No avalanches noted. There are several irregular white streaks of salt deposit with a considerable vertical component on the N. wall. A small area above the W. end of N. intrusive has a coating of white and looks as though the rock were rotten.

R.H.F.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day		Date	
	Tuesday		April 21, 1925
	Wednesday		" 22, "
	Friday		" 24, "
	Saturday		" 25, "
	Monday		" 27, "
	Tuesday		" 28, "
	Thursday		" 30, "

April 21
4 p.m. The odor of H_2S and free sulphur were noticed at SE. rim of pit. There was some motion at E. end of N. intrusive. The western and central line of steam are connected along the N. border of the July fill by a steam line that issues from a white salt-incrusted area.

April 22
3 p.m. Light rain with but little wind. Pit so full of steam that seeing into the pit was very poor. Small avalanches heard from N. wall. H_2S faint.

April 24
5 p.m. Occasional rock falls heard. Dense steam was rising from restricted area a little way up the S. talus.

April 25
11 a.m. Pit quiet. Steam abundant from the usual vents.
The white salts deposit around rim of pit very noticeable. Such an effervescence is common after a rainy spell. The salts that are bleached out by the rain and ready to be carried down by more rain are rendered visible by dry weather.

April 27
3 p.m. East wind blowing and pit partly obscured at times with steam. Small rock falls heard occasionally. Odor of sulphur noticeable.

April 28 The spicy odor of free sulphur very pronounced. There was but little steam escaping from the lower half of the line that leads up the SW. talus, though steam was abundant from the upper half. The lower half seems to have a heavy deposit of salts.

April 30
3 p.m. Pit quiet. Walls all red except at N. and W. intrusives. Avalanche material all wet except upper center of steam line in SW. talus, which was dry.

R.H.F.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day	Saturday	Date	May 2, 1925
	Tuesday		" 5, "
	Wednesday		" 6, "
	Monday		" 11, "
	Tuesday		" 12, "
	Wednesday		" 13, "
	Friday		" 15, "
	Sunday		" 17, "
	Monday		" 18, "

May 2
3 p.m. Very heavy steam cloud rising from S. talus.

May 5
4 p.m. Odor of H_2S faint but noticeable 700 feet back from rim. An avalanche of considerable size had recently fallen from above E. end of North intrusive. May not some of the H_2S come from such a place where the rock is greatly decomposed?

May 6 High humidity though but little steam visible above pit rim. One steaming place far up on the W. wall S. of place from which blue fume escaped in fall of 1924 was quite conspicuous. Strong indraft to pit at S. rim despite moderate NE. wind, as though pit were hotter than common.

May 11
3 p.m. Pit quiet. There were signs of recent small avalanches from N. wall.

May 12
3 p.m. Considerable steam from floor. No odor of sulphur nor H_2S detected. There were signs of recent avalanching from N. wall. A small round hole was noted in NW. wall above horn of N. intrusive body.

May 13
11:06 a.m. Avalanche from NE. wall. A bowlder was found with considerable free sulphur in and on it, as well as an aglomeritic layer of gravel.

May 15
5 p.m. Cracks back of S. rim show evidence of having moved probably with two earthquakes at 6:29 a.m. and 7:03 a.m. May 15. Small avalanches had recently fallen from N. wall.

May 17
4 p.m. Pit quiet. Faint odor of H_2S perceptible at times. Abundant steam rose from the pit, especially from a place a little way up S. talus.

May 18
2:40 p.m. An avalanche was noted at 2:40 p.m. from NW. wall. Small avalanches were frequent and all walls contributed to the number, though most were from the N.

R.H.F.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day Saturday Date May 23, 1925
Sunday " 24, "
Monday " 25, "

May 23 Small avalanches occasionally from all sides of the pit. Faint odor of H_2S at N. rim.

May 24
11 a.m. Pit quiet. Rock falls heard occasionally. The steaming vent in S. talus appeared much the same as other vents in the taluses or on the floor.

7:30 p.m. A faint rather whitish light was noted in the direction of the pit. It proved to be due to a burning house in Pahala.

May 25 A small avalanche had recently fallen from the center of the N. intrusive. A peculiar odor was noticed that could not be identified. It slightly resembled the odor of free sulphur, but was more like the odor of fresh lava.

R.H.F.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day		Date	
	Monday	June	1, 1925
	Thursday	"	4, "
	Saturday	"	6, "
	Sunday	"	7, "
	Monday	"	8, "
	Thursday	"	11, "
	Saturday	"	13, "
	Sunday	"	14, "
	Monday	"	15, "

June 1

Occasional rock falls heard. The cracks back of S. rim have been moving.

June 4
4 p.m.

An avalanche that caused considerable noise and sent up a small dust cloud fell from W. end of N. intrusion at 4:05 p.m. Rainy day. Steam abundant in pit.

June 6

Pit quiet. Small avalanches heard occasionally.

June 7

Avalanches larger and a little more frequent.

June 8
4 p.m.

Small avalanches, mostly from N. wall. It was from this wall that most of the avalanches fell on June 7.

June 11
4 p.m.

Pit quiet, only rock falls were heard.

The old ash beds at base of Uwekahuna bluff are still well exposed in places. The formations on this wall indicate a rise of lava in a fissure parallel with the W. wall of Kilauea N. of Uwekahuna. The fissure was later disturbed by collapse of the inner wall into Kilauea.

June 13
10 a.m.

Pit quiet, though it was apparent that there had been considerable avalanching recently.

June 14
2 p.m.

Brisk wind blowing. Considerable dust was in motion in Kau Desert and occasionally dust clouds rose from crater floor in vicinity of Halemaumau. A small avalanche fell from SE. wall. The walls at E., N. and NW. showed scars of avalanches that fell since the morning of the 13th.

June 15
Forenoon

Heavy dust clouds in desert, and small ones on S. end of crater floor. The dust clouds in desert reached to considerable elevation, certainly 500-600 feet.

The fume cloud above Mokuaweoweo can now be seen as early as 2:30 p.m. on clear afternoons.

R.H.F.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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JOURNAL

Day Tuesday Date June 16, 1925
Thursday " 18, "
Saturday " 20, "

June 16
10 a.m.

Pit quiet. Floor vapor abundant. Small rocks fall occasionally.

June 17
3 p.m.

Pit quiet. The odor of H_2S faintly noticeable.

June 18

Two avalanches during the day sent dust clouds well above the rim. They fell from N. wall above end of N. intrusive.

R.H.F.

June 20
10 a.m. to
12:15 p.m.

First visit of TAJ to pit in two months. Note increase of greenish yellow stain on bottom lava east side under the sulphur patches at base of talus.

Wall working steadily N. and NW. Has been peeling near the NW. talus. Slides every 10 to 15 minutes, mostly NW. Some from head of NW. talus, some from upper wall farther N., some from gulch over W. end N. sill. Striation of dust cascade on bulge of wall N. of NW. talus. This dust cascading is continuous.

The avalanching NNW. increased from 10 to 11:30, a number of the slides making cauliflower clouds, brown and reddish. There was some alternating of slides N. and NW.

At 11:40 came an immense avalanche NNW., tumbling its debris on to the lower part of the NW. talus above the W. pocket. It made a half ring of cauliflower across the bottom of pit fanning out horizontally, and a deep thunderous roar. This was all part of a process of undermining going on during the morning, reaching its maximum near noon, and the day representing the solstice.

At 11:50 a.m. came the grand climax in an avalanche that stripped the whole NW. wall up to the top, from the postal rift gulch to the two tubes in the upper wall farther N, a width of 200 feet.

The cavernous entrances of the two tubes were entirely changed and a slab of wall rock fell away for some distance back of the rim. There was an enormous rumble, the whole bottom was filled with cauliflower clouds, sliding continued for 10 minutes, the pit remained partly obscured by dust for a half-hour. The sulphur stain at the east was obscured by new red dust.

This avalanche was the biggest since November 28, and it was difficult to believe that some process was not operating to control its occurrence just at noon on the solstice. The day was sunny, warm, and with SE. light wind and cloudy spells.

Small slides from time to time seen from H.V.O. during the day. The big slide and others registered on seismogram.

T.A.J.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day Sunday Date June 21, 1925
Wednesday " 24, "
Thursday " 25, "

June 21

Some avalanches making dust seen in forenoon. Took car to Koa clump and region N. of Puu Ohale. Found ENE. chasms and cracks trending along ridge tops straight toward Puu Koae and cone craters. Wide rift belt here making an angle with the 1868 cracks.

June 23
9:45 to
10:45 a.m.

Pit very still. Scar of Saturday's avalanches in wide zone from NW. talus upward. That wall sliding every 10 minutes more or less, but very small slips. Ledge with deep niche at old talus section top of NW. talus.

Can now see some sulphur stain E. floor and talus. Some steam over crater evenings. Steam in small amount NE., N., E., SW., and S. taluses; hot dry solfataric patch S. talus, steam around front of gravel lobes bttom terrace, densest mass of steam at W. pocket and base of NW. talus; i.e., at foot of avalanching region. Wet spot steaming in upper wall NW.

At 11:40 a.m. a red avalanche cloud was seen to rise from the NW. corner of pit.

5:40 p.m.

At 5:40 p.m. another cloud of avalanche dust rose over W. side of pit.

June 24

Occasional small rock falls W.

2-2:30 p.m.

New talus heaps in two places NE. and corresponding fresh wall notches above. One of these under the high peeled region E. of the big dyke appears to be undermining the wall above as though more might fall soon. The new debris is gray and has been stripping the columnar part of the N. sill.

There are four caverns in wall near top just N. of postal rift trench in the area stripped by Saturday's avalanche. Day windy and dry with some whirlwinds on edge.

2:34 p.m.

A small avalanche NW. at 2:34 p.m.

June 25
10:30 to
11:30 a.m.

Pit quiet. NE. talus appears slightly rearranged. A little sliding heard NW. West pocket has the most steam. The red ledge two-thirds the way down SSW. wall appears to be an old wall-crack veneer. There is now a devinite U-shaped unconformity at the niche at the top of the NW. talus.

T.A.J.

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Day Saturday Date June 27, 1925
Monday " 29, "
Tuesday " 30, "

June 27
10-11 a.m.

A little sliding from N. side of W. boss. Remainder of bottom shows little that is new. With field glass make out what a jumble, shot with intrusions and some bowlder-like protuberances, are the red bosses NE. and W. The ledge under the old talus section top of NW. talus appears to be an old wall-crack veneer. There is one veneer vertically striated above E. part of N. sill, and a similar shoulder E. and W. of SW. tunnel, and at high WNW. niche. There are 5 dykes in the zone of SW. tunnel, mostly W. of it. The S. side of NW. talus, front of gravel terraces on floor, steaming wall high NW., and top of northern taluses are wet with steam: Not so the steam patches E., S., and SW., which are dry. Freshest sulphur is in the high ENE. talus.

T.A.J.

Airplane trips were made over Pune by R.H.Finch and John B. Stone (of Yale and Bishop Museum). No lava was observed along the NE. rift except at known localities. Dead trees along one crack indicated an increase of steaming similar to that observed at Aloi Crater.

R.H.F.

Montana earthquakes occurred the afternoon of this day.

T.A.J.

June 29
10 a.m.

Dry sunny day. Much NE. wind, dust whirls on SW. edge of pit and in desert. A little slipping of rocks in pit. Two sulphur patches more conspicuous than 2 days ago, one near base of SW. talus, the other on lava floor at center of pit. No steam detectable at either place. The one in center is whitish like yellow stained alum. The SW. one is bright yellow. The E. sulphur patches are dim with dust.

Santa Barbara quake this a.m.

T.A.J.

June 30
9 a.m.

After rainy night vapor cloud over pit, tails of dense steam on bottom, walls wet and brick red, the two sulphurous patches now steaming and partly obscured. Although drizzling, slides of small size heard NE. and N. Transformation of bottom by rain rapor remarkable. W. pocket has hundreds of tails of white vapor; much in center, NE. talus, S. talus. Less at N., E., and SW. taluses. S. talus appears hottest and bluish at base of jets. N. sill and W. boss are the driest rock surfaces. No blowing noise in quiet spell.

T.A.J.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day		Date			
	Wednesday		July	1,	1925
	Friday		"	3,	"
	Saturday		"	4,	"
	Sunday		"	5,	"
	Tuesday		"	7,	"
	Wednesday		"	8,	"

July 1
9:15 a.m.

Drizzle in the night. Sunny morning. Drier weather and less vapor jets. The lower stain of SW. talus is whitish now instead of yellow as on the 29th. Central stain patch steamy still. Pit is rather quiet through 10 minutes. The W. end of N. sill has caved away in the last 3 months, so that no longer can the vertical slide groove be detected there.

T.A.J.

July 3
5 p.m.

Small rock slides were heard from the vicinity of the SW. cavern. White deposits were noted on the NE. and NW. walls.

R.H.F.

July 4
11 a.m.

Pit dry, little steam; NE. wind. Bright day. Salts a little more yellow. Remarkably little vapor on S. talus. More at W. pocket. Rocks sliding a little W. and NW. NW. and NE. talus wet and also high NW. wall. White stains on S. and NE. walls. No vapor whatever over pit. Some at outside cracks E., NE. and SW.

July 5
11 a.m.

Although air is dry, sky cloudy, the vapor on bottom of pit is denser than yesterday, chiefly W., center, S., and SW. Very little rock motion. The S. talus has dry streak up middle, wet on both sides.

July 7
Noon

Drizzling. Chief steam at W. pocket and S. talus. Whitish salts at wall base SE. reappearing; a similar bank of solfataric wall steaming has appeared next W. side of SW. talus high up, adjacent to S. side of W. boss intrusive. Stones heard falling N. and NW. A little fresh debris NE. talus.

July 8
2:20 p.m.

One small avalanche NE. A fresh scar and talus over the columnar part of N. sill (NE.) probably an avalanche that made quake about 6 a.m. That wall and NW. wall now working. Cloudy day, steam dense at E. rim cracks and mod. dense in pit.

T.A.J.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

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Day Friday Date July 10, 1925

Monday " 13, "
Tuesday " 14, "
Wednesday " 15, "

July 10

2 p.m. Several avalanche dust clouds observed during the day. At about 8 a.m., 11 a.m., and 2:15 p.m. the dust clouds rose well above the pit rim. A small one was observed from the W. niche

2:30 p.m. at 2:30 p.m. There was a small yellow patch on the NE. wall to the E. of northern dyke.

R.H.F.

July 13

4 p.m. With Congressional party at pit.

Pele's Bathroom cavern rather cool of late.

Avalanche NE. side of pit from upper wall to columnar part of N. sill. Pit bottom unchanged. Not much steam.

Note hot steam up cracks of 1919 lava; is this 1919 heat?

July 14

Noon Dry and sunny. Dust whirls in desert. At 8 a.m. a small avalanche was seen under high part of Uwekahuna.

Pit walls working a little NW. and NE. Crack across bottom lava extending W. from E. sulphur patch; another to NW., as though E. sulphur location were swelling up. Not sure whether these cracks are new.

Very little steam at S. talus and center; more at W. pocket. At rim steam shows a little NE., E., and SW.

July 15

7:20 a.m. An avalanche was seen from south part of Uwekahuna Cliff. Others were seen yesterday afternoon.

8:05 a.m. An avalanche cloud rose NE. side of pit.

9:00 a.m. Avalanche same place as 7:20, S. end Uwekahuna.

2:30 p.m. Wind S. with calm spells. New avalanche debris and red dust on NE. talus from more caving of E. end of N. sill. A little rock falling N. Cloudy. Vapor at usual places and blue fume at E. sulphur patch on floor and E. edge of center steam. No blowing noise. Whole N. talus and some of N. floor red with fresh dust. A little sulphur odor SE.

T.A.J.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day Thursday Date July 16, 1925
Friday " 17, "

July 16
10 a.m. to 12 noon

Walked around pit. Much gone from NW. edge. Sulphur stain in steam patch on W. side of S. talus. Sulphur stain brighter on floor. Very little steam; dry weather. Small dusty slides from new avalanche place S. end of Uwekahuna and wall stained with streak of new ash. Hot steam near edge NW., NE., SW., and E.

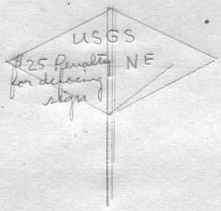
6:15 p.m.

Avalanche noise and dust at pit. Remarkable number of red fragments in 1924 debris.

T.A.J.

July 17
3 p.m.

Pitting up new trig stations around pit, eight of them, pipes with diamond-shaped galvanized iron places 22"x12" marked:

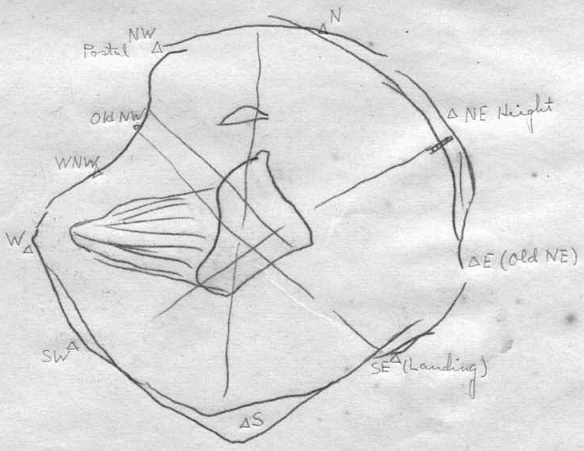


As conditions are new stable, and a new transit (Gurley U.S.G.S.) is available, propose to resurvey outline of pit, and with cirkut photographs to record details of wall.

Note one avalanche 4:15 p.m. from brick red patch in NE. wall at lower end of fossil talus section over W. side of N. sill. The avalanche made a rose-colored cauliflower cloud, and left a rosy streak; a really remarkable color.

Occasional small slides including one from SE. wall, which is unusual. There is a distinct massive intrusive body showing from under edge of S. talus. Much has peeled from the region of SW. caverns changing form of entrances. Some blue fume in steam of S. talus.

Sketch of trig station locations:



DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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JOURNAL

Day Saturday Date July 18, 1925
Monday " 20, "
Tuesday " 21, "
Wednesday " 22, "
Friday " 24, "

July 18
9:30 to
11 a.m.
5:30 to
6 p.m.

Put up SE., E., NE., and N. stations. Small slides N. and NE. Sulphur stain appearing increasingly yellow E. side floor and SSW. talus.

In late afternoon remarkable cloud over Mauna Loa with fringes like a shower, but with milky fume above. Cleared away at sundown showing only the usual fume over Mokuaweoweo. Appeared a convectional rain cloud mixed with fume.

July 20

Set all flags.

The NE. station was carried away by heavy avalanches during the night 18-19 July, when there were big avalanche type earthquakes recorded. That wall is now stripped up to the top. Alec (guide) reported avalanches NE. at 8 a.m. of the 19th.

11:30 a.m.

This day an avalanche NW. talus at 11:30 a.m. and a few trivial slides N. and NE.

The bottom is dusty from the recent slides. There are no other marked changes.

Shall place nine stations to cover the important parts of the pit rim.

July 21
4 p.m.

A little rock movement NE. and NW. Bright afternoon. Little vapor, that at W. pocket showing most. The avalanches of the 19th dusted the E. and N. taluses red, and the bottom area, and covered with dust the new sulphur stains and sulphate stains.

Flags show plainly in the sunlight.

July 22
11:30 a.m.
to Noon

Slight sliding NW. and NE. No changes on the bottom. Much dust on the bottom. Blue fume at the sulphur patch on east lava floor.

T.A.J.

July 24
5 p.m.

A hair-line crack was observed across the road and for a short distance on each side near auto parking place. Vapor from rim cracks abundant. There was less vapor in the pit than when last observed under similar conditions about a month ago.

Heavy dust clouds in the desert.

R.H.F.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day Monday Date July 27, 1925
Tuesday " 28, "
Wednesday " 29, "
Thursday " 30, "

July 27
10 a.m.

Avalanche at pinnacles E. of S. station at 10 a.m. and at 10:15 an avalanche NE. Some rock motion at other times. Otherwise pit very quiet.

Set up new flags NE. and NW., and flagged Oliver Emerson's NW. station. Flagged Wilson's stations "Beggar" and "Spit." Drew a plat of stations Spit, Beggar, N. Rim, S. Rim, 250' to 1 inch.

July 28
11 a.m.

Flagged Wilson's stations west of Kilauea "N. Rim" and "S. Rim." Now have the Wilson net around the pit and 10 stations on pit rim, with Emerson's stations S. and NW. still persistent from July, 1924.

Rainy day, cascades of mud at Uwekahuna. Vapor cloud over pit. Roar of rain on Uwekahuna about noon. No rain at Observatory.

July 29
8:45 a.m.

Walls red from heavy wetting with rain. N. sill and W. boss intrusives drier. Fresh heavy aval. material lies dry on NE. talus under middle N. sill W. of big dyke. Straight joint, vertical, and parallel to dyke, borders the break in wall from which the avalanche fell. This wall break is dry and the stripped area is a vertical band extending half-way to top from the sill. At 9:15 another fall here athwart the red deposit making red dust.

Small falls heard at NW. and SW. The SW. fall sounded as tho inside SW. tunnel. The seismogram showed a quarter hour of harmonic tremor last night. Is the SW. rift working?

A yellow patch is developing in high N. wall W. of N. gulch over sill; possibly the former fume patch. Steam abundant in bottom today.

T.A.J.

July 30
4 p.m.

Pit fairly quiet. Some small slides. New falls on NE. talus. White stain looks fresh on E. side of floor.

T.A.J.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

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Day		Date	
	Saturday		August 1, 1925
	Sunday		" 2, "
	Monday		" 3, "
	Wednesday		" 5, "
	Thursday		" 6, "
	Friday		" 7, "
(1)	Sunday		" 9, "

August 1
10-12 a.m. Strong NE. wind. Dust blowing all over crater and desert. No big slides observed. Inspection from S. end Uwekahuna. Here there are many large fragments and impact pits of 1924 baked olivine rock, etc.

August 2
10 a.m. No changes in pit, and only one slight movement of rock heard.

August 3
9-12 a.m. High wind, but little movement in pit. One slide heard. No marked changes. The sulphurous side is clearly S., SSW., and SE. There is a whitish patch at top of steaming area on S. talus.

August 5
2 p.m. No change. No slides.

August 6 Pit much the same. E. floor sulphur and E. talus sulphur a little more in evidence. Went to desert crack of 1920. Surface ash of 1924 is washing much thinner than at first.

August 7
7:30 a.m. Avalanche cloud rose over pit.

August 9
9:30 to
11:30 a.m. A big aval. cloud reported in morning.

In face of wall under NE. station there is a vertical half-shaft or groove stained with sulphur, of arc curvature in plan, like a shaft revealed by the breaking away of the wall.

W. of here on NE. wall there is the notch made by the caved upright cavern; below this at the lowest sag of N. sill, where the red deposit overlies the sill, there is the largest fresh break in the present pit wall. This is a clam-shell scaled-off place extending nearly half way to the top of wall from top of sill. Below is a conoid of fresh talus in large blocks reaching half-way across thickness of sill. Talus all around is reddened with dust of these falls.

During two hours 8 slides of small size, the two largest from red upper part of W. boss; 4 from middle and W. of N. sill; 2 from S. corner of pit. The activity of sailors and others in throwing down bowlders has finally dislodged the balanced bowlder of S. pinnacle just below S. rim.

August 9
(Cont'd)

A sulphur spot and whitened area base of E. talus are getting brighter. Vapor is thin and from usual places. As it is a calm morning, noticed noisy whirls on SW. rim making blowing noise, mere whirlwinds at hot cracks; these noises must not be mistaken for blowing in the pit.

Note: There must be correspondence between the talus conoids and the bays in the rim.

Thinking of the stages represented from inside pit outward, we have something like following diagram:

Dome in dome structure

3 - greatest instability
" heat
" rise or fall
shortest seismic intervals and least intensity
2 - less, and longer intervals and greater "
1 - under sea still less and longest intervals and greatest intensity.

Is the whole sea-floor a large mare dome?
Is the moat around Hawaii an outer engulfment rim?
What relation between frothing and gravity gradient?
For measurement of ground temperatures in many places, why not a soil auger operated by Ford truck and belt; take 1 ft. depth across 1924 ash south side Kilauea floor and across desert rifts. Marryman of E.J.Lord told me yesterday the ground is warm at Bird Park.

T.A.J.

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Day Monday Date August 10, 1925
Tuesday " 11, "
Wednesday " 12, "
Thursday " 13, "
Sunday " 16, "

August 10 Followed trail to pit. Until 1921 lava was reached there was very little left of 1924 ash, only small patches in cracks. On the 1921 lava within one mile of pit the ash covering was more general and up to a few inches in thickness, but increased rapidly on approaching the pit. Not lost its original buff color.

3:30 p.m. Arrived NE. side of pit. Heard a slight subterranean sound under me and a few rocks fall. Felt no quake.

All the taluses inside the pit have increased. The cone of July, 1924 is covered and a great part of the floor as well. The E. side of the floor appears to have been rotted by a solfataric action, but as a whole the solfataric action and deposits are slight. The whole interior of the pit is stained with Fe_2O_3, and many shades are as beautiful as in Waimea Canyon, Kawai.

Occasional small rock falls; pit generally extremely quiet.

In view of the overcast condition of afternoon and dampness, there appears to be little steam rising. It rises from many small sources, most of which are on the floor and taluses. No audible hisses. The afternoon is very calm. Occasionally a slight odor too weak to be recognized. Pit appears very much cooler than last July.

Small patches of solfataric stain, green, on SE. side of pit, and white over NE.

O.H.E.

August 11 3:30 p.m. No slides seen. N. talus appears to have been added to. No other marked changes.

August 12 Pit very clear. No change reported.

August 13 3 p.m. The niche over NW. talus is without its former overhang that made it a kind of cavern, and the talus shows fresh debris. Otherwise there is no change. A little sliding at W. boss.

August 16 3:30 p.m. Rainy. No slides. Pit quiet. Usual steam.

T.A.J.

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	Monday		August 17, 1925
	Tuesday		" 18, "
	Wednesday		" 19, "
	Friday		" 21, "
	Saturday		" 22, "
	Tuesday		" 25, "
	Thursday		" 27, "

August 17
Forenoon — Pit very quiet and dry. Hardly any steam shows on S. talus. From NE. the upper tunnel in SW. rift appears more filled up in its bottom part than formerly.

August 18
5 p.m. — Pit quiet. Fresh white sulphates steaming in middle of bottom. No signs of very fresh aval. talus. Other steam on bottom and edges as usual. Smell of sulphur at SE. edge.

August 19
2:30 p.m. — Some light sliding during a quarter hour heard twice at the NW. wall. Fresh stripping up and down W. wall over N. end of W. boss. Fresh white stains on NE. wall and S. side of W. boss. Little bottom steam except at W. pocket.

August 21
10 a.m. — No slides heard. Pit dry and still. This gives one the impression of being the most motionless time since the explosive eruption. No observable changes.

August 22 — Pit quiet. Yellow sulphur spot growing brighter at base of E. talus.

T.A.J.

August 25.
10 a.m. — Pit walls quite red. Steam abundant from pit so that it was quite perceptible above rims.

R.H.F.

August 27
2:45 p.m. — Rainy and steamy. Steam heavy on NE. talus, as well as S. talus and W. pocket and center floor. W. pocket makes many little tails of steam, S. talus large mass of vapor and some blue sulphur smoke. Blue fume also at E. edge of floor. Elsewhere blue fume not seen. Single rocks dropping toward W. Walls red after rain.

T.A.J.

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Day Saturday Date August 29, 1925
Sunday " 30, "
Monday " 31, "

August 29
2:45 p.m. There is fresh debris on the talus slopes NW., N., and NE. First two red, latter gray from the columnar part of the north sill. Higher NE. above the sill bend there is a remarkably oxidized brick-red area. Some rocks now falling NW. The niche above NW. talus is extending itself into an upward directed cavern northward.

August 30
2:30 p.m. Pit quiet. SW. and NE. taluses seem to be growing. Some isolated small slides.

August 31
2:30 p.m. Little change except individual stones perhaps on the NE. and NW. talus heaps. Considerable steam from face of high NW. wall. Rocks moved on the northern walls a little. A spot growing yellow and looking hot at rock ledge top of S. talus.

T.A.J.

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Day		Date			
	Wednesday		September	2,	1925
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	Sunday		"	6,	"
	Wednesday		"	9,	"
	Friday		"	11,	"
	Saturday		"	12,	"
	Monday		"	14,	"

September 2
2:15 p.m.

Pit dry and quiet. A little rock slipping over W. talus. SW. rift talus has an upper layer fresh, but not very fresh. No chanbe in northern taluses. Most steam at W. pocket.

There were 12 spasmodic tremors last night, but they do not appear to have been made by avalanches.

September 3
10-11 a.m.

Pit quiet. A few rocks fell. Vapor along S. side of dry patch up and down S. talus.

September 6

No change except that in sunlight the fume on S. talus looks blue and sulphurous in marked contrast to lustre of white vapor at W. pocket.

September 9
9:30 a.m.

Some very small slides. Dry weather, and the south talus fume is hardly visible. A little fresh debris on northern taluses. The region under NE. station is somewhat stripped.

September 11
11 p.m.

About 11 p.m. and again later avalanche noises were heard from the pit.

September 12
10:30 to
11:30 a.m.

NE. wall is working, and is avalanching. A large slab at top near NE. station appears ready to fall; notches working on both sides. Two slides in a half-hour (10:30-11), and later at 1:45 p.m. a larger slide sent up a dust cloud. The seismogram this day has three distinct aval. tremors.

Very hot, 80°; sultry. Thunder p.m.

September 14
3 p.m.

Saw dust rising above NE. wall. No slides during stay at pit 15 minutes. More rock has fallen from loose slab NE., but not the whole slab. Pit very clear, still and dry.

T.A.J.

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Day	Tuesday	Date	September	15,	1925
	Wednesday		"	16,	"
	Saturday		"	19,	"
	Tuesday		"	22,	"
	Wednesday		"	23,	"

September 15
9:15 a.m. Pit still and dry. Main steaming at W. pocket. A little sliding from rounded shelf W. of SW. lower tunnel. Almost no steam beside a large dry streak in S. talus. White salts again on bank at base of SE. wall. Vertical striations up and down two-thirds of SSW. wall.

12:50 p.m. Avalanche dust seen at pit.

September 16 Pit tranquil. During two hours work along E. edge heard no slides. No change in bottom. The morning light shows vertical grooving up N. wall like that observed yesterday SSW. This grooving is probably a striation due to past slides; the slides tend to fall for weeks in the same places and so mill the walls vertically. Oblique light brings out these millings.

September 19
4 p.m. New notch in wall next adjacent to and W. of W. horn of N. sill; fresh red debris below. After drizzling rains steam has returned to S. talus. Blustering cloudy weather, strong N. wind.

September 22
9 a.m. Pit still and sunlit. Vapor abundant at W. pocket. Vapor bluish at rock cracks at base SSW. wall, alongside of W. slope of SW. talus. Two slides N. and NNW. generated by soldiers throwing bowlders over the rim; one of these big enough to make dust cloud above rim.

1 a.m. An avalanche was heard.

September 23
9 a.m. New dry debris on W. side of N. talus. These fragments appear to have come from the west horn of the north sill, for the rock of the horn is broken in and freshly shaped.

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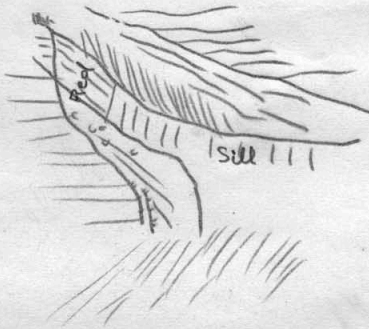
Day Thursday Date September 24, 1925

September 24
8:45 a.m. Saw dust cloud from considerable N. avalanche at 7:50 a.m. An avalanche roar last night about 9 p.m. At 8:50 a.m. saw considerable avalanche over W. end of N. sill. Wall freshly stripped, all the way to the top at gulch W. of N. station. New red dust on NW. wall and the taluses. Rock next to W. horn of sill very red. Wall N. continues to work.



Sketch of W. end of N. sill.

9:20 a.m. A fall occurred from very top of wall W. of N. station. Red cauliflower dust cloud.

T.A.J.

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Day Saturday Date September 26, 1925
Sunday " 27, "
Wednesday " 30, "

September 26
9:15 a.m.

At 9:20 and thereafter slides at N. under gulch W. of N. station about top of upper talus over W. horn of N. sill. One avalanche quite strong shows vertical columns of dust like Maehara's pictures of May 18, 1924. All the rocks fall clear below top of sill, showing that it overhangs. The vertical dust columns made by train of dust as individual streams of bowlders fall clear and entrain clouds with them. This explains the photos; streams of falling bowlders in individual jets. At the bottom a big cauliflower would boil out on the talus as all the streams hit. No other changes; 15 or 20 minute spells without the walls working.

10:10 a.m.

Dust from NE. corner of pit; 10:45 big avalanche N. At 1:25 another dust cloud.

T.A.J.

September 27
9:30-10 a.m.

Only one small slide N. Pit still and shows no significant change since yesterday. Vapor on bottom at W. pocket and S. talus; elsewhere slight. Red dust on talus NW. and N. Yellow spot in high N. wall appears solfataric, revealed by slides; no fume, however. The vertical striations in pit wall revealed in oblique sunlight are not all due to sliding, but partly due to natural columnar tendency of all the flows, with column joints vertical.

T.A.J.

September 30
2 p.m.

Rainy, humid day, with abundant steam in Halemaumau. Walls were bright red in spots, showing that light rains bring out the redness at only favorable localities.

R.H.F.

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Day		Date			
	Saturday		October	3,	1925
	Wednesday		"	7,	"
	Saturday		"	10,	"
	Wednesday		"	14,	"
	Thursday		"	15,	"
	Saturday		"	17,	"

October 3
10 a.m.

Evidence of more small avalanches seen at SW. rift chasm. No avalanching was observed.

October 7
9 a.m.

Small rock falls heard from N. wall. About half of the steaming vents in Halemaumau appear to be dry, as though the visible vapor were live steam while the borders of the other half appear damp.

October 10
11 a.m.

Pit quiet without sounds of rock falls even.

October 14
8 a.m.

Occasional rock falls heard. Walls very red. The thick massive flows and the gray intrusive remain gray. There was a faint bluish haze in the pit apart from the bluish appearing steam jets where the background was dark.

October 15
2 p.m.

SW. winds. The entire mountain top in diffuse bluish haze. The blue haze was especially noticeable in Kilauea Iki. Fog drifing in from SW over Halemaumau. Floor vapor from pit usual and evaporated a short distance above place of issue. Condensation of vapor began about 400 feet below rim and made dense clouds at rim level.

October 17

Small rock falls heard. Much of the redness of the walls had disappeared.

R.H.F.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day Saturday Date October 24, 1925
Sunday " 25, "
Tuesday " 27, "
Wednesday " 28, "

October 24
9:20 a.m.

During an inspection of 20 minutes at SE. edge of pit, with light drift of wind from SE., no single pebble fell in the pit for 15 minutes. Then there were some very light falls at the N. gulch.

The walls are red and wet after rain. The notably dry places, probably hot, are the NE. sill, yellow spot high N. wall, upper middle streak in big W. talus, several streaks in S. talus, lower bench SSE. wall, spots in decomposed wall ENE.

Under the W. horn of NE. sill recent falls have developed a cavern directed tangentially westward. There is fresh red fine debris on talus in N. corner. Fresh red debris is also on high talus cone under middle of NE. sill; this conoid merges with a gulch there leading down from the red spot at base of the fossil talus slope that overlies the sill, western half.

Steam at W. pocket, center, S. talus, and scattering elsewhere. Damp morning. The auto exhaust nucleates much vapor at road terminus. Much vapor over pit and crater floor.

October 25
9:45 a.m.

Note long, dry, hot streaks with steam rising above W. pocket in S. side of NW. talus. Ground on S. side of W. boss also is dry. Much white and yellow salt.

October 27
10-12 a.m.

Several small slides chiefly at N. corner of pit. Vapor on bottom at usual places. Walls very red after rain.

After a thunderstorm yesterday afternoon, very high cumulus over pit, and hundreds of tails of vapor from Kilauea floor converging to the hot convection cloud at pit. Now nucleation of vapor N. of pit with S. wind.

October 28
11 a.m.

Pit dry; NE. wind. Maximum bottom vapor at W. pocket and NW. talus. In general the recent sliding as shown by fresh material on the taluses has been mostly N. and NE. This forenoon there is a little rock slipping above the big W. talus and at the N. The N. and NE. walls show fresh peeled areas N., NNE., and NE.--all along the wall above the big sill. Otherwise conditions are very quiet.

T.A.J.

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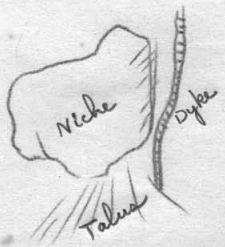
DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY
Hawaiian Volcano Observatory
Day Saturday Date October 31, 1925

October 31
9:45 a.m.

Rocks in motion N. and W. At 7 a.m. there was dust in the pit; N. corner shows large amount of fresh red debris and dust on talus and the cavern near bottom recently noted has fallen away. A cove of massive gray rock now shows in NE. sill where the vertical laminations are, surrounded by them. The high talus cone at middle of sill has been fed from a niche bounded on the E. by the rift dyke, so that the protruding corner of rock that ends the niche is straight and vertical.

T.A.J.



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Day	Monday	Date	November	2,	1925
	Tuesday		"	3,	"
	Thursday		"	5,	"
	Monday		"	9,	"
	Thursday		"	12,	"

November 2
3 p.m.

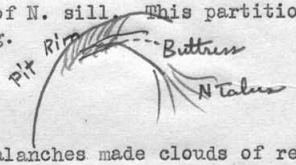
No change and no slides seen. Some dust before and after at N. side.

November 3
3 p.m.

For 20 minutes there were occasional slippings of rocks from the walls SW., NW., and NE. The slips were so small that the rocks falling could not be detected by eye, but the noise was almost continuous for minutes at a time.

The steam at W. pocket is more vigorous in its rising as separate tails, than the idle steam at S. talus. The vigor of the steam on W. slide is intermediate. Sulphur stain at E. talus is no longer bright or quick forming, though there is tendency to yellow color there and on E. floor.

There is a considerable buttress, sharp edged, where the wall has fallen away below W. horn of N. sill. This partition stands out chordally to the pit ring.



November 5

At 9:30 a.m. and 10:26 a.m. avalanches made clouds of red dust from N. side of Halemaumau.

2 p.m.

Went to pit 2 p.m. Rainy. Saw and heard northing. Quiet vapor rising.

November 9
2 p.m.

Drizzling. Pit shows fresh red and gray debris on N. talus and a little fresh gray on NE. talus. A solfataric spot above middle N. sill. NE. wall and taluses below are fresher than anywhere, and the gray fragments mean the sill itself is always peeling. Is it perhaps squeezing out and scaling off through all these months?

November 12
2 p.m.

Fresh talus under W. horn of N. sill. Gray and red debris. In a half hour two spells of sliding at N. corner.

T.A.J.

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Day Saturday Date November 14, 1925
Tuesday " 17, "
Saturday " 21, "
Sunday " 22, "
Tuesday " 24, "

November 14
3 p.m.

Pit the same as the 12th. High NE. wind. Wet, much steam; Roaring noise from wind in outside steam cracks.

November 17
2-4 p.m.

With J. B. Stone to pit and Daly laccolith. Pit the same except for odor H_2S noticed at NE. edge. N. wall at contacts of W. horn of NE. sill is caving away so as to cut away the shelf that formerly made a gulley above the horn.

At Daly laccolith, climbed up gulch. Contact on W. side of part of the intrusive is vertical. Looks like a slag heap laccolith contemporaneous with the beds a few feet above it. Higher the lava flows bank horizontally against its curvature. Bottom contact breaks across strata.

November 21
10-12:30 p.m.

Three slides heard during forenoon. Otherwise pit very quiet and unchanged.

November 22
10 a.m.

No slides. Pit quiet. Some dust seen over pit at other times.

November 24
9:30 a.m.

Pit shows nothing new. Some dust from avalanches in afternoon. The north wall is changing its detail slightly with continued slides, with continued slides. The N., NNE., and NE. taluses are becoming conoids of some considerable height.

T.A.J.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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JOURNAL

Day Wednesday Date November 25, 1925
Saturday " 28, "
Monday " 30, "

November 25
2:15 p.m.

One small avalanche middle N.E. wall, and two small slides N. and W. heard in 15 minutes.

Abundant blue smoke mixed with the steam at S. talus. Cloudy and damp. New material on northern taluses.

T.A.J.

November 28
12 Noon

Only change noticed was that the poised slab of rim E. of NE. sta. has fallen and a piece of it lay on top of talus below. The rim there no longer appears so cracked as before.

Vapor moderate. Sulphur E. side of floor increases very slowly now; there is usually no vapor there.

T.A.J.

November 30
3 p.m.

With A. Lewis. A very slight trickle of stones heard once. N. wall has peeled slightly and N. taluses are fresh, but there is nothing in the crater to check with the coming on of strong NE. tilt that appeared on the seismograms. This has accompanied sudden change to colder weather.

T.A.J.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day Thursday Date December 3, 1925
Friday " 4, "
Saturday " 5, "

December 3
9:45-10 a.m.

Wind SSE. Notice the actual wall rock wet and steaming above the talus near top of NW. slide, at E. end of NE. sill, at base of SW. rift dyke both sides, and along base of SE. wall.

Four slides in a quarter hour, N, SW., and W. Two of these from the SW. rift belt. The slides were small, but made trails of rock and dust, and started suddenly from high up the walls. The walls are much more in motion than at any time recently. There is red dust on floor and new debris on northern and western taluses. Trickle cascades of sand in motion on W. wall S. of NW. talus.

The wet and steaming lower walls appear to go with S. wind. There has been no rain in 24 hours. Vapor on bottom is ordinary.

December 4
2:30 p.m.

A big cloud of dust was seen over the pit.

The seismogram shows a long earthquake movement about 2:31 p.m.

Evidently there were big avalanches from W. wall about noon and thereafter.

This was foreshadowed by the movements of yesterday.

December 5
2 p.m.

Cascades of black sand continuous from bottom four-fifths of the way up W. wall between W. boss and NW. talus. This is the relic of yesterday's avalanches.

Big scar in wall above where a large surface has fallen away. Rocks moving there now. Fresh red debris below. Dust stain clear across floor to E. talus obliterating the sulphur there.

Steam jets rearranged at border of the new debris. The W. pocket covered with rocks. Steam extends in a line up bottom part NW. talus. Purplish black sand on top of new debris in small talus cones.

Some rocks falling SW. Almost continuous sliding at the new scar..

T.A.J.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day Sunday Date December 6, 1925
Monday " 7, "

December 6
9:30 a.m. At 9:30 a.m. a snappy, jerking earthquake shock, short, and plainly felt. Avalanches at the pit came just after. The shock dismantled both Bosch instruments; rang bell No. 1 of annunciator. This means a half-amplitude of from 2 to 13 mm.; must have been Cancani IV at least. The jerk was sudden and P short; a local source. The prism seismometer was not upset, even No. 1 of the ten prisms remained in place, set back about 1/24 in. by test (it was supposed to be set 1/48), from its overturning point. Readjusted the prisms to 1/96 in. (quarter turn 1/24 pitch screw) differences from #1 to #10. Set each one by screwing forward slowly to the overturn point, then setting back the required amount.

Found by test that the annunciator seismoscope can leave the mercury buttons adjusted so as not to stick the platinum point if the point is lifted to where it just touches top of meniscus and does not dip into the mercury. The set of mercury cups should be adjustable easily each day, all same height. The height of the platinum point varies with changes of temperature, so that properly the machine should be thermostatic: electric light inside and a cooling thermostat.

12:43 p.m. Second quake came at 12:43 p.m. Dog showed alarm. Felt about same as first, a little more prolonged. This also dismantled both Bosch pendulums. It rang No. 1 annunciator. It upset #1, #2, #3, #4, and #6 prisms as newly adjusted with 1/96 inch differences. By test it was found that upsetting No. 1 made it rebound against screw and this jarred off the others, as the prolonged quake kept them bouncing from the wire to the screw and back. An arrester is needed to catch each prism without any shock to the others.

2:20 p.m. Went to pit. Light S. wind; pit very dry; west wall has nearly finished its sand cascades. Very little rock motion. Notice a wet vertical line in SW. wall E. of rift caverns, steaming near the top. The earthquakes had produced no visible effects.

December 7
2 p.m. Calm. Pit very still so that if there were the slightest blowing noise it could be heard. There was none. Sand cascades again on west wall. A small slide occurred there. Rocks fell also SW. and N. There is fresh debris on NE. talus. Yellow-green stain is conspicuous now only at base of SW. rift talus. Dust at pit seen twice toway. Finch reports numerous quakes lately on Hilea seismograms.

T.A.J.

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Hawaiian Volcano Observatory

JOURNAL

Day Tuesday Date December 8, 1925
Friday " 11, "
Sunday " 13, "

December 8
10:14 p.m.

Prolonged earthquake. Seismogram without dismantling. No record on prisms or annunciator, the latter set about $\frac{1}{4}$ inch from 1st mercury. E-W on Bosh $\frac{1}{8}$ inch plus half-amplitude. This means that annunciator pendulum has less amplitude than Bosch under working conditions. Seismogram shows rhythmic revivals, 6 or 8 of them, and 2 or 3 of these could be felt.

Pheasant squawked much during and after the quake. The dog jumped up and showed alarm.

T.A.J.

December 11
10 a.m.

Bright, calm weather. After 0.03 inch rain last night there are several damp steaming places on walls and talus heaps. The wall on each side lower end of SW. rift dyke was especially dark and damp looking. Both gullies, one N. and one NW., were wet. W. wall where recent avalanche took place leaving a domed scar, is streaked with fine dark brown dust or sand with a smooth pile of same at base.

Central floor very dusty. Deep gouge in top of central portion of N. intrusive.

Popping sound as of rock breaking loose and getting ready to fall heard 4 or 5 times in 15 minutes. Could see no rock falling nor dust disturbed. On account of echo the location could not be determined. Tried to detect sulphur smell, but could not.

I.P.J.

December 13
11:40 a.m.

A small amount of pinkish dust seen to come out of pit at N.

I.P.J.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

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Day Monday Date December 14, 1925
Wednesday " 16, "

December 14
11 a.m.

After 36 hours with no rain, the damp areas in pit are still there. All the steaming places are wet. The bottom of SW. wall has large extent of wet rock.

Air calm at first and no odor could be detected, but when a light NE. breeze came up, sulphur could be plainly noticed. One sulphur patch at left (E.) side of bottom of talus heap that comes from SW. rift, and a very small one among broken rock at SE. edge of floor.

During the first five minutes, twice the sounds of a rock snapping and bumping were heard. No disturbed dust could be seen. Peculiar swishing echo the second time.

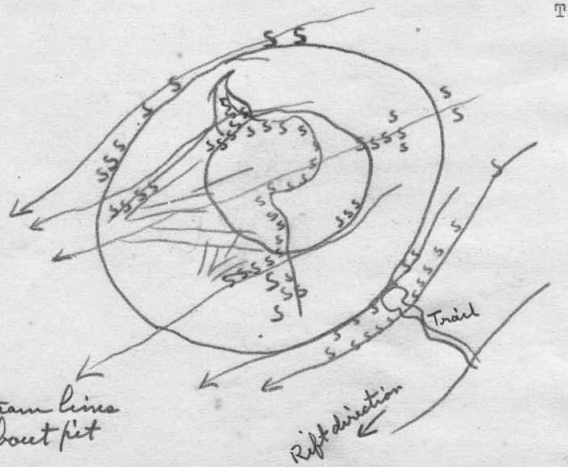
I.P.J.

December 16
9 a.m.

Description almost exactly same as December 14. The popping sounds are individual rocks falling at the N. One was like a pistol shot. Wind light NE., light rain last night. Blue fume at S. talus steam and one patch E. floor. White salts on wall E. and W. sides of big talus SW. and W. Much wet flocculent steam top of big talus, at S. side of W. boss where the white steam is fresh and most abundant, and at wall E. of base of talus under rift caverns.

White stain again at bank base of SE. wall. A sulphur patch in steam base of talus next it to the N. Whirlwind blowing of steam at edge of pit SE. Heavy flocculent steam base of NW. talus, and soft steam clouds at S. talus. The steam forms a notable sinuous line from S. talus across bottom all the way to NW. talus.

T.A.J.



DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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JOURNAL

Day	Thursday	Date	December 17, 1925
	Wednesday		" 23, "
	Sunday		" 27, "
	Tuesday		" 29, "
	Wednesday		" 30, "
	Thursday		" 31, "

December 17
9:30 a.m.

Fresh red debris on N. talus. The yellow stain at base of talus under SW. rift tunnel is increasing. The steam patches and walls are unusually wet. The steam at S. talus is all at top of talus today, and the long dry streak up middle of talus is free from steam.

T.A.J.

December 23
10 a.m.

Abundant steam from vents in Halemaumau. Occasional rock falls from western wall. Not only were the walls dark red, but also several of the avalanche slopes had streaks of the same hue.

R.H.F.

December 27
11 a.m.

Steam abundant, especially from SW. half of pit. No rock falls were heard.

December 29

A few small dust clouds were observed during the day.

December 30

Steam abundant along S. rim and from SW. half of pit. Sulphurous odors (H_2SO) were noted.

On the NE. wall above E. half of northern intrusive there was a considerable cooling of white sulphates.

Dust clouds quite frequent.

R.H.F.

December 31
11 a.m.

One slight echo of falling rocks heard. Pit dry and still. Nothing whatever new detected.

T.A.J.