

12TH OCTOBER 1959

DR. HAROLD S. PALMER  
2831 HYDE STREET  
HONOLULU 14, HAWAII

DEAR DR. PALMER:

THANK YOU VERY MUCH FOR YOUR INTERESTING LETTER OF THE 8TH. DURING MY STAY IN HAWAII, I ENJOYED THE PLACE VERY MUCH AND HOPE TO GET BACK AGAIN SOMEDAY. I FOUND MANY INTERESTING MYTHS OR BETTER, FIGMENTS OF THE IMMAGINATION. THESE ARE FREELY CONJURED UP BY THE NATIVES AND HALF CASTS BY THE SIMPLE PROCESS OF WAVING A LITTLE GREEN MONEY! THERE SEEMS TO BE VERY LITTLE GOING AROUND TODAY WHICH IS WORTH ANYTHING. PROBABLY THE BEST SOURCE OF REAL MYTHS IS THE WRITINGS OF THE EARLY EXPLORERS AND THE MISSIONARYS. WE DIDN'T HAVE MANY TOURISTS ON MAUI AND NONE AT ALL IN THE DESERT REGION BEHIND HALEAKALA. IF THERE WAS ANY PLACE WHERE THE MYTHS WERE STILL FAIRLY PURE IT WAS IN THIS BACK COUNTRY.

THERE IS ONLY ONE KIPUKA OF THE 1770 FLOW. I HAVE HEARD THE SAME STORY FROM NATIVES IN THE ENVIRONS.

IN REGARD TO THE 1938 EARTHQUAKE, I AGREE THAT IT DOES NOT SEEM PROBABLE TO ASSOCIATE IT WITH THE LAVA FLOW ON THE SOUTH SLOPE. HOWEVER SOME OTHER GOOD EXPLANATION IS NEEDED TO EXPLAIN THE PRESENCE OF CHARCOAL UNDER THE LAVA. THIS WAS VERY RECENT AS I ALSO COLLECTED A QUANTITY OF WHITE ASH ON THE SURFACE OF THE CHARCOAL. IF ANY APPRECIABLE TIME HAD ELAPSED, THIS SOLUBLE MATERIAL WOULD HAVE DISAPPEARED. THERE ARE STILL A LOT OF GOOD THINGS TO BE DONE ON HALEAKALA.

ENCLOSED ARE THE REPRINTS YOU ASKED FOR PLUS ONE ABOUT MY WORK OUT THERE ON RADIO ASTRONOMY.

SINCERELY YOURS,

*Grote Reber*  
GROTE REBER

2231 Hyde St.,  
Honolulu 14, Hawaii,  
Oct. 8, 195~~6~~9

Prof. Grote Reber,  
Associated Universities,  
Green Bank, W. Va.

Dear Sir:-

I was much interested in reading your "Age of Lava Flows on Haleakala, Maui," and am permitting myself a few comments - constructive, comments, I hope.

But, first, Stearns and Macdonald's "Geology and Ground-Water-Resources of the Island of Maui, Hawaii," barely make reference to Stokes's critique of Thurston's estimate. This was in a letter from Stokes to me, which I have copied off (as best I could) for your files.

Counting by fours, as the old time Hawaiians did, seems to have a rational explanation, at least for fish. On each hand there are four spaces between digits, and the tail of a fish could be nicely held in each such space.

Neo-myths. I came to the University of Hawaii as Assistant Professor of Geology in February, 1920, became Professor in 1923, Senior Professor of Geology in 1954, and retired as Professor Emeritus in the summer of 1955. I knew Mr. Thurston, a lawyer by education, but owner and publisher of the Honolulu Advertiser and active in political matters from some time during the Monarchy at least into the time of Territorial Status. He was island-born of missionary stock and spoke Hawaiian. He died some years ago.

I know Mr. Stokes, too, though he has aged greatly so that he no longer recognizes me. On a few occasions we cooperated a little on borderline projects of geology and his archeology and ethnology. He was British born (but I do not know in what part of the empire, though I suspect Australia or New Zealand), and had much experience in his fields. He was on the staff of Bishop Museum in Honolulu for years and years.

On the basis of life-experiences and of training it would be hard to choose between the two men, but I think Stokes more dependable in his analysis of the data.

Oh! I got off the neo-myth track. I know of two, at least, that have sprung up during my time here. I understand the ~~like~~ drivers of tour limousines and buses have quite an array of them - not only on Oahu but on the other islands, too.

I strongly doubt that the 1938 earthquake stimulated any outbreak on Maui. Airplanes would have reported such. Also the epicenter was 25 miles at sea NORTH of Paueala Point, which makes it at least 50 miles north of the 1770 (?) flow.

I have not spent more than fifteen days, I judge, on Maui, and the place names around the lava flow in question puzzle me.

On the 1928 U. S. G. S. Makena topographic Sheet, 1 : 62,500 I find the following:-

Keonioio - a little settlement of four or five houses <sup>at</sup> in the north corner of La Perouse Bay. The translation is beyond me.

Kaluaolapa - The crater, (or one of the craters) that discharged our flow  
Ka = the; lua = hole; o = of; lapa = ridge. Hence as I gather,  
"The hole in the ridge."

Keonehunehune does ~~not~~ appear on this map. Translation???? I think it is too far up the slope to have fed the flow that reached the sea northeast of La Perouse Bay. But I had only half a day in that region and was primarily studying what the effects of wave erosion had been on the aa.

Stearns quotes Thurston as quoting Father Bailey as being told by natives that a woman and child were surrounded by the lava (obviously in a kipuka) and after the lava had cooled walked out unharmed. That lava would have been hot enough so that they did not tarry along the way. Your map shows the kipuka, or at least a Kipuka.

In 1919, a MaunaLoa lava flow in Kona or Kau surrounded some cattle in a big kipuka, and after a few days men went in and led or drove the cattle out.

In 1926 I climbed up the steep side of the Hoopuloa lava flow only a few hours after it had reached that point and walked out on the flow perhaps 50 feet. But it was hot enough so that I did not stop walking, even with thick, leather soles on my field shoes. I kept right on!

The January 28, 1938 earthquake off Maui woke me up. I had gone to bed a bit early. I felt a slight sway of the mattress, presumably a motion amplified by the coil springs. I was on sabbatical leave that spring, and I was shown the very small seismograms written by the seismograph at the University of Vermont, Burlington, Vt., so it must have been a major shock - likely Rossi-Forel X at the epicenter, though VII and VIII seem to be the highest on Maui, the nearest dry land.

I was in Manoa Valley in Honolulu on Jan. 28, 1938.

I would appreciate it if you would send me two reprints of the article, one for my personal reprint file and one for The Hawaiian Collection of the University of Hawaii.

Yours very sincerely,



Harold S. Palmer.

There now is  
a recent, new  
Makena sheet,  
7 1/2' x 7 1/2',  
1:24,000  
or  
1 in = 2,000 ft,  
which I have  
not seen

2618 Ferdinand St. (Honolulu, Hawaii)

August 26, 1936

Dear Dr. Palmer,

Many thanks for the copy of Thurston's article on the probable date of Keonecio lava flow. I read it many years ago with much interest, and later regretted that I did not note the reference. Unless you say otherwise, I shall keep the copy.

Analysing Thurston's information from Bailey - the latter's inquiries in 1841 placed the flow as in the <sup>time</sup> of the grandfather of his informants, namely two Hawaiian generations prior to 1841. Thurston places the year as 1742, which as he unconsciously shows is the birth-year of the grandfathers, and is based on a three-generational count. This is a serious error, a correction of which (using Thurston's generational unit) would place the estimated year as 1775.

The adherence to the two-generational count is imperative. It attributes adult life to the observers of the flow, but not great age because the reference then would have been to their adult children. More than two generations is unlikely in view of the check provided by the Ako data. See note on kupuna below.

The generational unit used by Thurston is 33 years. I believe that 25 years is better (You have my notes of Hawaiian Chronology). Using the latter unit we may proceed with an estimate.

|   |           |           |
|---|-----------|-----------|
| Bailey's inquiries would naturally have been of the older people, and we may average their age at 50. Hence their birth | years was | 1791 A.D. |
| That of their grandfathers (25 gen. unit) was   |           | 1741 A.D. |
| If adult when they were observing, they were 25 years old and the date of the flow may be placed as                     |           | 1866 A.D. |

|  |  |           |
|--|--|-----------|
| With a generational unit of 33 years, and the age of the <del>same</del> informants the same 50, the estimate would be |  | 1758 A.D. |
|--|--|-----------|

|                         |  |           |
|-------------------------|--|-----------|
| Thurston's estimate was |  | 1742 A.D. |
|-------------------------|--|-----------|

|   |  |           |
|---|--|-----------|
| Ako's statement that the flows occurred at a time when the grandfather of his father-in-law was old enough to carry two coconuts from the sea to the upper road, and that the latter was 92 in 1905, may be accepted for the moment as the basis of a check. Thus the father in law was born in |  | 1813 A.M. |
| His Grandfather was born (25 gen. unit) in  |  | 1763 A.D. |
| Coconuts were counted by fours, as I recall, so that a reference to "two coconuts" probably indicated "two 'fours' of coconuts." Yet Thurston's estimate of the boy's age as 10 seems fair enough. Adding the <sup>figure</sup> the year of the flow, on Ako's statement was                    |  | 1773 A.D. |

|   |  |           |
|---|--|-----------|
| With a generational unit of 33, the date would be fifteen years earlier, namely |  | 1757 A.D. |
| This was used by Thurston   |  |           |

Tabulated for comparison:

| <del>Present estimate (25 gen. unit)</del> | Bailey | Ako  | Average   |
|--|--------|------|-----------|
| Present estimate (25 gen. unit)            | 1766   | 1773 | 1770 A.D. |
| " " (33 gen. unit)                         | 1758   | 1757 | 1758      |
| Thurston's "                               | 1742   | 1757 | 1750      |
| " " correct                                | 1775   | 1757 | 1766      |

On present information, I favor the date 1770 A.D.

KUPUNA. Bailey's informants placed the flow in the time of their "grandparents." The term used could have been none other than kupuna, indicating primarily "grandparents" and secondarily, "earlier ancestors." But the two estimates are interdependent for a check, and Ako's account tend to restrict the period of the actual grandparents.

But the question of the correctness of Ako's estimate of his father-in-law's age must arise. If 92 years old in 1905, his birth year was 1813, a period when Hawaiians gave no thought to year dates - in fact it was not until 30 or 40 years later that the missionaries succeeded in making them of consideration. On the other hand, it is possible that the father-in-law was born in a year coincident with some important event. Then the year-date could have been calculated readily in later years and become established. The event might have been the birth of Kamehameha III, under dispute in 1840-1850 (and since) as in 1813 or 1814.

It is also possible that the age 92 in 1905 may have been an arbitrary exaggeration as may be noted today among some very, very "aged" Hawaiians. However, I am inclined to believe that it is approximately correct.

The flow is probably not of extreme antiquity on the basis of the growth of neo-myth. Compare these two: In 1841, Bailey was informed that "a woman and child were surrounded by the flow, but escaped after it cooled. Such is a possibility.

In 1922, 81 years later and five generations after the event, Thurston is told of the destruction by the flow and turning to stone of two adults and two children, namely mother and daughter and father and son. Furthermore, he is shown the petrified humans in place. Information communicated to by grandparents to grandchildren, as in Bailey's time, is likely to be correct. Neomuth belongs to later generations.

In 1786, La Perouse arrived at Keoneolio Bay, and observed, according to the translation: "At every instant we had just cause to regret the country we had left behind us; and to add to our mortification, we did not find an anchoring place well sheltered till we came to a dismal coast, were (sic) torrents of lava had formerly flowed like the cascades which pour forth their water in the other parts of the island." This vivid description will apply to the Keoneolio flow, and I presume to the others also, although I have not seen them. La Perouse went ashore.

Use preceding as you desire. With best wishes.

Sgd. John F. G. Stokes.

*Copied Oct 8, 1959  
Harold S. Palmer*