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The White Island Crater Valley in 1826

By D. WAYNE ORCHISTON

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WHITE Island has long been an object of scholarly attention. In recent years Luke (Hamilton and Baumgart, 1959: 14-21) has brought together a number of nineteenth century accounts of the Island in a bid to reconstruct changes in the topography and thermal activity of the crater valley. Drury's visit of about 1848 is the earliest detailed account given in Luke's study. The purpose of the present paper is to place on published record for the first time the details of two early visits to White Island, both from the year 1826. Because of their historical and scientific interest these are given below in full.

The following account is by the botanist Cunningham, who, together with the Williams brothers, spent the morning of December 1, 1826, exploring the crater valley. Since Cunningham's diary entries are in pencil and sometimes difficult to decipher, short sections of the text remain untranslated. The manuscript spelling has been adhered to throughout.

"It being the Intention of my Missionary friends onboard, to visit White Island in the Bay of Plenty, which is admitted to be not only of volcanic origin but to be in active operation externally Accordingly, our Course(?) during the night ??? & Southerly was Shaped, in order to make the Remarkable Island at Daybreak About the dawn of Day this Morning this Island was perceived distant 4 Leagues in the line of our Course, and at 7 am we reached its Northern extremity—a steep acclinty about 600 feet above the Sea.

"Running along its Eastern side, equally steep in parts, its Eastern Extremity formed in rocky, stratified ledges, surmounted by scrubby vegetation, seemingly ??? over the Ridges, which rose to the Height of 1500 feet, we perceived large Columns of smoke & vapour to abound, leading into the Conclusion that if this Island was at all accessible it was on its S.En side. On Reaching this shore of the Island, a very practicable spot for landing presenting itself we accordingly got the boat out, & my friends having directed the Master of the little vessel to be off and we quitted the schooner & lined our Course, towards the lower part of the Island distant 2 miles, at which we landed on a beach of water worn pebbles agt. which a moderate Surf only broke.

"This opening, to the Smoking Crater we found 4 hundred yds wide, it was bounded by steep inaccessible Cliffs showing that (at) one period it was united to the other parts &

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then presented to seaward a ??? wall equally inaccessible to the Crater as the other sides of the Island which at that period might prove entirely of circular figure.

“On quitting the beach of pebbles we entered upon a Soil composed of sulphur and the decomposed ashes, thrown up from the Crater at former periods.

“From this point we beheld before us, a space exceeding  $\frac{1}{2}$  a Mile in extent, forming a Basin, bounded to the SE. NE & S.W. by vertically faced cliffs, tinged with a sulphur coloured hue in which we perceived several small orifices discharging a Small Column of Smoke. We observed that in some parts of boundary cliffs, where the Rock was faced with the soil formed of the debris of the Cinders, the rain of successive Years, had groved in them numerous channels by which these waters had fallen with considerable velocity in the Valley of the Crater & then had formed Deeply grooved sides, which dipped to a small lake in the upper part of the Valley, evidently beneath the level of the Sea, from whose boiling surface rose a dense steam or Sulphuric Vapour, extremely difficult to us to Respire—As we proceeded along the Valley to the only Orifice which (?) issued a Column of Smoke issued, we noticed in the heated soil chiefly of Sulphur and Debris, small orifices, fuming with a highly heated vapour and in some parts the bubblings of Water in a state of Ebullition, a higher temperature than my thermr. could indicate (which I regretted only admitted of the advertisement of Caleri(?) to  $140^{\circ}$ ). The soil was sensibly warm to us thro’ thick shoes, and on running the thermr. into it, the Mercury rose to  $124^{\circ}$ . On reaching the base of the orifice where the large Column of Smoke rose, we ascended to its margin, with some risk, as the vehement discharge of the body of Smoke, exceedingly heated was very Considerable, we however ascended on the windward side, and was therefore not liable to be affected by the discharge in our face of heated suffocating Smoke

“We now beheld its column ascend with great force from an orifice nearly Vertical about 7 or 9 yards wide (30 feet)—in the Mouth and as no fire was perceived, altho’ from the vivid Colour of the Column of Smoke—and the vast heat it reflected on our persons during our stay in our perilous sitn. we had no doubt that ignited bodies approached near the mouth of this Volcanoe.—

“Among the minerals, which had been changed by the Chemical operation of fire, we gathered about the margin of this Crater a red pigment attached to lamellated portions of stoney Substance, in organisation like the Bark of a Tree, also nodules of a stone that had undergone fusion, and on hardening had received in a course of stratification, veins of sulphur

“In the lower parts of the Valley, the soil proved very soft, in some places dry, in others saturated with moisture, formed a Sand, exceedingly warm to the touch—At the extreme part of the Vale a vast body of Steam from hot water rose! this excited the curiosity of all of us more or less, we therefore proceeded from the smoking margin of the Volcanoe to within a few yards of this phenomenon. It was truly awful to observe Water in deeply furrowed channels, in the greatest state of Ebullition, bubbling up thro’ orifices too dangerous to approach, as the soil was not only much heated on which we stood but very boggy, and showing at every step a greater Depth & more fallacious Surface to attempt to risk ones weight on.

“The atmosphere moreover at this Extreme of the valley, we found so much saturated with Sulphuric Vapour as to prove highly oppressive to our respiratory organs, so were therefore glad to get back to the beach on which we had landed, with the many specimens in geology of this Island, with which we had loaded ourselves.

“Altho we saw no indication that the Sea breaks over the stoney barrier at which we landed to the interior part of this Volcanic Valley which lies(?) even lower than the level of the Ocean, still it is probable that the Sea at fall & change, in heavy SEy winds may force its passage into the boiling Lake, the water of which we tasted proved of a salt acidulated flavour.

“We saw no fresh water on the part of the Island on which we landed, and from our obsns. on other parts as we worked round it we have no doubt of the nonexistence of this invaluable Element on it, altho’ ’tis said several natives were once living on it, until some Bay of Islds. came & destroyd them They surely had only taken shelter for a limited period, at this Island, from those periodical attacks of Northern Natives, & had probably a quantity of fresh water with them in Calabashes (according to their custom) On our return abt noon we made sail”

The account below is after Shepherd who accompanied the New Zealand Company’s migrant vessel “Rosanna” on a coastal reconnaissance, in search of a location suitable for a settlement. The “Rosanna” and its escort the “Lambton” made initial contact with New Zealand at Stewart Island on March 5, 1826, and

then proceeded to Port Oxley (Otago Peninsula), Cloudy Bay, and the Wanganui River. The chronologically continuous journal entries terminate on June 1, 1826, at this last-mentioned port of call, only to recommence with a description of an undated visit to White Island. This is followed by "A short description of the natural productions &c which I found at the different places we visited in New Zealand", written at the Bay of Islands on November 12, 1826, and in addition to the above localities includes descriptions of the Thames and Mercury Bay. These details, although fragmentary, reveal that it is to Shepherd and his colleagues, and not the Williams-Cunningham party, that the first-known non-Polynesian landing on White Island must be credited. Exactly when this occurred cannot be determined, but it was sometime between June 1 and November 12, 1826, and probably towards the end of this interval. Unfortunately that section of the manuscript relating to White Island is not in an excellent state of preservation as a fragment measuring some 10cm by 7cm has been torn from the top left-hand corner of each of the two relevant manuscript sheets. Since the remaining decipherable fragments mean little on their own these damaged sections have been omitted below.

"White Island is . . .

"In this Valley we saw four large active creters and from one to two thousand small ones, from these creters issued large volumes of sulphureous Smoke or gas which ascended to a considerable hight forming in its ascent majestic clouds. Large quantities of lead coloured ashes also ascended with the Smoke, which were blown by the wind Several miles distant.—

"The largest of these creters is one at the base of the mountain about 2,000 feet distant from the entrance bearing E.NE.. It is from 50 to 60 feet diameter at its mouth and of an unknown depth.

"It was burning furiously and the flames arrived near its mouth with an immense quantity of dark and light coloured Smoke of a strong sulphureous smell.—The next in magnitude to this is one about 500 yds. beyond it which made a noise exactly like a steam engine full charged when the valve is opened. It was a large caldron of boiling hot brimston or some such combustible which produced a large quantity of white coloured Smoke or Steam: but I saw no flames arrise out of it

"The other two next in magnitude to these are not far distant from them and also produced a large quantity of white Smoke, out of a boiling hot liquid. The principal part of the other creters were small only generally not more than from one inch to 3 inches diameter these also produced a considerable quantity of white Smoke or gas. and liquid brimstone which congealed soon as it got cold Of these small creters several are upon the mountain from . . .

"It was also observed that these creters produced double the quantity of Smoke when the tide was full than when at ebb and a hissing noise was heard from many of them.—

"A great proportion of this valley has lately sunk 30 to 40 feet below the level. This low space is by far the most active in Volcanic eruption. It has sunk down as near as canbe on a level with the sea.— It is probable that this valley originally had had only three large Creters burning in it, (as three large visible circles are still to be seen in the form of the outer boundary of the valley) which had most probably burned down to a great depth and weadth, and undermined the mountain, which had occasioned its falling into them, and being thus obstructed in their progress, have burst out again in so great a number of small creters. It is remarkable that no living creature nor any vegitable substance was found in this valey.— The high Mountain which serounds it is nearly pupendicular which together with the immense quantity of Sulphuric Smock Strikes the spectator with terror.—

"This Valy is principally composed of brimstone in various quantities, large quantities of Iron Stones, burnt earth and ashes, a kind of Soft rock like pipe clay which most likely would be good for bleaching cloth and washing, a crystalized white substance found outside of dry sulphur, a hard white Stone a Soaft red do (i.e. "stone") and several other Substances which I did not think of any value.—

"The mountain appears to be chiefly of volcanic origin being a number of Strata which lay horosontal verticle and longitude and nearly of the same . . ."

From the above accounts it would appear that of the four main orifices active during Shepherd's visit, only two were operational at the time of Cunningham's

sojourn. The approximate locations of these two main orifices, as furnished by Shepherd, are found to bear no correlation with currently existing features. This is not surprising in view of the frequent occurrence of topographical changes in the crater valley (Hamilton and Baumgart, 1959: 14-22, 25, 27, 32-35). Finally, it should be noted that Shepherd's ENE bearing of the valley entrance from the principal orifice must represent a slip of the pen as only an ESE figure is tenable.

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D. WAYNE ORCHISTON, B.A.(HONS.),  
Department of Anthropology,  
University of Sydney,  
N.S.W. 2006,  
Australia.