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To
His Excellency
Baron A. von Humboldt.

Sir: I have the pleasure to enclose
to you a short account of the ascent of the
volcano Popocatapetl, which your Excellency has
done me the honor to request.

The peak of Orizaba was climbed
during the month of April or May 1848 by a
number of officers, among whom were Lieut.
Maynard of the Navy, and Lieut. Reynolds of
the Army - Having the honor of acquaintance with
both these gentlemen, I can procure, should
your Excellency desire it, a detailed account of
the ascent.

With high respect
I have the honor to be Sir
Your obt servt

Charles P. Stone

Bethen St. No. 1. }
Thursday morning, }

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*descripción de
Popocatépetl*

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On the 3^d of April 1848, a party of some 30 officers of the U. S. Army, escorted by 70 soldiers who had applied to accompany the expedition, left the city of Mexico to attempt the ascent of the volcano Popocatapetl. On the evening of the 6th the party had reached Atlautla, a small village at the base of the volcano from which the crater bears north-north-east; and here, the mountain being in full view, was arranged the plan of ascent.

From the apex of the cone there runs with a gentle slope in a northwesterly direction, a ridge, always covered with snow, and which, at the distance of perhaps an English mile from the crater, terminates in a precipice of several hundred feet depth. Near this abrupt termination, it is joined by a second ridge, which runs in a direction nearly S-S.W. to a remarkable rock called "El picos del Fraile", a landmark about 1000 feet lower than the summit, and of such huge proportions as to be easily distinguished from the city of Mexico. At about 100 yards below the "Fraile" is the junction of two well defined rocky ridges, which, from that point, diverge at an angle of about 30° having a valley of loose pumice sand between them extending to the limit of vegetation. The most northerly of these two ridges, terminates at the limit of vegetation near the rim of the long chut of a "vacaria": and this chut is connected by narrow and obscure paths, with the village of Atlautla.

The plan adopted was, to take the cow paths as far as the vacaria, thence to follow up the sand valley between the rocky ridges to their junction, and, having gained the Fraile, to leave it and the ridge leading upward from it, to the left, and to gain the first mentioned snowy ridge at its junction with the second. Beyond this point, the only difficulties to be encountered appeared to be the deep snow and the rarity of the atmosphere.

Atlautla was left early on the morning of the 7th: and at 4 o'clock P.M. of the same day, after an exhausting march in narrow and steep paths, leading sometimes through deep gullies formed by the torrents of the rainy season, and sometimes along the edges of precipices

Opposites, an open space was reached, which, at the distance of a mile or mile and a half from the limit of vegetation, offered a convenient halting place; and here arrangements were made for taking a few hours' repose before commencing the difficult part of the ascent.

Unfortunately for the success of the expedition, one of those storms which sometimes precede nearly a month the rainy season, set in about dusk, pouring with great violence, rain, hail and finally snow upon the party, which, but partially provided with tents and accustomed for months to a very mild climate, suffered far more from the rude visitation, than it enjoyed in the truly sublime spectacle of a combined thunder and snow storm howling through the vast ravine above which they were encamped.

The storm raged furiously from sunset on the 7th until nearly daylight on the morning of the 8th; when, although the snow extended from the crater far below the encampment, and the clouds still looked somewhat threatening, an advance was made by about one half the entire party.

Hardly had the limit of vegetation been passed, when the clouds which had at first covered only the summit, fell below the Fraile, and this, together with the great body of snow which had fallen during the night,

recharged the appearance of the mountain, that the few who continued the ascent, lost their way and became entangled in rocks to the north of the two ridges between which they should have remained. While in this position, they were enveloped in a cloud of snow driven by a fierce north wind, which at once hid every thing resembling a landmark, made the foothold and advance difficult, and banished those who attempted to visit it and continue the ascent. The result was, that on the evening of the 8th the majority of the party was encamped on the same spot as the night previous, some of the officers having returned to Atlantla; and, much to the chagrin of all, the object of the expedition had not been accomplished. Three officers had nearly reached the Fraile.

As night came on, all who had encountered the driving snow storm were suddenly attacked by a most painful sensation resembling that of having the eyes filled with sharp sand; and this increased until all were for the time perfectly blind. The night was passed a great pain, but in the morning, after a succession of washings in warm whisky and water, the pain was so much relieved that all were enabled to start for Ameca, the blind being led by those who had not been exposed.

The 9th April was spent in Ameca, curing the eyes of the afflicted, and

and from this town the greater portion of the party left to visit the cave of Cuernavaca. Seven officers and an Englishman who had accompanied the expedition resolved to renew the attempt, and on the morning of the 10th left Ameca for the vacaria. Late in the evening of the 10th the little party, still further reduced by the loss of an officer who had gone astray, arrived within a few hundred yards of the limit of vegetation, and then lighted its fires. It was resolved to commence the ascent over the sand before daylight, in order to take advantage of the frozen crust which is nightly formed after the meltings of the snow during the day, and is destroyed by the first hour's sun in the morning.

At 9½ o'clock A.M. on the 11th April, six officers, the Englishman and eight soldiers were making their way up the sand valley toward the Frail, much facilitated by the knowledge of the localities gained in the unsuccessful attempt three days before. The sand being often during the dry season quite dry had taken its natural angle of about 45° and having now an icy surface, the foothold was very precarious, and much assistance was derived from the iron shod pikes, with which all but one of the party were furnished. From the time of leaving vegetation until daylight, frequent flashes of light followed by an odour of sulphurated hydrogen were noticed, but it was not until the Frail was reached, that smoke was seen to issue from the crater, or that much difficulty was experienced from the snow. Above this point, the snow was so deep that one sank to the knee at each step, and in some places it was hip deep. The snowy ridge first mentioned was easily attained, but in this part of the ascent, so great was the exhaustion caused by the rarity of the atmosphere that it was necessary to stop after each ten or twelve paces made, to recover breath and strength to continue. At 10⁺ 10' AM. the first officer had reached the lip of the crater; and before 11 o'clock the same had been accomplished by the six officers, the Englishman and four soldiers.

The day being fine, the view obtained from the summit was beautiful and extensive beyond the possibility of description. The peaks of Orizaba and the Nevado de Toluca were distinctly visible, while the two great valleys of Puebla and Mexico could be taken in at a glance. Standing in the region of perpetual snow the successful party could see below, a country of every climate from the frozen one in which they stood, to the perpetual burning of the torrid zone. The crater above which they were standing was an immense cavity varying in depth from probably not less than 600 feet in any part, to more than 1200 feet: the lip, nearly circular was generally estimated by the party at about $\frac{1}{2}$ mile in diameter: but the writer of this note is of the opinion that they were deceived by the character of the air at that height, and thinks that it has near $\frac{3}{4}$

of a mile and harbors a mile diameter. In many parts the walls were nearly vertical and in some even overhanging, but they had the appearance of being subjected to frequent carings in, so that the form probably changes rapidly with time. In the eastern portion of the bottom, were several large yellow cones, apparently of pure sulphur, and from these cones there constantly came forth clouds of vapour supposed to be sublimated sulphur: as the patches of snow on the floor of the crater were tinged yellow, and the snow down far outside was strongly impregnated with sulphur.

The walls on all sides presented large seams, from which at short intervals there came forth puffs of vapour. The walls, and all the rocks near the crater were of spomae, varying much in density and colour. The thermometer, at 10^½ o'clock A.M. stood at the summit in the shade, at +26° F. At 7 o'clock it stood at the "Fraile" at +28° F. The only barometer which could be obtained in the city of Mexico, was found so much out of order as to be utterly worthless unless for the time, and this prevented the party from adding one to the measurements already made of the peak. In descending, one portion of the party passed down the southern side of the mountain, and found at the distance of some 2000 feet below the summit, a small crater in the midst of a sand valley: it was not more than 100 feet in diameter, and seemed to have thrown out but a short time before, a large quantity of black coarse sand.

It gave no signs of activity at the time of the visit.

The officers who reached the summit were; Capt. Bonford, Capt. Fowler, Lieuts. Kirkham, Buckner, R. Anderson, and the writer of this note. The Englishman was Mr Baggally.

Capt. Charles Bone
Borax St n. 1.