



COTOPAXI, AS IT APPEARED WHEN IN ERUPTION IN 1743.

From Juan and Ulloa's 'Voyage Historique de l'Amérique Méridionale, 1752.'

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EXPEDITIONS AMONG THE GREAT ANDES OF ECUADOR. 2.

- Jan.* 17, 1880.—The ‘tambo’ of Chuquipoquio was left for the town of Ambato. Mr. Whymper being unable to ride, the Governor of Ambato sent eight Indians with a litter for him, and two soldiers, who were termed ‘a guard of honour.’ As a bill was afterwards presented for their services, ‘guards of honour’ were declined for the future.
- „ 18–24. *At Ambato.*—Called in Dr. Abel Barona, who treated the sick men of the party skilfully. Ambato is a town with a permanent population of, perhaps, 5,000 souls, but on market days people flock in from the surrounding country, and 5,000 to 6,000 persons can be seen in the Plaza alone. It is a livelier place than Guaranda, somewhat less elevated above the level of the sea, and considerably warmer. Temperature during the daytime rose above 70°, and at night scarcely fell to 60° Fahr. It is extremely well provided with fleas, particularly on market days.
- „ 24. *From Ambato to Iatacunga.*—These towns are about twenty-four miles apart, and the road from one to the other leads through a country of the most dreary description — almost treeless. The great mountains, Tunguragua and Cotopaxi, when visible, present a very imposing appearance from this direction. They are, however, seldom seen, and the eye has few objects to rest upon except naked aloes. The road is exceedingly sandy and dusty, though upon the whole it is good for Ecuador. An omnibus

leaves Ambato for Quito every Tuesday at midday, arriving at its destination about 4 P.M. on Wednesday. Fares, 8s. 6d., 17s., and 1l. At Latacunga, in the centre of the town, there is a decent hotel kept by Pompeyo Baquero. This place is 9,170 feet above the sea, and has frequently suffered from eruptions of Cotopaxi, which is about twenty miles distant from it.

Jun. 25. *From Latacunga to Machachi.*—This was again a part of the Quito road. The country becomes more and more dreary as Cotopaxi is approached, and continues exceedingly uninteresting until the Tiupullo ridge is crossed (11,700), which divides the basin of Latacunga from that of Machachi.

From the summit of the Tiupullo ridge there would be very fine views if the mountains were clear, as from it Tunguragua might be seen to the south, Ruminahui and Cotopaxi to the east, Illiniza to the west, and Corazon, Pichincha, Cayambe, and Pascochoa more or less to the north. This ridge was crossed several times by Mr. Whympers's party, but the views were never seen free from clouds.

The descent on the plain of Machachi passes through comparatively agreeable country, and the town (9,800 feet) is well situated as a centre from which to make expeditions to the Great Andes. More than five weeks were at one or another time passed here, at the 'tambo' kept by Antonio Racines, an Ecuadorian, who treated the strangers with great attention, and who deserves to be pointed out as an exceptionally fair-dealing man.

„ 26. *At Machachi.*—Occupied in getting our rooms into a habitable state. Had all the things turned out of them and the floors well scrubbed. The matting of the room was beaten for the first time since the house had been built, and this was regarded as a most extraordinary spectacle. Crowds assembled to see the performance.

„ 27. *At Machachi.*—Louis Carrel was still unable to walk. Mr. Whympers and J. A. Carrel went out with the idea that they could ascend Corazon in a short day. Found that they were mistaken, and they did not get within 2,000 feet of the top, although they were out ten hours.

Throughout the whole stay in Ecuador distances

were constantly underrated. At first, when it was supposed that an object was a mile distant, it was generally found to be $2\frac{1}{2}$ to 3 miles off, and even at the end of the journey estimates were usually 50 per cent. too low. The lower slopes of most of the mountains are of enormous length, and three to four times as long as similar slopes in the Alps. Thus a moderate-sized patch of forest on them looks at a little distance like a clump of bushes; great and impassable ravines appear mere ditches, and ordinary-looking grassy slopes are found on close approach to have grass growing five or six feet high.

- Jan. 28. *At Machachi.*—Very much rain fell yesterday and to-day, and there were thunderstorms every day that was spent in the town. Arranged to start J. A. Carrel off to-morrow to make a close inspection of Illiniza, a mountain which seemed hopelessly shrouded in mist, and was said to be seldom or never perfectly clear.
- „ 29. *At Machachi.*—J. A. Carrel went off at daybreak to try and find a camping-place on the northern side of Illiniza. Received a visit during the day from a civil engineer in Government employ named Lopez, who gave much information, almost all of which proved afterwards to be fiction. In one respect he spoke truly—namely, that the weather which was now prevailing was much the same in all parts of the mountains, and was likely to continue with little difference for several months, after which there would be less rain and more wind and dust. It became evident that it was useless to wait for fine weather, and that, if ascents were to be made at all, it would be necessary invariably to camp out at the very highest attainable points, and to wait until breaks in the weather permitted dashes to be made at the summits.
- „ 30. *At Machachi.*—Went out to inspect a hot spring to the east of the town. J. A. Carrel returned in the course of the afternoon, and reported that, so far as he could see, the highest peak of Illiniza was all but inaccessible on the northern side. It was determined to wait until Louis was able to put his feet to the ground, and then to return over the Tiupullo ridge, to examine its southern side.
- „ 31–Feb. 1. *At Machachi,* collecting, and measuring 17,000

feet on the road as a base for angles. Prepared for an ascent of Corazon, and left at midnight for it with J. A. Carrel and a native of Machachi named Lorenzo.

Feb. 2. Ascent of Corazon.—Our Ecuadorian professed to have ascended Corazon, and we let him lead until it was evident that he knew nothing whatever about the upper part of the mountain. He took us round to the western side (invisible from Machachi), and we found there a series of cliffs of a very difficult and rotten character, from which stones fell abundantly. After having got higher than 15,000 feet, we returned round the southern side, and then essayed to climb the cliff facing Machachi, and succeeded in doing so, arriving on the very highest point soon after midday. Our Ecuadorian could not be induced to accompany us, and he remained below drying his trousers. We remained on the top several hours, built four cairns on the summit ridge, and erected a large flag; and in returning made direct for Machachi, arriving there shortly before 8 P.M., having had a day of twenty hours, out of which less than two were spent in halts.

The height of Corazon is very nearly 16,000 feet. Its ascent was the easiest one which was made in Ecuador, with the exception of Pichincha; and to those who know the best way of making the ascent its difficulties are very moderate. It afforded, however, several surprises. At a distance, from the direction of Machachi, it looked a very insignificant affair—an afternoon walk—but when the final peak was approached closely it appeared quite inaccessible. Finding that the western side was very dangerous on account of falling stones, we returned to the eastern side, and when we got fairly up to the foot of the cliff which faces Machachi we found, to our surprise, that it was easy to scramble up it, although the scramble was a steep one.

On the western side there are probably some permanent snow-beds in the couloirs, but all the other sides were frequently entirely free from snow, so that this mountain scarcely enters the 'snow-line.'

„ 3-6. *At Machachi.*—J. A. Carrel went to Quito for money and stores, and the others were occupied in preparation for Illiniza.

- Feb. 7. Started this morning from Machachi (leaving there the bulk of the stores) with the Carrels, Perring, four natives, and a train of mules for Illiniza. Returned across the Tiupullo ridge, and then bore away to the west to a farm called Hacienda de la Rosario, which was the nearest house to our mountain. Passed the night there.
- „ 8. *From Hacienda de la Rosario to Camp on the South Side of Illiniza.*—Started about 9 A.M. with all the company, and with great labour got all up to the edge of the southermost glacier of Illiniza by 3.30 P.M. The slopes were sandy, and the mules could scarcely be induced to come up the last few hundred feet. Encamped there at a height of 15,300 feet, and sent all the people, except the Carrels, along with the animals back to the hacienda.
- „ 9. *First Attempt to ascend Illiniza.*—Louis Carrel was still unable to walk, and was left in charge of the camp while the two others started for the summit. Started at daybreak, went to the head of the glacier easily (few crevasses), and then took to an arête leading continuously to the highest point of the mountain. This was much broken up; the rocks were frequently loose, and they were interspersed with numerous snow-beds, which almost always overhang one or the other side in cornices. Progress was slow and difficult, and at midday, having then attained a height slightly above 17,000 feet, it was brought to an end by arriving at the foot of the final peak, which here consisted of a vertical section of glacier. The summit was not seen until the explorers arrived at the foot of this obstacle, having been shrouded in mist the whole time. There was no possibility of getting higher on this side except by tunnelling through the ice; and as this was out of the question for two men, and as the eastern and western sides were equally abrupt, it was obvious that there was no means of getting to the summit except from the northern side, which Carrel had previously pronounced all but inaccessible. Commenced descending soon after 1 P.M., and arrived at the camp about 4, having dense mist almost all the way, and not being sure that we should hit off the camp until we arrived at it, as the track on the glacier was nearly obliterated. Mules arrived at the camp about the

same time, and we all went down to the *hacienda*, arriving there at an advanced hour of the night.

Feb. 10-13.—On the 10th we returned to Machachi, and until the 13th were occupied with preparations for Cotopaxi, as there seemed no chance of getting a clear view of Illiniza, which remained almost always covered with clouds. The weather was bad during all these days, and much new snow was seen on all the tops whenever the clouds broke.

„ 14. *Machachi to Hacienda Pedregal.*—The day commenced fine, and we flattered ourselves that at last a change for the better had occurred. Besides the Carrels and Perring, our party consisted of six natives as porters, three arrieros, nine mules, and two sheep. The course away from Machachi led at first nearly due east, over a sort of pass between the mountains Ruminahui and Pasochoa. In three hours and a half we arrived at the farm and collection of huts called Pedregal, and halted there to allow stragglers to close up, being at that time minus three porters, one arriero, one interpreter, and one sheep. Whilst halting a violent rainstorm came on, and rendered it impossible to proceed further that day.

„ 15. *From Pedregal to First Camp on Cotopaxi.*—This morning we proceeded on our way, making a straight track in a southerly direction towards Cotopaxi, that is to say, going nearly at right angles to yesterday's course. We made for the western side of the mountain, to avoid the easterly winds which are almost constantly blowing hereabouts, and after being well drenched in heavy rainstorms encamped somewhat higher than 15,000 feet above the sea, having had great difficulty in getting our animals up the last few hundred feet in consequence of the looseness of the sandy slope. Sent back the arrieros and all the beasts directly their loads were taken off.

We selected the direction which we followed because we believed it to be the best line which could be taken, and without reference to any other ascents which had previously been made. We derived no assistance from our natives, who were profoundly ignorant respecting other travellers who had been in this district. It was, therefore, curious to find subsequently that we had taken the exact line which was followed by Baron von Thielmann about two

years before, and had encamped within a few yards of the position he selected. We found a bottle containing his card at a short distance from the place where our tent was pitched. A good thousand feet lower there were traces of another encampment, but by whom made we were unable to learn. After we had settled down we heard occasional rumbles inside Cotopaxi. They were scarcely more alarming than the noise of a door slammed in a distant part of a large house. Snow fell nearly all night.

Feb. 16. *At the First Camp on Cotopaxi.*—All the time during which we had been in the neighbourhood of this mountain I had studied it on such occasions as it was visible, and had remarked that, although during the daytime it emitted ceaseless clouds of smoke or steam, during the nighttime it was almost always tranquil; and had concluded that we should very likely be able to see well into the crater if we could pass a night on the summit. The great height of the mountain, the want of protection from weather, and the possibility of being surprised by an eruption were all matters which had to be taken into consideration, and preparations had been carefully elaborated before leaving Machachi.

Despatched the Carrels and two Ecuadorians upwards at 8.30 A.M. with the second tent, 250 feet of rope, eight days' provisions for one man, and a variety of etceteras. Sent Perring and the others downwards to collect wood and water, as neither was to be found anywhere near the camp. The first-named party returned at 6 P.M., having accomplished the mission, and deposited the goods near the summit. One of the Ecuadorians had given in after an hour's walking, and the other had stopped at the foot of the final cone. The second party returned at 2.30 P.M., and Perring was then sent back along with two natives, who preferred the attractions of Machachi to the slopes of Cotopaxi.

The weather was again abominable on this day. During the greater part of daylight either snow or hail was falling, and during the rest of the time there was fog or high wind. Min. temp. this night was 25° Fahr. With this temperature, and in total darkness, the remaining Ecuadorians carried on religious exercises for two hours.

Feb. 17. At the First Camp on Cotopaxi.—The others requiring repose, and the weather remaining unfavourable, we remained in camp. Much lightning round about us, accompanied by thunder. The summit was occasionally visible from the camp. Photographed it from two positions. Collected insects, plants, and rocks in the neighbourhood of our station. Got rid of another Ecuadorian, a skulker who was useless.

Heard scarcely any rumblings or noises to-day, though clouds of steamlike vapour were seen continually pouring out of the crater whenever the summit was visible.

„ 18. *Ascent of Cotopaxi. Encampment on the Summit.*—This morning was unusually fine, and the upper part of the mountain was free from clouds for several hours. Started off J. A. Carrel with two natives at 5.20 A.M., and followed with Louis at 6, catching the others at about 17,000 feet above the sea. We had fine views of Sincholagua, Antisana, and Cayambe as we went up, and spent time in examining them through a telescope, with a view to ascending them.

The route which we took led directly up to the summit from our camp, and may be best described by saying that we followed the crest of the ridge, which descends almost continuously from the summit towards the mountain Ruminahui. We scarcely deviated from a right line until arriving at the foot of the final cone, and it was then necessary to zigzag and to bear away slightly towards the south.

This, perhaps, is the best direction from which to make an ascent. We could, however, have followed the ridges next to us either on the north or south with almost equal facility. The whole of the party arrived on the highest point of the summit exactly at midday, having experienced no difficulties worth recounting. With the exception of the final cone (which was a combination of ash and ice), almost the whole of the ascent was made over snow. When between 18,000 and 19,000 feet high, the whole of the party (roped) went up 360 steps without stopping.

Early in the afternoon we despatched the natives back to the first camp, with instructions to return on the morrow, having previously been assisted by them in preparing a place for the tent. The camp was neces-

sarily established on the outside of the final cone, which at this part was entirely composed of ash. This was very warm to the touch, and was so exceedingly loose as to render it a matter of much trouble to fix the tent ropes securely. High wind springing up while we were encamping, we carried out four additional ropes and attached them to the largest stones which we could bury in the ashes. We then rigged up a rope as a sort of hand-rail from the tent to the immediate edge of the crater, from which we were distant 250 feet.

We had scarcely completed our preparations when a violent squall arose, which threatened to carry the whole establishment away. The poles bent and quivered, and the ropes dragged at and loosened their attachments. During an hour it was a great question whether our roof would weather the storm. The squall passed away as suddenly as it rose, and for the rest of our stay we were not much troubled by wind.

At intervals of about half an hour the crater regularly blew off steam, though no stones were ejected, or at least none were observed. The steam appeared to be very pure. It rose in a jet with great violence from the bottom of the crater and boiled over the edge, continually enveloping us. We sustained, however, scarcely any inconvenience from it, and this was the more remarkable since we had been well-nigh stifled with sulphurous fumes during the ascent when about 1,500 feet below the edge of the crater.

When night had fairly set in, we went up to view the interior of the crater, and saw the whole of its vast proportions for the first time. The lower part was illuminated by glowing fires, and one half of the upper cliff was brilliantly lighted by a nearly full moon. Little smoke was at this time rising, and it scarcely interfered with the view, whilst it heightened the effect. Min. temp. in night 13° Fahr., which was the lowest temperature observed during the whole journey.

In the morning we measured 600 feet along the western side of the crater, and took angles to gain an idea of its dimensions. Photographed it, and attempted to measure the depth by lowering a line; but both operations were marred—the former by the

smoke and wind, and the latter by the projections of the cliffs.

At 10.30 A.M. sent the Carrels down to the foot of the final cone with the first instalment of our belongings, and on their return we carried out more work, ultimately leaving our camp at 2.5 P.M., carrying the whole of our remaining goods. During this day we saw nothing of our Ecuadorian porters, who ought to have arrived to assist us; and we were consequently obliged to leave a quantity of our goods at the foot of the cone, and to send for them on the morrow. Though heavily laden, we arrived at the first camp by 3.55 P.M. Much snow fell during the night. Mid. temp. in night 28°.

Feb. 20. At the First Camp on Cotopaxi.—Sent Louis Carrel and the Ecuadorians to recover the goods which were left above yesterday, and despatched J. A. Carrel, on foot, with two mercurial barometers to Machachi, to bring up mules for our retreat. Min. temp. at night 24°.

„ 21. *From Cotopaxi to Pedregal.*—Carrel arrived with the mules in the afternoon, and we quitted our camping-place at 5 P.M., arriving at Pedregal at 9.50, having lost much time in the darkness through having no competent guide. The next day was a day of rest, and we remained at Pedregal with two natives whilst Perring, with the major part of the goods and beasts, returned to Machachi.

This brought our second considerable expedition in Ecuador to a successful termination. It will ever be memorable to me, because our second camp—that on the summit—was by far the highest at which I have ever passed a night, and because I then viewed, for the first time, the whole of the interior of the crater of one of the most terrible volcanoes in the world.

Note.

The engraving which accompanies this number is copied from the work which was published by the Spaniards who were associated with French Academicians in their labours near Quito in the early part of the last century. The tent is supposed to be a representation of the kind which was employed by the travellers, but both its size and the angles of Cotopaxi are exaggerated in a ludicrous manner.

(*To be continued.*)