Three Weeks' Camping-out in the Andes.

By WALTER LARDEN.

II.

I WILL now continue my narrative. Dr. Helbling's second attempt failed; for a violent wind came on, and he was obliged to descend, having nearly suffered from frostbite.

When the weather had quieted down, he set off again for his sleeping place, while I went for a day's ramble, with two objects in view. One was to find where we ought to have camped, and the other was to get photographs of Tupungato.

We had camped by the stream that runs from about S.W. to the point 11,350. I now went up the other branch that runs from S. by E. to the same point—(seeing my one condor, at 200 yards distance, on the way)—and then turned up the first valley to my right, towards the S.W. by S. or so. It was soon evident that it was up this valley that we should have camped, as the great N.W. arête * of Tupungato, spoken of before as affording an obvious route up, is far more accessible from this valley than from that which we had chosen. Crossing the stream, I mounted a ridge on the other side, and advanced along this towards Tupungato until I reached a sort of head from which I had a magnificent view of the N.E. face * of the mountain. It was a striking sight. The whole glacier that descended from the mountain was broken into penitentes, as were also the ice-patches lying on the side of my ridge. I had thought that Dr. Helbling would get up this time. The day had begun well, and I could see clearly how easy a route up the N.W. arête afforded. But wind had now come on, and mist was beginning to cover the mountain. I hurried up with my photography, but I only just managed to get the actual summit in (it is the rocky lump to the left)† before the top became invisible. For a time I stood there impressed much by the extraordinary solitude of the place; and then I had to hurry back. No one knew where I was, and even Dr. Helbling (the only one capable of mountain walking) could not have searched in the dark. I came late back to camp, guided for the

* See note at the end of this article.

† I am here assuming that the illustration is reproduced.

last bit by the cheery light of the fire. Dr. Helbling had failed, as I feared; the terrible wind had beaten him when only some 100 metres below the summit. Thus ended our stay near Tupungato. The mountain remained unclimbed; but we had at least learned how it should be attacked another time.

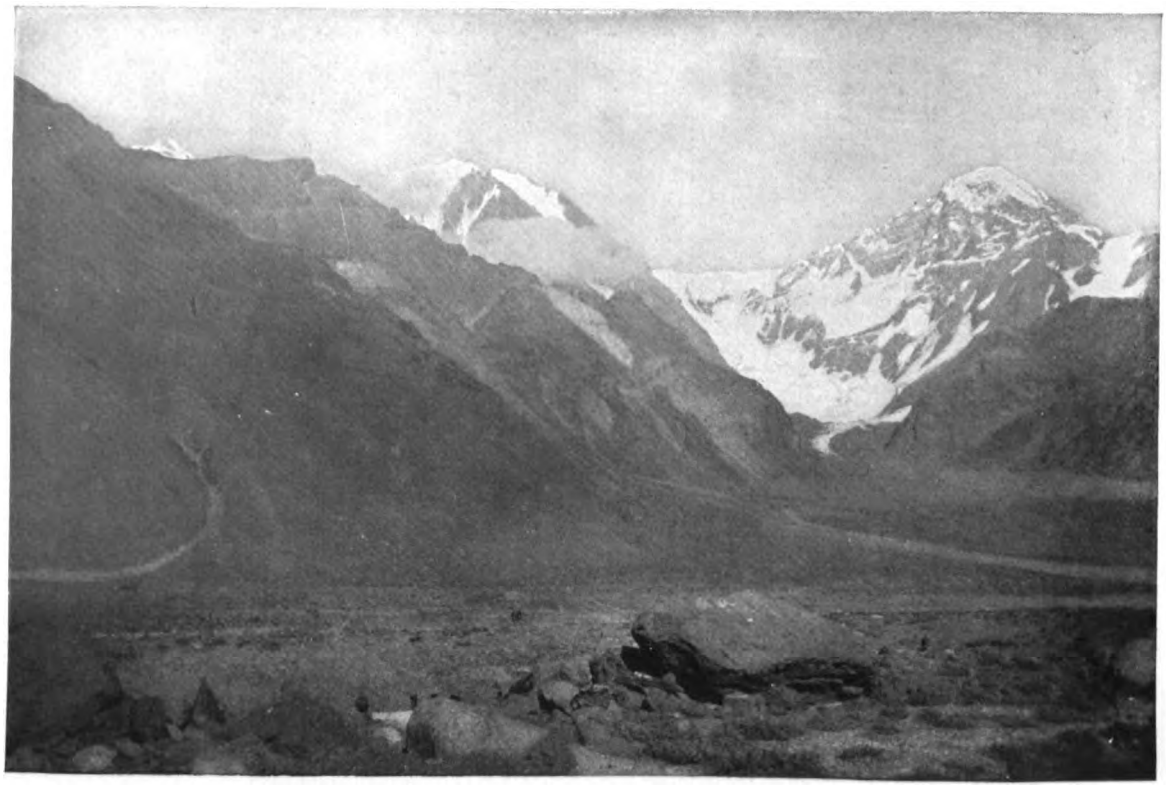
Our next aim was to visit the glacier region at the head of the Rio del Plomo valley; a region, I may say, far more worth visiting than the higher parts of the Tupungato valley where we had spent a week — unless indeed Tupungato, an uninteresting mountain in itself, be considered a worthy objective on account of its height.

In our first day we reached the mouth of the Rio de las Taguas, and made our halt there. Moving on next day we came in an hour or so to a remarkable hot spring. This, like those at Inca, was highly charged with dissolved limestone and salts. The limestone was deposited in a fan-shaped sheet that abutted on the flood-bed of the main-river, and over this flowed the salt and bitter water. Dense masses of the usual dark green, rush-like grass surrounded the spring, and the water, near the source, was full of slimy weed.

Dr. Helbling and Ambrosio had stayed behind for survey purposes; another arriero had been sent back to Inca for food, and the third, with the rest of the mules, was soon far ahead of me as I stayed at the springs to photograph; so that, when I moved on again, I was quite alone. I soon found myself in rather a ludicrous fix, due to my lack of knowledge of this mule work. I got on to the edge of the flat valley bottom. To my right ran the river, so powerful that I was extremely doubtful as to whether it could be forded; and a little way on ahead this stream swept the base of vertical conglomerate cliffs, so that further advance along the margin was impossible. An exceedingly forbidding gulley to my left led up to a higher level above the cliffs. My mule refused the river; my mule refused the gulley. I studied its face, but could not determine, from its reserved and expressionless aspect, whether the animal was merely 'cussed,' or whether it was wisely rejecting what would lead to disaster. I felt absurdly helpless. An hour elapsed, and I began to fear that Dr. Helbling and Ambrosio had passed me by on some higher route that I had looked for and failed to find. However, after 1½ hours the two came up. I had been right not to force the mule to ford the river. Ambrosio pronounced it impassable. We had to dismount; and so, leading them by the reins and urging

CAMP UP THE RIO DE LAS TOSCAS VALLEY

MOJON NEAR THE PORT DEL MORADO; ABOUT 16,500 FT. (?) ABOVE THE SEA



VIEW ACROSS THE RIO DEL PLOMO FROM OUR CAMP

them on from behind, managed to get our animals up the gulley mentioned above.

We were aiming at the left bank of the Rio del Plomo, and accordingly, being on the right bank of the Taguas river, had to cross this. We found later that it should have been crossed opposite the hot springs, where it was much divided. Our present crossing, a little below the mouth of the Toscas branch, was decidedly sensational; but, as usual, Ambrosio managed it very cleverly, taking the worst part in a direction slanting down-stream so as to lessen the side-pressure on the mules.

We finally camped (at about 12,000 ft. ?) high up on the left bank of the Rio del Plomo. A better place would have been on the right bank, on which side we could have got quite close to the glacier. On our side we were cut off from further advance, about 1 hour or 1½ hours below the glacier, by a shoulder that could only be passed on foot. The stream near our camp could be forded before 10 A.M. or so, but not later on in the day.

Next day we climbed this shoulder, and I took a panoramic view.

The day after I went off alone on foot to examine the glacier. It is composed of two main branches that join a little way above their common end. One descends from the W., and is very long; its head lies in névé-fields fed by a group of mountains; but I had not time to get among these. The other branch, which I should call the main branch, and which descends on the whole from the N.N.W., is shorter and wider; and it does not take long to get on to a high hummock between the two branches, where one finds oneself in the presence of the fine circle of mountains that feed this shorter branch.

The combined glacier formed of these two branches ends up in a very curious way. Barring the moraine-covered sides, the ice is clean until close to the end. But here there stretches a band of moraine right across. This moraine has, as usual, protected the ice, and therefore a cross ridge has been formed. The result is that if you descend the glacier (among the clumsily formed penitentes), when you get near to the end you come into a hollow; and in the front of you, extending from side to side of the glacier, rises a ridge of moraine-covered ice that cuts off all view down the valley. Mounting this, you look down dirty ice-cliffs, from the base of which issues the river.

How this cross-bar of moraine comes there I could not see. I had to suppose that it was an accumulation of débris covered by ice higher up and melted out lower down. But the abruptness

with which it occurs is perplexing. I saw no reason to suppose that it was a case of deflected lateral moraine.*

My first day I went a little way up the W. branch, and one of my photos shows, though on a disappointingly small scale, the penitentes into which it and a tributary of it are broken. The chief work of my second day was to get a panoramic view from the hummock, between the two branches of the glacier, of which I have already spoken.

The mountains of this group would evidently give unlimited work for climbers; but they suggested the need for porters and for guides who could cut steps in ice; even Dr. Helbling did not attempt them single-handed.

Another day I examined and photographed some typical conglomerate cliffs, and also some curious saline springs that occurred some way below our camp. Perhaps these last are worth describing.

Cropping out of the conglomerate cliffs that fringed the flat shingle-covered flood-bed of the river were some lower cliffs of a white rock that was as hard as marble when freshly broken, but weathered into a white, somewhat saline, powder after sufficient exposure to the air. From the base of these spread a fan-shaped tract some 300 yards long, discoloured by saline deposits and ferric-hydrate, that ended on one of the branches of the river. This tract was pitted all over with holes from 3 or 4 ft. across and 1½ ft. deep to 12 ft. across and 5 or 6 ft. deep, some of which contained saline water that gave off bubbles of gas. And each pit had an overflow channel from its lower lip. ('Lower' refers to the slight slope of the valley bottom.) Though none were full when we were there, it was evident that the pits and channels had been formed by the welling up of saline water; and that the material of the white cliffs was the source of the salts.

Of our descent to a camp at the hot springs (in the course of which we saw two guanacos), and of our ascent of the mild Cerro Rotondo, I will say nothing;† but will pass on to our expedition up the valley of the Rio de las Toscas (which valley our arrieros called the '*cajon de estoca*') to visit the mojon (or boundary mark) at its head. If the Boundary

* Nevertheless, it may have been.

† At the hot springs it felt relatively warm at night, and Dr. Helbling slept outside the tent. Yet in the morning there was cat-ice over the saline water that had, somewhat higher up, issued warm from the spring!

Commissioners mark rightly the height of the pass called the Port. del Morado, then this mojon, which stands higher on the ridge, is about 16,500 ft. above the sea.

From the hot springs we sent back, for good, one of our men with some of the mules and baggage, and so moved more easily. Our camp that night was in a region more God-forsaken than any we had seen yet; we were at the extreme limit even of the thorny scrub (which by the way was always *cuerno de cabra* and *yareta*, not *acerillo*, higher up), and so were this time short of fuel. In a small dry gulley where we took refuge there were, for the first time, unmistakable evidences of the former presence of the Boundary Commission; for we found a large number of empty wine bottles.

Setting off next day we left on our right a valley headed by an inviting-looking snow group, and at last saw before us the final branch of the stream that was headed by the ridge over which passes the Port. del Morado, and on which stood our mojon.

What a scene it was, and how one realised that here, even in the height of summer, death from cold would grip the belated wanderer! Even at noon the stream ran as a white ribbon, water gurgling under ice; and at 4 P.M. there was not much more water to be seen. And this although, save for bristling ice-patches here and there, the valley was one of bare rock or débris that must have absorbed readily the powerful radiation of the sun. (I may say here that, in the cold and dry air of these high regions, we found no inconvenience from the sun; even with a cap on it was quite endurable.)

When we judged the mojon to be about 1 hour from us, Dr. Helbling and I set off on foot. We passed through one of the patches of bladelike penitentes of which I have already spoken, and soon gained the ridge. Here, at 16,500 ft. or so, there was no sign of permanent snow. Nay, more; to the W.S.W. of us lay a great mound, to the top, or nearly to the top, of which we saw that one could have climbed practically without leaving scree or rock or shale. Yet this was undoubtedly the 22,000 ft. Tupungato! I have elsewhere questioned the validity of the expression 'the snow line,' and will not repeat myself; I will only point out that we were higher than much of the big glacier region that heads the Rio del Plomo valley.

That day virtually ended my time in the mountains. Returning to our camp and sleeping there once more, we set off the following morning for Puente del Inca; and, forcing the pace,

reached it in two days. There I stayed for some eight days, and made a few interesting expeditions on mules. (Dr. Helbling set off for one of *his* favourite excursions. He was for some 34 hours alone on the ice, and had to stamp his feet, to keep off frostbite, all through a night! I was indeed no well-matched companion for a man of such endurance.) One day a large party of us mounted to the side of a glacier that descends from Aconcagua; Dr. Schiller gave the height reached as 5000 metres (about 16,400 ft.). From a strange account of this expedition that I saw later in a Chilian newspaper, I anticipate the growth of a legend that 'On February —th, 1909, a German gentleman with his daughter and niece nearly succeeded in reaching the summit of Aconcagua;' for in this account there was no mention of the rest of the party nor of the fact that mules were used all the way.

On two other days I saw a fresh type of the desolation of the Andes; enormous rounded hillsides and ridges of bare, red, hard earth. It is no doubt the aridity that causes this desolation and this rapid degradation of the mountains. With more water, vegetation would grow, and then its roots would exercise a binding influence. And, once the vegetation got a start, there would be less sand for the wind to sport with; and the burying of grass and scrub under wind-drifted sand, which now is so noticeable, would cease.

I fear that mine was a very tame expedition. But I venture to think that it does really contain something of interest for climbers, since it indicates how the Andes may be explored (as Drs. Helbling, Reichert, and Schiller and others do explore them) at moderate expense.

My share of the expenses of the three weeks (and we had more mules than would be needed had not heavy and bulky surveying instruments been taken) was £45.

Assume now that I had been younger (say between 30 and 40) and stronger, and that I had had with me sleeping gear (I will just suggest eiderdown or warm fur as a basis) lighter and warmer than that which Dr. Helbling had, I think that I may fairly say that, had there been better luck as regards wind-conditions, I might, at this moderate cost, have climbed Tupungato and perhaps some other big peak, and have explored to some extent the Rio del Plomo glacier region. And, for less, I might have climbed Aconcagua and Tolorsa.

I understood that at Puente del Inca one can get into touch with two men who are more or less trained guides. If one

GLACIER-REGION HEADING THE RIO DEL PLOMO VALLEY

W.N.W. BRANCH OF THE RIO DEL PLOMO GLACIER, AND A TRIBUTARY TO IT, BOTH BROKEN INTO PENITENTES

added to the above a suitable additional sum for the hire of these, the chances of doing some real climbs would be much increased.

The main points to be considered are the following:

1. The hire of mules and men. Here one must 'know the ropes.' At the hotel they were asking \$1 (1*s.* 9*d.*) per hour; but we paid only \$1½ per 24 hours!
2. The commissariat.
3. The possibility of joining some old hands.
4. The question of clothing and sleeping-gear.

In all these matters I think that I can either give some useful hints and information, or can put people in the way of obtaining the same. I shall be very glad to answer to the best of my ability any questions that may be sent to me.

Note.—My compass, balanced for the Northerly dip of England, jammed badly in these regions, which lie of course south of the aclinic line, and have Southerly dip. For this reason, and possibly because of the presence of magnetic rocks, I cannot feel sure of the bearings that I have given. It is only right to say that, in my notes taken at the time, I had spoken of the 'W. arête,' and of the 'N. face,' of Tupungato; and that it was subsequent study of the Chilian map that caused me to alter these into the 'N.W. arête' and the 'N.E. face.'

Minor Rock Climbs from Courmayeur.

By CLAUDE WILSON.

SOME years ago it was my fortune—good or bad—to record among the 'New Expeditions' in the 'Alpine Journal,' one or two minor rock climbs in the neighbourhood of Courmayeur. I did this in simple-mindedness and good faith, without the slightest shadow of a notion that a vigilant editor would consequently attempt to exact the promise of a paper upon these and neighbouring climbs. But after some sparring the promise was given—chiefly to avoid controversy—for the idea of fulfilling it was at that time never seriously considered. I felt that the matter would shortly be forgotten, and that at any rate it would be easy to escape, as indeed I have several times done, by a simple and truthful statement that I was as yet insufficiently equipped. But the subject had perhaps already taken hold of me, and it certainly has grown upon me since: and while, as opportunity offered, some little