

was in the year 1846, I think, that the sailors of the *Conway* were massacred on shore and their heads stuck on poles at Tamatave. In fact, H.M.'s service did not gain much honour on that occasion from its conflict with the Malagasy. What has struck me, in listening to this paper, is the great advance Antananarivo has made, and the total absence of improvement in the means of communication between Tamatave and the capital. As now described, it is exactly what it was fifty years ago, and apparently the French, who have now been in occupation long enough to have made travelling more easy, have failed to do so. It certainly is surprising. I rather suspect that the Malagasy up to the present time have not wished to improve the communication between the shore and the capital. I do not know if I am right, but Mr. Sibree will inform us. I wish also to bear witness to what Mr. Sibree has said with regard to the work of the London Missionary Society, and the other missionary societies in the island, towards the civilising of the natives. They deserve the highest credit for the perseverance, courage, and zeal with which they have prosecuted their labours. We may also add that here—as in many places we cannot do—their work has been highly successful. I have listened to the paper with the greatest pleasure, and shall be glad to be the mouthpiece of the audience in conveying our thanks to Mr. Sibree, not only for his paper, but for his most interesting and beautiful illustrations.

Mr. SIBREE: In reply to the question, I may just say it is quite true no improvement at all has been made in the means of communication from Tamatave, and the cause of this has been largely political. The prime minister used to say he had two generals in his army, General Forest and General Fever, and these he pitted against any foreign forces coming up to take his town. The Malagasy discourage the road to the interior, because they know it would be used by foreign forces to enable them to overawe the town of Antananarivo; and the wisdom of this is proved, as the French, when they invaded the island, were only able to penetrate 5 miles inland from the coast.

The PRESIDENT: Mr. Sibree, who has done already so very much to make Madagascar better known in Europe, has added to his services by the excellent paper he has read to us to-night. You will desire that I should return to him, in your name, your best thanks; and I do not doubt that you will wish to include the other gentlemen who have addressed us. Mr. Pickersgill told us a great deal that was very interesting, and with much skill he entirely avoided the subjects upon which Mr. Sibree had already addressed us. One is always safe in calling upon Canon Tristram whenever there is a question of natural history in any part of the world; and Sir Rawson Rawson is always instructive.

Mr. Conway's Karakoram Expedition.

THE following letter from Mr. Conway has been received by the Secretary. The previous letter, referred to in the first paragraph, as well as the maps which, in a former letter, were said to be about to be sent down in the Residency bag, have not as yet come to hand. The letter now received gives an account of the explorations carried on during the month of August on the Baltoro Glacier, in the Mustagh Range. Mr. Conway's party reached Srinagar on October 12th, having been the whole summer

season—some five months—in the mountains. Some extracts from private letters from Mr. Conway's companion, the Hon. C. G. Bruce, a son of our late President, Lord Aberdare, are added. They supply in part the missing letter by giving an account of one of the great glacier passes crossed. Of the second, the Hispar, &c., crossed by Mr. Conway himself, we have as yet only the summary account telegraphed to the 'Times.'

JUNCTION CAMP, BALTORO GLACIER,
BALTISTAN, KASHMIR.

August 29th, 1892.

IN my former letter I sent you an account of the passage of the Nushik La and the Hispar Pass, accomplished by sections of my party. I have now to inform you of our doings during the last month. We remained at Askoley for four days, resting from our labours, and making preparations for an exploration of the great Baltoro Glacier. Mr. Eckenstein's health compelled him to quit the party, so that when, on July 31st, we started away from Askoley, our numbers were reduced to the Hon. C. G. Bruce, Mr. A. D. McCormick, and myself, with the Alpine guide, Zurbriggen, and our invaluable four sepoy, Harkbir, Amar Sing, Parbir, and Karbir, all from the 1st Batt. 5th Goorkhas. We had, besides, about seventy coolies, and a miscellaneous following of servants, goat and sheep drivers, and the like.

The first day we retraced our steps to the foot of the Biafo Glacier which we crossed in blazing mid-day heat to the usual camping-ground, called Korofon. The glacier has retreated considerably since Col. Godwin-Austen was here, and no longer blocks the main Braldu Valley. The river that drains the Baltoro and Punmar Glaciers flows past the foot of the Biafo Glacier, and does not tunnel under the ice. From Korofon we went forward in two parties to the rope-bridge that crosses the Punmar stream. One party kept the lower way round by the edge of the river. McCormick and I climbed over the intervening mountain buttress for the sake of the wider view, and also in order to add to the natural history collections. We found several flowers new to us, and caught a quantity of butterflies. We met our companions at the rope-bridge, and camped just beyond it. The coolies, carrying first their loads, and then the sheep and goats one by one, took five hours to cross the bridge. Close to our camp was a side stream draining a small glacier on the east. The stream is usually about two yards wide, but during the night of August 1st, owing to the great heat, it so waxed in volume that when we came to try and cross it our endeavours were for a long time fruitless. We set the coolies to cast stones into the deeper parts, but the waters carried them away as fast as they were thrown in. Zurbriggen then got out the climbing-rope, and McCormick and a Goorkha succeeded in wading across with it. With this rope fastened

from bank to bank, and the Goorkhas, and often Bruce, standing thigh-deep in the icy stream to help, we succeeded in conveying all the coolies over. The stream was steadily rising all the time, and the last coolies, when they did not fall down, were at least buried up to their waists in the swift torrent. Bruce was here, there, and everywhere, manifesting his usual abundance of energy. He carried over about half the sheep, taking them one by one under his right arm, while with the left he grasped the rope in the deeper places. At first he carried two sheep at a time, one under each arm, but the rising waters prevented any further exploits of the kind. An hour later we reached the angle of junction of the Punmar and Baltoro Valleys, and thenceforward we advanced up the latter towards the foot of the great glacier. It took us a day and a half of most laborious travelling to reach the foot of the ice. The whole way we traversed steep stony slopes bare of all vegetation and facing the south, whence the sun blazed down upon us with a hateful fury. Above us was almost always a precipitous rock-cliff; below us the raging torrent. We had to find an often precarious way across the narrow *débris* slope between the two. Sometimes we were forced to descend to the very verge of the waters; sometimes we had to scramble across the face of the precipitous rocks. At length, on the second day, the foot of the Baltoro Glacier came in sight, and in due time we pitched our camp close to the ice-cave from which the river rushes in mighty volume. We rested a day at this spot.

On August 5th we climbed on to the foot of the Baltoro Glacier, and commenced ascending it. Little did we foresee the discomforts it had in store for us. The Hispar Glacier, with its stone-covered snout 20 miles long or more, had been a revelation to us; but if the Hispar Glacier is stony, the Baltoro is much stonier. Fully two-thirds of its entire length are so completely covered with stone-*débris* that the ice is not visible, except where lakes or crevasses occur. We were able to avoid the lower part of the Hispar Glacier by traversing the slopes of its left bank; but the banks of the Baltoro are not traversable. Straight up the horrible middle of the ice one is forced to go. And then the surface is not flat, but consists of a series of prodigious mounds. One I measured was 200 feet high. These mounds can sometimes be circumvented, but oftenest must be climbed over; and the stones that drape them are resting upon ice, and constantly give way under the foot. There are also many lakes in the ice hereabouts, as in so many other glaciers, and these add to the deviousness of the way. It follows that the progress of the laden coolies was slow, and that the marches had to be short. To make matters worse, the weather was abominable, and every afternoon we were deluged with cold rain, which seemed to freeze the very marrow of our bones.

The scenery by which we were surrounded during these days of glacier marching was, of course, superb. On the very first day

Gusherbrum disclosed his giant tower right ahead of us, uncompromisingly inaccessible from this side. On the evening of the second day, after the usual storm, the veil of clouds, swiftly drawn aside, revealed to our delighted gaze the glorious form of Masherbrum, with his summit rocks golden in the sunlight and grand skirts of snow sweeping down to the glacier beneath.

Four days we marched up the stony glacier, and at the end of the fourth march we encamped by the side of a little lake on the north bank. The weather promised well for the morrow, and we determined to ascend a peak to the north, whence we might expect to gain a view of the monarch mountain of the district, the peak catalogued on the map as K², and measured 28,278 feet high, second therefore only, amongst measured peaks, to the great Gaurisankar, in Nepal. A peak so important cannot permanently remain with a designation so inadequate. It has been proposed to attach to it the name of that energetic explorer and surveyor, Colonel Godwin-Austen, just as the name of the Swiss surveyor Dufour has been attached to the highest point of Monte Rosa. But as no one would dream of calling the highest of the Central Pennine Alps Mount Dufour, and as it is surely inappropriate to exchange the ancient and beautiful name of Gaurisankar for that of Mount Everest (euphonious though it be), so neither does it seem to me suitable to call the monarch of the Mustagh Range Mount Godwin-Austen. Let the highest point of Gaurisankar be the Everest Peak, the highest point of K² the Godwin-Austen Peak, as the highest point of Monte Rosa is the Dufour Peak; but let each great mountain mass be named, as the natives of a locality always name their mountains, descriptively, and not after any person whatsoever. Tower-like in form, K² stands on the great rampart that encircles and protects the empire of India on the north. It looks abroad over the Central Asian plateau. I suggest, therefore, that it be called the Watch-Tower of India, and by that name I shall designate it till a better be suggested.

At two o'clock in the morning of August 10th we started to ascend the mountain of our choice. It seemed to be a point in the ridge dividing the Baltoro Glacier from the tributary ice-stream that comes from the Watch-Tower. The brilliant moonlight enabled us to dispense with a lantern. We mounted at a fairly rapid pace straight up the slope of grass and stone-*débris* north of our camp. The dawn did not appear till long after it was expected; but the moonlight sufficed to make even such unpleasant ground as we had to travel over, visible in all its details. When we had climbed for about an hour, the view behind us was greatly developed. We could look up the various side glaciers to the south and discover the order and arrangement of the peaks at their heads; but it was not these that startled our interest, and made us halt thus in the cold morning. A far more important object was in sight away to the south-east, at a distance of some 15 miles.

The Baltoro Glacier is formed by the union at the west foot of Gusherbrum of two great affluents. One of these descends from the Watch-Tower, and is itself formed by the confluence of seven tributaries; the other and longer branch comes in from the south-east. About 8½ miles above the junction point this south-east glacier again divides into two large branches. Between these rises an enormous mountain mass, not marked on any map. It is throne-like in form, and, as it were, draped in a noble white robe. Auriferous veins permeate its mass. We named it, therefore, the Golden Throne. It was this beautiful mountain, with one exception the most beautiful in this region, that had been coming into view as we ascended, and now, in the mixed lights of moon and dawn, smote upon our eyes as we turned round. With one consent we cried, "That is the peak for us! We will go that way and no other!"

One of the chief objects of our day's expedition was thus early accomplished, for we had come forth to see the great peaks and make our choice from amongst their virgin array; and now, though we had seen but one, we were captive to its beauties, and our choice was made. We sat down for half an hour to fix the lineaments of the great peak once for all in our memory, fearing lest the envious clouds which enveloped Gusherbrum and Masherbrum should hasten to wrap away the Golden Throne from our sight. But in this matter, as in many others, the fates were generous to us that day; and though at times the sky was heavily beclouded, and the great mountains were for the most part buried in misty folds, the peak of our desires remained almost always visible from side to side and from base to summit.

When we started off again we went forward in happy frame of mind, pounding up the stones which no longer seemed so hateful. At break of day we halted to photograph the Golden Throne, and shortly afterwards we reached firm rocks, which led us to a finely-situated plateau, apparently intended by nature for a plane-table station, and promptly utilised by us as such. Above this plateau the ridge narrowed to a sharp rock arête, which we followed for the remaining four hours of our ascent. It is an arête broken by many gaps, and decorated with many points, shoulders, and teeth. It consists almost entirely of one kind of rock, whose strata, inclined but little from the vertical, cut approximately at right angles to the direction of the ridge. It results from this formation that there are frequent walls of rock across the ridge, whose steep faces have to be climbed. Sometimes we scrambled along knife-edges of rock; sometimes we went over the very top of jutting pinnacles; sometimes we had to take to the steep face on one side or other of the ridge, and to clamber along little ledges till we could get into a gully and climb back by it to the arête again, having thus evaded a difficulty presented by the crest of the ridge itself. Below us, on the left, at the foot of a precipitous rock-ribbed slope, was a narrow glacier,

broken from side to side by deep and impassable crevasses. Below us on the right, was another glacier, at the foot of a slope less steep, but still steep enough for a stone loosened by our feet to bound down it, taking an avalanche of its fellows with it to the icy plain.

All the Goorkhas went well. Harkbir shows the best mountaineering ability. Besides climbing as well as the others, he picks up the mountain craft more rapidly, and begins to handle rope and axe intelligently. He is already at least as good as a good Swiss porter, and if he could work for three years under a first-rate guide like Zurbriggen, he would become a good guide himself. Karbir could also be made into a good guide in the same time, and Amar Sing is only a little less promising than these two. Parbir is a capital independent scrambler, but will always remain an amateur.

We halted for an hour at the breakfast place, enjoying and photographing the gorgeous view that was displayed all around. Bruce and the Goorkhas followed our example and put on the rope; Parbir, the humorist of the party, amusing himself by roping Amar Sing in a slip-knot, and almost rolling over a precipice in shrieks of laughter. The sun was shining brightly on the eastward face of the arête, but the other side remained in frosty shade, and the delicate spiculæ of ice, with which the rocks were furred, kept crisp till the sunlight actually struck upon them and dried them away almost in a moment. We had already reached a height of over 17,000 feet, and yet we felt no inconvenience from the rarity of the air as long as we advanced at a steady pace, and were not obliged to take up specially cramped positions nor to hold the breath. If the chest is kept free, so that it may expand to its utmost limits, the lungs supply themselves with air enough. But if the man in front of you tugs at the rope and thus constricts the chest, or if, at the moment of making an unusual effort, you hold your breath, as you naturally will, a slight sensation of giddiness supervenes; but this is swiftly dissipated by a few deep breaths.

A quarter before noon we stood on the summit of our mountain, and as we found some crystals there, we at once named it Crystal Peak. Its altitude is approximately 20,000 feet. We were disappointed to find that it was not situated on the crest of the ridge dividing the Watch-Tower and Baltoro Glaciers, but that a deep gap separated us from that ridge. We could look over it at many points, but a narrow pyramid of rock about 1500 feet above us exactly shut out the view of the Watch-Tower of India, whose buttresses only were we able to see.

Facing the south the view was in many respects similar to that from the Zermatt Gorner Grat, though, of course, on a vastly larger scale. The Baltoro took the place of the Gorner Glacier, sweeping down from left to right, and fed by a series of large affluents descending from giant peaks. The Golden Throne occupied the position, and though far surpassing it in beauty, mimicked the form of Monte Rosa. Masherbrum,

imposing and precipitous, took the place of the Matterhorn. Its summit is certainly accessible, but the climber who reaches it will have to carry his life in his hand during all the climbing hours of a long summer's day. Beyond Masherbrum were countless minor peaks away to the stately Mango Gusor and the ridge opposite Askoley; but clouds rested upon them, and shut out any glimpse into the greater distances, which this, the only gap in the vast amphitheatre that surrounded us, might have permitted.

We remained for an hour and a quarter on the summit in perfect comfort, observing the instruments, taking photographs, eating our light luncheon, smoking our pipes, and by no disagreeable sensation whatever (as long as we remained quiet) feeling that we were a foot above sea-level. At one o'clock we reluctantly turned to descend. We retraced our steps for a few yards along the deeply corniced snow-ridge, and then, creeping through a gap in it, we struck straight down a snow-crested rib on the east. It was a steep rib, and the snow was rather soft; besides that, it rested upon ice, which now and again came too near the surface to be comfortable. But there were always rocks close at hand to which we could take if need arose, so that we advanced without anxiety. We followed the rib for an hour and a quarter and then left it for the couloir on the north, by which we reached the snow-field at the head of the glacier below in half an hour more. We ran down easy slopes for a few minutes, and thus came to the edge of the stone-covered portion of the ice. The remainder of our descent to camp took three-quarters of an hour, and lay wholly over slopes of horrible stone-*débris*. It was a glorious climb, and, for the matter of that, not unmemorable, for no peak of such altitude, in which there was any considerable mountaineering difficulty, has ever before been ascended. The climbing on the Crystal Peak, in the ascent at any rate, was as hard as the climbing on the Matterhorn.

The next day, August 11th, was brilliantly cloudless, filling all our hearts with content and our spirits with hope. We rested in the morning, and, after lunch, made a short march to the foot of the last considerable side glacier descending from the great ridge of which the Crystal Peak is a buttress. We made our camp on the fan of white moraine thrown off from the snout of the side glacier. Next morning, August 12th, Bruce and Zurbriggen went off to institute preliminary investigations in the neighbourhood of the Golden Throne, whilst McCormick and I, with two Goorkhas, made a second attack upon the ridge that hid the Watch-Tower of India from our anxiously expectant eyes. This time we proposed to reach a col in it instead of a peak. Starting at 6.30 A.M. we mounted the long slope of white *débris* behind the camp, and then traversed the steep slopes along the left bank of the White Fan Glacier. We thus avoided all the great crevasses, and reached the upper snow-field in two hours from our camp, and

just as the sun peeped over the high eastern ridge. We put on the rope and wandered across the snow-field, found a way over the big bergschrund beyond it, and then cut steps up a short, steep slope of ice to the col. It was an exciting moment before we topped the ridge, for, thanks to the map, we had a clear idea of what we expected to see. Below us should have been a vast amphitheatre of snow, and rising beyond it the Watch-Tower of India, visible from base to summit. Ever since I decided to come to these regions this was the view that had haunted my imagination and raised my keenest hopes. Now the long-expected moment was at hand, and only a frail wall of snow separated us from the wondrous sight. With a bound we were on the ridge, and floods of disappointment poured over us. There was no great snow-basin, no vast peak majestically rising out of it. Opposite to us was a mean ridge not much higher than we were (18,000 feet), and separated from us by a narrow glacier. Above the ridge there rose into the air an ugly mass of rock, without nobility of form or grandeur of visible mass, broken up into a number of little precipices by small patches of snow that spotted it about. McCormick, with his bag of blocks and colours, asked in disgust, "What have I brought these here for?" and we sat ourselves down in comfortless positions on angular rocks and lit our pipes for solace. However, matters were not really so bad as they seemed. The view to the north was a fraud, and the only thing to do was to turn one's back on it; but the view southwards, whence we had come, was superb. It was a mountain prospect, perfect in all respects, and beheld under every advantage of brilliant light, fallen obliquely enough, and absolute atmospheric clearness. For foreground there was the purest of snow-fields, bending to its hollow with every grace of curve. For frame there were the delicately-coloured walls of two mighty mountains, whose sharp summits pierced the sky on either hand to an overpowering height. Beyond the white snow-field was the sweeping surface of the Baltoro Glacier, acting as broad foundation for an infinite complex of mountains behind. Right and left, Jakin and Boaz to this temple of nature, two spires of dark rock reared themselves aloft, with a glacier flowing out between them from a low pass. Over this pass there came ridge behind ridge, peak behind peak, rising higher and higher, tier above tier, with ribs of rock and crests of snow and deep-lying valleys of ice-bound splendour, till the eye, bewildered by so much magnificence, ceased from the attempt to unravel the tangle of the hills, and rested satisfied with the whole as an impression, single and complete.

In returning to camp we could not follow the left bank, as in the ascent, for now the slopes were awake, and stones kept constantly falling down them, singly and in battalions. We had therefore to find our way through a maze of crevasses, which occupied a good deal of time. When we reached the tents we found the thermometer

within registering 92° , but by admitting what little breeze there was and loading the roof with blankets we made the place habitable. Later in the afternoon fine gossamer clouds began to drift up from the south-west—certain harbingers of bad weather in these parts. Presently they lost their crisp outlines and melted together into a high mist, which ultimately thickened into a black and threatening pall of cloud that blotted out all the blue from the sky, but cast it on to the mountain shadows.

On the following day, August 13th, we started up the glacier in the footsteps of Bruce and Zurbriggen, to join them, two marches on, at the base of the Golden Throne. In a little more than an hour and a quarter of quick walking we came opposite the mouth of the Watch-Tower Glacier, and could look towards the great peak; but its upper parts were veiled in clouds, and we could only see the spreading base of its buttresses. Opposite the Watch-Tower Glacier another great tributary comes in from the south, whilst the main Baltoro stream comes from the south-east and goes away to the west. We were therefore in a place similar in mountain arrangement to the crossing in the upper part of the Aletsch Glacier, which is known as the Place de la Concorde. We continued our march as long as the coolies could follow, and then we encamped at the entrance of the upper portion of the Baltoro Glacier, and in full view of the Watch-Tower of India whenever the curtain of clouds should be withdrawn.

Bad weather now set steadily in, and for four days we did not move camp. I would not advance further up the glacier till I had taken a round of angles with the theodolite from this important position, and photographed the Watch-Tower. Moreover, there were many necessary arrangements to be made. We were going beyond the limits of the scantiest brushwood, and required provision of fuel for a fortnight. The coolies and Goorkhas had to cook their bread for the same period. All this involved delay, and the fact that it snowed and hailed and blew continually did not facilitate matters. At last, on August 18th, the baggage arrangements and the weather permitted us to start upwards once more. We made a long march of it, still following the same moraine on which Junction Camp was pitched. Thick fresh snow lay everywhere, and made the going laborious; but in mid-afternoon we reached the camping-ground of our companions, and set up our tent alongside of theirs, at the very foot of the Golden Throne, and just out of reach of the avalanches with which it saluted our coming. The height of this camp (we called it Footstool Camp) was about 16,500 feet, or rather more. Its position was magnificent, at the foot of the splendidly coloured precipices of the Golden Throne, with a peak of over 25,000 feet on either hand, and various glaciers radiating from it in all directions. The glacier that most concerned us was the one that we were to follow in a south-east direction under the south-west side of the

Golden Throne. This mounted from Footstool Camp in a staircase of seracs, or ice-falls, above which we hoped to find a broad plateau and a snow-ridge leading from it to the peak.

During our absence Bruce and Zurbriggen had been working at the ice-fall, and had found a way up about 1000 feet of it; but there still remained a band of seracs through which they had not been able to pass. On the 19th they went up again with the Goorkhas, carrying a store of provisions which they deposited at the highest point they had yet been able to reach. The 20th was a day of rest, and brilliantly fine. On the 21st the dawn broke lurid and threatening. An ominous orange glow rested on the higher peaks, and illumined the wild clouds that curled about them. A horizontal drift of mist at a high altitude cut off the summits of the loftiest mountains, and cast dark shadows about their bases. The wind again blew from the south (the bad quarter), and the night had been too warm.

With so much to discourage us we nevertheless started on our momentous expedition shortly after six in the morning. We followed the well-trodden track to the foot of the seracs, and zigzag up amongst them. The morning was close and we all experienced some difficulty in breathing. In an hour and a half we came to the *cache* of provisions, above which the difficult seracs began. The fresh snow was in good condition at last, so that the work before us was not at all so hard as a few days earlier it would have been. We fortunately struck a good bridge over the worst chasm, and thanks to Zurbriggen's splendid leading, we ultimately emerged from the chaos of broken ice on to a sloping plateau of fairly even snow-field, divided about by a labyrinth of huge crevasses. Here we were forced to camp, as the snow was become too soft to permit heavily-laden men to venture over the many snow bridges that still had to be crossed. The height of Serac Camp was about 18,000 feet. When the tents were set up Zurbriggen and the Goorkhas went back through the seracs and fetched up the provisions from their place below. On the 22nd Bruce and the Goorkhas went down to Footstool Camp for more provisions. We were obliged to be well victualled, as, in case of bad weather coming on, it would not have been possible for us to get down through the seracs. Zurbriggen and McCormick went forward to find the way through the still difficult glacier, and I occupied myself about the instruments.

The cold was very severe on the morning of the 23rd, so that we delayed our start till 6:30 A.M., and then went off with such loads as we could carry, the tent, instruments, and warm wraps receiving the preference. The weather was magnificent, and only a few light clouds drifted over the neighbourhood of the Mustagh Pass, which never seems able to keep clear for many hours together. The trudge over the frozen snow was delightful except for our feet, which felt the cold severely. We were not discomforted by the altitude, and could have marched for

hours (in the shade) with pleasure. Our business was to force up the camp another 1000 feet on to the lower plateau, at the foot of what we supposed to be the Golden Throne's arête.

A series of long snow bridges had to be crossed and two journeys made before the sun softened them. When we reached the plateau, in less than an hour, Zurbriggen and the Goorkhas went back for the rest of the things, whilst McCormick and I set up and arranged the tent. When this was finished we discovered that our feet were dead. We pulled off boots and stockings and fell to rubbing our toes with snow. In about half an hour sensation slowly and painfully returned. The second journey occupied Zurbriggen and the Goorkhas about twice as long as the first, for the sun shone upon them, and made breathing difficult. They were presently followed by Bruce conveying some laden coolies, whose arrival made our preparations complete as far as food and camp were concerned. When the coolies had gone down, taking the unwilling dog with them, we set up the three tents for our four selves and three Goorkhas, and passed the remainder of the day in cooking and the like occupations.

On the 24th both Bruce and Harkbir were unwell, so leaving them at the lower plateau we carried all of the tents and three days' provisions another 1000 feet up to a level snow place at the actual foot of a steep slope leading to the arête we meant to climb. This again involved two journeys, and for laden men was very hard work. The height of Upper Plateau Camp was about 20,000 feet, and here Zurbriggen, McCormick, and I spent two nights. The Goorkhas went down to their tent by Bruce's on the lower plateau.

At length, on the 25th of August, we assaulted our peak. Bruce and the Goorkhas called us at 1.30 A.M., and all seven of us had to crowd into the one tent till it should be time to start. They were all fairly numbed when they arrived, and we now knew by experience that, at this altitude, none of us could stand the cold of night for more than an hour. Hence we did not start till 7 A.M. A series of sleepless nights, culminating in this last, rendered McCormick unable to march, so we had regretfully to leave him behind. We started straight up the snow slope behind the tent, and in an hour reached the arête, along which the remainder of our route was to lie. Our bodies grew warm with exercise, but the cold ground seemed to suck the warmth out of our feet. They gradually lost all sensation, notwithstanding our stamping and crunching of them. At last we had to halt and pull off our boots, and set to work rubbing to save ourselves from frost-bite. This we only just succeeded in accomplishing. The sun now came upon us, and though our feet remained numbed for the rest of the day, and in the case of some of us for several days, our bodies were soon far too hot to be comfortable. The great variations between biting cold and grilling heat are the chief impediment to mountaineering at high altitudes in

these parts. Not only are the cold and the heat alike hard to endure, but the change from the one to the other seems to weaken the forces and to render the whole body feeble.

A quarter of an hour's walk brought us to the first point on the ridge, about 1300 feet above camp. Here we halted to set up the barometer, and take some photographs. Beyond the first point there was a small depression, which had to be reached by a rather difficult rock scramble. On either hand steep slopes, or walls of ice, descended to the glaciers below, and we were obliged to keep to the very crest of the narrow ridge. Here our climbing-irons were of the greatest assistance, for the rocks were all fissured over with little cracks, which would have given no hold for bootnails, but afforded securest anchorage for the steel points of our claws. Beyond the little col, which we reached in about ten minutes, the slope on our right hand came rounding forwards, and presented to us a very steep face of mingled ice and rocks, which had to be surmounted before we could again travel along the main arête. We had a tough scramble of it for a quarter of an hour, and then we expected better things. But, to our horror, we found that the ridge leading to the second peak was not of snow, but of hard blue ice covered with a thin layer of snow. Every step we took had to be cut through the snow into the ice. The snow would have clogged the climbing-irons and prevented them from taking firm hold of the ice had it not been cleared away.

The ice beneath was in any case too hard for the steel points to penetrate until it had been prepared by a stroke or two of the axe. Small steps sufficed for us, but if we had been without climbing-irons, large ones would have been necessary for safety; our work would have been greatly increased, and our rate of progress much diminished. As it was, Zurbriggen found the work of step-cutting—severe at any time—far more fatiguing than at the ordinary Swiss levels.

From the top of our rock scramble to the second peak took us an hour and ten minutes. We were rewarded when we got there by finding, under a kindly rock, a little pool of clear water, more precious to us than all the veins of ore that traverse our mountain in every direction. Amar Sing was overtaken by mountain sickness at this point, and had to be left behind.

The remainder of our ascent was altogether monotonous. The white ridge led straight up before us, and had to be followed. It was of ice thinly covered with snow, and every step had to be cut with the axe. Moreover, the arête was heavily corniced on our left hand, so that we were forced to keep well on to the right slope, and remained in ignorance of the development of the view in the other direction. Our advance was necessarily slow, and the terrible heat which the burning rays of the sun poured upon our heads did not add to its rapidity. There was plenty of air upon the corniced ridge where we could not go,

and now and again a puff would come down upon us and quicken us into a little life. For the most part we were in the midst of utter aerial stagnation, which made existence intolerable. Such conditions dull the observing faculties. I heard the click-click of Zurbriggen's axe making the long striding steps, and mechanically struggled from one to another. I was dimly conscious of the vast depth below on the right filled with tortured glacier and gaping schrunds. But now and again would come a reaction, and the grandeur of the scenery would make itself felt. We could look over the three passes at the head of the serac glacier, and behold mountain masses of extraordinary grandeur showing above them. At length the slope we were climbing became less steep, and with a few more steps we stood, at 2.45 P.M., on the summit of the third peak on the ridge, at an altitude of about 23,000 feet.

Here a surprise awaited us. The Golden Throne's summit was still 1300 feet above us, but the peak we were on was absolutely cut off from it by a deep depression, of whose existence we had necessarily been kept in ignorance till now. We had climbed another mountain, and our work was done. We were glad of it. I imagine that when my observations are properly reduced the altitude of our mountain will come out from 22,750 to 23,000 feet. We named it Pioneer Peak. Unfortunately, the broad extended arms of the Golden Throne shut out much of the distant panorama from us on one side, and a grand snow pyramid of over 25,000 feet on the other also intercepted the view to the south, though its own noble aspect was compensation enough. But framed in the passes I have mentioned there were glorious mountain pictures, that to the south, looking straight down the great Kondus Valley, and away over the bewildering intricacy of the lower Ladak Ranges, being especially fine, and rendered all the more solemn by the still roof of cloud poised above it at a height of about 25,000 feet. When one beholds a small portion of nature near at hand, the action of avalanches, rivers, and winds seems tremendous; but in a deep extending view over range after range of mountains, valley beyond valley, nature's forces are reduced to a mere trembling insignificance, and the whole effect is of a majestic repose. The clouds seemed stationary above the mountain kingdom. Not a sound broke the utter stillness of the air. We ceased to pant for breath the moment the need for exertion was withdrawn and the breeze began to play upon us. A delicious lassitude and forgetfulness of past labour supervened upon our overwrought frames.

But the moments were precious, and each must be used to the best advantage. The sickness of two of the Goorkhas reduced the number of instruments that could be carried, and I greatly lamented the absence of my little theodolite, whose place was inefficiently supplied by a prismatic compass and a clinometer. With these I took a round of angles. I next photographed the panorama twice round. Then the

turn of the plane-table came, and I was able to sketch in an important addition to the glacier survey. Meantime the barometer had been accommodating its temperature to that of the surrounding air (54° Fahr.). It stood at 13.30 inches, and yet we felt no insufficiency in the supply of oxygen, and Zurbriggen was able to smoke his cigar in comfort. Finally I took tracings with the sphygmograph of Zurbriggen's pulse and mine; and here the damaging effect of altitude made itself apparent. Our lungs were working well enough, but our hearts were being sorely tried, and mine was in a particularly bad state. We had all nearly reached the limit of our powers. We could have walked uphill 1000 feet more or so, but we could have done no more difficult climbing, and Zurbriggen said that he could have out no more steps. If we could have had tents and warm wraps and spent the night at this point, we should, I believe, have been able to restore our forces and to have climbed another 3000 feet next day; but we were all weakened, not so much by the work of the previous hours as by the continued strain of the last three weeks. There was no debate about what we should do next: we all knew that the greatest we were going to accomplish was now done, and that henceforward nothing remained for us but downwards and homewards.

We remained on the top for an hour and a quarter, for it was hard to give over repose, and harder still to tear ourselves away from a scene so magnificent and so rare. The southward vistas, which were wholly new to us, had of course chiefly arrested our attention in the moment of our arrival at the top; but it was westwards, down the valley we had mounted, and far far away to the north-west, that the vastest area was displayed to our wondering gaze. Gusherbrum, the Broad Peak, and the Watch-Tower of India showed their clouded heads over the north ridge of the Throne, and were by no means striking objects. Further round we looked straight down the Baltoro Glacier to the great Junction, beyond which stood up, in all its constant majesty, the finest mountain of this district and of all mountains that I know, save only the unsurpassable Matterhorn, for majesty of form. It is a peak about 25,000 feet in height, unmarked on any map, and if previously beheld by any traveller, mistaken, as is most likely, for the Watch-Tower of India. It stands close to and east of Captain Younghusband's Mustagh Pass, so I have called it the Guardian of the Mustagh. Beyond this and the neighbouring Mustagh peaks came the Biafo mountains, and those that surround the Punmar Glacier, and this was but the foreground of the view. Away it stretched to the infinite distance behind the ranges of Hunza, and northwards, possibly as far as the remote Pamirs. This incomparable view was before us during all our descent, with the evening lights waxing in brilliancy upon it, and the veil of air growing warmer over it. The high clouds that roofed it became golden as the sun went down, and every grade of pearly mystery, changing

from moment to moment, enwrapped the marshalled mountain ranges that form the piled centre of Asia, and send their waters to the remotest seas.

A few minutes before four o'clock we started on our downward way, and in little more than half an hour we reached the rocks of the second peak, and were able to satisfy our thirst with draughts of fresh water from a generous pool. We found Amar Sing quite well again, and able to make the descent without assistance. It took us 50 minutes to reach the first peak, and then our work was practically finished, for only a long snow slope separated us from the tent. After a final look round, we seated ourselves on the steep snow and slid down it to camp in less than a quarter of an hour. We reached camp at a quarter past six.

Next morning, August 26th, we went down to Bruce's camp at an early hour, taking all we could carry with us, and leaving the rest to be fetched by two Goorkhas. We loitered about on the lower plateau, so that it was eleven o'clock and very hot before we started down through the seracs. We found the snow soft and many of the bridges broken, and besides, we were all heavily burdened as well as tired. The heat was terrible, and not a breath stirred the stifling air. The four hours or more that we spent amongst the seracs were far the most trying we have experienced. Ultimately we reached Footstool Camp and entered upon repose. We rested there the following day, and observed, without regret, that the fine weather was breaking up. On the 28th we came down to Junction Camp, starting rather late, and being overtaken by a snowstorm and driving wind on the way. Snow fell heavily all the afternoon and during most of the night, and when we awoke next morning the snow had drifted up the sides of the tents to the height of a foot or more. The sun is now shining hotly, and wreaths of cloud are drifting around the Watch-Tower of India and the Golden Throne. We shall continue our downward march this afternoon whatever the weather may be, for we are tired and worn by long exposure to high altitudes. Our stock of provisions is running short, and our flock is reduced to one miserable little sheep. To-morrow we hope to reach the foot of the Masherbrum side glacier, whence a low pass leads southwards to Kapalu. We hope to cross that, and thus to leave the regions of glaciers and snow. I intend to go to Leh to compare my barometer with the standard instrument there, and then to return to Abbottabad and so home.

W. M. CONWAY.

SKARDO, *September 12th.*

P.S.—I have had to be the carrier of my own letter, so I reopen it to inform you of the close of our mountaineering season. Bad weather pursued us down the Baltoro Glacier, and we were daily snowed and hailed upon. On August 31st we arrived at the corner of the Stachi-

kyungme side glacier (just opposite to the highest point reached by Col. Godwin-Austen). Next day we sent off all our spare baggage and rested. On September 2nd I sent Zurbriggen to look at the reputed pass at the head of the side glacier by which we hoped to cross into the Hushe Valley. He returned with the report that the passage was impossible, the glacier being terminated by a lofty wall entirely swept by ice-avalanches from high-perched overhanging glaciers. There was nothing for it but to go down by the way we had come; and anyhow, the continued bad weather made this course the only prudent one. We reached Askoley in three forced marches, and rested a day there. On September 7th and 8th we crossed the Skorola to the village of Skoro, in the fertile Shigar Valley, and we came on here, down the Shigar and across the Indus, on a raft of inflated sheepskins. To-morrow we start for Leh.

W. M. C.

The following are the extracts from the letters of Mr. Bruce:—

NAGAR, *June 25th*, 1892.

NAGAR is about six miles from Balbit—Hunza Proper, that is—and is almost as delightful as that place.

The cultivation of both places is simply extraordinary, and the system of irrigation perfect. Conway considers that some of the main irrigation canals must be five hundred or six hundred years old. Every field produces two crops a year, and has for many generations; and, as far as I can see, the land has apparently no need of rest. I suppose plenty of sunshine and water, with certain snow in winter, has a good deal to say to this. Hunza and Nagar have great forts like a Norman castle, with the village grouped all round them, so that the people can always retire within the fort in case of necessity. The forts are very strongly built—so much so that in the attack on Nalt our mountain guns were found to be quite useless, and, as you know, gun-cotton and a storming-party had to do the work.

When Conway comes home you will see photographs, pictures, etc., and the diaries, which will give you a good idea of what an interesting place this is; and he will also be able to describe the road which connects Hunza with Nagar, and his experiences over the two rope-bridges on the way—the worst that I myself have been over.

We are now going up to a place called Bitter Mal, from where we have a pass from Yarkand to explore, and three passes over to Baltistan, called Hispar, Nushik, and Arindu. Everything is so immense: passes from one valley to another which take four, five, and six days to cross. Imagine Mont Blanc put on to another mountain without making much difference in its appearance, and if you can do so you will get some idea of the country. The deep valleys, however, are utterly different from anything in Europe. An African desert crumpled up into valleys and rocky precipices describes their scenery; the bottoms of the valleys stony and sandy, and, except where irrigated, without a blade of anything; most trying to walk through, and owing to the badness of the paths, exceedingly difficult to ride through, although the people of the country, and those who are accustomed, ride at a great

pace along the most precipitous paths, over which I always feel inclined to jump off and lead my pony. However, Allus, my pony, who met me in Gilgit, was always first-rate over rough paths, as she is a hill-born pony from the Waziri country, north of the Bolan Pass to Quetta.

I have been having and watching tremendous games of hockey up here with the men of Nagar, and various Goorkhas of my own and of a Kashmir detachment quartered here. There is a capital polo ground, of the native shape. A most blowing game, 8000 feet above the sea. At the beginning of the game and after every goal both sides start from the same goal, and tear down the middle of the ground, yelling; when they arrive in the middle, the man who holds the ball throws it up in the air and hits off without stopping his pace, and then the scrimmage begins, sticks flying all over the place. Everyone hits as hard as he can, and whirls the stick round his head. In Gilgit we've had nearly as many men in hospital from hockey as from everything else put together.

My next letter will probably come by way of Askardo, as we shall soon now be over the Passes. As soon as we are over we can then really say that we have accomplished something.—Your loving Son, C. G. BRUCE.

ASKARDO, *July 11th, 1892.*

HERE I am, arrived by the Nushik Pass. I ought to have been back with Conway five days ago, but, as you will see, appointments at a certain time in a virtually unknown mountain country can't always be kept. Here is a little account of the passage. From Hopar, above Nagar, on the way to the Hispar Pass, or Biafo Glacier, Conway and I arranged that I should cross the Nushik—which had been tried but never crossed by a European—and bring him back from Baltistan, salt, grain, and 25 to 30 coolies. Accordingly, I set out on June 27th for Hispar, which, we were told, we could reach in a day; which we did in a hard day of 13 hours, scrambling over a vile road. The next day at Hispar I arranged for men to cross the Pass with me, and got seven first-rate men, the best as a lot I have seen at all. On the 29th I left Hispar for Magerum (which is placed too near Hispar on the map), and arrived there in 11 hours—at least 9 being on moraine or moraine-covered glacier—a most tiring amusement. The following day, in breaking weather, we reached Hikutum (marked on the map Hyonkum), at the mouth of the Hispar. Here we arrived in snow at three o'clock in the afternoon. It then proceeded to snow for 40 hours, during which I had to make an expedition down for three hours to cook. July 2nd was fine after seven o'clock, with a brilliant sun, so on July 3rd we started for the Pass at 4 A.M. We had been originally told that the Pass was good enough for ponies, but no one had been over it for 20 years. An old man, who accompanied us, had been over in his youth, however, and knew the general direction of the way. We left the huts at Hikutum, and descended on to the small Nushik Glacier, which is a tributary of the great Hispar Glacier. The glacier is a good deal crevassed, and I found it necessary, within half an hour from leaving camp, to put the rope on to the four leading men. In twenty minutes more we turned to the left on to steepish slopes of snow-covered glacier, which was occasionally just sufficiently hard frozen to let us in suddenly over the knees. After a rise of about 700 feet we bore right diagonally across the mountain, crossing two or three large crevasses. After about three hours we came to a place which made me stop and consider. Directly in front, along the way that the old man with us remembered, was a steep snow-slope, which measured 52° of steepness, and terminated in an ice-precipice. Across this lay the direct route to the col. To the left

and immediately above us, were steep snow-slopes, and a great crevasse, crossed by a doubtful bridge—a longer much but rather better way, with no fear of starting an avalanche. The snow on the first-named steep slopes did not please me. I was afraid of the whole surface coming away with so many men as we were; but two of the Hispar men knew better than I, and, roping themselves together, and taking my axe, they trod and cut steps right across the face. These men are quite at home in snow, and understand the use of the rope and axe very well, though our European axe is very much better than their own style. We all crossed after them, keeping good intervals, so as not to put too many men together. From here to the col, over some more crevasses and steep slopes with rather shaky snow, along a short but unpleasant way under the great cornice, which follows the whole ridge, and then Parbir cut through the said cornice and let us out on to the top of the col, 16,800 feet above the sea. Time 9:45 A.M. From here to our camping-ground, which we reached at 3:30 P.M., was easy, and we travelled rapidly. The next day, long and tedious, and much moraine, took us to Arimdo, which we were very glad to reach, as for two days we had been on very short commons indeed.

At Arimdo we stopped for one day, to eat chiefly, and then were obliged to go off to Askardo to get boots mended, stores of several sorts, &c. I had to give up recrossing the Nushik for several reasons—the distance to go from Askardo, the difficulty of arriving at the ridge in the early morning from this side, and the danger of crossing, owing to the whole of the Pass being greatly exposed to avalanches, unless the weather is very certain.

When we arrived at Molto, near the junction of the Basha and Braldo Rivers, I gave up walking, and took to a small skin-raft of inflated goat-skins fastened together with withes and managed by four men with poles. It is a very wet and exciting mode of progression, as one is carried at from 9 to 10 miles an hour, and occasionally very much faster in the great rapids, down the river.—Your loving Son,
C. G. B.

Orthography of Native Geographical Names.

By Lieut.-Colonel J. C. DALTON, R.A.

GERMANY has just taken an important step in the direction of securing uniformity in the rendering of native names, both in writing and orally, by the appointment of a special committee to thrash out this difficult question so far as the German Protectorates (*Deutsche Schutzgebieten*) are concerned. The committee, which, as will be seen, was a very strong and representative one, was convened by the Government, and the results of their labours have been accepted and made law.

We in England have not been idle in this respect. A code of rules, drawn up by the Council of the Royal Geographical Society in 1885, and revised in 1891, has been accepted by the Admiralty, War Office, Foreign, Colonial, and India Offices. A further and most important step was made when the Congress of the United States of America adopted our rules almost *verbatim*, and gave orders for an alphabetical list of all place-names in United States territory to be drawn up based on these rules, which list will be the only recognised