

*Notice of a Trip to the Niti Pass. By Lieut. R. STRACHEY. Communicated by order of the HON'BLE THE LIUET.-GOVERNOR, N. W. P.*

I returned here some days ago from Niti, and although I have not much in the way of personal narration to give, all that I expected has, I believe, been done. I reached Niti early in July, having as I passed Joshinath (at the union of Dauli and Vishnuganj) set up a Barometer, &c. there with a rain-gauge. These have been regularly registered from the end of June, till the middle of October, as also have a similar set of instruments at Niti. At both places, the registers were kept by natives of Almora whom I took up with me. About a week after my arrival at Niti, I started on my first expedition. My route you will see from the accompanying sketch map. The old map showed none of this and my brother's map was likewise quite wrong, so it was not till I had been over the ground that I got a clear idea of the geography of this part of the country. I went via Marshak pass 18,500 ft. to Raj-hote, there visited the pass into Tibet called Tumjun-la 16,500 and went down the river from Raj-hote as far as it was practicable, returning to Niti by Chor-hoti pass 17,500. You will see that this valley of the Raj-hote river exactly corresponds to those crossed on the road, from Milam into Hundes, the Marshak and Chor-hoti passes being the parallel of Unta-dhura, and the identity is still further shown by the geological structure of the mountain ranges. During this and my subsequent journey, I collected a considerable number of fossil shells which I have no doubt will enable competent geologists to decide fully on the age of the strata in which they were found. I can only venture on generalities.

Shortly after my return to Niti, I was joined by my brother Henry from Ladak, who came via To-ling and the Niti pass without meeting with any obstruction. He remained with me till my return here. With his help I began horary meteorological observations at Niti, which were continued without interruption for six days, by which time it had become clear that the law of the hourly variations had been sufficiently developed. About the first week in August, after these observations had been completed we started together for the Niti pass,

with the intention of undertaking a series of meteorological observations in the plain of Hundes, and also hoping to be able to fix the position of Kailás and Gurlá, and generally to improve the old map of Hundes, by trigonometrical operations, based on the great snowy peaks, the positions of which have been fixed by the G. T. Survey. I may as well at once go on to say that this has been done, and that the new survey has enabled me to draw out with a fair degree of accuracy, my survey work of last year, and the determination of the positions of Kailás and Gurla will equally add to the value of my brother's first rough survey of his route to Mánsarowar. The greater part of this work has been drawn out, and a reduced copy, 8 miles to an inch, will be begun by my brother directly, which shall be sent to you as soon as it is finished. This map will serve to illustrate the account of my last year's trip into Hundes, as well as this year's operations near Niti. I intend to set about writing them directly, the former being already drawn out in the rough.

The day after we crossed the Niti pass, we were met by people sent to look after us by the Zungpun of Dábá; they however talked in the meekest possible way, and only asked where we were going. This we explained, and next day we fixed on a place at which to encamp for the meteorological observations which were at once begun. The following day the Zungpun himself appeared in company with a man, who it seems had been sent from Gartok (on the news of my having settled at Niti having reached that place), specially to look after me, and likewise to keep the Zungpun up to his work, in preventing my entry into Hundes.

They asked permission to visit us, to which we of course assented at once. The interview began by their saying that we must be off instantly; to which we replied, that we intended to remain until we had completed the work for which we came unless turned out by the Zungpun. After much talk they by degrees abated in their demands, and from granting one day and then two, at last when they saw that we were utterly obstinate, ended by saying, that our proposal to go when we had done what we wanted, was quite satisfactory. It was understood, however, that we were not to go to Dábá or Dungpu. We told them indeed plainly, that we only intended to go on 4 or 5 miles to some hills from the summit of which we wished to take angles. The

weather, which for the first few days of our stay in Hundes had been fine, became abominable, and a good deal of rain fell, extending as far as we could see, over the whole plain of Guji, and covering the mountains north of the Sotlej with snow. I may as well note here that the plain of which I talk, the existence of which Capt. J. Cunningham doubts, was crossed in the direction of its length by my brother on his way from Ladak. It is I fancy 100 miles long, and where broadest 40 or 50 miles, and it is very distinctly seen from the vicinity of Nití pass extending in a N. Westerly direction to a great distance. We had encamped at the foot of a mountain, the top of which was about 18,000 ft. above the sea, and which we had fixed upon as one of our survey stations, our camp was at about 16,500 ft., which is I think very near the limit of possibility for a permanent camp in this region. We waited quietly here—the place is called Lanjar,—till the weather cleared up, which it did in course of time. The Zungpun remained in camp with his tail within a quarter of a mile of us, occasionally stirring us up to go; but he was not taken much notice of. The first fair day, however, we went up the mountain and remained there the greater part of two days and one night, during which the angles that were wanted were taken and horary meteorological observations made for a period of 24 hours, also of Magnetic Dip, &c. When this was done we moved on to the Lung-yung hills to complete the triangulation that was to fix the position of Kailás and Gurla. The Zungpun did not think it worth while to follow us, though we had, in reality, gone so close to Dábá and Dungpu, that he could not have prevented our going to either place, if we had been so disposed; indeed it looked very much as though his waiting till we moved was a mere pretence to take in his own superiors. There can be little doubt that at the bottom of all this non-interference with us, was the utter impossibility of his doing any thing if he had wished it. At that time there were, I believe, in Dábá, more British subjects than Tibetans; and although there has hitherto been a sort of impression, that our people were afraid of the Tibetan authorities, and therefore declined to take English travellers into Hundes, the result of this last expedition has been to prove most satisfactorily to me that this is utterly unfounded. Indeed, the whole of this part of Tibet is absolutely at the command of our Government, for by stopping the export of grain across the frontier the

whole of Guji would be starved, and of this they must be just as well aware as we, and no doubt far better. It is perhaps hardly probable, that it will ever be worth the while of the British Government to coerce that of Lassa; but if it be, I should conceive that closing the frontier would most effectually bring them to reason.

Having concluded our operations at Lung-yung we returned *via* Sheshel, Raj-hoti and Chor-hoti passes to Niti, which we reached early in September, having satisfactorily cleared up the doubtful points in the geography of this part of the mountains.

I had determined to remain at Niti till the end of September, in hope of getting fine weather, and of being able to make another ascent to some considerable height. The bad weather towards the end of the month, however, disappointed me in this, and I was at last at the beginning of October, only able to get up to about 14,700 ft. down to which the mountains were covered up with snow. Between this elevation and Niti (11,500) corresponding Barometrical observations were made by my brother and self, and the difference of height was also measured by the Theodolite, for the purpose of testing the formula by which heights are calculated from Barometrical observations.

We left Niti on the 10th October, and came straight down here only stopping a few days on the road, to make another similar set of Barometrical observations between heights of 10,500 ft. and 5,500 ft.

In the history of this year's work I shall explain the nature of our Trigonometrical operations, from which any one who wishes to do so may see the data on which our position of Kailás rests.

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