

JOURNAL

OF THE

ASIATIC SOCIETY.

Abstract Journal of the Routes of Lieutenants A. BROOME and A. CUNNINGHAM, to the sources of the Punjab rivers.

The object of the journey which we performed during the rainy season of 1839, was to ascertain the sources of the Punjab rivers; and at the same time to collect every kind of information that we thought might be useful and interesting regarding the countries through which we were to pass.

The plan which we laid down for ourselves was to travel in company northwards from Simla as far as Tandee on the Chundra-bhága river; and there separating the one to make a detour to the east, and return to Simla by the Spiti river; the other to pursue a westerly course over the hills to Kashmeer.

The source of the Beas river having been visited before by three different travellers; Moorcroft, Gerard, and Henderson, all of whom crossed the Sutluj at Bulaspoor, and proceeded through the state of Mundee to Sooltanpoor, the capital of Kooloo; we determined to vary our route from theirs as much as we were able; and with this view we crossed the Sutluj at Rampore on the 19th of June, by a *jhoola*, or swinging rope, from which a loop is suspended in which the passenger sits. On the 20th we crossed the mountain spur separating the Koorpua Nullah from the Sutluj by the Gai Ghatee, or Cow's Pass, 7,093 feet in height, and descended through a rich cultivation to the bank of the Koorpua Nullah, which we crossed by a *sanga*, or spar laid across the stream on the 21st., and ascending the Chenáhee Nullah we passed a water-fall of one hundred feet, and

reached the village of Suroua, situated in a lovely little valley, where we saw wheat as fine as any in England. Above the village, the valley is a level meadow about three quarters of a mile long by half a mile in breadth, surrounded on all sides by thick woods of walnut, chesnut, apricot, peach, and cherry, with acacia, mimosa, cypress, cedar, and every variety of pine : amongst which were white and red roses, jessamine, a white flowering thorn like may, and a beautiful large iris, besides wall-flowers, forget-me-not, strawberries and poleantus, with flowers of all shades of red, brown, and yellow. There were three waterfalls at the head of the valley ; the lowest and least pouring down in one unbroken stream over the rock, which is naturally hollowed into a deep recess, forming a very pretty, cool, and musical bower.

On the 24th of June we reached the top of the Pass at the head of the Suroan Valley, called Chaol Ghaut, 10,170 feet high, where we halted for the night. Snow was lying in a sheltered ravine on the northern slope of the mountain, which is part of the lofty range forming the shed-water between the Sutluj and Beas rivers. Several of the peaks in this range are 18,000 feet in height, and are covered with perpetual snow. From this we descended over a clayey soil, made dangerously slippery by incessant rain, to the village of Bédath, at the junction of the two torrents which form the Teerthun river, along whose banks we proceeded for three days to Larjee, where it joins the Syneja river, and where about 100 yards lower down the united streams fall into the Beas river, just at that point where the Beas after running for a long course southward turns abruptly to the west through a narrow gorge, the channel of the three united streams not being so broad as that of any one of them. We were much surprized to find that this remarkable junction of three large streams was not esteemed holy. We rested in a large cave excavated in the variegated marble rock by Munnee Ram, a former Wuzeer of Kooloo ; who, we were told used frequently to come to this place for many days together to escape from the cares of state ; but more likely he came to bathe at the junction of the three rivers, for a more sterile and inhospitable place could not be conceived.

We then ascended the course of the Beas river, which widened
 Beas river. after a few miles into a beautiful large valley ;
 generally about half a mile across, and wooded
 down to the water's edge, with a broad winding stream variegated

with many islands. We crossed the Gomuttee river, a considerable tributary on the left bank of the Beas, by a ricketty wooden bridge, and passed over the Beas itself upon inflated buffalo skins to the fort of Bajowra, where the road from Mundee, by which Moorcroft, Gerard, and Henderson had travelled joins the road from Rampoor. On the evening of the 29th of June we reached Sooltanpoor, the capital of Kooloo, and found lodgings ready for us in the house of the former Wuzeer of Kooloo. On the following day we paid the Rajah a visit of ceremony. He was the same Ajeet Singh whom Moorcroft had seen; but when we saw him he was completely at the mercy of the Sikhs, who lorded it over him, even in his own Durbar.

The capital of Kooloo, Sooltanpoor, or as it is sometimes called Rughoo Náthpoor, from the chief temple being dedicated to Rughoonath, could never have been extensive, and it was then daily becoming less. It is situated at the confluence of the Serbullee, a small stream, with the Beas river. It has but two streets, but they are paved with boulder stones, as are likewise all the lanes. The houses are built of stone and wood, but we saw none of any particular neatness. Goitre was prevalent, diseases of the eye common, and extreme dirtiness universal. The annual revenue was said to be 1,20,000 Rupees, of which the Sikh Government seized 70,000.

We left Sooltanpoor on the 3rd of July; but instead of crossing the river to the left bank, as Moorcroft did, by the two bridges immediately above the town, we proceeded along the right bank. The valley opened as we advanced, and the scenery became bold and beautiful. The islands were numerous and well wooded; and the banks were alternately gentle slopes covered with grass to the water's edge, and steep alluvial spurs overhanging the river, and covered with apricots, peaches, apples, pears, figs, and grasses all growing wild; further on, were the pine-clad slopes of the mountains on each bank, the nearest green, the more distant blue; and beyond all, appeared the lofty snowy peaks at the head of the river.

On the evening of the 4th of July we halted on a low bank, close to a hot well, called Seeta Koond. The well was surrounded by a square enclosure with a few stone figures of deities placed in the corners. The temperature of the water was 104°. of Faht. the spring has probably some connection with the hot wells at Biseshta-moonh, on the opposite

bank of the river, which were visited by Moorcroft, who however does not mention their temperature. In the morning we continued our journey, and after passing through a forest of noble cedars we reached the village of Booruwa. There the scenery was very picturesque. On the left and to the front were snowy peaks; but to the right there were steep cliffs of gneiss, resembling "castellated parapets," as Moorcroft described them twenty years ago. At two miles beyond this we passed Kothee, the last village in the vale of the Bees river, and proceeded to a very pretty level spot of ground called Ralha, surrounded by high cliffs, and steep green slopes, and where the Bees was so narrow that one might have jumped across it. In the morning we made a laborious ascent of two miles by an irregular flight of steps, built about 25 or 30 years ago by a Brahmin, who had charge of the custom house opposite the village of Koshee. The road was then tolerably level for about a mile; after which it continued ascending for two miles, crossing all the ravines on hard snow beds, which even then, 7th of July, had not melted, until we reached the head of the Pass, where from beneath an enormous block of mica slate, the infant Bees had its birth at a height of 12,941 feet. On the top of this block we built a pile of stones, and in the midst erected a slab on which we inscribed our initials. The crest of the Rotung-joth, or pass, is a little higher than the mica slate block, or just 13,000 feet, from which it slopes gradually to the north for about a mile over a hard bed of snow. The heat and glare reflected from the snow were intolerable, and our faces were completely blistered. From this the view of the snowy peaks of Tartary, the land of undissolving snow, was extensive and beautiful. Three thousand feet beneath us rolled the Chundra river, which even there was a deep stream, 100 feet wide; and on all sides was dazzling snow, from the midst of which towered the gigantic mountains,

—— Whose lofty peaks to distant realms in sight,
Present a Siva's smile, a lotus white.

One of the peaks, about twenty miles higher up the river, appeared like a mighty natural obelisk against the cloudless blue sky. It is called *Indr-sar-deo-ka-thán*, or "the abode of the supreme deity, Indra."

The descent was steep and rugged for about three miles to the bank of the Chundra river, which we crossed by a suspension bridge made of

birchen twig rope, having a span of 106 feet, and a height of forty feet above the stream. We halted at Koksūr, the first village in Lahul, and the highest on the bank of the Chundra, at an elevation of 10,053 feet. There was not even a bush to be seen as far as the eye could reach, although the vegetation around the village was rich and luxuriant, the whole ground being covered with strawberries, dwarf irises, hyacinths, and pinks; there was also one primrose in blossom on the 8th of July.

From Koksūr we proceeded along the right bank of the Chundra for five miles to the village of Tehling, where we saw on both sides of the river a few poor withered looking yews; snow was lying in all the gorges and ravines; and even in the bed of the main stream there were large masses forty and fifty feet thick on each side, which had only recently been cut through by the current and undermined. In two days we reached the village of Gooroo Guntall, twenty miles below Koksūr, at the junction of the Chundra and Bhaga rivers, whose united streams form the Chundra-Bhaga, or Chenab river, the Sandabal of Ptolemy the geographer. There we halted as the birchen bridge over the Bhaga river had been swept away; and on the following morning we ascended the left bank of the Bhaga for about four miles, and passing through the large villages of Gwajun and Kardung, we reached a wooden bridge, forty feet span and forty feet in height, by which we crossed the stream, and then descended it for four miles to Tandee, the chief village of Lahul, which is exactly opposite to Gooroo Guntall, the village from which we had started in the morning. The only trees about Tandee are yews and pollard willows. On the banks of the Bhága however there were pines; and we found plenty of wild gooseberries of which we made very good puddings: some of these gooseberries that we bottled with snow water remained perfectly good after a journey to Simla, where they were cooked and eaten. We saw some yellow roses too on the banks of the Bhaga, and some columbine near Tandee. The crops consist of buck-wheat, common wheat, and barley; of which buck-wheat is by far the most common. The crops frequently fail either through the backwardness of the warm season, or through the early setting in of the long winter; indeed for three years before our arrival at Tandee there had been no good crops of wheat or barley. The natives however attributed this failure to the displeasure of Provi-

dence on account of the conquest of the country by the Sikhs, and the expulsion of the Raja of Ludákh.

At Tandee we heard of the death of Runjeet Singh; and it was currently reported that we had been sent to take possession of the country: this indeed we might easily have done, for our party mustered about one hundred people; and the natives of Lahul are so cowardly that Moorcroft relates they on one occasion, when invaded by a small party, buried their swords and fled to the more inaccessible parts of the mountains. Here we parted company on the morning of the 15th of July; the one to ascend the Bhaga river and to return to Simla by the Spiti river; and the other to follow the Chundrabhaga and to proceed through Burmawur on the Boodhil river to Chumba, and from thence to Kashmeer.

On Lightning Conductors to Powder Magazines. By W. B. O'SHAUGHNESSY, M. D. Assistant Surgeon, Bengal Medical Service.

The paper now published by Prof. O'Shaughnessy is in continuation of his paper on Lightning Conductors, which appeared in No. 99 of this Journal. The positions contained in that former essay having been arraigned in a contemporary publication,* the Professor put forth a rejoinder to the exceptions taken against his views and statements by the writers above alluded to, and then placed his rejoinder in my hands for publication in this Journal, as a necessary sequel to his original essay. The circumstances under which the paper now published was written, give it of necessity a certain controversial tone, which I have felt myself bound to account for, while laying before my readers a paper, without which the essay on Lightning Conductors, already in their hands, would be incomplete.



To the Editor of the Calcutta Journal of Natural History, &c.

Illness and absence from Calcutta have prevented my sending an earlier notice of the article which has appeared in your last number relative to the attachment of lightning rods to Powder Magazines.

The only point in the article in question, which I feel myself called upon to notice in your pages, is the attempt of your correspondent to shew that I had falsely described the spear-head of the Britannia on

* Dr. M'Clelland's Quarterly "Journal of Natural History."

JOURNAL

OF THE

ASIATIC SOCIETY.

Abstract Journal of the Route of Lieutenant A. Cunningham, Bengal Engineers, to the Sources of the Punjab Rivers.

From Tandee on the Chundra Bhaga river, where I parted with Lieutenant Broome, I continued my way along the right bank of the river, with the proud consciousness that I was the first European who had ever visited that part of the Chundra Bhaga. On the 16th of July, 1839, at sixteen miles below Tandee, I crossed the river by a wooden bridge called *Rocha*, or the 'Great' Bridge, 85 feet long and 43 feet above the stream, to the left bank, where I once more came upon fir trees which I had not seen for a week. After a walk of two miles over a dusty bad pathway, I had to climb a steep hill on which the celebrated temple of Triloknath is situated. On the road I passed a Hindoo Pilgrim, a Gosain who had come from Sunam in the protected Sikh States, having visited Jwala Mookhee near Kangra, and the various hot wells at the head of the Parbuttee river.

The temple, which is situated at one end of the village of Goonda, is square, and is surmounted by the *trisoal* or trident of Siva, who is Triloknath, or, The Lord of the three worlds, Heaven, Earth, and Hell. There was an open Court to the front with a two-storied verandah of wood; the pillars, architectraves, and rails being all richly carved. In the middle of the Court there was a block of stone about 6 feet square by 5 feet high, on the top of which was growing the sacred plant *Toolsee*, or Basil. The figure of Triloknath was of white marble, about two feet

high, with six arms ; on its head there was placed a small squatted Buddhistical looking figure which the attendant Brahmin declared to be of Anna Poorooa, probably meaning Anna Purna, the beneficent form of Parvati, the wife of Siva. In the Court there were many tall poles surmounted by cow's tails and pieces of cloth, placed there as offerings, by Tibetan Buddhists as well as by Brahminical Hindoos.

The village of Toonda in which the Temple of Triloknath is situated, had been overwhelmed in snow in the preceding year, 1838, when all the houses which had not been bonded with wood, had fallen down, and killed the inhabitants. The Rana or Chief of Toonda Triloknath is under the authority of the Rajah of Chumba, to which state the lower portion of Lahul belongs.

The province of Lahul embraces the whole breadth of the Chundra and Bhaga rivers, and extends down their united streams called the Chundra Bhaga in a W. N. W. direction to about ten miles below Triloknath. It is divided into two unequal parts ; the larger belonging to the state of Kooloo, and the smaller to Chumba. In the former there were 108 villages, containing 740 houses, and 3,764 inhabitants.

The revenue of the province is derived from two different sources ; a house tax, and a duty on the carriage of merchandize. Under the Rajah's administration each house was taxed at 10 and 12 rupees, but the Sikh Government increased the tax to twenty rupees per house, by which they raised the collections from 5,000 to 10,000 rupees per annum, the houses of the priests and poorer labourers being exempted from taxation. The rates of toll were at the same time adjusted by Zurawur Singh, the governor of Ladakh, the duty upon each carriage sheep being raised from half an anna (or three farthings) to four annas, (or six pence.) This was considered very oppressive by the people, but as a sheep can carry 8 and 10 seers, or one fourth of a man's load, the fair and natural rate of duty would be to charge one fourth of the duty levied upon each man ; and Zurawur Singh did no more, for a man is charged one rupee. On a pony which carries from 60 to 70 seers, or double the load of a man, the duty levied is likewise double or two rupees per pony.

The grain raised in Lahul is all consumed in the country ; and as there are no natural productions, the house tax is paid by the inhabitants from the joint Stock, obtained by hiring themselves as porters between the states in the lower hills of the Punjab and Ladakh ; the porters who bring goods from Kooloo, Munde and Chumba being changed at Tandee for natives of the province itself, who receive 6 rupees cash, for the journey to Ladakh. The hire of a pony to Ladakh is 13 rupees.

The articles taken to Ladakh are :—wheat and rice from Chumba ; Iron and Opium from Mundee ; coarse white cottons, and Benares brocades of the worst quality from Kooloo ; with goats skins dyed red, chiefly manufactured at Bissowlee and Noorpoor in the Punjab—in exchange for which the following articles are brought to Tandee to be sold to the merchants of the neighbouring states. Shawl Wool ; Bang, or Hemp prepared for smoking ; silver in wedges, each wedge called Yamoo, weighing 180 rupees or $4\frac{1}{2}$ lbs. avoirdupois ; Borax, native of Ladakh ; Salt, manufactured at some Salt lakes beyond Ladakh ; and Tea, brought from Yarkund.

For the two previous years, however, but little trade has passed through Lahul, on account of the seizure of Ladakh by the Jummoo family, who have established a high road through their own territory of Jummoo, which throws all the duties upon the traffic into their power. The route runs from Jummoo, through Chinénee and Bhudurivar, both in Forster's route to Kishtwar, and thence to Chutogurh and Ladakh. The whole of these places, and consequently the entire route, are in the possession either of Gulab Singh or of his brother, Dheean Singh.

The consequence of this change in the direction of the commerce had been so prejudicial to Lahul, that about 500 people had emigrated to other countries ; and many more would have followed them had they not been stopped at the Custom houses established on all the passes leading from Lahul. Another consequence of this interruption of the traffic had been that very little or no Salt had come to Lahul, for the two preceding years ; and of this the people complained bitterly, as well as of the loss of their hire as porters between the lower hills of the Punjab and Ladakh. Many of them were literally starving, having nothing to eat, except grass, willow leaves, and strawberries. Even the attendant Brahmin of the holy temple of Triloknath was glad to get the remains of my Mahomedan Munshi's dinner.

There are four passes leading from Lahul into Chumba, all of which were described as equally bad. Of these the Dogee Pass leads from the village of Ruppoo, about 8 miles below Tandee, over the snow, and down the course of the Boodhil river to Burmáwar. The other passes lead from Triloknath. The upper one is called the Bugga Pass and leads direct to Burmáwar ; the lower is the Humguree Pass, and is very little used, and the middle is the Kalee Joth, or Pass of Kalee Débee, which I chose.

On the 18th of July, I quitted Triloknath, and on the following evening reached the foot of the Kalee Débee Pass, so named from a

black conical peak to the South, dedicated to Kalee Débee. The place was called Hoolyas, in Sanskrit Hoolyasaca, and was merely a resting place at the foot of the pass; there I shot some snow pheasants and Alpine Hares. On the following morning I began the ascent of the pass up steep banks of loose angular masses of rock, and over sloping snow beds, down which fragments of rock came bounding and dashing along with a crash like the rattling of continued and numerous file-firing. The porter who carried my iron tentpegs was struck on the knee by one of these stones, and hurled before my eyes down the sloping indurated snow. Luckily the snow bed terminated in a fork between two mounds of broken fragments of rock, and there the man's further progress was stopped, and his life saved. He was lame however for three weeks afterwards. The crest of the pass was a narrow ridge not more than ten and twelve feet wide, covered with soft and newly fallen snow. There I spread my cloak and found by my thermometer that the height was 15,700 feet. In the middle of the ridge there were two small slabs erect and smeared with vermilion, near which were numerous sticks covered with rags. For a few minutes I had a splendid view of the green hills of Chumba smiling in the distance. A thick haze then descended and obscured even the terrific gulph below, and I commenced the descent without seeing where I was to halt for the night. A goat was sacrificed by my servants to the Goddess Kálee, and to that they attributed my safety as well as their own. The descent was 5,000 feet to the spot where I halted, at the head of the Nye river, one of the principal tributaries of the Ravee.

On the 21st of July, I continued my journey, following the course of the Nye river for seven miles to the village of Loondee, below which I crossed the river and halted at the Dhurmsala, or traveller's house. The next day I reached Burgaon, a large village on the left bank of the Nye, and was much cheered with the sight of a mulberry tree; and there I got some good wheat flour, some excellent milk, and fine honey. On the 24th I passed through Footahun, below which the Nye and Boodhil rivers join the Ravee, to Poolnee; and ascending the Boodhil river for five miles I crossed it by a very respectable wooden bridge, 68 feet in length and 98 feet above the river, with a railing, knee high, on each side. There I saw wild grapes and mulberries just beginning to ripen—and continuing my journey for an ascent of 1,500 feet, I reached Burmawar, or Vermmawura, the ancient Capital of the Verma family of Chumba, 7,015 feet above the sea. The spot was a beautiful one; but the severity of the winter had no doubt led to its being abandoned as a capital for

several centuries. The tall spires of the stone temples, and the profusely carved wooden temples were completely shaded by cedar and walnut trees. One Cedar was 20 feet in circumference. There were numerous stone pillars, tradition said 84, dedicated to Siva; and a large brazen bull, the size of life, under a wooden shed, besides several travellers' houses. The figures in the temples were of brass and exceedingly well executed, all bespeaking a very ancient origin. I copied three Sanscrit inscriptions from the brazen figures, recording the names and families of the donors.

On the 29th of July, I left Burmawur, and at four miles reached the village of Khunn, opposite Tootahun, where the Nye and Boodhil rivers join the Ravee. From thence the road descended for 1,500 feet to the Ravee, which was rushing between steep cliffs of black clay slate; I crossed it by a birchen rope bridge 116½ feet span and 60 feet above the water: the points of suspension were at different heights, and the fall of the curve in the middle was 20 feet, which made the ascent and descent extremely difficult and dangerous. From the bridge, I had to scramble amongst loose stones, and up steep banks for an ascent of 2,000 feet in a distance of two miles, when I reached Woolas, on the left bank of the Ravee, opposite Khunn and Tootahun, at the junction of the three rivers, which I was surprised to find was not considered holy. The three streams were about equal in size; but the Boodhil is the one held in most esteem, as one of its sources is in the holy lake of Munnee Muleés—its other principal source is from the Dogee Pass, on the road from Tandee to Burmawur. The Nye River has its principal source in the Kalee Débee Pass; but a considerable feeder called the Raim River, joins it from the Bugga Pass. The Ravee itself rises in Kooloo from the Bungall Mountain, and runs in a N. W. direction to Woolas, where it is joined by the Nye and Boodhil.

From Woolas, I followed what is called the royal road, or that used by the Rajahs of Chumba when they make their pilgrimages to Munna Muhe's. It was one day's journey out of the way, but as it ascended the higher spires of the mountains, I chose it for the sake of the more extensive view, which I should obtain, and for the sake of the survey, which I was making. In three days, I reached Chaitraree, where was a temple to Sugget Débee. The figure was of brass with four arms; and on the pedestal was an inscription, recording the donor's name, which I copied. On the next day, I reached Bussoo, and on the following day Mahila; and on the 4th of August, I crossed the Ranee by a birchen rope bridge of 169 feet long, stretching from an isolated rock on the bank to the Cliff

opposite, and reached Chumba, the Capital of the state of the same name.

Chumba, or Chumpapoor, the Capital of Chumba is situated on a level piece of ground on the right bank of the Ravee, at an elevation of 3,015 feet. There is a tradition that the river formerly covered the Chaugaun or plain of Chumba; which is certainly correct, for the plain is formed of large boulders of slate and granite, mingled with rich earth above, and with coarse sand below. There are nine good temples in Chumba; none of them, however of such beautiful workmanship as those at Burmawar. The Rajah's Palace is an extensive building, but it cannot boast of any beauty. The houses are not different from those usually seen in the hills; and I was altogether much disappointed with Chumba.

Of seventeen purgunnahs, through which I passed I have a detailed account of all the different villages, amounting to 259, containing 1,672 houses, and 8,849 inhabitants. These seventeen Purgunnahs form about one-eighth of the whole country; which must, therefore contain, with the addition of 800 houses, and 7,000 inhabitants in Chumba town, 14,176 houses, and 77,792 inhabitants. The villages on the lower course of the Ravee are however much larger than those upon the higher streams, and I am therefore inclined to rate the population at nearly 100,000; of whom perhaps 10,000 may be exempt from paying the house tax—the remainder, 90,000, living in 12,500 houses, will give a revenue of 2,50,000 rupees, if taxed as usual at 20 rupees per house.

The trade through Chumba, formerly considerable, is now very little, owing to the opening of the new route, through Jummao; Customs are, however, collected at Bhudewar, which forms the North Western boundary of Chumba, and through which merchants occasionally pass, and merchants who come to Chumba, sometimes carry goods by the Sajah Pass and Chutegurh to Ladakh; but the traffic is comparatively trifling; and I do not therefore value the amount of Customs collected at more than 50,000 Rs. yearly, making a total revenue of 3 lakhs of rupees, or £30,000.

There are no natural productions exported from Chumba, save rice and wheat to Ladakh; and the manufactures are considerable: the principal are thick woollens called Burmawur, manufactured in pieces eleven yards long, and fifteen inches wide, in all the colder parts of Chumba. Some are carried to Kooloo for sale, and I have seen a few pieces at Simla. Coarse Alwans, or Shawl Cloths, are made in the town of Chumba from Ladakh Wool, but they are all used in the country.

The men wear a long sleeved white woollen cloak, fastened round the waist with a black woollen rope; and on the head a peculiar peaked cap

of thick white woollen; the women wear the same cloak, only black, with a white rope round the waist; and a small scull cap on the head—the men's dress is a very picturesque one.

From the Rajah's Pundit I obtained a long list of the Rajahs of Chumba, beginning with Brahma of course, and descending through the Surajvansa to Sumitra, after whom the list appears to be less apocryphal. The earlier Rajahs are said to have resided in Burmawar.

On the 11th of August I quitted Chumba, crossing the Ravee immediately above the town by a birchen rope suspension bridge, of 187 feet span; and with much difficulty made my way to the village of Kurédh. One of my porters in crossing the small stream, now swollen by rain, lost his footing and was drowned. On the 13th I reached the summit of the pass of Chuarhoo, 8,041 feet high, from which I saw the plains of the Punjab indistinctly through the clouds. In the evening I reached the large Village of Chuarhee, where I halted. On the following day I made a fatiguing march of $4\frac{1}{2}$ miles to Jajeree, on the bank of the Chukkee River, over several high ridges of stiff gravelly conglomerate, alternating in strata with sandstone. The next day I crossed the Chukkee River with some difficulty, by swimming. It was 200 feet across and about 5 feet deep in the middle, and the rounded boulders at the bottom afforded no footing whatever; after a little ascent and descent I came upon a large open plain, which I crossed to Noorpoor.

Noorpoor is a fine flourishing city, 1,924 feet in height, built upon a narrow ridge of a sandstone rock, curving to the North; the houses are chiefly of squared stone; and the main street runs over the solid rock. The city was founded upwards of two hundred years ago by the celebrated Noor Jehan, the beautiful empress, who established a number of Kashmerians in it. In 1839 there were said to be 7,000 Kashmerians in Noorpoor, who were chiefly employed in the manufacture of Shawls. I saw many of the Shawls, which were decidedly inferior to the real Kashmerian Shawls, this was attributed to the difficulty of getting the finest wool. The Noorpoor shawls are however of very fair workmanship, and they are brought in great numbers to Simla, Delhi, Lucknow, Benares, and Calcutta.

On the 18th of August I left Noorpoor, and crossing the Chukkee River, I reached Puthankot in the plains of the Punjab at an elevation of 1,205 feet above the sea. From thence I passed through Shujanpoor, a good sized straggling town, and crossing the Umritsir and Lahore Canal near its head, I reached the bank of the Ravee, which was nearly a mile in width. The passage was made in about an hour by boat, and I halted

at a large straggling town called Ruttooa, from that passing through Heeranugur, Chungee Marhee, Mudwar Harmunder, Rarha, and Pullee, I reached the bank of the Tohi, the Jummoo River which was rushing along deep and red, having been swollen by heavy rain in the lower hills. There I was detained until the evening, as no boatman even with a bribe would venture his boat in the rapid current. At Jummoo I occupied an upper room in a gateway prepared for reception by Golab Singh's eldest son, Oodhum Singh, who was lately killed at Lahore.

The town of Jummoo is about the same size as Noorpoor, but it contains fewer inhabitants, as there are no two storied houses in it. A few Shawls are manufactured at Jummoo, but they are made to order and not for general sale. Rajah Oodhum Singh treated me kindly enough; but my servants were watched, and I was unable to procure any information of value, I therefore quitted Jummoo as quickly as possible, and crossed the Chenab river 10 miles below Aknoor, near where Taimoor had crossed it. The main stream was 920 yards wide, rolling swiftly on with a strong current. There were besides six other channels, some of them breast deep, and all having a rapid stream; and beyond these was the river Tohi, which, rising in the Rutun Punjall mountains, flows by Rajaoree, and joins the Chenab above Wazeerabad. It must have been between this river and the Chenab that Alexander had pitched his camp about the same season of the year; for Arrian says, 'The flat country is also often overflowed by rains in summer, insomuch that the River Acesines, having at that season laid all the adjacent plains under water, Alexander's army was forced to decamp from its banks, and pitch their tents at a great distance.'

The Tohi, frequently also called Töh, is, I have no doubt, the Tutapus of Arrian, a great river, which falls into the Acesines, for the Tohi of Rajavree runs in a direct line upwards of 80 miles, and where I crossed it near Mumaivur, at the same season in which Alexander had seen it, it was a great river running deep and red. It was full of quicksands, and the passage was dangerous as well as tedious. On the 3rd of September I reached Bheembur, at the foot of the mountains on the Royal Mogul road to Kashmere.

On the 5th I proceeded to scale, what Bermier called that 'frightful wall of the world,' the 'Adi Duk' or first range of mountains. On the top of the pass I saw a gibbet with two cages containing the skull of Thums and his nephew, the chiefs of Poonch, who had for a long time resisted the encroachments of the Jummoo family. A price was set upon their heads by Goolab Singh, but from their known bravery no one dared

attack them openly ; and they were at last killed, while asleep, and their heads carried to Goolab Singh, who ordered them to be suspended on the crest of the Bheembur pass. The next day I crossed the 'Kumaon Gosha' mountains, or 'sharp ridged bow,' the range being narrow at the top and bent at each end like a bow. Thence passing through the Serais of Noshehra, Inayutpoora, Chungex, and Muradpoor, I reached Rajaoree on the 8th of September. The Rajah was very attentive and communicative, and I received much interesting information from him. I also procured a history of the country, and some orders by Aurungzebe, and Nadir Shah ; besides a copy of a grant of the Rajaoree territory, by Bahadoor Shah ; since then the territory has been seized bit by bit by the Jummo family, until only a small circle of 20 miles diameter now remains to the present Rajah.

In the grant given by Bahadoor Shah, the revenue of Rajasore is stated to be 77,77,960 dáms, equivalent to 27,799 Rupees, which with the Customs collected, must have been increased to 50,000 rupees. The territory now is about one fourth of what it was at that time, A. D. 1708, and the Customs have nearly ceased, as the Sikhs give free passes for all their own merchandize ; the present revenue cannot therefore be more than 10,000 rupees, which was the sum stated to me by many respectable natives.

The chief crops in Rajaoree were rice and maize ; the maize invariably occupies the higher grounds, and the rice fields the level alluvial formations along the river ; these were kept constantly flooded by streams conducted along the hill sides from the neighbouring torrents. Height of the city, 2,800 feet.

The hills between Bheembur and Rutun Punjall are all of a coarse greyish sandstone, alternating with loose gravelly conglomerates near Bheembur, and gradually changing into a siliceous state in the Rutun Punjall range,—at the foot of which there are large blocks of conglomerate in compact masses cemented firmly together.

I left Rajaoree on the 10th of September, and after an easy march of eight miles over a stony road, I reached Thunna ;—from whence to the crest of the Rutun Punjall the road was good, but steep. The crest of the pass, I found to be 7,350 feet in height ; from whence there was a noble and extensive view, over the low hills of Rajaoree, of the distant plains of the Punjab. From thence the descent was through a thickly wooded forest of walnut, elm, horse chesnut, and pine trees to the bank of the Bahramgulla river, which I crossed by a bridge, and proceeding up one of its tributaries, I halted at Chundee-murg. Rain had fallen heavily for some days previously, and the small stream had swept away

all its bridges, so that I had some difficulty in making the numerous crossings, which the road took. One of my goats was swept away by the rapidity of the current. The ascent of the Peer Panjall was extremely steep, but the road was good and wide, having been repaired by order of the Sikh Government. My thermometer gave 11,224 feet as the height of the crest of Peer Panjall Pass. From thence the road was a gradual descent for $2\frac{1}{2}$ miles to the Serai Aliabad, built by Ali Murdan Khan; height 9,812 feet. A little below Aliabad the road was narrow, but quite safe, a parapet wall having been built on its outer edge overhanging the torrent below. The place is called Lala Ghulam, after a slave who superintended the work, and whom Ali Murdan is said to have afterwards sacrificed and buried there. Beyond that, the road was good and broad, occasionally ascending and descending to an open piece of ground, called Doojan, below which I crossed the torrent and proceeded along a level pathway to the Serai of Heerpoor. The next day I passed through Shoopyen, and crossed the Shoopyen river, reached Ramoo ke Serai, where I halted; and the next day, 15th of September, I entered Kashmere city, having been three months and two days from Simla.

The city of Kashmere is situated on both sides of the river Behut, at an elevation of 5,046 feet above the sea. I am aware that Baron Hugel made the height 6,300 feet, but Jacquemont calls it 5,246, and Moorcroft says, that the *general* level of the valley is about 5,000 feet. It is of an irregular shape, the greater part being on the right bank of the river; about one fourth of the houses are deserted; but the city must still contain about 80,000 inhabitants.

The information which I have collected regarding Kashmere is not yet completely arranged, so that I cannot give any general results. I may state, however, that I have a list of all the villages in the valley; a minute account of all the passes, including those which are used only for contraband trade; the history of the Shawl Wool from its first starting from Radakh and Khantam (or Changtang) to its arrival in Kashmere, where it is spun into thread, dyed, and woven into Shawls. I have besides ten or twelve specimens of Kashmerian songs translated into English verse; and a very good collection of the coins of the Hindoo Rajahs of Kashmere preceding the Mussulman conquest.

Additions made to the Geography.

I will conclude with stating the additions, which the joint travels of Lieutenant Broome and myself have made to the Geography of the Alpine Punjab.

Of the Sutluj.

1. The whole course of the Spiti river, one of the principal branches of the Sutluj, has been surveyed by Lieut. Broome.

Of the Beas.

2. The whole course of the Teerthun river, one of the principal feeders of the Beas, has been jointly surveyed as well as the Beas river itself, from its source to its junction of the Teerthun river, in addition to which, the mountain course of the Chukkee river has been laid down by Lieut. Cunningham.

Of the Ravee.

3. The whole course of the Nye river, with a portion of the Boodhil river, and also of the upper Ravee, with the further course of the Ravee, after the junction of the Nye and Boodhil rivers as far as Chumba, have been surveyed by Lieutenant Cunningham.

Of the Chenab.

4. The whole course of the Bhaga river, has been surveyed by Lieutenant Broome; the source of the Chundra by the same officer, and the greater part of its course jointly by Lieutenants Broome and Cunningham; and the course of the joint stream of the Chundra Bhaga, as far as Triloknath, by Lieutenant Cunningham. The greater part of the course of the Tohi river, a principal feeder of the Chenab, has likewise been surveyed by the same officer.

Of the Thelum.

The Shoopyen river, which rises in the Peer Punjall, has been surveyed by Lieutenant Cunningham.

Of the Indus.

The source of the Yunam Choo, or Yunam river, a large tributary of the Indus, has been laid down by Lieutenant Broome.

(Signed) ALEXANDER CUNNINGHAM.
1st Lieutenant of Engineers.

Lucknow, 8th February, 1841.