

^ A cushion, wool, hair, or any such substance, is preferable to a solid bed ; but I can think of nothing better than plain dry saw-dust.

Many chronometric measurements have caused errors, and great consequent perplexity, in the following manner :—

The chronometers were rated in air whose average temperature was (let us suppose) 70°.

They were then carried through air either considerably hotter or considerably colder, and again rated in a temperature nearly equal to that specified.

The rates did not differ much, and it was supposed that the chronometers had been going extremely well : in truth, the rates of most of the watches *had* differed *extremely* from those found in port during the voyage ; but they had *returned* nearly to the *old* rates upon reaching nearly equal temperature.

This has happened more or less to every ship carrying chronometers across the equator, especially when going to Rio de Janeiro with the sun to the northward of the line.

Magnetism is supposed by some persons to affect the rates of chronometers. It is difficult to detect.

XVIII.—*Notice of a Visit to the Himmáleh Mountains and the Valley of Kashmír, in 1835.* Communicated by Baron Charles Hügel.

[BARON Hügel, of Vienna, well known as an eminent naturalist, having just returned to this country, after an absence from Europe of six years, chiefly spent in India, has communicated the following account of a journey from the river Sutlej at Belaspúr, through the lower range of the Himmáleh to Kashmír, from thence to the highest part of the Tibet Panjáhl, then to the Attock and back through the Panjáb to Lud'yana, recrossing the Sutlej ; accompanied by a letter, tracing his route during his five years' travels, from which a slight extract is subjoined.]

“ I left Toulon in May, 1831, visited parts of Greece, Cyprus, Latakia, Syria, and Baalbek ; Alexandria, Cairo, and Egypt, to the confines of Nubia ; descended the Nile to Ghineh ; crossed to Cosseir, and embarked in the steamer for Bombay, where I arrived in the spring of 1832. In India I visited Puna, Aurungabad, Ellora, Sattara, Bijapúr, Belgám, Goa, Darwar, Bellari, Bangalore, Seringapatam, the Nilgheries, Kochin, Cape Komorin, Palancotta, and by Ra^mmiseram to Manár in Ceylon. In this Island I visited both the east and west coasts ; the highest point Pedradallegalla, near Nur Ellia, and

the little-known interior and the stupendous monuments of the religion of Baudha. Returning to the coast of Coromandel, I reached Madras in September, 1833, where I embarked in his Britannic Majesty's ship Alligator, Captain Lambert, and visited the Easter Islands, the Friendly and Society Islands, Singhapúr, Sumatra, and Java; Swan River, King George's Sound, and Sydney, in Australia; Van Diemen's Land, New Zealand, and Norfolk Island, Manila, and reached Canton in the beginning of 1835. Thence to Madras and Calcutta; by steam to Benares, Lucknau, Allahabad, Agra, Bhurtpár, Delhi; thence to Massuri and Simlah; and after a stay of three months in the British Himmáleh, I crossed the Sutlej at Bilaspúr, to Kashmír, Attock; recrossed the Sutlej at Lud'yana, returned to Delhi; thence to Ajmeer, Chittoor, Udipoor, Mount Aboo, Almedabad, Surat, and reached Bombay in May, 1836."

The highest chain of the Himmáleh, after the river Sutlej has crossed it, changes its direction more to the north, and detaching from its main body several isolated masses, follows this direction to $75^{\circ} 30'$ E. longitude, where in latitude 35° N. it takes at once a westerly direction. Soon after the Sutlej is passed, the traveller has no more before his eye, from elevated spots, the endless lines of ridges with their white peaks, which is the peculiar character of the highest chain of the Himmáleh, seen from Massúri and Simlah; but only detached mountains, covered with snow, partly intersected with lower ranges and deep ravines, some at a great distance one from another, with valleys between them.

Those detached mountains appear from the plains of the Panjab as one uninterrupted chain. The largest of them, the Mori Range, which begins to the north of Belaspúr; its highest point appears to be the *Mony Mús Kidar*: this bears N.E. from Nadaun, where it is called Tchampr. Seen from Kablí, Mondobri Katiba (Mondobri mountain) appears to be the highest. The Mori Range is divided into three groups of mountains, the highest points of which are called Mondobri Katiba, Gaurazig, and *Mony Mús Kidar*; these bear from Kabli, N. 30° E., N. 70° E., and N. 80° E.; the first is the nearest. The Mori range is entirely unconnected with the highest chain of the Himmáleh, and about thirty-five miles in length, from S.E. to N.W.; it terminates abruptly due E. from Núrpúr. It is composed of several more or less rounded peaks to the S.E., and forms at last a long straight line of the same height covered with snow in its ravines. Below them, towards the S.W., is a plain or large valley called Zamber Kidar, overgrown with jungle and without cultivation.

The next are the Santch Mountains, much higher than the Mori

Range; their direction is N.N.W.; they are composed of very extraordinarily shaped points, and extend for about twenty miles. The highest point is Sericot, a singularly shaped pyramid; the range bears from Núrpúr, N.E. to N. by E.

To the west of the Santch Mountains is Baldewa, or Rumnuggur, an insulated snowy mountain; its top forms a plain with a regularly shaped elevation on it. It is the nearest of all to the plains of the Panjáb; this makes it peculiarly conspicuous from thence; in fact, it appears as one of the highest points in the immense panorama from Vizierabad, but disappears entirely when seen in the mountains. Between the Santch Mountains and Baldewa is the shortest road to Kashmír, but impassable for horses, Baldewa's highest point bears N.N.W. from Núrpúr.

Tricota, or Tricota Devi is the last of the insulated snowy points; it is a beautifully-formed mountain when seen from the W., consisting of three peaks, the highest of which is in the centre: it is separated from the plains only by one low range. Tricota is the lowest of those insulated snowy mountains, and the snow, though seldom, disappears sometimes entirely from it.

From the appearance of these mountains the direction of the strata is difficult to be guessed, except from the Mori mountains, where it is from the S.W. to N.E.

From Tricota there is again a great break in the snowy mountains, but not visible from the Panjab. There the Tibetan mountains fill up to the eye the open space; a beautiful valley, the Rás Doon, is at its foot, through which the shortest road leads from Jommú to Kashmír. To the N. by W. of the Tricota Devi rises the Ratan Panjahl, which, although under the snow line, rises 11,600 feet above the level of the ocean. This range is again separated from the Pir Panjahl, which forms an enormous mass of snowy mountains running from 73° to 75° E. long., in the most singular sinuosities. Here the snowy mountains recede more and more from the plains of the Panjab. By a deep and narrow chasm the Jhyllum finds its way through them; on the right banks of which the Baranulla mountains continue the same range, which, through the Kamsír mountains, reaches to the river of Attock, and is united with the Tibet Panjahl and the Hindú Kúsh, by immense ranges, named the Gosseie, through which the Attock flows; and Nunnenwarre, through which the Kishen Ganga flows. These mountains have here an entirely different direction than that of the Himmáleh; both run for a certain time from E. by N. rounding to S. by W.; so that the Pir Panjahl, the Baramulla mountains, the Gosseie, Nunnenwarre, and the Tibet Panjahl, form a regular oval of snowy mountains round the valley of Kashmír, which only in its S.W. end, and for one-fifth of its extent, is interrupted by

lower ranges. All the highest mountains which I had occasion to examine round the valley, have their dip to the east of north, rising abruptly with deep precipices from the south and west, with scarcely any vegetation, and have on their top, plains and long ridges, descending at an obtuse angle, and covered with the richest soil and vegetation in the direction of north and east. This changes a little on the Tibet Panjahl, where sometimes plains are on the Kashmír side of the highest range. In this direction Nanga Purvut, or Diamal, (the former the Tibet, the latter the Kashmír name,) bearing N. by W. from the town of Kashmír is the highest point, which, from the Banderpur Pass to Iscardu, appears like a gigantic pyramid rising above all the other mountains.

From Nunnenwarre (N. by W. from the town) the snowy peaks of the Tibet Panjahl have, first, a southerly direction, reaching at the precipitous termination of the mountains to the south and west, within six miles from the actual plains of Kashmír; and then, turning in an easterly direction, recede farther and farther from the valley. In this direction are the two highest points of the whole Tibet Panjahl; which is the continuation of the highest chain of the Himmáleh, and which points I believe to be the highest from the Sutlej to the Indus. They are called Mer and Ser, and consist of two pyramids, one black, the other white, in appearance near one to the other, and of the same height; rising in unparalleled majesty over the boundless region of snow, when seen from the highest point of the Pir Panjahl. These two mountains are seen from Vizierabad, bearing N. 55 E. and N. 57 E., having the plains of the Panjáb, the Pir Panjahl, and the valley of Kashmír between them and Vizierabad; from the valley I think them forty miles distant.

Before the Moguls conquered Kashmír, seven passes existed leading to the valley. Acber entrusted them to hereditary Malliks, allotting them villages, for which they were obliged to defend the pass entrusted to them, and in case of war to appear in the field with a certain number of soldiers, varying from 100 to 500, which at this moment they are unable to do. Acber gave them power of life and death; the Patans reduced this to the power of cutting off noses and ears, and now their power consists in fines. The following is a list of them, beginning to the north of the town, and turning to the east:—

1. Dellawer Mallik. Banderpur Panjahl* (pass), by Kuihama to Iscardú; the highest point of the pass thirty-four miles from the town.
2. Rossul Mallik. Kándriball Panjahl, to Iscardú.

* Pansahl in the Kashmír language.

3. **Maredwaderan Mallik.** The same Panjahl to Ladak. This pass divides when on the highest point of it, fifty miles from the town.
4. **Naubuck Nai Mallik.** Naubuk Panjahl, or Tibet Panjahl, by Islamabad and Naubuk to Ladak; the highest point of the pass seventy-four miles from the town.
5. **Shahabadka Mallik.** Sagam Panjahl nūr Bauhall Panjahl. Both to Kishtewar and Jummú; the former fifty, the latter forty-six miles, to the highest point.
6. **Kulnarwah Mallik.** Kulnarwah Panjahl to Jummú, fifty-four miles to the highest point.
7. **Shupianka Mallik.** Pir Panjahl, sixty miles to the highest point.

The following are the now existing passes:—

1. **Banderpur Pass.**
2. **Kandriball Pass.**
3. **Naubuck Pass.**
4. **Sagam Pass.**
5. **Banhall Pass.**
6. **Kulnarwah Pass.**
7. **Schupianka Pass,** mentioned before.
8. **Ningmaruk Tera Pass** to Prunch; twenty-six miles to the highest point of the pass.
9. **Tossemaidan Pass** to Prunch, over the plain of Tasse, twenty-six miles to the highest point.
10. **Ferospur Pass** to Prunch, twenty-eight miles to the highest point.
11. **Baramulla Pass,** by Canhorn, to Prunch, fifty-two miles to the highest point.
12. **Baramulla Pass,** by Mozufferabad, the Tchikri of old, to Attock.

All the passes to Prunch are of a very recent date, and for this reason no Mallik exist. It is the same with Baramulla, the now-existing pass being made by the Patans eighty years ago; which appears to throw some doubt on Acber's entering the valley from that direction. He found, at all events, the difficulties so great, that he thought it unnecessary to appoint a Mallik.*

All the passes of Kashmír go over the highest mountains, with the exception of the Baramulla, or Westeru Pass, which follows the course of the Jhylum. It is rather extraordinary that this river comes from a part of the valley where no snowy ranges exist, and runs in the direction where they rise without termination

* Nos. 11. 12. 5. 3. are the passes always open.

one over the other. It is a peculiar feature of the three largest rivers of the Panjáb, the Sutlej, the Jhylum, and the Attock, that they run for a considerable time in the direction of the formation of the highest ridge: the first and the last having their sources beyond the highest mountains of it.

The valley of Kashmír has on its south side gently rising hills, the last declivities of the Pír Panjahl, covered with the most luxuriant vegetation; and the eye gradually ascends over their beautiful forms and colours to the snowy range with its thousand peaks. On this side more or less extensive valleys are formed, in the centre of which the purest mountain-streams flow, and form, higher up, innumerable cascades. In this direction the zoologist and botanist must bend his steps; here the thickest woods are interspersed with open plains, and the wanderer through them finds neither in the former a tree felled by man, nor in the latter the countless flowers bent by the steps of a living being. Here is perfect solitude; there, treasures of vegetation are heaped up without an eye to enjoy them; and the silence is only interrupted by the notes of the blackbird or the bulbul.

The traveller is surprised to find the mountains in this temperate climate very cold; with their southern exposure bare and uncovered; and to reach the highest point, and to see, facing north, plains covered with flowers under the snow-line, and then the richest forests descending to the valley.

Kashmír, in a political and financial point of view, has been much overrated: not in a picturesque one. The valley, in its length from north-west by west to south-east by east is little more than eighty miles long; the breadth, crossing the former line, varying from thirty miles to six. I speak of the actual plains: from the eternal snow of the Pír Panjahl to the Tibet Panjahl are from fifty to sixty miles. Both ranges run nearly parallel in the first direction, with a great number of peaks. The height of the passes from Bimber to Kashmír, and that from Kashmír to Iscardú is the same, nearly from 12,000 to 13,000 feet: the highest point of the Pír Panjahl, 15,000 feet by boiling water. The city of Kashmír, 5800 or 5900 feet* above the level of the sea.

Population.—Four years ago, about 800,000; now, not exceeding 200,000 persons. The valley is divided into thirty-six pergunahs, containing ten towns and 2200 villages. Kashmír Town contains still 40,000 inhabitants; Chupeyan, 3000; Islámabád and Pám-pur, 2000. It was not the bad administration of the Sikhs, but a famine brought on by frost at the time the rice was in flower, and cholera in consequence of it, that reduced the population to one-

* Three thermometers brought it very nearly to the same height.

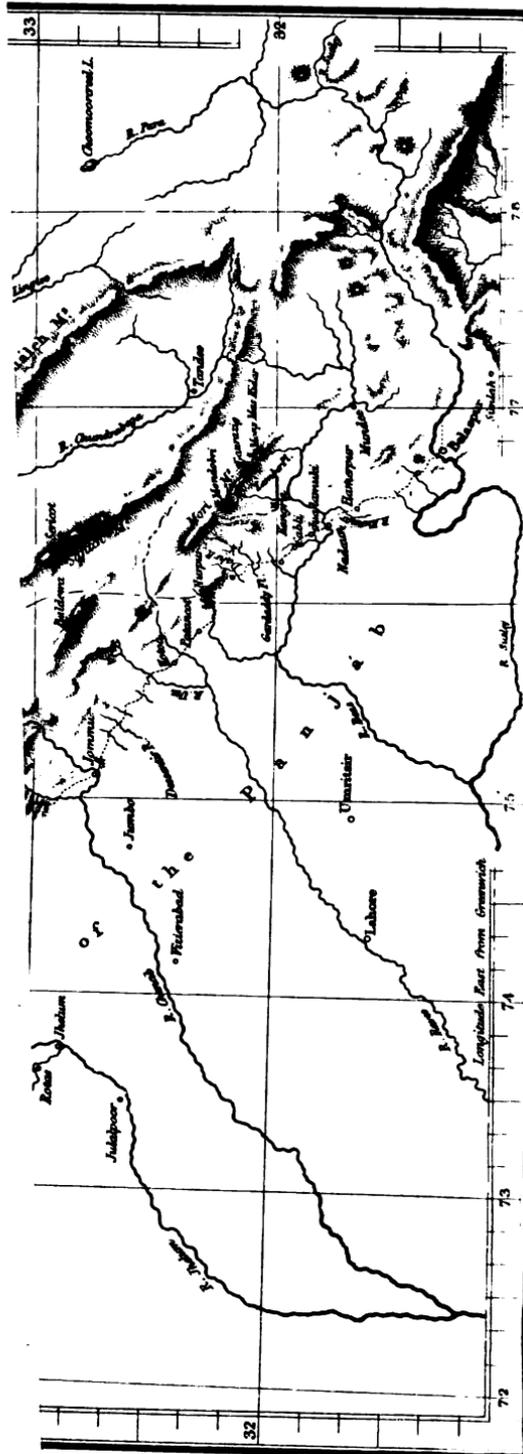
many
2000

ishing
wenty-
ountry
b and
, most
úrpur,
shawls
r than

2000
three
er in-
at 800
extin-

having
way is
000 to
of the

one of
 rivers that
 that t
 mati
 souro
 Th
 hills,
 luxur
 beaut
 peaks
 the ci
 highe
 and l
 inters
 finds
 the o
 perfe
 witho
 by th
 Th
 clima
 cover
 plain
 riches
 Ka
 much
 lengt
 than
 varyit
 from
 from
 direct
 from
 same,
 Pir I
 5800
 Poy
 200,
 conta
 still 4
 pur, 4
 famin
 chole



fourth of the former number by death and emigration: many villages are entirely deserted. Chirar Town contains now 2000 houses, and only 150 inhabitants!

Revenue.—Last year very nearly nothing, Ranjít Singh wishing that the country should recover: this year (1836) he asks twenty-three lakhs from the Governor Mohan Singh, which the country cannot give. The emigration has brought to the Panjáb and Hindustán many shawl manufacturers; and Kashmír will, most likely, never yield again what it did a few years ago. Núrpur, Lud'yána, and many other places can bring to the market shawls cheaper than Kashmír, where every article of food is dearer than in the Panjáb and Hindustán.

Wáter Lake is nearly thirty miles from east to west.

Brahmans, the only Hindús in Kashmír, 25,000 in 2000 families; they are Vishnuvaites and Sivaites, divided into three divisions, who all intermarry. They are darker than the other inhabitants, owing to a colony sent for from the Dekhan about 800 years ago, after the aboriginal Brahman race was nearly extinguished by the persecution of the Muhammedans.

There is not in the valley the slightest appearance of its having been drained: the pass through which the Jhyllum found its way is one of the most beautiful in the world; its bed, from 1000 to 1500 feet deep. I do not believe more in the traditions of the Kashmírian Brahmans than in the Tables of Manethon.
