

JOURNAL
OF THE
ASIATIC SOCIETY.

No. VI.—1850.

Report on the Valley of Spiti; and facts collected with a view to a future Revenue Settlement.—By Captain W. C. HAY, B. A., Assistant Commissioner, Kulu.

Approaches to the country.—I gather from information that the valley of Spiti is approachable from our own territories and Kunnáwar, by six different routes.

First Pass.—First, and easiest, is through Kunnáwar, viâ Shiálkar, over a low range of hills by the Kíágar pass to “Súmrah,” the last village in the Busahir territory, and thence across the Spiti river to “Lári,” the first village in Spiti. By this route you meet with three mountain passes; viz. the “Warang,” between “Chuni” and “Lupá” in Kunnáwar, which is 13,000 feet high; the “Runang,” 14,508 feet, between Kannar and Súngnam in Kunnáwar; and the “Húngráng,” 14,837 feet, between “Súngnam” and “Hungo,”—and have to cross the Spiti river which is not bridged; rapid, and 3½ feet of water.

Second pass Mánrang.—The second is over the “Mán” pass, commonly called the “Mánrang;” but “rang” merely signifies a pass. The road to this is from “Súngnam” in Kunnáwar, to “Robak” where copper mines are worked by the Busáhir Rájá; then over the pass, which Captain Gerard, I think, calls 18,000 feet to “Mán,” a village in Spiti, and one march from Dankar: this pass

is not open until May, and closes usually in October. The "Mánf" pass bears from Dankar East 46; there are two very high peaks above the pass, and a lake called "Mánf-ke-Choh."

Third Pass "Bhubáh."—The third pass is the "Bhubáh Jhote." The road to this jhote strikes off from the Sutlej at the Wangtú-bridge, ascending to the village of "Gutgáon" in the Pargannáh of Bhubáh in Busáhir; thence the pass is two marches from any habitation: it is a high pass, probably near 18,000 feet; you cross it and descend to the village of "Múdh" in Spiti, only one march. This is by far the shortest road to Rámpúr; but the pass is only open from May until October. I contemplated coming to Spiti by this route, but snow fell for four days successively, and I gave up the intention. Two Spiti men afterwards tried it, and had to march unceasingly for two days in 3 feet of snow, and one man was frost-bitten; it is certainly impracticable for Hindustanis in November.

Fourth Pass "Satoláh."—The fourth pass is the "Satoláh," which leads into Kúlú, entering it at "Jagat Súkh;" by this pass you have to pass the Shigri; the marches are as follow:

From Dankar to Kurjeh,	} 1
Pámo,	} 2 in Spiti.
Lohsar,	
Kúnzam ghat, on this side	3
Shigri Ghátí,	5.
Sutlehet,	6.
Gúnzá Pattar,	7.
Jagat Sukh,	8.

In this route, it is said, there are three streams to pass, which are impracticable for Ghoonts, and only open from May until October.

Fifth Pass "Kanzum."—The fifth pass is "Kanzum Lámú." "Lámú" signifies pass: this leads into Kulu, viâ the Rotang pass, and is only open from May until October.

Sixth Pass "Bará Lachá."—The sixth pass is the Bará Lachá, viâ Láhoul and the Rotang pass. The marches to Lohsar are as at the fourth pass, thence to Takpokongyah to Bara Lachá, &c. :—Only open from May to October.

These are the passes from our own Territories and Busáhir, through the outer chain of mountains.

Passes into Tartary.—Through the second chain of mountains into Ladak and Tartary, there are three passes.

1st to Chúmúrti.—The first from Lári to Chúmúrti in Tartary; the marches are as follow, being six days' journey.

All these places are beyond our frontier.	}	1st, Húling.
		2nd, Súng-kill.
		3rd, Tún-tún.
		4th, Pút-pút (lámú) said to be a very high pass.
		5th, Rúm-búding.
		6th, Chúmúrti.

2nd Pass into Tartary—"Párang."—The second pass is over the "Párang" lámú, upwards of 16,000 feet, and goes by the villages of "Ki Gúmpá" and Kibar to Rúksú, a district in Ladak. This is usually called the "Párang Lá," Lá being the contraction of "lámú" a pass.

3rd Pass into Tartary—"Tungling."—The third pass is over the "Tungling" lámú, a very high pass, also leading to Rúksú, and the road strikes off between the villages of "Hall" and "Qatu," but on the opposite side of the Spiti river.

These are all the passes through the mountains into Spiti that I have as yet become acquainted with.

Boundaries.—The boundaries of Spiti are as follow. It is bounded on the North by the Párang range, which separates it from Ladak. To the North East there is no defined boundary, but inaccessible mountains.

To the South and South East by the Máni pass ranges which separate it from Kunnáwar.

To the East a valley, called "Kurati" takpo, separates it from Chinese Tartary.

To the West, the snowy range from "Bhubáh" to "Bará Lachá," Bhubáh Jhote, separating it from Busáhir, and the latter from Kulu, and Lahoul. The Bhubáh Jhote is to the W. S. W. and the Bará Lachá N. W. These appear to be all natural boundaries.

Valleys.—The length of the Spiti Valley, longitudinally, I should estimate at about sixty-six miles; the following being my supposed distances between each place situated in the valley. From the boundary

before reaching Lári,	..	..	..	..	6 miles.
From Lári to Po,	..	..	..	..	8
Dankar,	..	..	..	..	10
Lidang,	..	..	..	..	6½
Kfū Sing,	..	..	..	..	4½
Rangrik,	..	..	..	..	5
Ull,	..	..	..	..	10
Hansi,	..	..	..	..	10½
Lohsar,	..	..	..	..	5½

Total,.. 66 miles.

There are three transversal valleys, one in the direction of the curved line of mountains extending from the Bará Lachá to the Bhubáh pass. The length of this valley to which villages extend may, from the Spiti river to the village of "Múdh," be estimated at 30 miles.

The second transversal valley extends from the Spiti valley, in the direction of another curve of high mountains, separating the Spiti valley from Tartary, and whence arise another line of water heads; the rivers running in an opposite direction. The inhabited part of this valley does not extend above ten miles. From this again, is a lateral valley, running almost parallel with the Spiti, in which are only two villages in about three miles.

A third transversal valley is the "Párang," leading up to the "Párang pass" into Ruksu, or Ladak; in this there are only two villages in about two and a half miles. These may be said to contain the inhabited and cultivated parts of Spiti.

The passes through these valleys I have already mentioned.

Crops.—The crops in Spiti consist of two kinds of barley, one of wheat, peas, and mustard from which oil is made. They sow in May, and reap in September.

Rivers.—The principal river is the Spiti; I followed it up as far as "Lohsar," where it divides into two branches, one called "Pílú" running from the North West, and another flowing from the "Kúnzam lámú," and called "Líchú" from the South West, and said to be four days' journey.

The peculiarity of this river is the immense width of its bed, being (from the time it takes a South and South East direction, where the

“Párang” river enters it, to a point where another stream flows into it from the “Mání rang”) seldom less than half a mile wide, and, in some parts, nearer a mile.

At this season of the year, the main stream is not in most places above forty yards wide, or above three feet deep,—that is above Dankar. This river is also remarkable for its very flat bed, and for not containing boulders of any large size—none above a foot in measurement, but much more generally small stones, gravel, sand, and a calcareous marl.

Its principal tributaries are the “Tungling,” “Párang” and “Lingti” flowing into it from the left bank; and the river “Peen” on the right.

The “Tungling” and “Párang” flow from mountains of the same names, each source distant about 20 miles.

The river “Lingti” flows from Lúngpá: it is said to be two days’ journey, and above the village of “Lílong” it is called the “Pedangehi;” its bed is about eighty yards, and the stream at present is about 20 feet wide.

The river “Peen” is said to flow from the “Bhubáh” Jhote and above takes the name of the “Bhubáh.” When the river takes a S. W. direction it is joined by another considerable stream, the “Yensá,” flowing from a mountain of that name two days’ journey from its junction with the “Bhubáh.” Another large stream then joins the “Bhubáh” called “Para Kiö,” which is said to flow from a mountain of that name four days’ journey; its course appears to be nearly South. The “Bhubáh” then takes the name of “Peen” from the Koti of “Pínú,” or valley, through which it flows. The width of this river bed is from 300 to 800 yards.

There are many other feeders to the Spiti, but which may be more appropriately termed torrents, principally running into the Spiti, on its right bank, with a course from the mountain, through which they have forced their way, of about half a mile: some of their beds are very remarkable, from 300 to 500 yards wide, quite straight and parallel, like the banks of a canal, and the débris, in some instances, from 200 to 300 feet above the water level: the rush of water on the melting of the snow, must be very great through these channels. The Spiti river is, at this season of the year, in some parts completely frozen over, and you can both hear and see the stream flowing beneath

the ice. A great quantity of border ice is frequently broken up and carried down the stream, which occasionally gets jammed, and the passage is interrupted; the river above then increases in depth, and becomes impassable.

The bed of the Spiti is so deep as to prevent its water being of any assistance to the people in cultivating; they depend entirely upon the small streams from the mountains feeding their kools. On the right bank of the Spiti are immense beds of débris, forming plateaux of sometimes two miles in length, and from half to one mile in breadth; a quantity of calcareous deposit has taken place upon the débris, and would afford excellent arable ground, but for its aridity, and impossibility of conducting courses to water it: in some seasons when a great abundance of snow has fallen upon the range of mountains immediately above the level ground, cultivation is attempted, but it is very uncertain, and in taking revenue from the country, it cannot be accounted as productive soil.

The probable total length of the Spiti river, from its source to its junction with the Sutlej, may be estimated at one hundred and twenty miles. I am told that fish have never been seen in the Spiti river.

GEOLOGICAL FORMATION.

Physical and General view.—The Physical and Geological account of this country, such as I am able to give, can be embraced in a small compass. The account of the mountains, valleys, and passes will, in fact, explain the physical position.

Gypsum and Alum.—The formations that I have seen, belong wholly to the secondary period: in fact, Spiti may be described generally as being of various kinds of lime and sandstone, with a few slates and shales, and conglomerates. On descending to the bed of the Spiti, after crossing the range which separates it from Kunnâwar, beds of red sandstone are first met with; in connection with these, below Lâre is gypsum, and alum; and, from the water all the way from Lâre to Dankar being saline, I have no doubt but that rock salt may be discovered in the vicinity of the gypsum.

Fossil beds.—These secondary strata contain some excessively interesting fossil beds. The first which I examined are in the Pínú valley, and above the village of "Mekiön;" they are a marine deposit, and

belong to the "Porkilitic" group, being situated between the beds of "lower new red sandstone" and the Magnesian group or dolomitic conglomerate; these again being associated with beds of shale, and mountain lime-stone, point it out as an exceedingly likely locality for coal; the snow however was on the ground and the Thermometer not above 10° in the middle of the day, when I visited the place, so that my observations were unsatisfactory.

The fossil beds of Ammonites are of great extent, varying from the size of a cart wheel, to an inch in diameter: in a very short time I collected as many as two men could carry, and could distinguish as many as six or seven different species of Ammonite, with a variety of other shells, and one or two vertebræ of fish.

Oxide of Iron.—A large quantity of red oxide of iron is found somewhere in the vicinity, which is used by the people for ornamenting their houses, marking their sheep, &c.; this locality, when free from snow, would be worth observing, because beds of this description often overlay silver and lead ores.

Lias and lower Oolitic beds.—The other fossil beds, which I examined, are in one of the lateral valleys near the village of "Gienmul." The formation corresponds with our well known "Lias," and "lower oolitic" reposing on the Lias. The mountain, behind which these beds are situated, is composed of a series of calcareous and sandstone beds, in an almost undisturbed position.

The decomposing Lias, with much indurated mud or clay, and greatly tinged with iron, have greatly the appearance of a coal field, and are on undulating hills; these are filled with ammonites of only one species: the decomposition of this group furnishes the richest ground in Spiti; the soil at "Lidang" and "Lára" seems also to be of this description, but the fossils are not so abundant. The lower oolitic reposes on the Lias, and is composed of rather complicated strata, containing immense quantities of dead shells in a black deposit of extreme fineness; this clay is perhaps an indication of the neighbourhood of coal. I procured a quantity of these fossils, consisting of a variety of bivalve shells, one or two univalves, and varieties of Belemnites and "Orthoceras."

The mountain lime-stone is the most abundant formation in Spiti, and abounds with species of ammonite, Orthoceras, Spirifer, Tere-

bratulæ, &c. &c. ; some of these beds may perhaps be attributed to the primary fossiliferous or "Silurian" group, since they are in a horizontal position, and have never been disturbed since their deposition, and they are a dark gray argillaceous deposit, below which a slaty sandstone is met with ; the fossils generally being, "pentamerus," "tentaculites" ammonites and belemnites—all indicative of the Silurian group.

Soil.—This brief description will so far tend to show that the productive soil of Spiti, is in general calcareous. As far as Lidang it is of a light colour ; from Lidang to Kí, the soil is blackened by the fossils ; and above these places, to the head of the valley, the soil assumes a reddish appearance, from the calcareous soil being more or less mixed with the decomposing siliceous particles of red sandstone.

These soils are all light, and easily turned up by the plough, and should, if properly watered, be highly productive.

Secondary Strata.—It is a fact to be noted, that Herbert in his mineralogical survey of the Himálaya, travelled as far as the Hungrung pass in Kunnáwar, and leaves it with a remark, that lime-stone is never, in these mountains, a principal formation : now, the principal lime-stone formation is only there beginning, the whole of Spiti may be said to be a lime-stone formation ; likewise, a great part of Laboul. Herbert also says, after mentioning the formation of gneiss, &c., that "outside of the whole are very limited examples of the secondary strata." Now the secondary strata are of great extent, but not as observed by him. The secondary strata begin at the Hungrung pass, which is a mere spur from higher mountains, chiefly composed of lime-stone and sandstone, as the boulders in the river at Súngnam might have pointed out, but he merely sighted the lime-stone, and drew, in my opinion, an incorrect conclusion.

The Bará Lachá, and many other mountains from 16,000 to 20,000 feet high, are secondary, although certainly very uncommon height for secondary formations : and it will be a natural conclusion that nearly the whole range, bounding the Tartar plains in this direction, are secondary or certainly not older, which would give as great a breadth of secondary as primary formation.

Population.—The five Kotis into which Spiti is divided contain upwards of sixty villages, enumerated in Table No. 1. The whole of

these villages contain only three hundred and sixteen houses, and their population is as follows, the census being from actual enumeration.

Adult males,	-	-	-	-	392
Boys under 12 years,	-	-	-	-	191
Adult females,	-	-	-	-	593
Girls under 12 years,	-	-	-	-	238
Lambas or priests not included above,	-	-	-	-	193

Total, - 1,607

giving a total of one thousand six hundred and seven souls.

The population is represented to me as having been on the increase for the last five years.

Revenue.—It is not without some difficulty that I got the people to make me acquainted with the revenues which had been formerly paid, but I believe the following to be pretty correct.

Revenue for 1847-48-49.—The revenue for the years 1847-48-49 has been paid to the Vazir of the Rájá of Busáhir—at least for 1847 and 1848; that for 1849 was tendered to the Vazir, who has since written to me to receive it on account of Government. The revenue paid to Mansúk Dás, the Vazir of the Busáhir Rájá, in 1847, was merely 753 rupees.

In 1848, the same sum was paid, with the addition of 400 lacs* of grain, the produce of some land at Dankar, which was called Sircári.

The revenue for 1849 is still in hand, and is 753 rupees and 500 lacs of grain, now in the fort of Dankar, which will be made over to the Vazir of the Rájá, and 753 rupees, credited to Government.

Mansúka Das, Vazir, made an offer to Mr. Edwards, the Superintendent of hill states, to continue farming Spiti, upon an increased rent of 1,000 rupees, and I believe he recommended to the Board that his offer should be accepted; but I think it very objectionable, for the Spiti people believe that he only took the sum fixed for the three years, with a view of obtaining a longer lease, when they were apprehensive that it was his intention to exact more from them.

The Spiti Vazir holds a paper, written in Thibetan, signed by the late Mr. Agnew, which the people here say is guaranteeing to them that no more than 753 rupees should be levied from them. I have no means

* See page 440.

of testing the truth of their assertion, nor do I know whether Mr. Agnew was authorized to make such an agreement, but I have treated the subject lightly, nor could they have considered it very binding, from the fact of their having paid to Mansúka Dás, in excess of the 753 rupees, grain to the value of 200 rupees or upwards.

Revenue for 1844-45-46.—In the years 1844-45 and 46, the annual revenue paid to the Thánádár at Ladak was 1,031 rupees. Besides this, 100 “Múndís” or iron crow-bars; likewise two Ghoonts, and a nazaráná of 15 rupees annually to the Thánádár, and 60 sheep in jugat.

During these three years the Seiks are said to have further plundered the country of 4,000 rupees, also 60 ghoonts, and much other property.

Revenue from 1839 to 1843.—From 1839 to 1843, both inclusive, an annual revenue of 2,000 rupees was paid to Rájá Goláb Singh.

Besides this, 100 sheep within the five years; and, in 1839, three Ghoonts were presented as nazzars, and one Ghoont annually for the four succeeding years.

Prior to 1839.—Before 1839 the revenues from time within memory, was always paid to the Rájá of Ladak, as follows; 396 rupees in cash, 200 lacs of grain, 100 múndís, 34 pieces of cloth (Barmúr), and 132 shúgús of paper, equal to 660 Hindustáni táktehs. During these years, they also paid annually to the Rájá of Kulou, six rupees, and two pieces of cloth, as tributs. Also to the Rájá of Busáhir 30 pieces of cloth as tribute. And to China (from 50 Chinese families settled in Spiti) about 200 lacs of grain.

This revenue to China has been discontinued for the last 12 years; but, before my arrival, some Chinese were sent from Tolung to demand the ancient tribute.

Demands of the Chinese for revenue.—Since my arrival, Vakfls have been sent to me from Tolung and Chúmúrtí, setting forth their claim to this tribute, but I told them that, as it had not been paid for the last 12 years, and the Company had the means of protecting their own subjects, that I did not think it would be continued; but that as I was not vested with political authority, I would make their request known to my superiors.

This ancient tribute does not appear to have originated with the

Chinese government, but in ancient times there were Tartar hordes upon the border, and the Spiti people appear to have paid this grain to be protected from plunder.

Revenue how hitherto collected.—The revenue of Spiti has hitherto been collected by a Vazir (hereditary); whatever revenue is required has been levied equally from the five Kotis: in the collection, he is assisted by five "Gatpos" or Múkfáhs. The Vazir has hitherto been allowed to pay himself at the rate of one rupee in four, and he holds the village of "Kiúling" in Jághir.

Amount of grain produced, and probable home consumption.—The whole five Kotis contain 2,554 lacs of ground. The probable produce of this land will be 20,667 lacs of grain, and the probable annual home consumption 15,000 lacs; which, deducting 800 lacs for the produce of the Jághir lands, will leave them 4,867 lacs to pay their revenue with; which, roughly calculated, would be about 1,600 rupees, besides the sale of Ghoonts, say 400 rupees, and any tax upon their industry.

Commerce.—The Spiti people are not essentially traders, their country affords but little pasturage, and they have seldom more sheep than to supply their own wants.

Exports.—The exports are confined to grain and a few Ghoonts, together with a few manufactured blankets, and pieces of Barmúr cloth. The return for their grain is salt, and wool. For grain they receive equal weight of salt, and for three lacs of barley they receive eight "kiris" of wool; the kírí is a Chinese weight, and differs from 12 to 16 seers.

Trade with Chinese.—The Chinese are their own carriers: they come to Spiti in November, and take about 1,000 lacs of grain, and a few Ghoonts. The Spiti people say that this trade might be increased. The Chinese do not barter "pashm" or Shawl wool, but take rupees for it.

From the Chinese, the Spiti people buy their sheep, (a very fine description) giving five lacs of grain for one sheep.

Trade with Busáhir and Ladak.—They export to Busáhir about 250 lacs of grain, chiefly to Súngnam, and receive in exchange rupees: the Busáhir people are their own carriers: a few Ghoonts are also sold. To the Busáhir people they also exchange part of the salt they

receive from China, for iron and tobacco, and a small quantity of pashm, about 12 maunds, is also exchanged for iron: if this iron is more than sufficient to supply their own wants, they trade with it to Ladak, or Rüksú, and exchange it for ornaments for their women, and other trifles.

They also exchange about 250 lacs of grain with the Tartars, from Rüksú, for wool and salt.

The usual selling price of grain amongst themselves appears to be from 2½ to 3 lacs of barley, and 2 lacs of wheat for the rupee.

This appears to be their entire trade.

Weights and Measures.—Their measures are of three descriptions, "linear," "agrarian," and of solidity.

"*Linear.*"—By the linear measure, cloth is sold by the "háth" as in Hindustan. Wool is sold by what is called a "kír" or bundle, which differs as to weight, but is two háths in length; this is used in commerce with the Chinese.

Agrarian.—The agrarian measure estimates by the quantity of grain; in Kulu it is "Bhars," here it is by "lacs," a lac being 32 catchá seers, or 12 pucka seers.

Capacity and Solidity.—The return of grain sown is 14 to 1 of barley, and from 10 to 12 for 1 of wheat. Gram is sold by the seer of 20 double pice weight; our seer is from 80 to 84 tolas, their seer is 32 tolas.

They have also a small measure called a "Máni" or "Thi," which is a small wooden cup; this is of two sizes, the one used for buying, called "Chayreh," holding 29 rupees weight of grain; and the other, by which they sell, called "Guyreh," which only holds 21 Ra. weight; small articles of value are bought and sold by the barley-corn weight, as a grain of rice is used in Hindustan.

Liquor.—Liquor is measured by the "Puttah" of 2 seers, equal to ½ seer pucka. Their liquor is of one kind, distilled from barley called "Chung," and is sold 30 "puttahs" for the rupee. They consume large quantities, and one man is said to drink, on occasions of festivity, as much as four puttahs.

Domestic Animals, Cattle, &c.—Their animals consist of Yáks, Jabbús or half Yáks, Cows, Ghoonts, Asses, Sheep, Goats, Dogs, and Cats.

Yaks.—The Yák is a highly useful animal; with it they plough, carry loads, and it furnishes milk, and hair for their ropes.

In the severest weather, this animal appears to enjoy itself in the snow, and it is often to be seen with icicles, of several inches in length, hanging to its nose, and a foot or more of ice hanging to the hair falling from its neck and shoulders. Long hair hangs over the eyes, and prevents their freezing.

Number of Yaks, Jabbús, Cows and Ghoonts.—*Chinese breed.* The total number of Yaks in Spiti is 439: and of Jabbús and Cows 412. The Ghoont, although an useful animal, seldom carries any burden but a man; the total number in Spiti is 365, but bred chiefly for sale. They have two breeds, one a small Ghoont, never above 12 hands high, peculiar to the country. The other a large breed of Ghoonts, from 13 to 13½ hands high, is bought from the Chinese, and usually comes from "Chúmúrtí." For a Chinese Ghoont two years old, they give a four year old Spiti Ghoont. All are equally hardy, and are kept out the whole winter,—all except the yearlings, which are housed. During winter, the Ghoonts live entirely upon the roots of stunted bushes, and are very expert at scraping the snow from off them with their fore feet.

But little attention, except in a few cases, is paid to the breeding of these Ghoonts; a certain number of entire Ghoonts are turned loose amongst the mares, and the sire of a foal is seldom known. Such as are not required for breeding, are castrated when between two and three years of age.

The right of castration has usually been the right of one person, given under a seal from Ladak.

The breed of Ghoonts with a little care might be considerably improved. Many are killed during winter by wolves and leopards, and I saw some which had been much lacerated, but escaped.

Asses.—The ass is also an useful animal, and is of a peculiarly strong breed, not in general large, but with powerful limbs; they are chiefly employed to carry firewood, and are said to be able to go wherever a sheep can: their milk is also drunk. The total number in Spiti is 79.

Sheep and Goats.—The sheep appear to be of two distinct breeds; the common one produces the fine "Biánghy" wool, the other is

a very large species which is brought from "Chúmúrtf" with very long wool, but not so fine as the other.

The goat is of the description which produces the Shawl wool or pashm. The total number of sheep and goats in Spiti is 1095.

The Spiti people are not carriers, or they would have a larger number of sheep. Each village has its three or four dogs, and a very fine black species of cat: these I think comprise all their domestic animals.

Zoology.—I am here at a very unfavorable season of the year to make any observations, either on the Zoology or Botany of the country; in fact, with the latter science: I am unacquainted, and, with regard to the former, having been a keen observer through these mountains, I have been struck with but two new species of bird of the genera "Erythrospiza," and "Ruticilla," every thing else that I have seen is well known and described.

Physical constitution, morals, manners, &c. of the people.—The position of Spiti, situated amongst ranges of high mountains, subject to extreme cold, and far from civilization, points out in a degree the physical constitution of its inhabitants.

The Bhotiás are a physically robust cast of people, the climate not being sufficiently severe to impede the vital functions; with strongly marked weather-beaten countenances; of middling height; with muscular body, flat faces and noses, and, in general, small eyes. The natural colour of their skin is a light brown, and the reflection of the sun from the snow gives them a ruddy hue, which is so peculiar to all the race of Butan. Their hair from exposure to the atmosphere is extremely coarse and matted. The women are also very muscular, and all burdens, except in cases of extreme necessity, are carried by them, the men merely ploughing the fields. They are not subject to much disease, and live usually to 70 years of age.

Diseases.—Small-pox is their greatest enemy, which occasionally depopulates whole villages. Stomach diseases are not uncommon and which may be increased perhaps by the entire want of vegetables. Weakness of the eyes is also common. Although depending entirely on snow and ice water, and in a country of lime-stone goitre is scarcely known; one or two cases, they say, may exist in the whole country.

Ages of Marriage.—The common ages of marriage are, with the men, from 20 to 21, and women from 15 to 20.

Polyandris.—The abominable custom of polyandris prevails, that is, a woman marries a family of brothers.

A man in good circumstances has sometimes two or three wives; but, from the first circumstance, and the priesthood not marrying, the proportion of unmarried females is large.

Slavery unknown.—Slavery is unknown amongst them. They are free in their manners, without being rude, or inquisitive; and have a certain degree of Chinese cunning.

No interest taken for money.—They never take interest for money, but often lend and borrow amongst themselves.

Houses.—Their houses are large and well built, and generally two or three stories high. The first three feet built of stone, and the remainder of sun dried bricks, 18 inches long, 8 wide, and 6 deep, cemented with calcareous mortar. The roofs are flat, with a layer of willow or tamarisk twigs, over which is about 6 inches of earth. On the outer walls are usually deposited grass and wood for winter use, and the houses of the richer zemindars are always distinguished by the neatness with which this is stored. This keeps the snow off their walls. One room in a house is usually 20 feet square, or 24 by 20, the roof supported by a double row of wooden pillars, the architrave being, in the better houses, highly carved in Chinese style, in the form of dragons, &c. The two centre beams, are about 2 feet apart, and over these, to form a ceiling, willow or juniper sticks, peeled of their bark, are crossed, and placed close together giving a neat and cleanly appearance; this however is much destroyed by the lighting of fires in the room, and there being no exit for the smoke, except by the door and some very small windows, which are usually on only one side of the room. The walls are generally washed with a slate-colored marl, and a cornice imitated by a band of white and red, sometimes yellow, made from gypsum, and red and yellow ochre. Generally speaking they are extremely well housed. On the outside corners of the houses are usually erected poles, with a black Yak's tail on each. The whole family live in one house, consisting usually of a grandfather and mother down to the grandson, &c.

Khatak presented, a Chinese custom.—When the parties can afford it, distinct buildings, but close together, are occupied; the grandparents occupying the second best. If they die, the father occupies

his father's quarters, and the younger couple the best. Such are their arrangements. They appear to live happily together, seldom quarrel, and crimes are very uncommon. Their customs are essentially Chinese, and I was always presented with a "Khatak," or white silk scarf, by every head of a village.

Mode of reckoning time.—Their mode of reckoning time is by lunar months of 29 and 30 days alternately, and every three years they add a month to reconcile the motions of the sun and moon. Their present Samvat (Kilú) commenced on the 15th of December.

Mode of detecting crime and oath.—When two parties are accused of crime, an oath is taken in the following manner. The names of each are written on paper or engraved on stone, then wrapped up in flour, and either thrown into hot oil, or water, a person then plunges in his hand, and the first name that comes up is considered the guiltless person.

Petty thefts punished by fine.—Petty thefts are punished by fines.

A person dying without an heir, the personal property goes to the Lambas.

Crimes how punished.—If a woman deserts her husband, and goes to another man, the man pays the expenses that have been incurred by the husband, with an occasional fine, according to circumstances.

Bad crimes, as maiming, wounding or murder, have hitherto been punished by orders from Ladák, generally by the cutting off a hand.

Amusements.—Shooting with a bow and arrow is one of their favorite pastimes; the implements are of Chinese manufacture. A sort of religio-dramatic performance constantly takes place, the actors are Lambas, who repeat religious sentences, and are joined in a chorus by the crowd; on these occasions grain is bestowed, and every donor's name registered in a book kept in the gúmpáh or the kúrdewaráh.

Dress.—All are clothed in woollen coarse cloth and blanket at all seasons, and in winter, a goat or sheep skin cloak reaching from head to near the feet, the hair inside. The women wear a sort of loose wrapper with arms, extending to below the knee, bound round the waist with usually a red coarse shawl of pashm; loose trowsers usually red, which are gathered close below the knee, and stuffed into a pair of cloth leggings attached to a large Chinese shaped shoe, (these leggings answering for stockings,) and tied round the calf of the leg

with a woollen string. The shoe is made large and the vacuum filled with búśá or wool.

Their heads are usually bare, but they have a large moveable ornament made of brass, or sometimes of silver and gold, studded with a variety of turquoises, which extends from the forehead over the parting of the hair, and reaches in a long tail behind. They wear their hair long in a number of plaits. They also wear a variety of necklaces of amber, coral, &c. ; and coral earrings and wrist ornaments cut from the chalk shell. No woman is without these ornaments. The higher class sometimes wear a kind of cap made of Kimkhab and trimmed with sable fur, but these are seldom seen ; a woman may be said almost always to appear with a bare head : they are in no way secluded, and are free and frank in their manners, and of very cheerful disposition.

The dress of the men much resembles that of the women, but their heads are generally covered with a sheep skin cap, or one of black blanket hanging loose, with a light blue border. Many wear their hair in one long platted tail, with, occasionally, turquoises and corals. They have all a necklace of coarse amber and other beads. They also wear, suspended round their waist, a flint and steel, and round their necks a polished piece of brass which serves as a looking glass, and various charms.

The Lambas have a variety of head dresses, but all in the Chinese style, either a cap or a hat.

Food.—Their food consists almost entirely of a sort of Sattú, made from wheat, barley, or peas. They occasionally eat meat boiled into a soup ; and drink quantities of tea, boiled with butter and salt. Yák's flesh is eaten without prejudice ; but, in killing any animal they abstain from shedding blood, and usually strangle. They have no poultry ; in fact I doubt if fowls would live. They have not a fruit or vegetable in their country. Turnips, which are cultivated in Kunnáwar, are not seen here. I think that cabbages and beet root might be introduced here with great advantage to the health of the people. Potatoes would not thrive, the cold being too severe. Tobacco is smoked by nearly every man, who has a pipe made of iron stuck into his cammarband, and a leather pouch for his tobacco.

Religious Institutions.—The faith of all the inhabitants of Spiti is "Buddhism." The priesthood form a large portion of such a small

population, there being nearly 200 distributed in the five Kotis. They consist of a Head Gelong, who is their guru or high priest: under him again are five other Gelongs, and all the rest are "Chunbás" and "Cheláhs." The two last or inferior orders can be made here, but a priest must go to Lahassa to be made a Gelong, by the Teshú Lambú. The "Cheláhs" are made indiscriminately from the peasantry. In Spiti there are five Gumpás or Thákúrdewaráhs, each having its Gelong. All these are under the orders of the Teshú Lambú at Lahassa. The priests must either be clothed in red, or yellow, and on no account wear white; their head dresses are very various. They are strictly prohibited from exercising any other functions but those of religion. They are entirely supported by the people, and they collect grain for their support at harvest time from the people; they have a store room to each Gumpá. The Chinese families settled in Spiti are called "Chuji," and they present annually, 200 lacs of grain to the head Gumpá. The priests are prohibited from marrying; if they do, or are known to have connexion with a woman, they are beaten and dismissed from the order. There are however two sects of Lambas; one called "Neingmá" answering to the Byrágis of Hindustan; who though not allowed to marry, are allowed to keep women; there are only 13 of this sect in Spiti.

The other sect is the "Gilopá" who represent the Sannyásies: they consider themselves defiled if they touch a woman. The "Neingmá" sect generally wear long hair, and the other short. They dispute with one another as to their superiority of learning.

The priest attend at births, marriages, and deaths: at a birth, several priests are called, who go through a ceremony of astrology predicting the fortune of the child, and receive presents.

Parties are married by a guru in the open air, when prayers are read; the tilak is then marked on their foreheads, they have "Khataks" (white silk scarfs) given to them by the guru, when they get to their house, and he departs with presents. At a funeral a Lamba attends whilst the body is burnt. The guru and other priests then attend, and presents are distributed. The ashes are thrown into a river, and the place where they were burnt, heaped over with cow dung and clay; and, if the friends of the deceased can afford it, a monument is erected in the shape of an urn. There are no nunneries or nuns in Spiti.

They believe in one God Supreme, but have a variety of inferior divinities, which are represented in their temples. Prayers and charity are, in their estimation, sufficient to ensure happiness in another world.

They believe in various births hereafter: that a man's span in this world is 70 years: but in the second it will be 60, the third 50, and so on till 10, when a man is only to be a háth ($1\frac{1}{2}$ ft.) in height. They believe in many yugs; they say that only three have arrived, and that nine hundred and ninety-seven are yet to come. Metempsychosis forms a part of their belief, but they are not explanatory on the subject, and say that only the Teshú Lambú can explain it. It is rather extraordinary with this belief that they should eat the flesh of animals, which they will not kill, but receive to be eaten when they have been killed, or have died. The store-house of the Gumpá has a large supply of dried dead animals, and pieces of flesh strung and dried.

Once a month, the whole of the priests assemble for general prayer, it is first read by the Gelong, and repeated by all the rest. Their most remarkable festivals are usually at the full moon.

This is all the information which I have thought it necessary at present to collect, regarding their religious institutions and customs. The Lambas are quiet and inoffensive, and much respected by the people generally.

If the country is highly taxed, it will be necessary to make some provision for the priesthood in the shape of Jáhír.

Lahassa is called by the people here "Chotá Chín," and the country between Lahassa and Mánassarovar or "Mantaloi," is called "Guari." China Proper is called "Gynuk." The country of Little Thibet is called "Bálti," or that portion above Cashmere, &c. The Ladak country goes by its own name.

Climate.—Having no Barometer with me, I am unable to ascertain the atmospheric pressure, but with a Thermometer only graduated to Zero, I have, as regularly as I could, taken the temperature of the air since my arrival; always morning and evening, but being generally on the march at mid-day, I have not often been able to ascertain it at that time. I give in a table (No. 2) the range as observed, which will point out the winter climate as being very severe. The diminution of atmospheric pressure is inimical to the growth of trees, and there are only to be found a few stunted trees of "Juniperus excelsa" and willows.

The prevailing winds are from South to East, and at times very high, and the greater portion of the tops of the higher mountains have all the snow swept off by the wind. I remark particularly in Spiti, what struck me so much last July in Lahoul, and especially North of the Bará Lachá, that the soil gives out much heat by radiation. The want of heat and atmospheric pressure are, in these regions, greatly against vegetation.

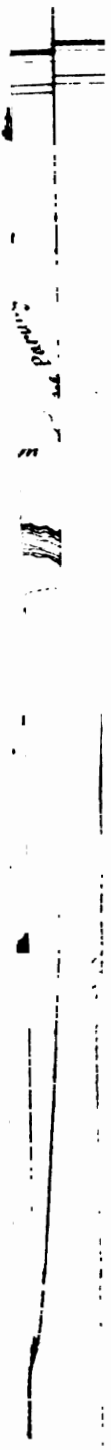
Having given a succinct account of this country and its people, I may sum it up by saying, that Spiti is a mass of nearly bare rocks, with here and there small patches of cultivation, almost entirely without trees, thinly populated, and small villages, the largest not having above 25 houses. The table which I annex will give the number and houses of the villages.

I have now but to add a sketch map of the country, such as will afford a reference to villages. I do not profess to give the mountains in their proper form or distinct ramifications. I have taken regular angles; but, without a protractor, cannot lay them down; besides, that task has most likely been already done, and much better done than with my opportunities or resources, I could hope to perform it.

Conclusion.—I trust that any deficiencies in this report will be excused. I have no proper paper; my hands are so benumbed with cold, that I can with difficulty write, and the ink freezes in my pen at every two or three words. I have had no books or maps to guide me, and am in perfect ignorance of any thing that may have hitherto been written: all is from my own unguided observation. I should, upon the whole, say that the country is in a prosperous state, the people are well housed, well clothed, and possess an abundance of food, such as they are accustomed to: they are contented and happy, with principles of order and industry; and, with a moderate taxation, I think they will prove good subjects, and useful and beneficial to the Government to which they are now annexed.

Having thus stated facts, which I was alone ordered to collect, with a view to enable a future settlement to be made, however incomplete these may be, though collected to the best of my ability, I trust that my superiors will be able to form a judgment both of the country and its people.

(Signed) W. E. HAY,
Assistant Commissioner.



Part 1

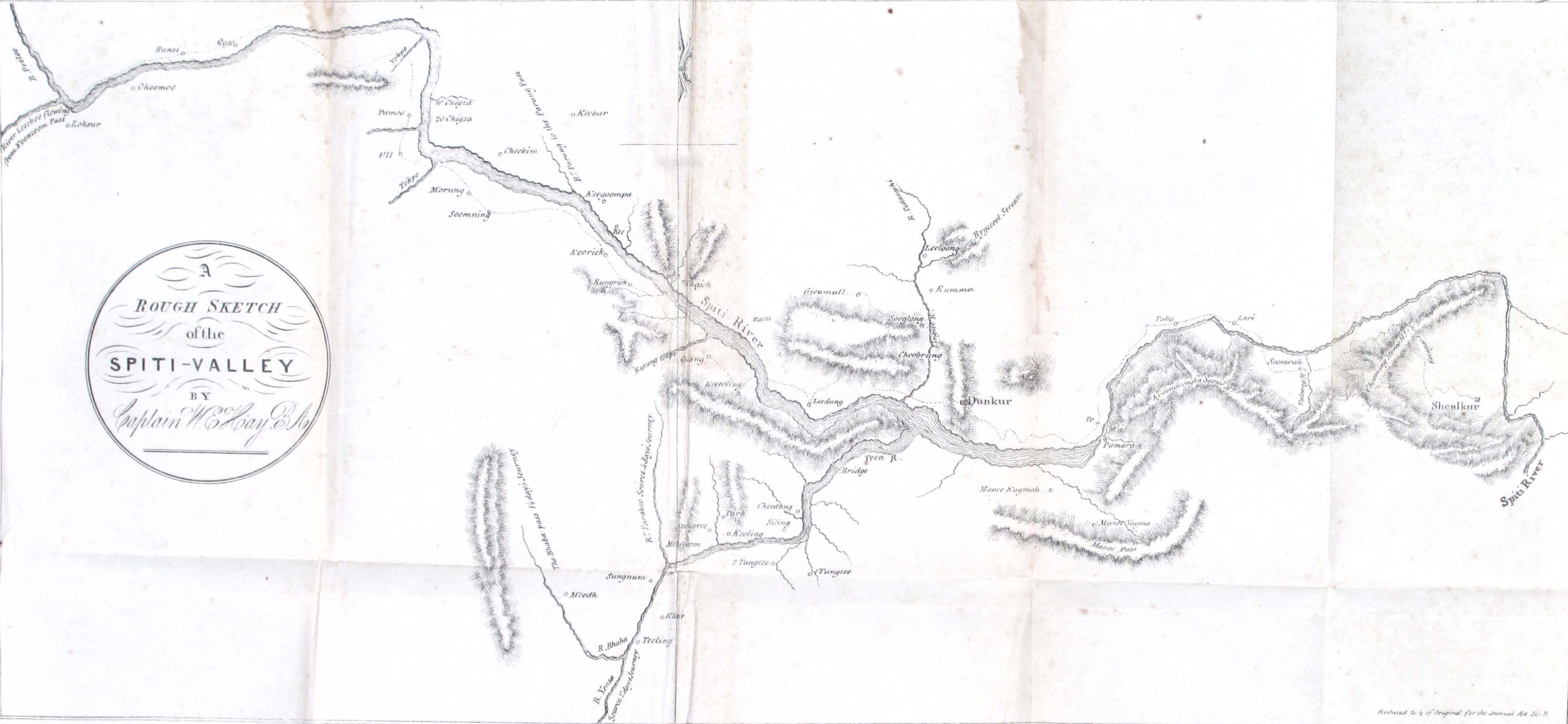
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A
ROUGH SKETCH
of the
SPITI-VALLEY
BY
Captain W. C. Hoyle, B.A.



Reduced to 1/4 of Original for the Journal A.S. II.

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TABLE NO. 1.

List of the Kotis in Spiti, with the Villages, and quantity of land under Cultivation.

<i>Names of Kotis.</i>	<i>Names of Villages.</i>	<i>Quantity of land cultivated.</i>
Shámpáh,	Seri,.....	41 Lacs.
	Fokpáh,	37 "
	Omarungpá,	4 "
	Mániyugmá,	120 "
	Mánikugmá,	97 "
	Dankar,	107 "
	Sircári land at Dankar, ..	35 "
	Chunchugmáh,	1 "
	Ladupding,.....	2 "
	Nagupar,.....	1 "
	Rámá,.....	8 "
	Lidang,	6 " 10 patas.
	<hr/>	459 10
Pinu or Pinpa,.....	Tungtuyugmá,	51 "
	Tangtu Kugmá,.....	21 "
	Silung,.....	25 "
	Kuling,	46 "
	In Jagir to Tunjun Shu- pal,	11 "
	Jhutá,.....	16 "
	Parh,	68 "
	Kungri,	45 "
	Sunglum,.....	84 "
	Khur,	56 "
	Tiling,	45 "
	Bhujung,	8 "
	Tadnum,.....	22 "
	Mudh,	37 "
	Shung,.....	2 "
	Chudung,	8 "
	Akchi,.....	2 "
	Mikam,	3 "
	Chomuling Kugmá,	2 "
	Mikam Yugmá,	2 "
	Dhunja,	3 "
	Halungchi,	4 "
Yunum,	2 "	
Chomuling Yugmá,	1 "	
	<hr/>	564 "

<i>Names of Kotis.</i>	<i>Names of Villages.</i>	<i>Quantity of land cultivated.</i>
Purchikpah,	Lilung,	118 Lacs.
	Gicamull,	92 "
	In Jagir to Kulsung,	12 "
	Chubrang,	4 "
	Sanglôá,	4 "
	Lerá,	57 "
	Kájeh,	80 "
	In Jaghir to Nunáo Kul- sung,	10 "
	Quong,	16 "
	Küiling in Jagir to Nuna Kulsung the Vesir,	36 "
		429 "
Potepáh,	Rangrik,	149 "
	Chikim,	100 "
	Kibar,	182 "
	Kiotu,	40 "
	Samling,	36 "
	507 "	
Chujeh,	Tangpá langchi,	65 "
	Echim,	48 "
Half of Lidang is in the Shámpáh Koti } Lidang,	Yulelúm,	31 "
	Kumik,	58 "
	Tabá,	33 "
	Kurik,	61 "
	Ki,	42 "
	Géoti,	7 "
	Munni,	14 "
	Uil,	50 "
	Pagmu,	19 "
	Chikáá,	3 "
	Hansi,	62 "
	Kaómá,	13 "
	Lohsas,	60 "
Kolaksrus,	2 "	
	595 0	

Total in the 5 Kotis, .. 2554 10 or Bhars 319288 patah.

TABLE NO. 2.

Range of Thermometer in Spiti from the 9th December, 1849, to the 15th of January, 1850, exposed to the Sun.

Date.		At 6 A. M.	Noon.	6 P. M.	
December, 1849,	9th	14	48'	24'	Snow.
	10th	14	not observed	23'	
	11th	17	"	22'	
	12th	10	72'	18'	
	13th	6	74'	20'	
	14th	10	65'	16'	
	15th	6	"	17'	
	16th	4	"	14'	
	17th	12	"	21'	
	18th	14 Cloudy	34'	18'	
	19th	13	"	21'	Snow.
	20th	12	"	19'	
	21st	11	58'	25'	
	22nd	13	68'	22'	
	23rd	14	"	24'	
	24th	14	"	20'	
	25th	6	32'	20'	
	26th	6	"	14'	
	27th	4	"	24'	
	28th	4	"	12'	
29th	at Zero.	"	18'		
30th	18	"	22'		
31st	12	"	6'	Snow.	
January, 1850.	1st	at Zero.	"		6'
	2nd	12	"		6'
	3rd	14	30'		14'
	4th	13	28'		18'
	5th	10	29'		13'
	6th	at Zero.	46'		12'
	7th	8	56'		13'
	8th	13	23'		11'
	9th	6	24'		18'
	10th	18	28'		16'
	11th	15	27'		13'
	12th	14	22'		7'
	13th	at Zero.	53'		11'
	14th	6	56'		10'
	15th	4	20'		10'
	16th	2	20'		

True Copy.

(Signed)

D. F. McLEOD,

Commissioner and Superintendent,

Trans Sutlej States.

True Copy.

P. MELVILLE,

Secretary to the Board.