for one of salt. The Bhotias will not part with their salt except in exchange for grain. They sell the borax in the chief market towns bordering on or at the skirts of the Himalayas. Of late the trade in this article has fallen very much, the price being nearly 70 per cent below that of several preceding years. One reason for the depreciation in its value, is attributed to the bad quality of the article said to have been supplied in 1876.

The chief articles of import in food supplies are grains of sorts—principally wheat, barley and rice—, ghur, raw sugar and spices.

Broad cloth of prices, in the Delhi market, from Rs. 1/4 to 4/8 per yard is in large demand at Lhássa. A little of it is purchased by the Hunias. The coarser kind is chiefly converted into saddle-cloths. It is not taken towards the western parts of Tibet.

Cotton goods of all kinds find a sale in the Lhássan market. Some of the coarser descriptions are consumed in Hundes and the districts near Gártok. *Ghára*, the very coarsest, is almost entirely used up in flags, erected on passes, the tops of hills, tombs, and monasteries in propitiation of the manes of the dead and other spirits.

Indigo.—There is a lively demand for this in the markets of Shigátze and Lhássa.

Precious stones, &c. Turquoise, which is also supplied from Yárkand. Khotan, &c. through the Ladakhi traders, is imported in limited quantities from India. Rubies in small numbers and occasionally a few emeralds also find their way into Eastern Tibet. Corals and pearls (size of the latter preferred, not quality or color) of inconsiderable value are also in some requisition among the better classes of women all over Tibet.

Silver in British India coin, chiefly used as ornaments, is in much request in Eastern Tibet; but the Bhotias cannot indulge the taste of the Tibetans in this, except to a limited degree; exchange for grain being much more profitable.

Among the animals other than tame ones that inhabit Hundes are the leopard, known in India as the snow leopard, the lynx, the wolf, the wild dog, the kiáng or wild ass, herds of which might be seen all over the country where pasture and water are to be had, the Ovis Ammon, the Ovis Burrel, the ravine deer, the Tibetan antelope, and the wild yák. Hares are very numerous, and are not unfrequently found at elevations of 18,000 feet. The latter together with a small description of marmot and a tailless rat, make up the rodentia seen by me.

The shores of the lakes swarm with flocks of wild fowl throughout the summer months. The eggs of these birds are collected for transmission to Lhássa in part payment of revenue.

The eagle and vulture, apparently the same as those of the Himalayas are sometimes met with. The large black raven also common to the Himalayas are to be seen at every encampment. They constitute the chief scavengers of the country. They are very bold, and sometimes dangerous to such solitary travellers as are rendered helpless through exhaustion or cold, whom they have been known to attack, beginning by plucking out the eyes first.

While drawing up this report, I compared my notes taken from personal observations and enquiry with those of Cunningham, the Strachey brothers, Moorcroft, Traill in his "Account of the Bhotia Mehals of Kumaun", Csoma de Körös and Markham's Tibet, 1876.

For the information contained in the compilation of a few portions I am much indebted to the above authors. With regard to some points in connection with the gold, borax, and salt fields, I consulted Colonel Montgomerie's report on the explorations made by his Pandits in 1867.

Report on the Survey of the Western Sources of the Ganges,—particularly the Jadh Ganga or Nilang Valley,—in 1878 by Mr. T. Kinney.

Narrative of Operations.

Under instructions from the Surveyor General in August 1878 I was directed to proceed up the Bhágirathi valley and extend the survey of the western sources of the Ganges from Nilang up to the main watershed of the Himalayas, at the same time fixing from stations on the watershed as many Trans-Sutlej and intermediate points as I could, and sketching as much of the Cis-Sutlej portion of the district of Tsáprang* in Hundes as was practicable without risking any collision with or opposition from the Tibetan Authorities.

Accordingly I left Mussooree on the 17th August in the midst of unusually heavy rains, and, after rather a trying march, reached the village of Nilang on the 1st September. Here I overtook the staving party which had been sent on in advance; the men had been delayed by the illness of the daffadár and one or two others, by the bad weather, and by renewing a number of staves lower down the valley, which they had been instructed to do in case the two Nilang stations forming the base from which I was to extend were not to be found.

* Otherwise spelt Chuprang and Chiprang.

Hearing that news of the intention to survey the Nilang valley had already been forwarded to Tsáparang, I determined to push on to the pass at once, selecting stations of observation for the theodolite, and plane-tabling as I went, so as to reach the watershed, and if necessary cross the Hop Gádh to the minor range above the Sutlej, before any opposition could be offered. The weather having cleared and local information assuring me that clouds and snow seldom set in before the middle of October, I judged that I should have no difficulty, observing backwards from the advance stations of the series, in closing on my base, Nilang No. 1 H.S. to Nilang No. 2 H.S.

After completing my arrangements for supplies, carriage, &c., I left Nilang on the 4th September, having however to make short marches owing to the provisions being carried on sheep and goats. I reached Púlamsúmda, about 10 miles from the Tsáng-chok-Lá (the eastern of the two passes at the head of the Nilang valley) on the 7th. This is the largest encamping ground, and the meeting place for trade of the Jádhs and Hunias on this side of the watershed. Here I was met by the *Choba* (headman) of Poling, a village between Tsáparang and the pass, and about 20 miles from the former, who endeavored to induce me to go no further, or at least not to attempt to cross the pass, or have any staves or signals erected beyond the watershed. I temporized with him for a day, until I heard from the daffadár, a man of considerable tact, having had experience in dealing with the Húnias while working under Mr. Ryall. I had pushed him forward in advance with orders to endeavor to cross the Hop Gádh and stave the hill above Dogkwa Aur. He failed in doing this, owing to the removal of the *Sángha* (spar bridge) over the Hop Gádh by orders of a mounted messenger despatched by the *Choba* of Poling to Tsáparang, as soon as my approach was known; and also owing to the fact that the Jádhs I sent with him, terrified by threats of the future vengeance of the Tsáparang Governor, refused to aid him to construct a temporary bridge, or to cross with him at all. Mr. Ryall's late operations in Hundes had drawn down the displeasure of the Gártok authorities on the subordinate governors of Dába and Tsáparang; and the fact of a gentleman having lately succeeded in crossing the Sutlej in search of game, and in remaining there, shooting, for some days before his whereabouts were discovered and he was escorted back over the pass, had redoubled the precautions and vigilance of the Tsáparang authorities.

The daffadár however sent word to say that he had selected three commanding points on the watershed, from which a view of the range between the Sutlej and the Indus could be obtained. As these stations would enable me to observe to peaks on that range and in the intermediate ground, and as my instructions pointed out the necessity of avoiding any collision with the Tibetan authorities, I decided to give up the idea of visiting the range immediately over the bed of the Sutlej. Informing the *Choba* of Poling of my determination not to go beyond the passes, he sent word again to Tsáparang, and I was left free to pursue my work unquestioned; though I have reason to believe I was watched, as the man did not quit the neighbourhood till I left the valley, and any attempt to carry out my original intention would no doubt have met with prompt opposition.

On the 9th I marched to the foot of the Tsáng-chok-Lá; and visited my first station, on a hill about 3 miles east of the pass, height 19390 feet, on the 10th. The weather was showing signs of changing again, being unusually unsettled for the time of year, so I pushed on as rapidly as possible, observing from the second station on the watershed (to the east of the Thága Lá or western pass) on the 12th, and from the third station on the 13th. Both of these latter stations are over 19000 feet high. Returning towards Nilang the weather became more and more unfavorable; on three occasions snow-storms came on while observing; and on the 22nd, whilst observing from Jádhang H.S., (17400 ft.) the snow came on so severely that, after waiting over two hours in it, I was compelled to close work without obtaining observations to any intersected points, and we had extreme difficulty in getting back safely to camp by night-fall. I finally closed work (in another snow-storm) on the 26th, at Nilang No. 1 H.S. The topographical work was completed at the same time as the trigonometrical, the plane table having been in constant use on my way both up and down the valley.

As, with due regard to the safety of the coolies who had to lie out without shelter at night, I was never able to encamp higher than 14,000 or 15,000 feet, most of my stations involved an ascent of over 4,000 feet,—some of more than 5,000,—before commencing work. Leaving camp as early as I could induce the half frozen men to stir,—generally before 7 A.M.—I seldom reached my station till 2 P.M.; and generally had to close work by 5 P.M. in order to have light to descend to camp with safety to men and instrument. We seldom reached camp before dark; on one occasion having to feel our way carefully over very bad ground, until 8 P.M. Clouds also often interposed and shortened the already short time available for work; hence my observations were generally very hurried ones. The wind was always very high, and piercingly cold; on two occasions it blew over my plane table, and often alarmed me for the safety of the light theodolite I had. Cutting drifts from the snow beds lying round most of the stations, blowing with stinging sharpness into the face, added to the difficulty of standing at the instrument observing in such high winds. It was always necessary to carry up a few loads of wood to the stations and light a large fire to leeward of and some little distance from the instrument, both to keep the men warm and occasionally to warm my own hands at, as gloves completely failed to keep the fingers from becoming numbed and losing all sense of feeling.

Notes on former Surveys, Physical Features of the Valley, its People, &c., &c.

Until about the year 1815 very little was known of the western head waters of the Ganges, and the impressions that prevailed were extremely erroneous. The idea (derived from an ancient map of Tibet constructed by some Lamas attached to the retinue of a Chinese envoy, and from information published in 1784 as the result of the geographical researches of Father Tieffenthaller, a Jesuit missionary*), which was favored by geographers, was that the Ganges took its rise from *Tso Máphám*, one of the Mánsarowár lakes, and, flowing westward for many hundred miles, either forced its way through the snowy range by a subterraneous passage, or fell over its brow in a cascade (known as the "cataract of the Ganges") at Gangotri. The first European who visited Gangotri was Mr. J. B. Fraser, who in the year 1815 penetrated up the Bhágirathi valley as far as the Temple. Fraser notes the junction of the Jáhnavi (Jádh Ganga) from the north with the Bhágirathi, some 6 or 7 miles below the Temple; and made enquiries from two "Bhotias" (probably Nilang Jádhs, to judge from their statements) as to the length and direction of the course of this stream, and the existence of passes into Tibet proper at the head of it. Their information was vague and exaggerated, but by shrewd allowances for their exaggeration he places the source of the Jádh Ganga about 37 miles N.E. of Bhairongháti;—a close approximation to the truth, as the Tsáng-chok-Lá is about 30 miles N.N.E. of the junction of the two streams. He was informed that the Bhotias (Hunias or Jádhs?) made occasional raids down the valley, destroying villages, and carrying off cattle and any other plunder they could lay hands on. Not long before his visit the village of Kachauri, a few miles below Darálli, had been thus visited. No trace of Kachauri now exists. In May 1817, Captain J. A. Hodgson and Lieutenant Herbert explored the Gangotri valley, reaching as far as the *Gau-mukh* or cow's mouth, where the Bhágirathi issues from under the glacier; and, going a mile or two up the glacier, satisfactorily demonstrated the fallacy of former ideas as to the source of the Ganges. They describe four magnificent snowy peaks starting up boldly and abruptly from the (apparent) head of the glacier some miles above the Gau-mukh, and which they named St. George, St. Patrick, St. Andrew, and St. David, respectively. From their description I have no doubt that these are the peaks called on the Kumaun and Garhwál maps the Sotapanth peaks, fixed by Mr. L. Pocock. Hodgson notes the existence of a pass at the head of the Jádh Ganga by which the people from Raithal, a village 3 or 4 marches below Bhairongháti, go to get salt, blanket cloth, wool, &c., in exchange for grain. He reports the trade as trifling in extent, not more than 100 people going up and down yearly. The frontier village was then, as now, Nilang; and the inhabitants known as *Do-Bháshias*, from speaking the languages of both Garhwál and Tibet, and acting as interpreters and brokers for both parties. A route survey in 1818 up the Jádh Ganga by Lieutenant Herbert is incidentally mentioned in Vol. XIII Asiatic Researches, but I have been unable to find any further notice of it. Plane Table Section No. 36 of the North-West Himalayan Survey done by Mr. W. H. Johnson in 1853-54, gives a sketch of the Nilang valley up to the watershed; which sketch is termed by Mr. J. Mulheran "an approximation of an unsurveyed tract", and is evidently considered unreliable, as it was not incorporated into the final maps of that survey.

Two of the Trans-Himalayan Explorers, on their return from an expedition to the upper basins of the Sutlej and eastern branch of the Indus, and the gold fields of Thok-Jalung in 1867, carried a route survey from Shipki over the Thága-Lá pass (about 17,500 feet in height) to Nilang. Their position of the pass is almost identical with its situation as now determined. The foregoing sums up all that was known of the western sources of the Ganges until this year.

The features of the Nilang valley correspond with the general physical geography of this belt of the Himalayas as observed in other valleys; the main watershed being as a rule lower and the slopes about it easier than the southern and more interrupted range on which the highest groups of snowy peaks occur. The snowy range is, properly speaking, not a continuous range, but a series of enormous spurs which everywhere dominate the parent ridge, the Indian watershed, and which are separated from each other by lateral valleys more or less open towards their heads and as a rule contracting into stupendous gorges as they pierce through the snowy range and debouch amongst the lower mountains to the south. The Jádh Ganga is the westernmost feeder of the Ganges, and, with the exception of the head waters of the Tons and Jumna, the westernmost drainage of the Himalayas which falls into the Bay of Bengal; the valleys in Bashahr immediately across the ridge forming the western limit of the Nilang valley draining into the Sutlej. The entrance to the Nilang valley, from Bhairongháti up to near the village of Nilang, is through a gorge which may be called terrific. Snowy peaks from 20 to 21,000 feet in height tower apparently immediately overhead, the river bed being here at an elevation of about 11,000 feet. Falls of 9,000 to 10,000 feet in horizontal distances of under three miles are not uncommon, while sheer precipices of in one or two cases over 3000 feet overhang the stream. The following description of the approach to Bhairongháti and the appearance of the rocks about it, extracted from Captain Hodgson's diary, will give a good idea of the place.'

* *Asiatic Researches, Volume XI.*

"A sweep from south to east brings us to that most terrific and really awful looking "place called *Bhaironghâti*. The descent to the *Sángha* is of the steepest kind and partly "by a ladder. The *Sángha* is inclined far from the level, and as seen from the height above "it, cannot fail to inspire the beholder with anxiety as to his safe passage over it. It is in- "deed by far the most formidable *Sángha* I have seen; the height of the platform above the "river we measured by dropping the chain; it was 60 feet. One is apt at first sight to es- "timate it at much more, however this height added to the circumstances of the narrowness "of the *Sángha* (about 2½ feet wide,) its elasticity, and its inclined position, is sufficient to "render its passage disagreeable, it being like all the rest, quite open at the sides. It is laid "from one side of the precipice to the other, the end on the left bank is the highest. the "precipices in some places are quite perpendicular, in most, nearly so, rising to the height of "3000 feet above the stream; they are of compact granite; on some ledges there is a little "soil where the cedars fix their roots. The river below the *Sángha* is closely confined by the "wall-like rocks, which are perfectly perpendicular." * * * * * * *

"The strange and terrific appearance of this place (*Bhaironghâti*) exceeds the idea I "had formed of it; no where in my travels in these rude mountains have I seen anything "to be compared with this in horror and extravagance. Precipices composed of most solid "granite confine both rivers in narrow channels, and these seem to have been scooped out "by the force of the waters. Near the *Sángha* the Bhágirathi has in some places scolloped "out the rock which overhangs it. The base of these peaks is of the most compact sort of "granite, it is of a light hue, with small pieces of black sparry substance intermixed." * * * * * * "What are these pinnacles of rock 2,000 or 3,000 feet high which are above us "like? I know not. To compare small with great I think the aptest idea I can form of "anything that might be like them would be the appearance that the ruins of a gothic ca- "thedral might have to a spectator standing within them, supposing that thunderbolts or "earthquakes had rifted its lofty and massy towers, spires, and buttresses; the parts left "standing might then in miniature give an idea of the rocks of Bhaironghâti."

The *Sángha* or spar bridge above mentioned over the Bhágirathi has now been replaced by a light suspension bridge higher up over the Jádh Ganga; but as this suspension bridge is 380 feet long. 400 feet above the surface of the water, and only three feet wide, with only a light wire rope as side railing, it is fully as trying to the nerves to cross as the *Sángha* could have been. This bridge stretches across a chasm whose walls are perfectly perpendicular, and has but just enough level space at each end for the piers and abutments. It is the most remarkable bridge of its kind in the Himalayas, and so trying to cross, that many of the hillmen themselves have to be led across by others with stronger heads and nerves; pilgrims to Gangotri and others unaccustomed to walk securely on dizzy heights generally crawl across it on their hands and knees; the swaying and spring of the light wire ropes suspending the footway making the passage really a difficult one even to a man with good nerves and accustomed to precipitous ground. It was built by Mr. O'Callaghan of the Forest Department, and is a triumph of amateur engineering.

The valley preserves the same characteristics for a distance of about 15 miles up past the village of Nilang to the junction of the Mána Gádh, a large glacier fed stream which flows westward from the west of the Mána pass and falls into the Jádh Ganga about six miles above Nilang. Above this junction the valley gradually opens out, and the hills assume a softer and more gentle aspect; though the declivities are still steep they lose the bold, abrupt, and craggy appearance of the gorge lower down, and in some places the ascent from the stream to the ridge is over comparatively gentle slopes covered up to a certain elevation with short grass, and in places blooming with hardy wild-flowers and heather. The grass and heather have a peculiar sickly scent, which, producing a certain sense of faintness, adds to the difficulties of climbing due to the rarified air. This faintness becomes overpowering in some people who may probably be peculiarly subject to its influence from constitutional causes, and in this aggravated form is called *bís* (poison) by the natives, producing violent headaches, sickness at stomach, and a consequent total inability for further exertion. Above the limit of vegetation, which I here judged roughly to be about 17,000 feet, the hills become steeper again, the surface being a strangely confused mass of loose rocks of all shapes and sizes intermixed with patches of ice and snow, a perfect chaos of broken fragments. Deep down between the crevices of these rocks apparently solid masses of ice and frozen snow are visible, which during the warmer portion of the day often render the footing treacherous by giving under the loose rocks; the displacement of one of these rocks generally disturbing the rest for yards around one, so confused is the way they lie, and often causing a small avalanche.

From the watershed at the head of the valley the ground falls abruptly to the north into the Hop Gádh, which stream, flowing from a glacier a little N.W. of the Mána pass, takes first a northerly course, then turns N.W. under the ridge, and finally turning north again falls into the Sutlej about 25 miles N.N.E. (15° east of north) from the Tsáng-chok-Lá. Beyond the Hop Gádh a minor range, or rather a spur emanating from the watershed east of the Mána pass and rising here to a height of about 15,000 feet, obstructed my view of the bed of the Sutlej; on this is the Dogkwa Aur hill which I had been anxious to visit until I found the attempt would involve me in difficulties with the Tibetan authorities. Over this

spur however I could see the Trans-Sutlej plain, a plateau apparently sloping gently from the snow crowned range which bounds it to the northwards, down to the banks of the Sutlej, which are here said to be precipitous cliffs often over 1,000 feet high. This plateau appeared considerably cut up by streams and ravines, and broken by a few isolated hills: one of these (fixed as K3) situated about 30 miles from the Tsáng-chok-Lá at a bearing of about 25° east of north, is very remarkable from its peculiar appearance. Its western extremity rises boldly and abruptly to a height of about 1,500 feet above the surrounding plains, and it then slopes gradually off to the east sinking down to the general level almost imperceptibly. From where I first saw it, it bore a fanciful resemblance to some monster couched with erect and vigilant head on the plain.

West of the Hop Gádh three other considerable streams appear to drain into the Sutlej from the north slopes of the range at the head of the Nilang valley: on the westernmost of these about 8 or 10 miles from the Sutlej is the village of Tháng or Sáng. On the spur between this and next stream is a well known Dogkwa (nomad Tartar) encamping and grazing ground called Gandok. The third stream, the one nearest the Hop Gádh, has on its left bank, about 12 miles from the Sutlej, the village of Sárang, with another village, Karbak, on the other bank almost immediately opposite. About 6 miles north of Karbak is the village of Ri, and on the same spur, but on the Hop Gádh side of it is Riddhigáng, about 5 miles a little to the north of east from Karbak. About 9 miles northeast of the pass, on the southern face of the minor range or spur before noted is Dogkwa Aur, where the Jádhs and the hill men from the higher villages in Tihri who trade across these passes meet the Dogkwa or nomad Tartars to exchange their grain for salt and wool. A march beyond this is the village of Poling, whose *Choba* was deputed to watch my movements; and two marches more from Poling bring one to Tsáparang on the Sutlej, the residence of the governor of the districts of Chángu and Múrbak on the right and left banks of the Sutlej respectively. Toling, a much larger town than Tsáparang, and inhabited chiefly by Lamas and monks, is about 5 or 6 miles to the east, higher up the river. There is a large monastery here. From Poling a short march to the south brings one to Muling, another well known grazing and encamping ground of the Dogkwas; and thence there is a track, in a general southerly direction past a small lake on the northern face of the watershed, crossing the range some 12 or 14 miles south of the Tsáng-chok-Lá, and going down the Chúnganmu and Mána Gádhs to Nilang. It is however very seldom used.

The main streams draining into the Jádh Ganga are the Súmla Gádh from the north at the head of which is the western pass, the Thága-Lá; the Jádhang Gádh from the southwest joining the main stream about 7 miles above Nilang, and at whose head there appears to be no practicable pass into Bashahr; and the Mána Gádh from the east, which has already been noted. This latter stream is fed from the south by a very large glacier whose head is only 4 or 5 miles from the *Gau-Mukh*; another branch rises under the peak to the west of the Mána pass known on the Kumaun and Garhwál maps as Tára; and a third, the Chúnganmu, flows from the north, from the direction of Muling.

The boundary of Hundes leaves the main watershed near Tára peak, and runs along the ridge dividing the Mána Gádh from the Mána valley proper, and from the Gangotri valley. It leaves this ridge between the peaks known as H and Shippur, and is carried down the glacier opposite the village of Nilang to the Jádh Ganga: crossing this, the boundary between Hundes and Bashahr follows the spur north of Nilang up to the range separating the drainage of the Jádh Ganga and the Baspa valley. There is a tradition that Tihri formerly claimed up to the watershed, *i.e.*, the whole of the Nilang valley, as its territory; but it would appear always to have been debateable ground, and as far back as the visit of Mr. Fraser to Gangotri was certainly under Tibetan Government. The Tihri Rája now has his frontier customs post at Nilang for the collection of duty from the traders.

There are only two villages in this valley, Nilang and Jádhang, the former containing about 30 families, the latter about 10. Nilang is very curiously situated. The village, being on the right bank of the river, is thus within the boundaries of Bashahr; its cultivation, on the opposite bank, is part in Tihri and part in Hundes, the fields being divided by the boundary stream flowing from the glacier before mentioned. Jádhang, 3 miles up the Jádhang Gádh, and about 10 or 11 miles from Nilang, is of course well within the boundaries of Hundes, but both villages are on the same *status* as regards revenue, &c. In fact the villages are one in everything but situation; the inhabitants are a peculiar people confined only to these two villages, having common interests in the trade of the valley, and the *Syána* (head-man) of Jádhang is subordinate to that of Nilang. They pay revenue to three different Governments; the two villages collectively paying yearly Rs. 84 to Tihri, Rs. 100 to Tibet, and a poll tax of a *háth* (about 18 inches) of the local woollen stuff, in addition to a small sum in coin, to Bashahr; the total value of the payments to Bashahr being about Rs. 60 yearly.

Nilang and Jádhang, like the higher villages in other valleys, are deserted during the winter months, the Jádhs moving down the Bhágirathi and hutting themselves in at a place called Dhúnda about 7 or 8 marches below Nilang.

The part of the range to the north of the Sutlej which is visible from Tsáng-chok-Lá appears to be loftier than the portion which came under Mr. Ryall's observation, as it was

covered with snow in the middle of September, and the Jádhs assured me the snow was perpetual. The summit of the range is very uniform, there being few marked peaks or salient features on it.

The district of Tsáparang has two sub-divisions, Chángu on the north of the Sutlej, and Múrbak on the south. The Governor is appointed direct from Lhássa, but is subordinate to the Gártok governor, and as a rule retains office only for 3 years, sometimes however remaining for 4 years. The seat of Government during the winter months is at Tsáparang, but during the summer months the governor resides at Shángtsi, a small town in Chángu about 25 miles N. of Tsáparang on the other side of the Sutlej.

The Hunias have been so fully described by Mr. Ryall in his report, which precedes this, that I need only note a few particulars which appear to be peculiar to the district of Tsáparang, the western portion of Hundes which I visited.

The dress and customs of the Hunias of these parts are the same as those described by Mr. Ryall. They have the same uncleanly habits, the same social institutions, and the same fondness for drink. Their *Chang*, a kind of beer without any bitter in it, is usually made from rye but occasionally from barley, and is drunk fresh as soon as made. They are very fond of tea, of which they drink considerable quantities; they first make a very strong infusion, a cupful of this is put into a pot of boiling water, a lump of butter added, and it is then poured into a kind of churn which throughly incorporates the butter and the liquid, and gives the mixture a peculiar soft taste. A little soda is generally used in making the first infusion. Brick tea is in general use throughout Tibet, though good leaf tea may sometimes be procured at Gártok at about Rs. 2 per ℔. A brick of tea weighs about 8 ℔, and is sold for about Rupee 1 per ℔, a sum considerably above its intrinsic value. The sale of tea is a government monopoly, and is forced in a peculiar manner. The Lhássan government issues a certain quantity of tea to the governor of each province, for which he has to credit them with a fixed sum. He serves this tea out to the people of his district in quantities according to the wealth and standing of the family, whether they want it or not, and fixes the price himself, of course taking good care to leave a large margin for personal profit over and above the amount he has to credit Lhássa with. Almost every family is obliged to take some tea, only the very poorest, from whom payment cannot be squeezed, being passed by. The profit made from this monopoly is of course a cogent reason for the prejudice against the introduction of Indian teas, and equally accounts for the fines levied on any traders found trying to bring them in.

The Dogkwas of the Tsáparang district are nomads, living entirely in tents, cultivating no ground, but having large flocks of sheep, goats, and yáks with which they roam about from pasture to pasture, coming up to the grazing grounds in the higher hills during the summer, and in winter descending to the Sutlej plains. They are the chief carriers of the trade with the Jádhs and Garhwális from the side of the Hunias, but seldom go further south than Púlamsúmda, and generally meet the traders from the other side at Dogkwa Aur. In language and race they are identical with the other Hunias.

Mr. Ryall must have been mis-informed about the Jádhs, the people of the Nilang valley. Originally no doubt they were a community of pure Hunias, the Nilang valley having probably been colonized from Tibet at some remote period, just as the Bhot valleys of Kumaun and Garhwál are supposed to have been; but now they are decidedly a mixed race; I was informed that there is probably not a single family of pure Tartar blood remaining. They are now partly Tartar, partly Bashahri, with a strain of Garhwáli blood. The Bashahri element is due to intermarriages, while the Garhwáli mixture is probably the result of the presence of slave girls in the families of the Jádhs; these slaves being young girls sold to them by some of the poorest amongst the *pahári* families, when involved in money difficulties, for the sake of the money given for them, about Rs. 50 to 60 each. The nominal *status* of these slaves might be expressed as "purchased help"; they were not bought ostensibly as wives or even as concubines, but merely as servants to help in house and field; and living in the houses of their masters and eating with the family, were well treated and comfortable. However, though these girls, Hindus often of a fairly good caste, are not supposed to intermarry with people of a different religion, yet the natural result of their close association with their masters, combined with a low standard of morality, is the gradual introduction of a Garhwáli intermixture into the Bashahri-Hunia elements of which the Jádhs are composed. Some few years ago, when the Rája of Tibri placed Mr. F. Wilson in charge of his frontier affairs, the Jádhs, their trade, taxes, &c., he abolished the system of slavery prevailing, and set all the slave girls free. Many of them however preferred remaining where they were, practically on the same footing as before, except that they could now leave their masters if they chose to.

In dress, manners and customs the Jádhs follow pretty closely their original ancestors the Hunias. They drink as freely as the pure Tartars, both *chang* and also a spirit which they distil, and which the Húnias do not drink; they are also very fond of European spirits, and will do a good deal for a bottle of whiskey or rum. They eat yák's flesh, but not cow's. In religion they are professedly Buddhists, but practically are as much mixed in this respect now as in descent, and can hardly be said to have any definite religion. When in Tibet amongst the Tartars they conform to all their religious ceremonies and observances; when in Bashahr,

some portions of which are Buddhist and some Hindu, they accommodate themselves to the opinions prevailing around them; when in Garhwál they pay reverence to all the numerous *pahári debtas*; and when at home in their own village they seem to trouble themselves very little about religion at all.

The trade passing up and down the Nilang valley is chiefly in their hands, though *Kámpas* from Bashahr, and a few of the Garhwális from the higher villages also trade up this valley. with the Hunias. The Kámpas are a particular class of Bashahris who devote themselves entirely to trade, visiting all the principal valleys which lead into Hundes, in turn, from the Nilang valley as far east as the Milam valley, according as the prospects of trade are better in one direction or the other. They are the only people who have the privilege of travelling all over Tibet without question. The Jádhs go as far as Toling, Tsáparang, and occasionally to Gártok, while the Garhwális are seldom permitted to go further than Dogkwa Aur, or if they do reach Tsáparang occasionally, it must be under the escort of Jádhs or Kámpas. The principal export over the frontier is grain of various kinds; the imports are salt, wool, *pashmina*, yellow arsenic, and a few pieces of *pattu*. No gold dust seems ever to be imported. The wool is generally bargained for while on the sheep; when the bargain has been concluded the animals are shorn and the wool packed on the spot. In addition to grain, the Kámpas occasionally take a little cloth, sugar and spices up into Tibet. No borax is now imported.

The estimated value of the trade across the passes at the head of the Nilang valley is from Rs. 25,000 to Rs. 30,000 yearly. Of this amount from Rs. 16,000 to 20,000 passes through the hands of the Jádhs, the balance being accounted for by the trade of the Kámpas and Garhwális. The Rája of Tihri formerly levied an *ad valorem* duty of one anna in the rupee on all imports, equal to 6¼ *per cent*. In 1878 however a new impost was made of a *timashi* (a native silver coin equal to a little over three annas) on each bag of salt, which is equal to about 20 *per cent*; wool and other imports being taxed proportionally. The tax is farmed out to a Tihri official, who appoints his own collectors. The Jádhs complain bitterly of the new arrangement, and consider themselves a ruined community. They had to borrow money in 1877 to pay up the tax, which they have not yet been able to repay; indeed they had again to borrow a sum of Rs. 4,000 towards the end of last year. Unless they pay up the year's demands in full the Rája of Tihri does not permit them to move down to their winter quarters on the Bhágirathi at Dhúnda.