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Vol. III Part II

EDWIN T. ATKINSON



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P R E F A C E .

THE present volume concludes the historical, geographical and statistical account of the Himálayan districts of the North-Western Provinces in accordance with the instructions conveyed in Government Resolution, North-Western Provinces, No. 724A., dated 21st April, 1875, which will be found in the preface to the second volume of the Gazetteer. It was there laid down that the work should aim at a position differing from and so newhat higher than that of an ordinary Gazetteer, should be complete in itself and contain an account of all matters of interest connected with each district, or a reference to them where a detailed description was considered unnecessary. It was further directed that a description and history of each fiscal sub-division should be given, sufficient to place officers new to the district charge in possession of such general knowledge of the physical capabilities of the tract, its fiscal history and its inhabitants, as may enable them at once to exercise an intelligent control over its administration. This extended scheme was adopted in view of the failure of the District Memoirs, and was intended to supply their place, merely omitting in settlement notices details of a purely executive character, such as the reasons for adopting certain classifications of soils in particular localities, the details of the survey demarcation of boundaries, preparation of records, the adjustment of circle rates and such similar matters.

The first two volumes contain all matters affecting the entire Himálayan tract in the North-Western Provinces

as a whole. The present volume gives the topographical, statistical and other local information for each fiscal sub-division and important tract, town or place, in the Kumaon, Garhwál, Taráí, Dehra Dún and Jaunsár-Báwar districts. The sections under each notice compress within a reasonable compass everything of interest not only in the local official records, but in papers that have been printed at any time besides the results of much original inquiry. The notice of each of the numerous fiscal subdivisions, most of which were recently created and had to be carefully defined, contains all that it is necessary to know for good administration regarding its fiscal history past and present, its physical peculiarities and the population recorded at settlement. Under Kumaon will be found a brief and accurate account of every settlement, and the results given are in accord with the statistics recorded in the last report on the current settlement. The Jaunsár-Báwar notice also gives the result of the recent settlement. The Dehra Dún final settlement report has not been received, so that Mr. Williams' Memoir must be referred to for its fiscal history.

I have to thank Sir Henry Ramsay for assistance and advice throughout the work, and especially for the materials for the notice of the Bhábar, the administration of which has been especially his own work. Mr. Macdonald and Mr. Kilvert have aided in the notice of the Taráí, and the former has examined the proofs. Mr. F. Fisher, C.S., supplied in great part the notices of Mussoorie and Dehra, and Major Reade examined the proofs of the portions relating to Garhwál whilst passing through the press. I would especially here record my obligations to Colonel Garstin for his considerable aid in correcting notices of portions of the hills towards and beyond the snows which I was unable to visit and for examining the

proofs of the entire Kumaon portion of the volume. No trouble has been spared, therefore, to make these volumes complete and accurate, and this the last with which I shall have any connection now passes out for the judgment of my brother officers, who will best be able to state whether it fulfils the conditions above referred to or not.

CALCUTTA: }
February 19, 1886. }

E. T. ATKINSON.

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THE
HIMÁLAYAN DISTRICTS
OF THE
NORTH-WESTERN PROVINCES.

VOL. III.

PART II

Kailás, a peak in the Kangri or glacier sub-division of Puráng in Hundes, to the north of the Mánasarowar lake, is situate in north latitude $31^{\circ}-4'$ and east longitnde $81^{\circ}-22'$, with an elevation of 21,830 feet above the level of the sea. It is called Tise by the Huniyas. As seen from the north-western point of Rákas Tal it appears to rise to the north out of the plain only two or three miles distant, dominating the peaks and ridges for some miles around by at least 2,000 feet, Captain H. Strachey thus describes it :—

The south-western front of Kailás is in a line with the adjacent range, but separated on either side by a deep ravine ; the base of the mass thus isolated is two or three miles in length perhaps ; the general height of it, estimated to be 4,260 feet above the plain, but from the west end the peak rises some 1,600 feet

¹ Fraser's Journals, 4197 ; As. Res. XIV, 149 ; Skinner's Excursions, 300 ; Jacquemont, IV, 76, 92.

higher, in a cone or dome rather, of paraboloidal shape; the general figure is not unlike that of Nanda Devi, as seen from Almora. The peak and the upper part of the eastern ridge are well covered with snow, which contrasts beautifully with the deep purple colour of the mass of mountains below. The stratification of the rock is strongly marked in successive ledges that catch the snow falling from above, forming irregular bands of alternate white and purple: one of these bands more marked than the rest encircles the base of the peak, and this, according to the Hindu tradition, is the mark of the cable with which the Rákshasa attempted to drag the throne of Siva from its place. Fragments of a dark purple stone strongly resembling in colour the rock of Kailás, which are found on the shores of the lake, were a sort of rough jasper.

The openings on both sides of Kailás disclose only more mountains in the rear; the western ravine appears to be two or three miles deep; the back of the eastern recess is occupied by a fine pyramidal mass rising in steps of rock and snow, with a curious slant caused by the dip of stratification (to the eastward). The average height of the Kangri mountains around must be about the same as the eastern ridge of Kailás, 4,250 feet above the plain, i.e., 19,500 feet of absolute elevation above the sea, of which only the uppermost 1,000 feet or so is tolerably well snowed.

On a ledge on the base of Kailás, about the middle of the south side, is Kangri, by the Hindustánis called (Dindi) Darchin (14,500 feet). Moorcroft, in 1812, found here "four houses of unburnt brick or stones and about twenty-eight tents," to which may be added the Gumba of Gyanktang, which, in 1867, was a large village. Through the ravines on either side of the mountains is the passage by which the pilgrims make the *parikrama* or circumambulation. The circuit is performed in two days by those who take it easily, but with more exertion it may be done in one day. There are four Gumba on the road; (1) Nindiphu (or Dindi) in the western ravine, on the right bank of the Sárchu, and immediately opposite the peak of Kailás; this is the principal shrine and the head-quarters of the Lhoba Láma; (2) Didiphu, which is further up the ravine of the Sárchu: thence the pilgrim road crosses the Dolma-La, the ridge of the mountain behind the peak on which is a small pond which the Hindustánis called Gauri-Kund; the ridge is high enough to have snow upon it early in the summer. Thence the road descends to (3) Jungdulphu, in the eastern ravine, and (4) the Gyanktang, in Kangri.

From the south face of Kailás, close above Kangri, rises a considerable stream, which the Bhotiyas called Lá-chu, (i.e., the mountain river) falling into Cho-Lagan three or four miles to the south-east of its northern extremity. Moorcroft describes this stream as crossed by a *sanga* just below Kangri and originating in a cascade close above; he calls it the Darchin-gadera, a mere Hindustáni generality. From the ravine east of Kailás comes another considerable stream also debouching into the lake a mile or two east of the Lá-chu: this the Bhotiyas name after Barka, which is on the left bank of it in the plain between the mountain and the lake.

This Barka is the third "Tarjum," i.e., 'mail-station,' on the Lhása road from Gár. There is no village, but a standing camp of a tent or two, for the couriers. These two streams, Lá-chu and Barka, are the only permanent affluents of Cho-Lagan from the Kangri mountains. The Lá-chu, which is a very large stream,

is 150 feet wide and deepest three feet, running through a sandy bed, here a furlong broad, and expanding with much sub-division of the stream towards the lake.¹

Mr. Ryall writes :—“ Kailás in appearance is very striking. It is not unlike in shape a roughly-made Hindu temple with a few feet of its conical top broken off. For some miles around all the peaks fall short of Kailás by nearly 2,000 feet, and this superiority in height within an extensive radius enhances the beauty of the peak.” Kailás in Chhakháta (5,866 feet) below Malva Tál, also called Mahádeo-ka-ling, is said to resemble the Kailás in Tibet. There is a fair held here in Phálgun just before the Holi Mr. Griffiths thus describes Kailás in his translation of the Rámáyana.²

“ To far Himálaya's summits flee.

Kailása there wilt thou behold,
And Rishabh with his peaks of gold.
Between them see a mountain rise,
Whose splendour will enchant thine eyes ;
His sides are clothed above below,
With all the rarest herbs that grow.
Upon that mountain's lofty crest,
Four plants, of sovereign power possessed,
Spring from the soil, and flashing there,
Shed radiance through the neighbouring air.
One draws the shaft : one brings again
The breath of life to warm the slain ;
One heals each wound ; one gives anew,
To faded cheeks their wonted hue.
Fly, chieftain, to that mountain's brow
And bring those herbs to save us now.”

Kainúr, or **Kanyúr**, a traveller's bungalow and halting-place on the middle route from Páori to Almora in patti Choprakot of pargauah Chandpur in Kumaon, is situate on the right bank of the eastern Nyár river, in latitude 30°-1'-5" and longitude 79°-6'-10", distant 9 miles 1 furlong 10 poles from Gwalkura ; 14 miles 5 furlongs 28 poles from Chhiphalghát bungalow, on the same road and 10 miles 13 poles from Bungidhar traveller's bungalow ; The road hence to Gwálkúra has been described under GWÁLKÚRA and that to Búngidhár under BÚNGIDHÁR. The road hence to Baijirau passes by Ghatura across the Lokhar Ganga, Hit and Chauri rivulets, 1 mile 5 furlongs 29 poles. Thence across the

¹ H. Strachey, Journey to Cho-Lagan. J., A. S. Ben. XVII (2) 29 : See *Mána-sarowar*, also Montgomery's Pandit's Account, Rec. G. T. LX XI, 195, which gives further information. ² V. 224.

Pandera, Ghut and Semal rivulets to Sauli and Kaula, all of which are bridged; from the Kaula, an ascent of 1,000 yards leads to the Chauri-khál, 3 miles 1 furlong 20 poles from the bridge across the Chauri rivulet. A descent of about the same length leads to the Nánsyún bridge and by Toli and Jiwai (2 miles 5 furlongs 18 poles) to the Gynalekh-Chauri and Sukni village (1 mile 6 furlongs 30 poles), whence it is level to Baijiran and the Kunjoli traveller's bungalow. Kainút was at one time the head-quarters of a tahsíl since absorbed in Srínagar.

Kairarau, a sub-division of parganah Báráhmándal in Kumaon, contains the upper waters of the Gagás river near Dunagiri. At the recent settlement it had an assessable area of 1,519 *bisis*, of which 325 were culturable and 1,194 were cultivated (500 irrigated). The land-revenue in 1,815 amounted to Rs. 692; in 1820 to Rs. 1,056; in 1843 to Rs. 1,269; and is now Rs. 2,618, which falls at Rs. 1-11-7 per acre on the total assessable area at settlement and at Rs. 2-3-1 per acre on the cultivation. The population then numbered 2,859 souls, of whom 1,505 were females. The patti is named after the Kaira caste planted here by Kirati Chand in the sixteenth century. The patwári resides in Párkot, where there is a school.

Kakalasaun Malla, a patti of parganah Páli Pachháon in Kumaon, is bounded on the west, by Kakalasaun Talla and Talla Sult; on the south, by Kosiyán Talla and Chauthán; on the east, by Malli Doti and Silaur Malla and Talla; and on the north by Silaur Talla. This was separated from Kakalasaun at the recent settlement. It occupies the valley of the Naurar stream, which joins the Gagás just before the confluence of the latter stream with the Rám-ganga near Bhikiya-sain. The principal villages are Mujhirha, Gangorha, Mohnuri, Páli, Síim, and Thauli. The statistics of the Malla and Talla pattis may be shown thus:—

Kakalasaun.	ASSESSABLE AREA IN BISIS.				Assessment in rupees.				Population.	
	Total.	Cultivated.		Culturable.	1815.	1820.	1843.	Current.	Males.	Females.
		Irrigation.	Dry.							
Malla ...	3,268	77	2,664	527	1,059	1,770	2,044	3,320	2,758	2,638
Talla ...	989	30	763	196	473	666	682	909	736	679

The incidence of the land-tax in the Malla patti falls at Re. 1-0-4 per acre on the total assessable area and at Re. 0-14-8 per acre in the Talla patti : on the cultivation it falls at Re. 1-3-5 and Re. 1-2-4 per acre respectively. The patwári resides in Panthgaon : there is a school in Sinaura.

Kakalasaun Talla, a small patti of parganah Páli Pachháon in Kumaon, separated from Kakalasaun, at the recent settlement. It is bounded on the north and west by the Rám-ganga river, which separates it from Talla Nayán and Walla Sult ; on the south by Talla Sult and Kakalasaun Talla ; and on the east by the latter patti. It lies along the left bank of the Rám-ganga from its junction with the Gagás at Bhikiya-sain to the Bamora rivulet, and is traversed by the road from Rámnagar to Mási. The principal villages are Basot, Saurai, and Suni. The statistics will be found under **KAKALASAUN MALLA**. One village (Thapula) was received from Nayán at the recent settlement, seven were transferred to Sult Talla and two to Silaur Talla. The patwári resides in Bhikiya-sain, where there is a school.

Káladhúngi, a hamlet at the foot of the hills in the Chhakháta Bhábar of the Kumaon district, is situate on the high road from Moradabad to Naini Tal, 47 miles from the former and 16 miles from the latter, in north latitude $29^{\circ}-17'-5''$ and east longitude $79^{\circ}-23'-27''$, at an elevation of 1,300 feet above the sea. From 1850 to 1875 it derived some importance as an easy route to Naini Tal ; but with the opening of the railway to Bareilly it has gradually sunk again to its original position as a petty Bhábar mart, and the opening of the railway to Ráuibág must still further render it of only purely local importance. There is a traveller's bungalow, dispensary, and police-station. The place is hot and malarious in the rains. The population in 1872 numbered 111 souls.

The road from Moradabad is bridged and metalled throughout and traversed by carriages and mail-carts. From Moradabad to Sehal on the Káshipur road, 5 miles ; Badh-tánda in Rámpur territory, 15 miles ; Dariyál bungalow, 7 miles ; Rámpur road joins, $4\frac{1}{2}$ miles and Tarái begins ; Mundiya with police-station and dispensary, $6\frac{1}{2}$ miles ; Wilsonganj, commencement of forest, $5\frac{1}{2}$ miles ; Garpu, boundary of Kumaon Bhábar, 2 miles ; and Káladhungi bungalow, $6\frac{1}{2}$ miles. From the bungalow to Naini Tal, the first

eight miles to Mungauli traveller's bungalow is a continued steep ascent, the peak above the bungalow attaining a height of 5,110 feet. For some distance as far as Sariya Tál the road is tolerably level, passing by Khúrpa Tál (5,364 feet), where are the remains of one of the stations of the Kumaon Iron Works Company now closed. From Sariya Tál a steep ascent of two miles leads between the Háni-Báni cliffs and Deopátha by the Abelia pass into the Naini Tál valley.

Káladhúngi is connected with Haldwáni (15 miles) by a good cart track along the base of the hills. To Cháonchala, 5 miles, the soil is little else than gravel, supporting a thin and stunted forest traversed by a dozen dry channels of the Nihál, the most western of which passes a few hundred yards east of Káladhúngi. Cháonchala is a clearing close to the base of the hills, watered by the Bhakra, which takes its rise in the south-eastern slopes of the Páprí ridge: farther east comes another torrent, on the left bank of which is Fatehpur. Then Haripur, Mandapur, and Luriya Tál, in the neighbourhood of which some three miles from Haldwáni (*q.v.*) there are large sheets of cultivation irrigated by channels from the Gaula.

Kálapáni, in patti Byáns of parganah Dárma in Kumaon, is a remarkable collection of springs regarded as sacred by the natives and erroneously considered by them as the source of the Káli river, though the headwaters of the latter lie thirty miles further north-west. They are in fact unimportant tributaries and derive their name from the dark colour of their waters. They take their rise, on the north-eastern declivity of the peak known as Byáns-Ríkhi, 45 miles, north-east of Askot in latitude $30^{\circ}-14'$ and longitude $80^{\circ}-56'$ at an elevation of 14,220 feet above the level of the sea. Their waters are discharged into a stream flowing a few hundred feet to the west and which bears the name of Kálapáni river. This river is formed by the union of two streams, one rising close to the western entrance of the Lípu-lekh pass and holding a westerly course of about four miles joins the other rising on the western declivity of the great Kuntás peak and flowing five miles southerly to the confluence (11,760 feet) and about a mile above the springs. The united stream flows five miles south-westward to its confluence with the Kutbi river hence forth called the Káli, in latitude $30^{\circ}-11'-0''$

and longitude $80^{\circ}54'-0''$, at an elevation above the sea of 14,413 feet and only about 150 feet below the limit of perpetual snow. The spring is visited by travellers passing to Mánasarowar. The drainage area of the Kálapáni lies wholly within British territory, but a short way below the springs, the Káli forms the boundary with Nepál.

Kálapáni, a stream rising in patti Bárabisi of parganah Síra in Kumaon, drains that patti, the southern slopes of Loni (7,763 feet) and the northern face of Masurbio (5,916) and Kamroli (4,703) and first collects into a stream about Rin on the Shor and Thal road, and thence flowing south-west joins the eastern Rám-ganga on the left bank in latitude $29^{\circ}39'-50''$ and longitude $80^{\circ}11'-0''$ at the southern boundary of the same patti.

Káli, the largest river of Kumaon, is known on leaving the hills as the Sárda and lower down as the Sarju or Ghágra to its confluence with the Ganges at the southern extremity of the Ballia district in the North-Western Provinces. It has two head-waters: the Kálapáni (*q. v.*) to the east, which takes its rise in the southern slopes of the ridge crossed by the Lípu-lekh pass into Húndes; and the western branch, which has the longest course and the largest volume, is known as the Kuthi-Yánkti (*q. v.*). The latter has its rise in the glaciers lying along the upper portions of the patti of Byáns from the foot of the passes of Mankshang or Mangsha and Lunpiya leading into Húndes. From a little below Kálapáni encamping-ground southwards the Káli forms the boundary with Nepál.¹ From the confluence with the Kálapáni the united stream has a southerly course for a few miles to Garbiya and then bends to the south-west, in which direction it continues to flow twenty-three miles farther to the confluence with the Dhauri (*q. v.*) on its right bank near Titalakot in Dárma. The Káli, which at its confluence appears to be twice the size of the Dhauri, is previously a vast torrent, and in many places a huge cataract tumbling over vast rocks, which in some spots form natural bridges, being wedged together by their pressure against each other, and against the sides of the precipices inclosing the deep gorges down which the stream rushes. In many places the stream for considerable distances is totally hidden under glaciers. Below the confluence the stream is thirty yards wide;

¹ Art. V of Treaty of Sigauli.

but, swelled by numerous mountain-streams received right and left, it soon attains a width of eighty yards. It continues to flow in a south-westerly direction, and twenty-two miles lower down, or seventy-five from its source, it on the right side receives the Gori or Goriganga, a river equal in size to itself. This confluence is in latitude $29^{\circ}-45'-8''$; longitude $80^{\circ}-25'-0''$, and is 2,127 feet above the sea. Below this place twelve miles, and eighty-seven from its source, the Káli receives on its left bank from Nepál, the Chamliya, and three miles lower down, at the Jhúla-ghát, the elevation of the water's edge is 1,789 feet. Sixteen miles below this, at Pacheswar, the Káli receives the Sarju, the greatest of its feeders. Thenceforward the united stream is no longer called the Káli, but variously the Sárda or the Sarju. At Pacheswar it turns a little to the south-east, and ten miles lower down, on the right bank, receives the Lohaghát river, two miles below the confluence of which a large tributary from Nepál flows in on the left. Turning southwards at that point, it, at a distance of eighteen miles beyond, receives on the right the Ladhiya in patti Pál-belon, a considerable stream. By all these accessions it becomes a great river, and at Barmdeo, twelve miles lower down, in latitude $29^{\circ}-6'-30''$, longitude $80^{\circ}-13'-37''$, and 148 miles from its source, it enters the plain of Hindustán, about 800 feet above the sea. Webb found it "about 150 yards broad on an average, bed stony, very deep, and moderately rapid." Herbert estimates the discharge of water here during the dry season at 4,800 cubic feet per second; that of the Ganges at Hardwár at 7,000.

The Káli¹ is not used for navigation and but little for irrigation in the hills. (See CHAUDANS, BYANS) A tremendous land-slip took place a short distance above the debouche about 1846, and completely damned up the river, the bed of which is said to have been quite dry for several hours; accounts vary from three to twelve. Great damage was apprehended from its bursting through the obstruction; but fortunately it overcame it gradually, and no harm was done. There are gháts at Banbasa for the Taráí with canoes; at Barmdeo with Mundiya opposite; at Káladhúngi crossed

¹ This river is the Ghaghra of Shakespear; Gogra or Ghogra of Wilson and Thornton; Gharghara and Ghaghra of Wilford; Ghaghra of Buchanan and Gogra of Rennell. Martin's East India, II, 300; Prinsep's, Steam Nav. in India, 48; As. Res. XVI, 140; T. A. S. Dec. 1842, p. XXXIII. See AZAMGARH and GHÁSIPOUR districts.

by gourds (a thieves' ferry): Balsiya from Malásgarhi to Purnagiri: Kusm for elephants and horses to Khilpatti; Kákri only crossed by gourds; Dharm at the confluence of the Sarju, and Jhúla, where there is a bridge. The island of Chandni-Chauk¹ in the Sárda had long been a subject of quarrel between the Tarái and Oudh, but according to a decision of a commission appointed in 1830 it was handed over to Oudh.

Káli Kumaon, a parganah of Kumaon, containing fourteen pattis, each of which is separately noticed, viz., Chálsi, Oharál Malla and Talla, Gúmdes, Gangol, Khilpattiphát, Pálbelon Malla and Talla, Pharka, Regarúbán, Sipti, Súi-bisang, Talládes and Assi. The assessments since the conquest are:—

1815.	1817.	1818.	1820.	1823.	1826.	1832.	1843.	Current.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
8,960	9,764	10,967	12,248	14,152	12,363	15,555	15,621	25,873

The rate on the whole assessable area now amounts to Rs. 0-11-2 per acre and on the cultivation to Rs. 1-1-5 per acre. The assessable area comprises 37,078 *bhis*, of which 13,263 are culturable and 23,815 are cultivated (1,558 irrigated). The population at the time of settlement numbered 22,666 males and 19,164 females; in 1872, 25,222 males and 22,310 females; and in 1881, 14,589 males and 13,793 females. There were 1,324 *bhis* devoted to temple endowments and 161 were held free of revenue. There are 580 maháls or estates comprising 711 villages. Champáwat, the site of the old Chand capital, is in the centre of the parganah and now forms the head-quarters of the revenue administration of this parganah and Shor, Sira, and Askot. The borders of the parganah on all four sides are covered with scrub and forest, but the central portion is fairly well inhabited. The soil, however, in a great proportion, is of the second or third quality, and there is a deficiency of the best kind.

The climate is cold, and hence the productiveness is not great. Much surplus grain for sale does not exist, as nearly all is required for home consumption. A great portion of the inhabitants repair, during the cold months, to the Bhábar. The chief trade there is the sale of turmeric, which is plentifully grown in the warmer parts of the parganah. In the middle, waste culturable land is scarce, and it would therefore appear that the revenue has there reached its proper

¹ From Government, dated 23rd February, 1830; from Government, dated 22nd June, 1830; from Government, dated 9th April, 1832.

limit. Where the waste lands are abundant (as near the Káli and the Bhábar), there the climate is unfavourable to the spread of population. Towards Chaugarkha, however (on the north-west), the cultivation has increased and is increasing. The name Kumaon is a corruption of Kurmáchal, the old name of Kánádeo, a peak (7,248 feet) in patti Chárál east of Chhirapáni. Here Vishnu resided for three years in his tortoise *avatár*, and whilst there was worshipped by Indra, Nárada and the Rishis. Káli Kumaon is Kumaon along the Káli river.

Káligár, a subdivision of parganah Báráhmándal, lies to the north of the road from Bhainskhet to Dwára. In 1865, it contained an assessable area of 1,312 *bísis*, of which 329 were culturable and 982 were cultivated (65 irrigated). The land-revenue in 1815 amounted to Rs. 339; in 1820 to Rs. 601; in 1843 to Rs. 714 and at the present settlement was fixed at Rs. 1,278, which falls on the total assessable area at Rs. 0-15-7 per acre and on the cultivation at Rs. 1-14-10 per acre. The population then numbered 2,163 souls of whom 993 were females. The patwári resides in Dadgalya: there is a school in Kuwáli.

Kálimat, or **Kálmattiya**, an eminence four miles north of Almora in Kumaon, in latitude $29^{\circ}-38'-32''$ and longitude $79^{\circ}-42'-13''$, which attains an elevation of 6,414 feet. The name is derived from the colour of the clay, which consists of an impure plumbago.¹ The hill slopes down to the Kosi on its left bank and to the north-east is connected by a ridge with Binsar. The Gorkhális had a stockade here during their possession of Kumaon. Under the Rájas it contained the depôt for iron and tools, and the story runs that Sri Ballabh Upádhiya lived here, and, not being able to procure wood, took some iron from the Rája's stores, with which he lighted his fire and cooked his food. The ashes remain and make the hill black. It is the Kásháya of the Mánasa-khanda of the Skanda Purána: hence the name Kashár still applied to it. Sri Ballabh was called, in consequence of the above exploit, Loh-humi, the iron-burner: hence the caste name Loháni borne by his descendants. He received in *muáfi* the villages of Lohána, Satráli and Khulna. Here he again displayed his supernatural powers: for his wife being tired with carrying water for the service of the family god

bore the vessel on her head which rendered it impure. Sri Balabh then asked the idol to create a spring which at once burst forth, but the wife calling out in astonishment, destroyed nine-tenths of its volume and only one-tenth of the intended supply now remains in the *Upádhiya dhára*. Madden writes:—“In common with the vicinity of Almora itself Kálimat is too well grazed by cattle to afford much room for vegetation. In the spring a shrubby *Dipsacus* with lilac blossoms is common and in the autumn the warmer declivities abound with the beautiful *Osbeckia steilata* (*kukarmakri*, H). The *Scilla indica*, *Aquillaria indica*, *Curculigo orchioides* and *Fritillaria Thomsoniana*, all reach up to this point and are abundant.” The summit is composed of mica slate and gneiss in horizontal strata and gives a very fine and extensive view. To the east are the dark ranges of Biosar and Jageswar to the south and south-west the lofty Gágar excludes the plains and from north-east to north-west extends the snowy range, of which a view is given in Royle's Illustrations.

Káliphát Malli, a patti of parganah Nágpur in Garhwál, is bounded on the north by Tihri; on the east by Nágpur; on the south by Parkandi and Bámsu and on the west by Maikhandá and Tihri or native Garhwál. It is occupied by the valleys of the Mandákini, Káli Ganga and Madhmaheswar rivers, of which the Mandákini is the principal. It lies on the extreme west and its valley forms the road to the temple of Kedárnáth. The Basukhi and Sain from the north-west join the main stream at Sundwára. Thence the course is south-east through a number of villages to Guthna, where it receives the Káli Ganga and Nála where the Madhmaheswar joins it. The Káli drains the centre of the tract, which consists of lofty hills uninhabited except during the grazing season. The Damár or Bauár having its source near the Mandani temple flows into the Káli. The space between the Banár and Madhmaheswar is traversed by the pilgrim roads to the temples of Mandani and Madhmaheswar, but contains no villages of any importance. The patwári of Malli Káliphát, resident at Guptkásbi, collects the land-revenue of Pattis Bámsu, Parkandi and Maikhandá also. All four were assessed in 1864 at Rs. 1,700 for land-revenue and *sadábart* and Rs. 834 for *gúnth* on a total population of 5,916 souls.

Kálfhát Talli, a patti of parganah Nágpur in British Garhwál, is bounded on the north by pattis Bánsu and Parkandi; on the west by Tíhri; on the south by Talla Nágpur and on the east by Nágpur Bichhla. The Rudrprayág and Kedáruáth road passes northwards through the western portion of this patti along the left bank of the Mandákini river by Agastmuni, Nákot, Chameli, Hát, Bhatwári and Biri. At the last place it is joined by the Almora road by Karnprayág and Nandprayág. The cis-Mandákini portion comprises the valley of the Kiúnjgár, a tributary of the Mandákini lying between the Khatarsáni (8,478 feet) and Rágshi (10,091) peaks, closely cultivated. The trans-Mandákini portion contains the British portion of the valley of the Dármá-gár, a considerable feeder of the Mandákini, which it joins on the right bank near Basti. The patwári resides at Chandrapuri in the patti, which was assessed at Rs. 2,480 for land-revenue and *sadábant* and Rs. 207 for *gánth* on a population of 5,847 souls in 1864. Kálfhát Talli is rich in minerals. Iron mines are worked at Dogari, a Jaikhandi and Tundula; copper mines at Kayara, Kyúngadh, Dooar and Pingalapani.

Kálsi or **Khálsi**,¹ the chief village in parganah Jaunsár-Báwar of the Dehra Dún district, is situate in north latitude $30^{\circ} 32' 20''$ and east longitude $77^{\circ} 53' 25''$, at an elevation of 1,820 feet above the level of the sea, with an area of 39 acres. The population in 1881 numbered 854 souls (307 females), of whom 708 were Hindus and 146 were Musalmáns. Kálsi is situate on the Anláwa stream, a tributary of the Jumna about three miles from the great iron-girder bridge across the Jumna on the military road from Saháranpur to Chakráta, 52 miles from the former and 25 miles from the latter. Between the river and the town, the road winds up a gentle ascent and approaches the village through a fine grove of mango and *haldu* trees. There is a Public Works bungalow, a traveller's rest house, and also a tahsili, post-office, school and police-station.

The scenery around Kálsi is very picturesque; the whole district can show no more lovely view than the panorama opened up on dipping from the Saháranpur road at Ambári into the declivity by which the Jumna is reached. The new bridge over that river, a little to the south of an old suspension bridge, the piers of which

¹ I am indebted for most of this notice to Mr. F. Fisher, B.O.S.

alone remain, is a magnificent example of engineering skill. From the Jumna up to Kálsi the land on the western bank of the river is formed in two successive ledges or steps, each about one hundred feet high. Near the foot of the upper ledge is the celebrated Kálsi stone containing one of Asoka's edicts and lying close to the little villages of Byás and Haripur. It is reached by a hill-path leading from the main road. The path to the village lies off the main road to the right and passes through a gorge to the tahsli, which is a mean building, in bad repair and unfitted for the offices it is intended to contain. It is under consideration to remove the tahsildár to Chakráta, and this is understood to be the reason why so little attention is paid to Kálsi.

The Kálsi stone is a huge quartz boulder some ten feet high,

Asoka's stone.

ten feet long and eight feet broad at the base, the breadth diminishing towards the

top. The south-eastern face has been partly smoothed and bears the greater part of the inscription, but a portion of the record has been inscribed on the left hand side of the rock, the prepared surface having been evidently found insufficient for the whole. On the right-hand side an elephant is traced in outline with the word '*gajatams*' between the legs. The natives call it '*chitra-sila*,' 'the inscribed or pictured stone,' not '*ohatra-sila*' or 'canopied stone.' When first discovered by Mr. Forrest early in 1860, the letters of the inscription were hardly visible, the whole surface being incrustated with the moss of ages; but on removing the black film, the surface became nearly as white as marble. On comparison with the other edicts¹ that at Kálsi was found to be in a more perfect state than any other, and more especially so in that part of the 13th edict which contains the names of the five Greek kings:—Antiochus, Ptolemy, Antigonus, Magas and Alexander, who from western records we identify with Antiochus Theos of Syria, who flourished B.C. 263-46: Ptolemy Philadelphus of Egypt, B.C. 285-46: Antigonus Gonnatus of Macedonia, B.C. 276-43: Magas of Cyrene, B.C. 258, and Alexander of Epirus, B.C. 272-54; so that the writing was inscribed in the third century before Christ, or say 253 B.C. The other similar rock edicts are found

¹ See General A. Cunningham in Arch. Rep. I. 244; Corpus inscriptionum Indicarum p. 12, 117 (Calcutta, 1877.)

at Shábáz-garhi in the Yusufzái district, twenty-five miles north-west of Attak on the Indus, at Girnár in Gujrá, at Dhauli in Kattak and at Jaugada in the Ganjám district. All these contain the whole fourteen edicts, but portions are found in caves and on pillars and rocks elsewhere.

The local legends connect Haripur with the Rája Rásálu of the Panjáb and General Cunningham considers the fact of the existence of the legend here as proving that the Indo-Skythic Gújars of the Jumna had emigrated from the Sind-Ságar Duáb, bringing with them the legends of their forefathers. The Buddhist and Skythic connection with the tract of Jaunsár is further borne out by the tradition ascribing to the Nágsidh hill the scene of the penance of a Nága king. When Hwen Thsang, the Chinese traveller, visited this part of India in 735-6 A.D., he does not mention any city nearer than Srughna, which lay on the right bank of the Jumna below the Si-wáliks. This is merely negative evidence to show that no city of importance existed there during the middle ages; but Haripur may have formerly contained a large city, situated as it was at the confluence of two large rivers and a border town of the Indo-Skythian tribes inhabiting the hills. Another interesting monument of former times is the temple and remains at Lakhamandal, some 20 miles higher up the Jumna, in the Baúdar *that* described in the alphabetical arrangement of this volume. There are many old and quaintly-carved figures lying about there, and some of the temples have pretensions to considerable antiquity.

The watch and ward of Kálsi is provided for by a house-tax levied under Act XX of 1856, which in 1880-81 yielded Rs. 1,065, expended on police (Rs. 240), conservancy (Rs. 204) and public works. The timber trade of Jaunsár-Báwar passes by Kálsi and is conducted under European supervision. The depôt of the principal firm is at Dhák-patri below Kálsi, where the logs are taken from the river which has carried them from the interior. The other products of the parganah find a ready market at Kálsi; such as turmeric, ginger, wax, honey, walnuts, soapnuts, antimony, red-pepper, sheep, goats, and blankets.

Formerly it was a great emporium for European manufactured goods, but these now find their way to Chakráta. In 1830-32, when transit duties were levied, they were farmed for Rs. 1,800 a year, chiefly on exports; but now there is little trade beyond that in minor forest produce. An encamping-ground of 150 acres in extent has been taken up so as to admit of the regiment from Chakráta being located here during the cold weather, should the authorities desire. There would be ample room for a brigade parade-ground and exercise of all kinds.

Kálu Shahíd, or *Kálu-Sayyid*, a resting-place and encamping-ground, on the route from Bijnor to Páori, so called from the tomb of a Musalmán mendicant, is situate in patti Bhábar (Pátli Dún) of parganah Talla Salán in Garhwál. It is to be distinguished from the Kálu-Sayyid on the Lál Dháng Sot at the western boundary of the Kumaon Bhábar. It lies in north latitude $29^{\circ}-33'-48''$ and east longitude $76^{\circ}-42'-10''$, distant 12 miles 2 furlongs 8 poles to the cart road at the Jumna ghát near the Bogsár bungalow in the Pátli Dún. From Kálu-Shahíd the road is level for 1,000 yards and ascends 1,400 yards, then descends to Junikot to the cart-road, 2 miles 5 furlongs 8 poles from Kálu-Shahíd. Thence along the Tuniwala-gadh to Motásál, constantly crossing and re-crossing the stream, 2 miles 4 furlongs 25 poles. It then follows the-cart road down the Sona river, continually crossing that river and the Rámanga once to the grassy plain near Bogsár, 7 miles 15 poles. Supplies are dependent on whether the Forest Department are at work in the Dún or not, otherwise there are no villages and no inhabitants there.

Kamsyar a patti of parganah Gangoli, in Kumaon, is bounded on the west by the Sarju river; on the east, by patti Baraun; on the north, by patti Dúg and Pungaraun; and on the south by the Badher or Badrapatigár separating it from patti Athgaon. The road from Askot to Bageswar proceeds directly from east to west through this patti and parallel with the road up the Pungar valley in Dúg. Both these roads join the Milam and Almora road in the Sarju valley. The Badrapati flows to the west and joins the Sarju on the left bank. The patwári lives in Pokhri, and there is a school in Titauli. The peaks between which the Askot road runs rise to the heights of 6,547 and 6,305 feet respectively. Portions of

this patti to the north were transferred to the new patti of Dúg at the recent settlement. The present assessable area comprises 4,022 *bisis*, of which 1,951 are culturable and 2,071 are cultivated (823 irrigated). The land-tax yielded Rs. 259 in 1815, Rs. 415 in 1820, Rs. 573 in 1843, and is now Rs. 2,800, which falls on the total assessable area at Rs. 0-11-2 per acre and on the cultivated area at Rs. 1-5-8. The 7 revenue-free grants amount to 247 *bisis*. The population at the last settlement numbered 3,158 souls, of whom 1,671 were males, one village was received from Pungaraon, one from Baraun, one from Danpur, five from Athgaon, and one from Katyúr at the new settlement.

Kandarsyún, a patti of parganah Dewalgarh in British Garhwál is bounded on the north by Bachhansyún; on the south, by Choprakot and Dhajyúli; on the west, by Bidolsyún; and on the east, by Taili Chandpur. This patti was formed from Dewalgarh in 1844. The patwári of Kandársyún, usually resident in Khandgaon, collects the revenues of Bidolsyún and Ghurdursyún as well, aggregating in 1864, Rs. 2,738 for land-revenue and *sadahart* and Rs. 105 for *gunth*, with a population of 6,954 souls. There is a school at Khandgaon in this patti. The Chhipalghát traveller's rest-house on the road to Srinagar lies on the left bank of the western Nyár. The patti contains the upper valley of the western Nyar and its northern branch. In 1864 Dobri was received from Dhanpur, six villages from Chandpur and six villages from Choprakot. There are copper mines at Dobri, Morgadh, and Rájkhán.

Kandarkhuwa, a patti of parganah Phaldakot in Kumaon, is bounded on the north by Dwársaun and Changáon; on the east, by the latter patti; on the west, by Talla Tikhún, and on the south by the Kosi river separating it from Kotauli Talli. It is drained by the Ulabugr stream, a tributary of the Kosi which joins it on the right bank at Kákarighát. The patwári resides at Khand, where there is a school. The principal villages are Garhi, Garsári, Kalnu, Kotuli, and Suri. The assessable area comprises 2,818 *bisis*, of which 2,177 are cultivated (29 irrigated) and 640 are culturable. The land-tax yielded Rs. 1,766 in 1815, Rs. 2,161 in 1820, and Rs. 2,287 in 1843. It now amounts to Rs. 2,710, which falls on the total assessable area at Rs. 0-15-5 per acre, and on the cultivation at Rs. 1-3-11 per acre. The population at settlement numbered

4,733 souls, of whom 2,393 were males. One village was received from Dhúraphát and three from Chaugاون at the recent settlement.

Kandwálsyún, a patti in parganah Bárabsyún of British Garhwál, is bounded on the north, by Bangarhsyún; on the east, by patti Sitonsyún; on the south, by Banelsyún, and on the west by the Ganges. In 1864, three villages were transferred to Banelsyún, the patwári of which resides in Maklori and collects the land-revenue of Kandwálsyún also. This patti comprises a small strip of land along the left bank of the Alaknanda above and below its junction with the Bhágirathi at Deoprayág.

Kánsrau, an encamping-ground in the eastern Dún, at the foot of the Motichor hill, on the right bank of the Súswa river, on the road between Dehra and Hardwár. There is a police-station here and a house for the accommodation of native travellers. The place takes its name from the Kánsrau pass, once much used by people passing to and fro between Dehra and Saháranpur, but little frequented now since the road was opened under the Siwálik hills from Hardwár by Mr. Shore.

Kapholsyún, a patti of parganah Barabsyún in British Garhwál, is bounded on the north, by Paidúlsyún; on the south, by Jaintolsyún; on the east, by Khátsyún and Mawálsyún and on the west by Aswálsyún. In 1864, Simtoli was transferred to Khátsyún. The patwári of this patti resides in Sakhyána and collects the land-revenue of patti Khátsyún also; both aggregated in 1864, Rs. 1,578 from land-revenue and *sadábart* and Rs. 110 from *gúnth* paid by 3,844 souls. There is a school at Thápli. This patti lies along the left bank of the Khar stream, a tributary of the western Nyár, and is traversed by the road by Jwálpa to Páori.

Kapíri, a patti of parganah Badhán in British Garhwál, is bounded on the north by Dasoli Talli; on the south by Síli Chandpur; on the west by Taili Chandpur and on the east by Karakot and Nandák. In 1864, Barsáli was received from patti Pindarpár and Sonula from patti Pindarwár. This patti lies along the right bank of the Pindar river, between it and the Alaknanda. The patwári of Taili Chandpur resides at Simli, on the left bank of the Pindar, on the road from Lobha by Adbadri to Karnprayág and collects the revenue of Kapíri. There are iron and copper mines at Tulásu now worked.

Kapkot, a halting-place¹ on the route to the Pindari glacier, 14 miles beyond Bágéswar, 41 miles from Almora and 9 miles from Lwárkhet, in patti Talla Dánpur of parganah Dánpur in Kumaon, in latitude 29°-57'-6" and longitude 79°-56'-23." Supplies may be obtained here from a grain-shop; it is also on the route to Milam, which branches off here by Khárbugr, four miles from Kapkot. The road to Khárbugr crosses the Sarju by a suspension bridge and again a stream coming down from Lamoholi by a bad ford; and a second smaller stream beyond that. The road from Bágéswar runs along the right bank of the Sarju river, crossing the Lahor and Kanál rivers by bridges. It is generally undulating and easy and from its low elevation often uncomfortably hot. There are no important villages along the road. On the left bank opposite Kapkot is the large village of Atan. The vegetation between Kapkot and Lwárkhet exhibits most of the forms found between the former place and Bágéswar. In addition are the *Anemone vitifolia*, *Berberis lycium* (*kilmora*), *Erythrina arborescens* (*rúngara*) or coral-bush, *Parochetus communis*, *Quercus incana* (*bán*), *Echmanthera gossypium* (*jaundera*) and *Vitis macrophylla* (*amli*, *asonji*). There is a traveller's bungalow here, but no attendants or utensils.

From Kapkot upwards, the rock is the usual stratified limestone forming many abrupt brows and lofty walls, and sometimes contracting the Sarju to a few yards in breadth. The river is now reduced to a mere torrent and from Surhing appears, at a profound depth, a narrow streak of foam. Its source is on the south face of a huge spur from the eastern precipitous shoulder of Nandakot; this spur forks to south-west and south-east; the south-west range separating the valley of the Sarju from that of the Pindar. At this fork there is not a vestige of snow in September and October. Four streams large enough to require bridges occur, besides an infinity of rivulets, often converting the road into a swamp. About three miles above Kapkot there is a good suspension bridge across the Sarju, leading to Munyári. The river line receives a large affluent on each bank. At one and a half miles from Surhing the path quits it, and mounting 800 or 1,000 feet the camp occupies an open spot about Surhing and below a village called Lwárkhet or Lohargaon at about 6,700 feet above the sea. The scenery across the Sarju is fine. The Lahor-ka-Dhára, so named from a village visible to the north-east rather higher than Surhing, is bold, lofty, green, and wooded to the summit; it extends from north to south, and beyond it is the valley of the eastern Bám-ganga (*Madden*.)

Karakot, a patti of parganah Badhán in British Garhwál, is bounded on the north, by Talli Dasoli and Nandák; on the west, by

¹ See *Bágéswar*.

Kapiri ; on the south, by the Pindar river, which separates it from Sirgur of parganah Chandpur, and on the east by Pindarpár. In 1864, seven villages were received from patti Pindarpár and the villages of Mokh and Kúnde were transferred to patti Nandák. The patwári of patti Sili Chandpur, resident in Kewar, collects the land-revenue of this patti also, which lies along the right bank of the Pindar river. At Naráyanbugr the road from Lohba to Nandprayág and from Karnprayág to Baijnáth cross each other at the bridge over the Pindar. There are old iron mines at Gúryál.

Karaundu Palla, a patti of parganah Ganga Salán, is bounded on the west, by the Walla patti of the same name and Dhángu Malla ; on the south and east, by Langúr and the Nyár river and on the north by other pattis of the same parganah. There were seven villages transferred from this patti to other pattis in 1864. The land-revenue is collected by the patwári of Dhángu Malla resident in Dikhet. Mahrgaon in Karaundu Palla lies in latitude $29^{\circ}-57''$ and longitude $78^{\circ}-40'-20''$.

Karaundu Walla, a patti of parganah Ganga Salán in British Garhwál, is bounded on the north by the Palla division of the same patti ; on the west by Dhángu Malla and on the south and east by the Langúr patti. The Langúr patwári, resident in Ghúsa, collects the land-revenue of this patti also. Dasmeri in Karaundu Walla lies in latitude $29^{\circ}.57''$ and longitude $78^{\circ}-37'-15''$.

Karnprayág, a village situated at the confluence of the Alaknanda and Pindar rivers in north latitude $30^{\circ}-15'-43''$ and east longitude $79^{\circ}-15'-29''$, at an elevation of 2,270 feet above the level of the sea (bungalow 2,600 feet), lies in patti Taili Chandpur and parganah Chandpur of British Garhwál. There is a dispensary, a school, and a small bázár here. The Pindar is crossed by an iron suspension bridge of $184\frac{1}{2}$ feet span on the road leading to Nandprayág and Gopeswar. There is also a road by Chhatwa-pípal crossing the Alaknanda by a bridge there and joining the main pilgrim route by Srínagar for Kedárnáth. Karnprayág contains a temple named after Karna and is one of the places of pilgrimage at the confluence of great rivers. On each side of the junction are the remains of small temples of the usual Turk's cap style. The road

from Adbadri to Karnprayág consists of a gentle descent along the Bhararigár to its confluence with the Pindar at Simli, the residence of the patwári. Chandpurgarh is passed close to the road on the left. (See CHANDPURGARH). At Simli the Bhararigár is crossed by a *súnga* and lower down the Pindar can be passed by a *jyúla* or rope bridge. There is an old temple sacred to Gobiudnaráyan at Simli and the remains of three others. The road follows the left bank of the Pindar to Karnprayág, distant three miles. The hills on each side are precipitous and thickly clothed with forest which gives shelter very often to tigers.

Kartiya, a halting-place on the left bank of the Mandhál river on the road between Páori and Dháron, is situate in patti Painún of parganah Talla Salán in Garhwál, in latitude $29^{\circ}-39'-20''$ and longitude $78^{\circ}-56'-7''$, distant 12 miles 2 furlongs 29 poles from Chauránidhar and 8 miles 4 furlongs 25 poles from Sont Páni. The road to Kartiya from the left bank of the Nyár passes up by the villages of Chauránidhar and Chingadi and descends to the valley of the Walsagadh, crossing the bridge and again ascending to Rikbini-khál, 3 miles 6 furlongs. Hence a descent leads to the Semaisera rivulet, crossing the rivulets at Páli, Nansain, Ghatrauli and Gadyún, 4 miles 5 furlongs 27 poles. Continuing alternating ascents and descents the Pápari rivulet is crossed and the descent to the left bank of the Mandhál river is made, which is crossed by a level ford. The encamping-ground can be made on either side of the river.

Káshipur, a municipal town in the Tarái district in the parganah and tahsíl of the same name, is situate on the left bank of the river Dhela at a distance of about 45 miles from Naini Tal. The population, in 1872, numbered 13,113 souls, and in 1881 there were 14,667 inhabitants (7,112 females), of whom 8,477 (4,074 females) were Hindus and 6,190 (3,038 females) were Musalmáns, living in an area of 761 acres, or 19 to the acre. The occupations of the males were as follows;—153 servants of the municipality; 92 priests; 40 connected with law and medicine; 80 dancers and musicians; 240 servants, 102 engaged in commerce; 267 carriers; 765 engaged in agriculture; 139 masons and carpenters; 1,311 workers in textile fabries; 802 dealers in food and drink; 520 workers in vegetable and minerals, including water-carriers and sweepers, and 600 labourers and others.

There is a fair-sized bazar towards the centre of the town, consisting chiefly of brick-built houses : elsewhere the houses are for the most part the ordinary mud and tile huts. The *muhallahs* or wards of the town number seventeen :—Pakka-kot ; Katora-tál, from a lake of that name ; Khálsa or revenue-paying ; Kánúngoian, where the kánúgos reside ; Rájwára ; Lahorián ; Kila or fort ; Ali Khán Pathan ; Thána or old police-station ; Khatriyán ; Bánsphorán, or ward of the bambu-workers ; Katramáliyán, from the gardener caste ; Sikhán ; Rahím Khán Pathán ; Bagícha Káshi and Rámtaliya. The whole country at a distance of about two miles to the north of the town is still pure *tarái*, and this coupled with the fact that in the rains the back-water of the Dhela blocks up the drainage renders the town peculiarly unhealthy. Towards the close of the rains, when the surrounding swamps commence to dry up, a malarious mist arises which is the cause of fever and dysentery. These evils are much increased by the presence of large excavations throughout the site from which earth has been dug to construct the mud houses which form the principal portion of the town. The principal buildings are the tahsili, police-station, dispensary, schools, and a garden house constructed by Rája Shiuráj Singh for the reception of visitors. The Rája's own residence is an unpretending building of no architectural merit. There are two market days in the week with a brisk trade in cotton cloths, grain, iron and brass cooking utensils, salt, pepper, turmeric and other hill produce. The inhabitants in former days were almost entirely Hindu, but Musalmáns have now settled here in considerable numbers and now number three-sevenths of the whole population. The trade and importance of the town has declined of late years : but there is some hope that in a few years there will be some improvement in this respect. The high road from Moradabad to Rámnagar runs close by, and thence a cart-road leads to the new station of Ránikhet. from which it is continued on to Almora.

The only family of any importance is that of Shiuráj Singh, C.S.I., created Rája of Káshipur by the British Government. He represents the junior branch of a Raotela family, from which sprang Lál Singh, ancestor of the titular Rája of Almora, and Mohan Singh, once Rája of Kumaon for a short time, of whose history an

account has been given elsewhere.¹ Mahendra Singh retired first to Rudrpur and then to Kilpuri in the Taráí, but owing to bad management this parganah was reduced to a swamp and was rendered so unhealthy that, on the petition of the representatives of the family it was exchanged for the confirmation of possession in taluka Chachait. On the recommendation of Mr John Inglis Chachait was again exchanged for the forfeited estate of the Nawáb of Afzalgarh in parganah Rehar of the Bijnor district after the mutiny, and since then the family has grown in importance. The settlement in Káshipur dates from about 1840, when a plot of land was granted by the Pande zamíndárs, on which the present residence of the Rájá was built. Rájá Shiuráj Singh has since acquired, by loans and advances, the proprietary right in 18 or 20 villages in the parganah, and is now an Honorary Magistrate and important landholder. The municipality was established in 1872.

General Cunningham has identified the Govisana visited by Hwen Thsang with the old fort near the village of Ujain one mile to the east of Káshipur². He writes³:—

“The old fort of Ujain is very peculiar in its form, which may be boat compared to the body of a guitar. It is 3,000 feet in length from east to west, and 1,500 feet in breadth, the whole circuit being upwards of 9,000 feet or rather less than 2 miles. Hwen Thsang describes the circuit of Govisana as about 12,000 feet or nearly 2½ miles; but in this measurement he must have included the long mound of ruins on the south side, which is evidently the remains of an ancient suburb. By including this mound as an undoubted part of the old city, the circuit of the ruins is upwards of 11,000 feet, or very nearly that given by Hwen Thsang. Numerous groves, tanks, and fish ponds still surround the place. Indeed, the trees are particularly luxuriant, owing to the high level of the water, which is within 5 or 6 feet of the surface. For the same reason the tanks are numerous and always full of water. The largest of these is the Drona-ságar which, as well as the fort, is said to have been constructed by the five Pánda brothers for the use of their teacher Drona. The tank is only 600 feet square, but it is esteemed very holy, and is much frequented by the pilgrims on their way to the source of the Ganges. Its high banks are covered with Sati monuments of recent date. The walls of the fort are built of large

¹ See Gaz. XL 606 and preceding pages. Kunwar Partab Singh sued Lál Singh for a share in Chachait, but his claim was dismissed by the Sadr Diváni Adálat. He then petitioned Government, who gave him Rs. 250 a-month (1820). He was a minor when he succeeded, and Lál Singh had held possession as head of the family and retained it, and the grant of Chachait to Gemán Singh was confirmed. Partáb Singh's claim to Báspur was also negatived. To Collector, Moradabad, 30th October, 1832; to Government, 5th July, 1836; from Government, 30th July, 1836.

² Gaz. XI. 462.

³ Arch. Rep. I. 253.

massive bricks, 15 inches by 10 inches by 2½ inches, which are always a certain sign of antiquity. The general height of the walls is 30 feet above the fields, but the whole is now in complete ruin and covered with dense jungle. Shallow ditches still exist on all sides except the east. The interior is very uneven, but the mass has a mean height of about 20 feet above the country. There are two low openings in the ramparts, one to the north-west and the other to the south-west, which now serve as an entrance to the jungle, and which people say were the old gates of the fort."

"There are some small temples on the western bank of the Drona-ságar; but the great place of worship is the modern temple of Jwála Devi, 600 feet to the eastward of the fort. This goddess is also called Ujaini Devi and a great fair is held in her honour on the 8th day of the waning moon of Chait. Other smaller temples contain symbols of Mahádeva under the titles of Bhutesar, Muktesar, Nágnáth, and Jágeswar. But all these temples are of recent date, the sites of the more ancient fanes being marked by mounds of various dimensions from 10 to upwards of 30 feet in height. The most remarkable of these mounds is situated inside the northern wall of the fort above the ramparts. This mound is called Bhím-gaja or Bhím-gada, that is Bhím's club, by which I understand a large liuga of Mahádeva. Were it not for this name I should be inclined to look upon this mound as the remains of a palace, as I succeeded in tracing the walls of what appeared to have been a large room 72 feet in length from north to south by 63 feet in width, the walls being 6 feet thick. About 500 feet beyond the north-east angle of the fort there is another remarkable mound which is rather more than 32 feet in height. It stands in the midst of a quadrangular terrace, 600 feet in length by 500 feet in breadth, and, as well as I could ascertain from an excavation at the top, it is the remains of a large square temple. Close by the east and within the quadrangle there are the ruins of two small temples. To the eastward of the Jwála Devi temple, there is a curious circular flat-topped mound of earth, 68 feet in diameter, surrounded by a brick wall from 7 to 11 feet in height. It is called Rám-gir Gosáin-ká-tíla, or the mound of Rám-gir Gosáin, from which I infer it is the burial-place of a modern Gosáin. To the south of the fort near the temple of Jágeswar there is a third large mound, 22 feet in height, which was once crowned by a temple of 20 feet square inside. The bricks have only recently been removed and the square core of earth still remains perfect. To the westward of this last is a fourth mound on which I traced the ruins of a temple 30 feet square standing in the midst of a raised quadrangle of about 500 feet square. Besides these there are 10 smaller mounds, which make up altogether 14, or just one-half the number of the Bráhmanical temples which are mentioned by Hwen Thsang. The only ruin which appeared to me to be of undoubted Buddhist origin was a solid brick mound 20 feet in height to the south-west of Jágeswar Mahádeva and close to the small village of Khágpur. The base of the mound is upwards of 200 feet in diameter. The solid brickwork at the top is still 60 feet thick, but as it is broken all round its original diameter must have been much greater, probably not less than 80 feet. But even this larger dimension is too small for a *stupa* of 200 feet in height of the hemispherical form of Asoka's time. A *stupa* of that early period even when provided with both plinth and cupola would not have exceeded 100 feet in height; unless, therefore, we may

suppose there is a mistake of 100 feet in the text of Hwen T'hsang, I feel quite unable to offer any identification whatever of the Buddhist remains of Goviana as described by the Chinese pilgrim."

Káshipur is named after its founder Káshináth Adhikári, who according to one account was a servant of Rudra Chand (1565—97 A. D.) and according to another was employed¹ by Báz Bahádur Chand (1638-78 A. D.) and this is the more probable. It is said that the site selected belonged to four villages, in one of which was a noted temple of Ujaini Devi, a frequent place of pilgrimage in those days. It is doubtful whether this corresponds with the present site, and the tradition inclines to place the first settlement within the precincts of the Ujain village, a position far to be preferred, being well raised above the surrounding country instead of being within the influence of the river-floods. It was always a place of importance under the Chands. Siunáth, son of Káshináth, built the village, and planted the groves of Siunáthpur. Ramadatta Adhikári was governor in 1744, and his descendant in 1844 was a patwári in Gangoli Sib Deo built the fort here about 1745 and gave it in charge first to Hari Rám and then to Siromani Dás, and here Sib Deo himself was murdered by the garrison in 1764.² Siromani Dás was succeeded by his sons Nandrám and Har Gobind, whose family retained possession until the British occupation, when Sib Lál, nephew of Nandrám and son of Har Gobind, was found as farmer in Káshipur.

Katholsyún, a patti of parganah Dewalgarh in British Garhwál, is bounded on the north by the Ganges; on the south, by Ghurdursyún; on the east, by Chalansyún and Bidolsyún; and on the west by Ráwatsyun, Idwálsyún and Nádalsyún of parganah Bárahsyún. This patti was formed from Dewalgarh in 1864. In 1864 Fatehpur was received from patti Idwálsyún. The revenue of this patti is collected by the tahsili at Srínagar. It contains the valley of the Khath-gadh, which flows into the Kandha-gadh, a tributary of the Ganges, on the right bank. The roads centering in Srínagar pass through the patti.

Katyúr Malla, a patti or sub-division of parganah Dánpur in Kumaun is bounded on the west by patti Pindarwár of parganah Badhán of Garhwál; on the south by pattis Bichhla and Talla

¹ The statement in Gaz. XI. 469 that Káshináth founded Káshipur in 1718 A. D. should be changed to 1718 *era.* = 1639 A. D. ² Gaz. XI, 561, 566, 589-90. ³ *Ibid.* 594.

Katyur, and on the north by Pindarwár and Painkhanda of Garhwál. It contains the drainage area of the upper part of the Gumti river and the valley of the Lahor river. The valleys of the northern tributaries of the Gumti are studded with tea-plantations, amongst which are those of Megri, Anila, Ayártoli, and Baijnáth. The road from Someswar crosses the Kausáni range and passing by the temple of Kapleswar and Baijnáth proceeds to Karnprayág. From Baijnáth another road passes down the Gumti valley to Bágéswar. The southern portion is drained by the Gumti, while the Lahor river drains the northern half, the Magru-ká-danda range (6,294 feet), in which the Párkot peak (6,436 feet), also is situate, forms the water-parting between the two. The temple of Baijnáth nearly in the centre of the southern boundary of the patti lies in latitude $29^{\circ}54'24''$ and longitude $79^{\circ}39'28''$, at an elevation of 3,545 feet above the level of the sea. The patwári resides in Mawai and there is a school in Titoli. The principal villages are Gheti, Púrudha and Pujena. 671 *bísis* are held as *gúnth*, 242 free of revenue and 2,888 in fee simple : for statistics see KATYŪR BICHHLA.

Katyár Bichhla, a patti of parganah Dánpur in Kumaun, is bounded on the north by Katyúr Malla ; on the west by Giwár Palla and Walla; on the south by Borárau Palla and on the east by Katyúr Talla. This patti was separated from Katyúr Malla at the recent settlement and comprises the southern half of the valley of the Gumti commonly known as the Baijnáth or Katyúr valley. To the west the Birchuwa peaks attain an elevation of 7,427 and 8,042 feet respectively. The principal villages are Dyunái, Kansári, Una and Band and Kaulág, Khaderi and Bhuturiya to the south of the tea-plantations of Kausáni and Damlot. The road from Someswar to Baijnáth passes north by the Kapleswar temple in this patti. The statistics of the Malla, Bichhla, and Talla pattis may be shown thus :—

Katyúr.	ASSESSABLE AREA IN <i>bísis</i> .				ASSESSMENT IN RUPEES.				POPULATION.	
	Total.	Cultivated.		Culturable.	1815.	1820.	1843.	Current.	Males.	Females.
		Irrigation.	Dry.							
Malla	2,110	310	763	1,036	148	189	404	1,484	985	866
Bichhla	2,025	403	809	812	122	245	459	1,760	964	861
Talla	1,866	432	426	808	233	312	513	1,726	843	671

The incidence of the present land-revenue on the cultivated acre falls at Re. 1-6-1 in the Malla patti, Re. 1-7-3 in the Bichhla and Rs. 2-0-2 in the Talla patti : on the total assessable area the incidence is Re. 0-11 3, Re. 0-13-11, and Re. 1-0-7 respectively. 481 bísis are held in *gúnt* and 2,072 in fee-simple. The patwári resides in Nautyár, where there is a school.

Katyúr Talla, a patti of parganah Dánpur in Kumaun, is bounded on the north and west by the other Katyúr pattis ; on the south by Borárau Palla and Kharáhi ; on the east by Dúg and Talla Dánpur, and on the north-east by Talla Dánpur. It comprises the lower courses of the Gúmti, Lahor and Sarju rivers from some distance west of their influence to below Bágeswar. The Sarju receives on its right bank the Lahor river, which has its sources in the Malla patti and is separated from the Kanál-gadh on the north by the Bor and Párokot ranges : further south the Gúmti joins the Sarju at Bágeswar. The Sarju itself flows nearly from north-east to south-west through the patti. Besides the commercial village of Bágeswar noticed elsewhere the only important villages are Kháfila-khet, Bamrási and Dungargaon. From Bágeswar roads branch off to Baijuáth on the west ; Askot on the east ; Milam on the north and three routes to Almora on the south. At the recent settlement the portions of this patti lying to the east of the Sarju comprising some thirty-three villages were transferred to the newly-created patti of Dúg and ten to the north of the Kanál-gadh to Talla Dánpur, whilst Kháfila-khet and twenty-five other villages in its vicinity were received from Kharáhi. One village was transferred to Chálsi and two to Bichhla Katyúr : see further KATYÚR BICHHLA. The patwári resides in Bágeswar ; there is a school in Amtora.

Writing in 1821 Mr. Traill says :—“ Katyúr has a greater proportion of culturable land lying waste than any other subdivision in the province, a circumstance which must wholly be ascribed to its notorious unhealthiness during the summer and autumn.” In the Bhábar and lower hills, the absence of cultivation and the presence of thick jungle produce similar results, but with the disappearance of the causes of unhealthiness the climate improves. Katyúr, however, has always been remarkably open and free from

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jungle, whilst the presence of two large streams render the greatest facilities for irrigation and Bágeswar for disposal of produce, and to the lowness of elevation could alone be ascribed the presence of malaria which so long distinguished the valley. Under the Chanda criminals were banished to Chukam on the Kosi, Katyúr and Khat-sár in Giwár and there allowed to live as long as the climate permitted them. This evil reputation was sufficient to keep cultivators away, so that the condition of the sub-division since the introduction of British rule showed no improvement, the advantages arising from the security of property and profits to the cultivators being more than counterbalanced by the desertion of the cultivators. These were chiefly inhabitants of Garhwál, who during the late government had emigrated from thence to avoid their harsh and tyrannical task-masters and now returned to their homes. These causes operated to give a very low assessment at the second triennial settlement as an encouragement to cultivators to settle in the valley. In 1821, the number of houses in the whole subdivision scarcely exceeded the number of villages, and the number of deserted villages almost equalled the number of those nominally inhabited. The old *kánungoi* papers gave an area of 1,500 *alis* exclusive of lands assigned to religious purposes; but here they were worse than almost any other parganah and in 1821 only 674 *alis* were cultivated and 44 held in *hak-padhánchári*. The assessment in 1807 amounted to Rs. 644; in 1815 to Rs. 588; in 1819 to Rs. 796, and in 1820 to Rs. 853, or nearly one rupee per *ali*. Circumstances have so changed owing to the introduction of tea-cultivation and the consequent clearing of the land and improvement of the climate that the subdivision is not now more unhealthy than any other similarly situated in Kumaun. The land-revenue has trebled, but the exact figures for comparison owing to changes in area could not be taken out without considerable labour. Still in older times the tale must have been different, for Kárttikeyapur or Kabírpur was the old Katyúra capital and ruins of a considerable town still exist near Taili and Seli Hát and around the forts of Gopálkot and Ranchula.

Kauriya Palla, a small patti of parganah Tallá Salan of British Garhwál, lies between Síla Malla on the south and west and Kauriya Walla on the north and east. A portion of the Páori and Kohd-

wára road passes through its north-western corner. The only important villages are Majína and Húli. The former is on a cross path connecting the Kohdwára and Maidi valley roads. The peak of Kálágarh at the south-eastern extremity of the patti has an elevation of 6,065 feet above the level of the sea. Up to 1864 this was not a separate patti, but comprised a part of Kauriya. The patwári of Síla Malla, resident in Muára, collects the land-revenue of this patti also.

Kauriya Walla, a patti of parganah Talla Salán of British Garhwál, was formed from Kauriya at the recent settlement in 1864. It is bounded on the north by the Langúr patti of parganah Ganga Salán and Malla Badalpur of parganah Talla Salán; on the east, by the latter patti; on the south, by Malla Síla and on the west by Kauriya Palla. This patti contains the valley of the Maidi river, along which a fair road runs, meeting the Kbátali and Kohdwára road in the north-western corner. The patwári of Badalpur Malla, resident in Toli, collects the land-revenue of this tract also.

Kumaon, the principal district of the Kumaon Division, includes the tahsils or sub-divisions of Almora, Káli Kumaon, and the Bhá-bar, and lies between north latitude 28°-14'-45" and 30°-50'-0" ; and east longitude 76°-6'-20" and 80°-58'-15", with an estimated area of 3,680,000 acres or 8,000 square miles, of which 88,611 acres are culturable and 198,059 acres are cultivated (27,000 irrigated).

Fiscal sub-divisions. It is bounded on the north by Tibet (Tibbat); on the east by Nepál; on the west by Garhwál, and on the south by the Tarái. There are 19 parganahs containing 125 pattis as follows :—

Parganah.	Patti.	Parganah.	Patti.	Parganah.	Patti.
1. Bárahmandal.	Blesud Malla. Ditto Biebhla. Ditto Talla. Boráráu Palla. Ditto 'Walla. Dwárasun. Kairáráu. Kálgár. Ehaspurja. Uebhur. Ryúni. Syánara Malla Ditto Talla. Tikhún Malla. Ditto Talla. Athagúli Palla. Ditto Walls.	2. Chhakháta. 3. Ohaugar-kha. 4. Dnpur ...	Chhakháta. Dárun. Kharáhi. Lakhanpur Mal-la. Lakhanpur Tal-la. Rithugárh. Rangor. Sálam Malla. Ditto Talla. Dánpur Malla. Ditto Biebhla. Ditto Talla. Dág. Katyúr Malla. Ditto Biebhla. Ditto Talla. Nákúri.	5. Dárma .. 6. Dhanjákot 7. Dhyánrau 8. Gangoli ...	Byám. Chaudána. Dárma Malla. Ditto Talla. Chauthán. Dhanjárot. Uchákot. Simalkha. Bisjyála. Chhabts Dumau-la. Chauthainai. Chaugadh. Mali Kaa. Talli Rau. Bel. Sherang. Bareun. Kameyár.

Parganah.	Patti.	Parganah.	Patti.	Parganah.	Patti.
8. Gangoli ...	Pungaraun. Athgaon.	12. Páli—(con- cluded).	Dora Bichhla. Ditto Talla.	15. Síra ...	Ramgar Talla. Athbisi Malla. Ditto Talla. Bárabisi. Dindihát. Mall.
9. Juhár ...	Juhár Malla. Goriphát. Tallades.		Giwar Palla. Ditto Talla. Ditto Walla. Kakalasaun Malla. Ditto Talla.	16. Shor ...	Khurayat. Kharakdes. Mabar. Nayades. Rawal. Seti Malla. Ditto Talla. Saur.
10. Káli Ku- maon.	Cháisi. Cháral Malla. Ditto Talla. Gmudes. Gangol. Khilpattiphát. Pálbelon Malla. Ditto Talla. Pharka. Begarábán. Sipti. Sul-bisang. Tallades. Ass.		Nayán Palla. Ditto Walla. Silaun Malla. Ditto Talla. Sult Malla. Ditto Palla. Ditto Walla. Ditto Talla.	17. Askot ...	Waldiya Malla. Ditto Bichhla. Ditto Talla. Askot Malla. Ditto Talla.
11. Kota ...	Kota Malla. Ditto Talla.	13. Phaldakot,	Chaugaon. Dhúrphát. Kosyan Malla. Ditto Talla. Kandarkhuwa.	18. Kotauli ...	Kotauli Malli. Ditto Talli.
12. Páli ...	Chaukot Malla. Ditto Bichhla. Ditto Talla. Dora Malla.	14. Rámgar ..	Malli Doti. Agar. Rámgar Malla.	19. Mahryúri...	Mahryúri Dol- phat. Ditto Malli. Ditto Bichhli. Ditto Talli.

Chhakbáta, Kota and parts of Dhaniyákot, Dhyánirau, Rámgar, and Phaldákot belong to the Bhábar tahsíl. Káli Kumaon, Síra, Shor, Askot, Dárma, and part of Dhyánirau are managed from Champawat and the remainder from Almora. The thoks or pattis forming the sub-divisions of parganahs do not in all cases represent the similar divisions of the same name existing under the native governments. In former times it was the practice to remunerate the chief officers of state and the thokdárs or commandants of the forces in the field by assigning for their support the revenue of various villages often in different parts of the parganah. In Páli, where there was always a large military force cantoned to watch the frontier of Garhwál and in Bárahmandal around Almora, these assignments were very numerous, and the villages of each grant formed the thok or patti of the thokdár or kamín. Under the Gorkhális, also, all villages were classed together which had the same kamín or thokdár. A remarkable instance of this arrangement was patti Silkána composed of villages scattered all over the district, the revenues of which were assigned for the manufacture of gunpowder and patti Mahryúri, which was rent-free on condition that the inhabitants supplied carriers for ammunition and supplies in time of war. This artificial arrangement was found so highly inconvenient for revenue and police purposes that it was

abandoned in 1821, and the natural sub-divisions were restored.¹ The smaller parganahs were also absorbed as patti of the larger to which they formerly belonged ; thus Uchyúr, Dwársaun, Khaspurja, Bissaud, and Ryúni were included in Báráhmándal ; Chaugarkha, Sálam, and Kharahi in Chaugarkha ; Agar, Rámgar and Chhakháta in Chhakháta ; Dhaniyákot, Uchakot, Simalkha, and Chauthán in Dhaniyákot ; Síra and Askot in one parganah ; Dhyánirau and Chauhainsi in one parganah ; Katyúr and Gangoli in one parganah, and the Bhot country in one parganah making in all fourteen parganahs.

The Shor tahsili was abolished and Gangoli was added to Almora, whilst Shor, Síra, and Askot were transferred to Káli Kumaon. Further changes were carried out at the recent settlement (1863-73) which resulted in the distribution of the area given above. These alterations of area and designation have been so radical that it would be unsafe and unprofitable to describe them at greater length here, and the notice of each patti must be referred to for further particulars.

The general physical geography of the district has been noticed in the first volume. Kumaon is separated from Garhwál by a line partly natural and partly artificial. Leaving the Tibetan water-parting ridge at a point east of the Unta-dhúra pass the boundary follows the ridge on which the pass is situate to the Nanda Devi peak ; thence it descends in a direction a little to the west of south, and crossing the Pindar ascends to the top of a range which flanks that river on the south. This it follows to a high point called Badhángarh, from which it strikes across the head of the western Rám-ganga and its Deghát feeder to the ridge separating this river from the basin of the Nyár. It keeps to this ridge for some miles in a southerly direction ; and where the ridge turns off to the west the boundary descends to the Rám-ganga, which it crosses and passing through the outer ranges falls into the frontier line of the plains districts near Kotirao on the Phíka river, about midway between the Kosi and the Rám-ganga. On the east, the Káli separates Kumaon from Nepál, along its entire course up the Lipu-lekh pass into Tibet. It is to be remembered that the principal stream of the Káli loses that name

¹ To Board, dated 14th March, 1821 ; to Board, dated 21st May, 1821 ; from Board, dated 18th March, 1822.

above Garbiya in Byáns, and is called there the Kuthi-Yáukti; the Káli being the smaller affluent which comes down from the Lipulekh pass. On the north, the water-parting ridge separates Tibet from Kumaon. On the south it follows an irregular line from five to 15 miles from the base of the outer range of hills.¹ On the west the boundary line extends for about 165 miles: on the south for 90 miles; on the east for 130 miles; and on the north for 75 miles. The greatest breadth from north-east to south-east is 140 miles and the least from east to west is 40 miles, the average breadth being about 90 miles.

We have now to consider the arrangement of the mountain systems, and with them the valleys that form the drainage channels, for both are of necessity laid out on the same general plan and hold the first place of importance in a country such as this. In the Himálaya it is observed¹ that all the main ridges and valleys have a constant tendency to follow directions either parallel or at right angles to the main line of water-parting. This tendency, it is true, is often disguised by the rapid succession of several sudden changes of direction which when represented on the small scale of our maps gives an apparent obliquity to both ridges and rivers which has no existence in the elementary portions of which they are composed. In the western Himálaya this obliquity is observed to take one direction more frequently than any other, *i.e.*, such as to give a direction of north-north-west and south-south-east to a ridge the elements of which run from north-west to south-east. Thirdly, it is observed that the accumulation of the waters within the outer range of hills finds a passage to the plains in very few outlets. In the present examination we have to go over the ground in part already noticed in a previous volume; but our observations will be as brief as possible. Taking the great water-parting ridge to the north we find that it is unbroken from Nepál to Basáhir, and that the whole of the drainage to the south of it finds its way to the plains on the extreme west in the Jumna, with which we have nothing more to do in this notice; in the middle by the Ganges and on the east by the Káli. Between the Ganges and the Káli there is no stream

¹ These observations on the physical geography of the province are based on matter placed at my disposal by General B. Strachey and the records of the Survey of India.

which has its origin more than 40 or 50 miles from the plains. The cause of this diversion of the northern streams to the east and to the west is to be found in a series of longitudinal ranges which extend across the southern half of the district and by the help of cross ridges by which they are linked together form a complete barrier against the snow-fed streams, except through Ramdeo and Hardwár. The separation of the drainage area of these outlets takes place along a ridge drawn transversely from the great northern water-parting to that barrier first mentioned which on the west separates the drainage basin of the Rám-ganga from the Ganges and in the north and east that of the Kosi from the affluents of the Pindar, Sarju, and Káli; on the west, except in Lohba, it follows the boundary between Kumaon and Garhwal; and on the east the line from Bandani-devi near Almora by Dol to the connecting link with the Gágar range; passing where these two meet at the north to the great peaks of Nanda-devi and Nanda-kot.

An examination of the somewhat complicated network of ridges of the southern half of the mountains will show that its most important elements consist of two principal longitudinal ranges from twenty to thirty miles apart, the crest of the outer or southern of which is about ten to fifteen miles from the Bhábar or plains. The more northern of these ranges is nearly continuous throughout the entire length of Kumaon and Garhwál: the southern is broken through near its centre for a distance of about ten miles. From both of these ranges branch off many transverse ridges to the south-west, by two of which not otherwise of any particular importance a connected barrier is established between the longitudinal ranges on two lines; one at about forty miles from the Káli, the other at the same distance from the Ganges. The drainage of the area thus inclosed finds its way to the Ganges by the Rám-ganga and the Kosi, which pass through the breaks in the outer longitudinal range already mentioned, their drainage areas being divided by a third transverse ridge nearly half-way between the other two, like them in no way remarkable on any other account. The stream issuing from the hills between the Ganges and the Káli, other than the Kosi and Rám-ganga, have their sources never more than fifteen miles from the base of the hills, and always on the southern face of the outer longitudinal range.

Minor river basins.

The drainage area of the Káli is completed on the east by a great transverse ridge which runs down across western Nepál from the Tibetan water-parting. The Ganges system is bounded on the west by another great transverse range which traverses the Himálaya nearly at right angles for a distance of about seventy miles. It is connected with the Tibetan watershed to the north-west of Nilang and runs down to the extremity of the longitudinal ridge between the Jumna and the Ganges drawn across the outer portion of the mountains precisely similar to those between the Ganges and the Káli. The most northern of these longitudinal ridges is here little more than thirty miles from the foot of the hills, and by it the drainage of three-fourths of the entire breadth of the Himálaya is turned to the east into the Ganges at Deoprayág. Between this ridge and the plains there are no transverse ridges of any great importance, and the continuity of the longitudinal ridge being unbroken, except where the Ganges and Jamna debouch on the plains, the whole drainage falls into either one or the other of those rivers. To the west the Jamna system is separated from the Satlaj system by another great transverse ridge nearly conterminous for some way with the eastern boundary of Basáhr, then turning to the west around the head-waters of the Pábar and Giri to the longitudinal ridge to the north of the Kayarda Dún. The Jumna and Tons together find an outlet at Kálsi through the outer-range into the Dún.

The drainage area of the Ganges system comprises some 8,600 square miles, of which 5,000 square miles fall within British territory, the remainder being in Tíhri or protected Garhwál. The British portion of the basin of the Káli is about 4,000 square miles. The basin of the Kosi is about 800 square miles and of the western Rám-ganga about 1,200 square miles. The remaining 1,000 square miles of Kumaon and British Garhwál are occupied by that portion of the outer hills which discharges its drainage directly on to the plains in the Nandaur, Gaula, Baur, and other streams, all of which join the western Rám-ganga in the plains, and eventually the Ganges. It will be seen, then, that of the whole 12,000 square miles which are embraced in the two districts of Kumaon and Garhwál, 9,000 square miles or three-fourths

are drained by the Ganges and Káli, and of the remaining fourth the drainage of two-thirds is collected in the Rámanga and Kosi and of one-third, or one-twelfth of the whole area, the drainage flows down directly to the plains, but eventually joins the Rámanga.

The principal line of water-parting along the Tibetan frontier is a ridge of great altitude. Its mean elevation is certainly upwards of 18,000 feet above the sea, and its highest peak, Kamet, reaches to an elevation of 25,373 feet. At no point is it possible to enter Tibet from Kumaon or Garhwál without rising to nearly 16,800 feet, and the passes are more commonly upwards of 17,500 feet, and the highest, that of Mana, 18,650 feet in altitude. The watershed is throughout the greater part of its length a simple longitudinal range, but its structure is a little complicated for a distance of about 30 miles in its western half between the passes of Unta-dhura and Níti; the ridge, which might otherwise have constituted the watershed, is here broken through a little to the south-east of Níti, and the drainage of the Girthi and Laphkhel valleys is hence enabled to flow to the south, joining the Dhauri at Malári. The watershed is thus thrown back to the north about 10 miles, and follows the range which unites the Balchha, Shalshel, Ma-rhi and Tung-jungla passes with that of Níti. In the vicinity of Hoti this ridge is at one or two points almost entirely suppressed, so that the traveller may pass at once from Hoti to the great plateau of Guge with hardly any greater ascent than is requisite to carry him to the highest level of the plain, which is here not less than 16,000 feet above the sea. But this apparently easy route is in reality as completely closed as though the ridge immediately to the north of Níti was not broken through, for the gorge through which the Kiogadh or river of Laphkhel flows to join the Dhauri is impassable, and all access to Hoti is impossible, except by crossing one or other of the passes from the Níti valley or from Unta-dhúra above Milam.

Both in Kumaon and Garhwál the most important of the masses of snowy mountains are found in groups along a line from 20 to 30 miles south of the water-parting with which they are, moreover, connected by lofty ridges covered with perpetual snow, whilst they are separated one from another by the deep gorges which carry off the drainage from

Snowy range, Nanda-devi.

the southern face of the dividing ridge on to the outer Himálaya. The chief of these groups is that of which Nanda-devi is the culminating peak, and which attains a height of 25,689 feet above the level of the sea. The great ridge of Trisúl, which nowhere is less than 20,000 feet in elevation, for a length of 10 miles, is connected with Nanda-devi, but advanced about 10 miles in front of it to the south-west. Its three peaks are 23,406 (to the west), 22,490 and 22,360 feet high. To the north of the western peak are two others having elevations of 21,286 and 20,842 feet respectively, and to the south another having an elevation of 20,010 feet. The last separates the Bháiganga from the Kailganga, both of which are affluents of the Pindar. The eastern peak of Trisúl is connected with Nanda-devi by peaks having an elevation of 21,858, 21,624, and 24,379 feet respectively. Midway between the two latter a spur proceeds south-west, rising above the Pindari glacier to 20,740 feet, and in Nanda-kot to 22,530 feet. The spur connecting Nanda-devi with the Unta-dhura ridge proceeds almost due north from the peak (24,379 feet) close to Nanda-devi itself. To the north-west of Nanda-devi we have Dunagiri (23,184 feet) and two other peaks due east of it, 22,516 and 22,735 feet in elevation. North of these again is a group of peaks having elevations of 20,754, 21,341, and 23,220 feet respectively, the last of which is on the transverse ridge connecting the Unta-dhúra ridge with Nanda-devi and to the west of the pass. Between the pass and the transverse ridge is another peak having an elevation of 22,400 feet and to the east of the pass, the dividing ridge into Tibet has an elevation of about one thousand feet above the pass. The continuation northwards of the transverse ridge from Nanda-devi is broken in one place to admit of the passage of the Girthi river to Malári.

But little inferior to this cluster of peaks in magnitude or

Badrináth group.

magnificence is the great group, including

Badrináth, Kedárnáth and Gangotri, which

lie to the west of Nanda-devi. It is in all not less than thirty miles in length and contains the Satopant peaks having an elevation of 23,240, 21,991, 22,060 and 22,388 feet respectively ; then the Kunaling peaks at the glacier sources of the Vishnuganga, 20,038 and 21,226 feet, and connecting with the Badrináth or Chauhamba peaks further south-west by two peaks 23,424 and 23,063

feet high. The Badrináth peaks, from east to west have an elevation of 22,901, 22,619 and 22,395 feet respectively, and due east of them is Nálíkánta, having an elevation of 21,713 feet. To the west of the Badrináth group are the Kharcha Khand and Bharat Khand peaks above Kedárnáth, 21,695 and 22,844 feet respectively, continued further west in a ridge to the Bhágirathi crowned by a dozen peaks having an elevation of over 20,000 feet. On the eastern slope of the Kunaling peaks above mentioned lie the great glaciers Bhagat Kharak and Satopant, which are the sources of the holy stream flowing by Badrináth, and on the western slope of the same peaks lies the great glacier which gives the *Gaumukh* above Gangotri. To the north of Gangotri the peaks between it and the Tibetan water-parting form a continuation of those at the Máuá pass : here we have three peaks above 22,000 feet, three above 21,000, and three above 20,000 feet. So that in this magnificent cluster we have of measured peaks four above 23,000 ; nine above 22,000, eleven above 21,000, and eight above 20,000 feet above the level of the sea, in a tract about 26 miles from north to south and 30 miles from east to west.

The other groups of snowy peaks to which attention has to be drawn, though in themselves of vast proportions,

Minor groups.

assume a secondary importance when compared with the groups which we have just described. Amongst them may be mentioned the Jannotri group, including Bandarpunch to the west in Tihri and which is also a place of pilgrimage to the devout. The group includes one peak which rises above 21,000 feet and three others exceeding 20,000 feet. Next comes the ridge separating the Máuá from the Níti valleys culminating in Kamet already mentioned and having five peaks from north to south with an altitude of 23,862 (Máuá) 21,198, 20,094 (Rataban), 21,747, and 22,141 feet respectively. In eastern Kumaon, east of the Nanda-devi group, we have the Pancha-chuli group between the Gori and the Dhauli, with peaks having an altitude from west to east of 22,661, 20,700, 20,783, 21,114 and 19,923 feet, and again the ridge to the north between the Dhauli and the Kuthi-Yáukti marked by a number of peaks above 20,000 feet and culminating in the great peak of Yirgnajung above Budhi in Byáns, having an elevation of 20,455 feet. The great clusters of snowy peaks divide

the great river basins from each other and the smaller groups divide sections of the great river basins from each other ; thus Nanda-devi separates the Káli from the Ganges system ; the Yirgnajung and Pancha-chuli minor group separate affluents of the Káli from each other ; the Kamet minor ridge separates affluents of the Alaknanda from each other, whilst the Badrináth-Gan-gotri group separates the Alaknanda basin from that of the Bhágirathi¹.

We shall now turn to the river basins, but as each of the more important rivers has a separate notice our observations will be very brief. The Káli (q.v.) on the east has its true source in the Kuthi-Yánkti (q.v.), which joins the Kálapáni (q.v.) river and takes the name of Káli. The Kuthi river has a south-easterly course to its junction with the Káli, when both turn suddenly south-west and attain a direction nearly at right angles to the water-parting ridge. Next comes the Dhauli (q.v.) and then the Gori (q.v.) both with a similar south-easterly direction meeting the Káli almost at right-angles. Next comes the Sarju (q.v.) with a similar south-easterly course after taking its great bend at Bágeswar. The minor streams which form affluents of these greater tributaries observe the same rule and fall into their principal streams at right angles to their course : such are the Gumti, eastern Rám-ganga and Ladhiya. The remotest feeders of the Alaknanda are to be found in the Kiogadh or Laphkel and Lauka streams rising at the foot of the Bálchha and Kingri-bingri passes. These run at right angles to the water-parting line, here running north, and join the eastern Dhauli at right angles and both pursue a course to the south-west along the north-western slope of the Nanda-devi cluster until checked by the Kamet ridge, round which it sweeps to the junction with the Vishnuganga (q.v.) at Vishnuprayág, after which comes the great bend almost due south as far as Karnprayág. The Alaknanda

¹ The following are the local terms in common use for hills and mountains :—*galli*, narrow path or pass ; *gháti* or *khal*, a mountain pass ; *pathar*, *dhúnga*, a stone ; *patáli*, slate ; *dási*, quartz or white-rock ; *dhúra*, a high mountain range ; *danda*, a ridge ; *dhár*, a spur ; *kántz*, a peak ; *dhák*, open crest of a hill ; *búnga*, *kat*, fort or peaked-crest of a hill ; *tiba*, a peak ; *tíbri*, a small peak ; *pákha*, side of a hill ; *kurkura*, bare side of a hill usually with a southern aspect ; *bel*, a precipice ; *kuphur*, steep and rocky side of a hill ; *kurála*, sloping side of a hill ending in a precipice ; *para*, landslip, avalanche ; *khan*, a mine ; *china*, a pass or gorge ; *Aud*, steep side of a hill ; *sen* or *saina*, a lawn, and *kol*, a ravine.

here receives the Pindar (*q.v.*) almost at right angles on its left bank and takes a course south-west to Hardwár, receiving the Mandákini (*q.v.*) and Bhágirathi (*q.v.*) on the right bank. All these rivers run an oblique course to their junction with the main drainage channel. The Jádh-Ganga flowing at right angles from the Tibétan water-parting on the north is met by the Bhágirathi flowing at right angles from its water-parting on the east and the united streams have a course for some distance south-west until they are turned again to the south-east. The minor river basins have been sufficiently noticed already. If we roughly divide into four nearly equal parts the longitudinal range that extends across Kumaon and Garhwál to the south of the Sarju and Pindar rivers, the most western end near Dudatoli, the middle near Bhatkot and the eastern near Jágeswar, and if we draw three transverse lines from these points to the plains we shall roughly mark out the basin of the Rám-ganga on the west and that of the Kosi on the east. The western boundary of the Rám-ganga basin being conterminous with the eastern boundary of the Ganges system and the eastern boundary of the Kosi system being conterminous with the western boundary of the Káli system. The outer longitudinal range at a distance of ten to fifteen miles from the plains is broken through by the Kosi and Rám-ganga. The eastern portion of the ridge turns the Ladhiya into the Káli and the western portion turns the Nyár into the Ganges. It would be unprofitable to follow all the minor ramifications, all of which are laid out on the same plan, and what is true of the hills as a whole is true of each of the component parts of each basin down to the smallest stream¹.

There are no plains in Kumaon proper; as a rule, the base of one mountain touches the base of the next, leaving space only for a torrent between.

Waste lands.

Valleys some miles in length, but rarely so much as half a mile in

¹The following vocabulary will in some measure explain the local nomenclature for the river systems:—*ganga* is applied to any great river; *nadi* to a small river; *gár* or *gádh* to a stream and its glen; *gadhera* or *gadna* to a rivulet; *rauli* (*rao* in the Bhábar) to one flowing only in the rains; *chhíro* or *chhinchara*, a waterfall; *muguro* or *dháron*, an artificial spout of water; *bhámko* or *chhoiyo*, a spring; *jhadda*, a river swamp in the Bhábar; *naulo*, a covered well; *pokhar*, a tank; *khul*, a pond; *tál*, a lake; *kálo* (*yúl* in the Bhábar), a water-distributing channel from a canal; *bán*, an embankment for a *kálo*; *chopdulo*, *dob* or *dobara* are small *naulas* not built up; *domolo* or *dumaula* is the *prayágo* or confluence of two streams; *bagar*, or *bugr*, land lying along the bed of streams usually the site of a burning *ghát*. Gaz. X., chapter IV., pages 169-200.

breadth, exist in some parts of the district—the Baijnáth valley in Katyúr, the Someswar valley of the Kosi, the valley of the Káli, &c. These valleys are for the most part undulating, and are usually irrigated and highly cultivated. The Bhábar tract is one long plain indented with spurs jutting out from the lower hills, and cultivated wherever irrigation can be practised. The waste lands of this tract are estimated at 500 square miles, and both here and in the hills such encouragement has been given to cultivators to bring fresh lands (*nauábád*) under tillage that very considerable progress in this direction has been made of late years. Culturable waste in Kumaon, however, is neither extensive nor good of its kind; nearly all the land has been demarcated within the boundaries of some village or another, and but little remains unclaimed that can be made use of. In Garhwál, however, there are certain tracts reserved by Government which are said to be available for tea-plantations and the like, and information on this subject can be obtained from the Senior Assistant Commissioner in charge of Garhwál at Páori. The Commissioner reports that, so far as Kumaon is concerned, it would be better for an intending tea-planter to purchase a village with extensive pasturage ground than to attempt high cultivation on a small area, where manure in sufficient quantity is not procurable. Small villages with large tracts of jungle attached might be purchased in Káli Kumaon, Gangoli, Dhyánirau, and other parts.

Communications in general are sufficiently noticed under the article GARHWÁL. The new railway from Bareilly to Naini Tal must revolutionise the communications in the lower hills and make valuable tracts which the difficulty of carriage had rendered of little value. The following list of the roads, imperial and local, and the distances between places of some note with the aid of the map will give all the practical information required regarding roads in Kumaon:—

From	To	Number of miles.	Remarks.
<i>Imperial roads.</i>			
Almora ...	Someswar ...	19	Bridged.
Someswar ...	Gwáldam ...	21	"
Dwárahát ...	Ganáí ...	10½	Partly bridged.
Ganáí ...	Húngidhár ...	17½	Not bridged.
Rámnagar ...	Dhikuli ...	7	Partly bridged.

From	To	Number of miles.	Remarks.
<i>Imperial roads.—(concluded).</i>			
Dhikuli	Khairna	39½	Bridged.
Bhatoskhet	Dwárahát	12½	"
Ditto	Hawálbág	10½	"
Almora	Lohághát	52½	Partly bridged.
Bastiya	Ditto	36½	Bridged.
Lohághát	Pithoragarh	27½	Ditto.
Almora	Ditto	55	Partly bridged.
Chureng	Devidhúra	15	Bridged.
Almora	Haldwáni	42	"
Rámgar	Naini Tál	13	"
Almora	Ditto via Khairna,	31½	"
Naini Tál	Káladhúngi	16	"
Káladhúngi	Garpu	7	"
Naini Tál	Lál-kua	26	"
Total imperial roads ...		469½	
<i>Local roads.</i>			
Someswar	Bágeswar	15½	Bridged.
Baijnáth	Ditto	13	Partly bridged.
Someswar	Dwárahát	14	"
Ganú	Panuwákhál	7½	"
Ditto	Mási	7½	Bridged.
Mási	Sarái-khet	16½	Partly bridged.
Ditto	Dwárahát	16½	"
Ditto	Bhikiyasain	12½	Bridged.
Bhikiyasain	Muhán	22	Partly bridged.
Muhán	Dikhuli (iron-bridge),	6½	Not bridged.
Khairna	Báníkhét	16½	Bridged.
Ráníkhét	Dwárahát	14	"
Champáwat	Pharka	9½	Not bridged.
Almora	Lágeswar	27	Partly bridged.
Naya Thál	Ditto	32½	Not bridged.
Beninág	Almora	43½	Partly bridged.
Naya Thal	Pithoragarh	35	Not bridged.
Askot	Ditto	30	Partly bridged.
Jhulághát	Ditto	12	"
Bhnwál	Bhim Tál	6	Not bridged.
Ditto	Jyéli	7	"
Baitálghát	Ráníkhét	15	"
Dyárigghát	Ráníkhét	11	Bridged.
Hawálbág	Bágeswar via Binsar,	29	Partly bridged.
Bágeswar	Kapkót	14	"
Hawálbág	Takula	12	Not bridged.
Muhán	Marchúla	7	Partly bridged.
Kapkót	Pindari	37	} Bhotiya paths bridged over the larger streams.
Ditto	Munsyári	40	
Milam	Ditto	40	
Thal	Askot	24	
Ditto	Tejam	14	
Ditto	Pípálta,	5	
Beninág	Chaukori	9	
Askot	Munsyári	30	
Ditto	Dárma	55	
Ditto	Nyáns	58	
Ditto	Chaudáns	63	
Total miles of local roads ...		818	

Routes in Kumaon.

Stage.	Distance.	Remarks.
1. ALMORA TO PINDARI.		
Tákula	15	Baniya, bungalow.
Bágeswar	12	Ditto.
Kapkot	13	Ditto.
Lwárkhet	9	Ditto.
Dhákuri	7	Ditto.
Kháti	7	Ditto.
Diwáli	6	Ditto.
Phurkiya	5	Ditto.
Pindari	3	Ditto.
2. ALMORA TO MILAM.		
Kapkot	40	As in No. 1.
Khárbugr	4	
Sháns	8	Baniya.
Tejambugr	8	Ditto.
Jini	10	
Munayárl	12	Ditto.
Nilam Thalkot	8	
Rargári	8	
Bo-udiyár	5	
Hartoli-Laspa	10	
Milam	9	Bhotiya shop.
3. ALMORA TO PITHORAGARH.		
Panuwa Naula	15	Baniya, bungalow.
Naini	11	Ditto.
Gangoli Hat	11½	Ditto.
Báns	11	Ditto.
Pithoragarh	7½	Baniya.
Jhúlaghát	14	
4. MILAM TO TIBET.		
Milam	121	As in No. 2.
Shelong	7	Bad road, gradual ascent.
Topidunga	9	Cross Untadhúra.
Kyungar... ..	9	Across Jainti pass.
Thajung	6	Hundes on road to Gyanima.
5. PITHORAGARH TO DÁEMA.		
Satgarh	10	Road good.
Askot (Dewal)	13	Descent to Charneagár, short steep ascent, then descent to Dewal.
Baluwakot	10	Descent to Gori, crossed by <i>sanga</i> along right bank of Káli.
Dhárchúla	9	Road pretty good, fairly level.
Relagár	8	Houses left at Jáma.
Kbugulti... ..	7	Ascent to Khela: descent to Dhau-li river.
Dur	7	Cross the river several times and ascend by Sobula.
Selaghát	7	Descent to river and upright bank crossing glacier.
Go	9	Cross river at Go.
Khimling	6	Take firewood from Go.
Dawai	5	In Hundes.

Stage.	Distance.	Remarks.
6. PITHORAGARH TO BYANS.		
Relagár	50	As in preceding.
Sosa	8	Ascent to Kela then very steep descent to ascent from Dhanil bridge to Dhanidhar.
Galagár	10	Undulating, descent.
Majangár	8	Steep ascent and descent over Nirpantiya hill.
Budhi	9	Bad road with steps in places.
Garbiya	4	Arrangements for crossing passes made here.
Kálapáni... ..	...	Up eastern branch of Káll.
Damkung ... ..	...	Foot of Lipu pass.
Taklakhar ... ..	...	Hunda.
7. ALMORA TO ASKOT.		
Dhawalchina	18½	Baniya.
Lakhtoil	19½	Ditto.
Beninág	14½	Ditto.
Butter	10	Ditto.
Hát	10	
Askot	6	

Other routes are as follows :—

From	To	Miles.	From	To	Miles.
Pithoragarh ...	Jhúlagbát ...	14	Almora ...	Bágeswar ...	27
Ditto ...	Almora ...	55	Ditto ...	Thal ...	59
Ditto ...	Thal ...	19½	Ditto ...	Kapkot ...	41
Ditto ...	Askot ...	21½	Ditto ...	Pindari ...	77
Ditto ...	Nílám ...	54	Ditto ...	Someswar ...	18½
Ditto ...	Chaudáns ...	57½	Ditto ...	Khairna ...	20
Ditto ...	Dárma ...	46½	Ditto ...	Rámgar ...	19
Ditto ...	Kela ...	47½	Ditto ...	Dwárahát ...	26
Thal ...	Askot ...	15	Ditto ...	Ganáí ...	36
Ditto ...	Bárechhina ...	45	Ditto ...	Devidhúra ...	39
Ditto ...	Bageswar ...	32	Ditto ...	Pyúra ...	7
Ditto ...	Tejam ...	11	Devidhúra ...	Pharkiya ...	12
Ganáí ...	Bhikiya ...	20	Naini Tal ...	Rámbágh ...	11
Ditto ...	Deghát ...	17	Ditto ...	Haldwáni ...	16
Deghát ...	Mási ...	8	Ditto ...	Káladhúngi ...	16
Bágeswar ...	Hawálbágh ...	21	Ditto ...	Rámnagar ...	32
Ditto ...	Someswar ...	15	Ditto ...	Khairna ...	11
Ditto ...	Báijnáth ...	12	Ditto ...	Rámgar ...	18
Ditto ...	Gwáldam ...	20	Ditto ...	Shím-Tál ...	12
Someswar ...	Mujhkáli ...	13	Ditto ...	Ráufkhet ...	23
Ditto ...	Dwárahát ...	14	Ditto ...	Pyúra ...	25
Ditto ...	Báijnáth ...	12	Ditto ...	Moradabad ...	64
Ránikhet ...	Dwárahát ...	14	Shím Tál ...	Rámbágh ...	5
Ditto ...	Khairna ...	12	Ditto ...	Rámgar ...	9
Ditto ...	Betálgahát ...	17	Lohughát ...	Pithoragarh ...	27
Gurjiya ...	Muhan ...	6	Ditto ...	Pharkiya ...	9
Barmdeo ...	Banbasa ...	10	Champáwar,	Pharkiya ...	9
Ditto ...	Chorgaliya ...	29	Ditto ...	Lohugnat ...	6
			Ditto ...	Barmdeo ...	36

The climate varies according to the elevation, from the suffocating and deadly sultriness of the Bhábar to the perennial snow of the Himálaya. At Almora in the summer months the thermometer reads about 80° to 86° in the shade and at Naini Tál from 75° to 82°. During the coldest part of the winter months Almora has an average of about 40° and Naini Tál about 32°, but it is not unpleasant and the bright sun renders the cold little felt. Taking the average rainfall for the years 1860-61 to 1870-71, the records show sixty inches, but it naturally varies very much in localities but a few marches distant from each other. Naini Tál receives double the rainfall that Almora has owing to its situation on the southern face of the Gágar range, which attracts the rain-clouds and precipitates their moisture. The following table shows the rainfall for eleven years in inches :—

Period.	1872-73	1873-74	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.	1882-83.
1st June to end of September.	63.6	25.6	57.1	48.2	39.9	32.6	42.3	71.2	62.3	44.6	47.0
1st October to end of January.	0.6	2.9	0.5	0.6	5.8	8.8	0.5	8.8	3.8	2.9	8.0
1st February to end of May.	6.3	6.2	9.5	6.9	10.0	18.4	4.7	10.1	11.4	8.4	7.9

As a rule no month in the year passes without rain falling in some part of the district. The rainy season commences about the middle of June and lasts up to the end of September. A winter fall of a few days' duration occurs in January, which becomes snow on the hills and rain in the valleys. Some years pass without any snow: the natives consider that they have reason to expect a snowy season every third year at all elevations above 5,000 feet. When it falls, it never lies but on the mountain-tops and ridges, and not even there except they be very lofty or densely covered with forests. On the Gágar range, which rises on the southern frontier to an elevation of between 7,000 and 8,000 feet, snow occasionally lies so late as the middle of May. There does not appear to have been any systematically accurate observations respecting the limit of perpetual congelation, except those taken by General Strachey. From these it appears that the heights crowned with perpetual snow extend from the 77th to the 81st degree of east longitude, and are confined within a belt of thirty-five miles in breadth, between the 30th and 32nd degrees of north latitude.¹

¹ On the controversy as to the limits of perpetual snow see Hutton, Col. J. N. H. IV, 275; J. A. S. Ben. VIII, 181 (Webb); XVIII, 287, 296, 694, 934; XVI, 794; XVII (2) 203; XIX, 239 (Strachey).

The results of his observations further show that the snow limit which resists the effect of summer, recedes to a higher altitude on the northern or Tibetan slope of the mountains than on the southern or Indian side, having an elevation on the former of 18,500 feet, while on the latter it is permanently maintained at about 15,500 above the sea-level. From the close of the periodical rains to the beginning of February, the atmosphere is wonderfully transparent and brilliant, so that the seeming distance of objects is far less than the real. From the beginning of March, the distant peaks of the Himalaya become daily obscured by clouds about noon; and though this effect is frequently cleared away for a short time by transient falls of rain, it generally increases with the increasing heat of the season, until the haze becomes impenetrable to vision at the distance of a mile. This obscuration of atmosphere is not attributable solely to aqueous vapour, but appears to be the result also of dust, as the high westerly wind prevailing at the time is harsh and dry, and during the nights, which are calm and hazy, vegetables, and other objects exposed to the air, become covered with a light earthy matter. The malaria which produces such an effect in the Tarai extends into the depressed rich valleys on the banks of rivers, and generally into all places of low elevation. Captain Herbert says: "In the beds of the different rivers there are, as might be expected, various spots of a limited extent and of sufficient evenness of surface to be always objects of interest to the cultivator, though from their smallness scarcely entitled to the denomination of valleys. These spots generally occur in an advanced part of the rivers' course; and being, therefore, the lowest places in the mountains, are necessarily the hottest. In general they are fertile, yet are all considered more or less unhealthy, particularly at the breaking up of the rains; and when narrower than usual, so notoriously subject to the *mal* or jungle-fever as to be entirely neglected: instances occur in the beds of the Sarju and Kál: but where the width is rather greater, or the surrounding mountains not too lofty, they form the most populous, the most productive, and the most beautiful spots within the mountains." The character of the climate of Kumaon by Traill is decidedly unfavourable, and he gives a very formidable list of diseases as resulting from its influence: fevers, remittent and intermittent, contagious and typhus exhibiting the remarkably rapid and malignant features of the plague; small-pox, rheumatism, severe in character and common in its attacks; cutaneous diseases, universal; mortal or serious affections of the bowels, spleen, and lungs; dropsy and stone. Goitre or bronchocele is also prevalent in some places. See, however, under 'Medical' further on. Kumaon is subject to earthquakes. McClelland records eight that occurred between 1831 and 1835. The most severe was that of 1803, which destroyed many temples and houses. In 1851 one caused considerable damage at Almora; in 1871 a shock was felt at Naini Tal and again in 1880 an earthquake was, probably, the immediate cause of the disastrous landslide of that year.

The productions of the district—animal, vegetable, and mineral—have been noticed in the preceding volumes and need not be referred to here: so we shall proceed at once to the people and the local fiscal history, including tenures and village administration, also the income of the district from land-revenue, excise and

stamps and the medical and educational statistics which have not been before noticed.

In 1821, Mr. Traill estimated the population of Kumaon, at 6·5 per house, to amount to 164,000 souls.

Population. The next enumeration took place in 1852, when the total population was shown as 360,011 souls (169,808 females), of whom 81,796 were boys. Next comes the enumeration at settlement during 1863-68, which shows a total population numbering 394,922 souls, of whom 118,943 were men, 89,935 were boys, and 186,044 were females, giving an increase of 9·2 per cent. over the enumeration of the previous decade. The figures do not apparently include the Bhábar portion, for, comparing the total of the census records of 1872 with the portion recorded as applicable to Kumaon of the settlement report, the figures for the latter are 406,042 souls, of whom 213,975 (97,268 boys) were males and 192,067 were females. The figures for the whole of Kumaon, including the Bhábar, for the same year were 432,576 (201,877 females). In 1881 the population of the whole of Kumaon numbered 493,641 souls, of whom 232,587 were females. Distributed according to religion there were 479,948 Hindus (228,268 females); 11,261 Musalmáns (3,750 females); Christians 2,646 (663 females), Buddhists, 87 (43 females), and Jainas, 103. There were 5,148 villages with 70,245 houses and three towns with 2,719 houses, the urban population numbering 19,950 souls. The occupations of the males (261,054) will be noticed hereafter; but the fact that 150,704 were recorded as agriculturists and 12,423 as labourers sufficiently stamp Kumaon as being pre-eminently an agricultural district.

The population of Kumaon (493,641) and Garhwál (345,629) number 839,270 souls, and of these 823,134 are Hindus, 13,388 are Musalmáns, and 2,798 are Christians. But very few of the Musalmáns and Native Christians are natives of the hills, and for practical purposes the entire population of these hills may be classed as Hindu. They may be further sub-divided into (1) the aboriginal or at least long settled tribes of Khasiya Brahmans and Rájputs and their followers, the Doms; (2) the Hindu immigrants from the plains belonging to all classes; (3) the Tibetan immigrants in the Bhotiya tracts; and (4) mixed classes. It is more convenient

for us to follow the usual division into Brahmans, Rájputs, Baniyas and others, and commencing with the Brahmans we find them re-

Brahmans. recorded as numbering 108,283 souls in Kumaon in 1872, of whom a numerous list is

given. Those sub-divisions numbering over one thousand members each are Bhats, 2,494; Gujrátis, 1,003; Joshis, 6,557; Kabdwáls, 2,716; Kanaujiyas, 17,208; Khatkholas, 1,072; Maháráshtras, 2,496; Pándes, 4,780; Sárasútis, 6,703; Tiwáris, 3,641; and unspecified, evidently including the Khasiyas, 44,122. The census of 1881 shows 204,994 Brahmans without further distinction. Amongst the immigrants may be noted the Pants, Pándes, Joshis, Tewáris, Upádhyas and Páthaks.

The Pants ascribe their origin to Maháráshtra or the Mahrátha (Konkan) country. They belong to the Bháradváj, Parásara and Vasishta *gotras* and the Mádhyandiníya *sákha*. The Pants state that

Pants. some twenty-one generations ago their ancestor Jaideo came to Kumaon and obtained

from the Rája of the time a grant of Uparora in Gangoli. In the tenth generation his descendants divided into four branches, named after Sharm, Srináth, Náthu and Bháudás. Sharm became a physician, Srináth the spritual preceptor of the Rája, Náthu a teacher of Pauránik theology and Bháudás a soldier. The last mentioned acquired in camp and court a habit of eating flesh like his Khasiya soldiers and his descendants retain the custom. But the others confined themselves to vegetable food, as their present representatives do, and even oblige their wives who come from flesh-eating clans, like the Tiwáris and Joshis, to do the same. The Bháradváj Pants intermarry with Tripáthis or Tiwáris, Joshis and Pándes. They rarely marry Pants of the two other *gotras* and their customs and habits and manner of eating and drinking resemble those of other hill Brahmans. Their favourite object of worship is the Vaishnavi Sákti. The Sharmis are found in Uparora or Uprurha in patti Barháon, Kumulta, Jájut, Agar, Chhakháta, Dhári, Malaunj and Bairáti; the Srináthus in Tilári, Páudekhola and Agaráon; the Náthuis in Dubhákhhet, Jiuli and Silauti, and the Bháudásis in Syúnarakot, Garaun, Bhatgaon, Dhanauli and Khatauli. The most remarkable of the Bháudásis was Purukhottam Pant, the general who won Síra for Rudra Chand and lost his life in an attempt on

Garhwál.¹ They say that his arms are still concealed in an inaccessible cave on the precipice near Sfrakot. His descendant, Rudradatta, is the native gentleman to whom I am most indebted for my notes on local matters in Kumaon. The ancestor of the Vasisht *gotra*, Sábhu by name, is said to have come from Doti about the same time as Jaideo. They are found principally in Agaráon, Walna and Kurkoti. The Vashisht and Parásura Pants eat flesh and intermarry with the same castes as the Bháradváj Pants, whose customs and worship theirs too resemble. The Mankoti Rájas of Gangoli chose their principal servants from amongst these Pants.²

The Pándes are said to have come from Kot Kangra and from the plains. The latter obtained employment as *rasoyas* or superintendents of the Rája's food arrangements and the former as *purohitis* or spiritual directors. The *gotras* are the Gautam, Bháradváj,

Pándes.

Vatsa-Bhárgava, Kásyapa, Parásara, &c.;
the *pravara* is Tripravara and Panchpravara

and the *sákha* Mádhyandiniya. They marry with the Joshis, Lohánis, Pants, Páthaks, Tiwáris, Kanyáls and others. Sometimes they marry in their own clan, but not in the same *gotra*. Many of their sub-divisions are named after the villages received by their ancestors to hold free of revenue. Some eat animal food and some do not, and all are worshippers of Siva, Vishnu and their Sáktis. They appear to have come to Kumaon at about the same time the Pants came and were employed with the Bishts and Joshis by Som Chand.³ The Muduliya Pándes of the Kauaujiya sub-division were kámdárs or courtiers. The ancestor of the Gautam Pándes came from Kángra in the time of Thohar Chand and are found in Pándekhola, Chhámi, Hát and Chhachár. They worship the Kotkangra Devi from Jwálamukhi and were favourites with Rudra Chand. The founder of the Vatsa-Bhárgava *gotra*, by name Brahma, came to Kumaon from Kángra as physician to Sonsár Chand, from whom he received Párkoti, and hence the name Párkotiya often given to this branch. Six generations after Bráhma, came Mágh Pánde, who had five sons:—Kolu, whose decendants settled in Síra; Dasarath, who settled in Majhera; Devi Ballabh, who emigrated to Anúpshahr in the Bulandshahr district; Balmík, who remained in Párkoti, and Kunwar, who settled in Shor. The Bháradváj *gotra* came

¹ Gaz. XI, 551, 564.

² *Ibid*, 496, 527, 537.

³ Gaz. XI, 501.

from the plains and call themselves Kanaujiyas. They are also called Samaltiyas or Shimaltiyas from the village of that name, which is also derived from Sresthamandala, the kitchen, their office being that of *rasoya* or purveyor and cook. They are now found in Puchára, Chhámi, Pichhauri, Mánili and Semalti and furnish priests to the temple of Triyugi in Bágeswar. The Kásyapa *gotra* claims descent from two Kanaujiya Brahmans, brothers named Sinha and Narsinha, who took service with a Khasiya Rája as pu-rohit and *rasoya* respectively. The decendants of Sinha are found in Bairti, Bhadkot, Ganwár, Khargoli and Pípaltánda in Páli, and those of Narsinha in Pándegaon, Silauti, Barakheri, Basgaon and Pálari in the Chhakháta parganah. Bhawánipati Pánde of Bairti distinguished himself in the persecutions under Kalyán Chand.¹

The Joshís, though hardly ranked as Brahmans in the plains, have attained in the hills by long prescription a claim to be considered Brahmans and intermarry with Pans, Pándes, Tiwráís and others. They are by occupation astrologers

Joshís.

and horoscope-makers, but large numbers

now chiefly affect government service or agriculture. The census of 1872 shows over 16,000 of them in the North-Western Provinces arranged amongst 'other castes' and some 4,000 under 'Brahmans,' so that their position in the plains is very ill-defined; they have several *gotras*,—Gárgya, Bháradváj, Upamanyn, Kásyapa, and Angiras. They belong to the Mádhyandiniya *sákha* and claim to be of the Kanaujiya division. Their practices are much like those of the clans with whom they intermarry. The Garggotri Joshís claim descent from Sudhanidhi, who was one of the Chautara Brahmans employed by Som Chand.² He is said to have been a Chaube (!) of Dundiakhera in Oudh. Their principal occupation ever since has been Government service and they accept neither gifts nor offerings of food on the occasion of ceremonies unless from relatives. They are now found in Jhijár, Shilakhola, Digoli, Kotwálgaon, Kallaun, and Oligaon. They assume to themselves the title of *diwadán*. The Angiras Joshís claim descent from a Pánde of Khor in Kanauj, who came to Kumaon on a pilgrimage to Badrináth and then obtained employment as an astrologer and the village of Seren in Katyúr, free of revenue. From thence his descendants spread over

¹ Gaz. XI, 584, 596.

² Gaz. XI. 506.

the district to Galli, Sarp, Chaura, Mála, Kapkot, Gankot, Khá-kholi, Haneti, Khari, Palyúra, Mahinári and to Masimoli in Garhwál. They continued for a long time to perform simple priestly functions, but in the troubles which arose on the accession of Trimal Chand¹ in 1626 A.D., they succeeded in obtaining a share of state offices and have never since failed to be represented in government service. Service and agriculture are the occupations of the division to the present day. They also call themselves *diwáns*. The Joshis of the Upamanyu *gotra* claim descent from a Misra of Diptiya. They say that some of his descendants became Pándes and those that devoted themselves to astrology became Joshis. Birbhadra of this division obtained employment from the Bisht usurpers in 1726, and was the first of them to attain to any notoriety,² but having once tasted the sweets of power they concerned themselves in nearly all the conspiracies of the last century and suffered severely at the hands of Sib Deo³ in 1760. They have also a strong predilection for government service and called themselves *diwáns*. They are also known as Danya or Dhunya Joshis from their principal village. The Joshis of the Bháradwáj *gotra* make their ancestor come from Jhúsi near Allahabad, who after marrying a daughter of Sivachand Tiwári settled down in Silagaon village, whence his descendants are called Silwáls. Those that live at Chíná-khán and Darhyál are named after those villages. The poorer members of the Gangoli Joshis still practise astrology, as indeed do all. There is no real evidence that they came from the plains ; but if they did, they are a remarkable example of a caste hardly considered as being on the outskirts even of Brahmans in the plains having attained to such a respectable position in the hills which they still maintain by the intelligence and energy of their representatives. For the last two centuries they have been the master movers in all intrigues and have monopolised to a great extent all the valuable government appointments and possess an influence second to none and which has to be carefully adjusted by the administration.

Tiwáris or Tripathis or Tripáthis, the Tyáris of Garhwál, all claim descent from Srí Chand, a Gujráthi Brahman who came to Champawat some four or five hundred years ago and emigrated thence to Khagmara

¹ *Ibid*, 559.² Gaz. XI. 583.³ *Ibid*, 593.

on the Almora hill,¹ where his decendants were found when the Chands removed to Almora in 1563 A.D. These Tiwáris belong to the Gautama *gotra*, Kauthami *sákha*, Tripravara *pravara*, and are called Agnihotri Brahmans. They marry with the Joshi, Pant, Pánde, Loháni, Bhatt, Kanyál, Upareti, Upádhyas and Thaplyál divisions, not of the same *gotra*. Their principal occupation is agriculture and they are also found as priests and teachers, and many enjoy considerable grants free of revenue, especially the family of Náráyan Tiwári, who saved the life of Báz Bahádur Chand when a child. They are chiefly Sáktas or Saivás and Vaishnavas, and some worship the one God and do not bow to idols. Certain clans such as the Bameta, Dhobyál, Pokhariya, Balutiya and other Nánsgotri Brahmans claim to belong to the Tiwáris, and though in some cases they intermarry, they are not generally acknowledged. Most of them are agriculturists and till their own lands or take service.

The Upádhyas are of the Bháradváj *gotra* and claim to be decendants of Sri Ballabh of Kanauj, from whom the Lohána sept is descended. They

Upádhyas. are of the Mádhyandiníya *sákha* and Tripravara *pravara* and intermarry with Tripáthis, Joshis, Pants, Pándes and Bhattas. They are orthodox in their religious observances. Several other subdivisions call themselves Upádhyas, such as the Brahmapuriya who live in Brahmapura; Myánuliyas of Myánuli; Jális of Jál village and Haribolas from the first ejaculation of the *jap* in the morning prayer.

Many stories are told of Sri Ballabh. One told me by Rudradatta Pant relates how Sri Ballabh lived on the Kalmattiya hill near Almora and could get no wood there from the people in charge of the Rája's stores, so he took out iron from the house and made a fire with it and the ashes remain and make the hill black; the fact being that there is a good deal of impure plumbago in the soil. Sri Ballabh was called in consequence of this 'Lohahomi' or 'iron-sacrificer,' now Loháni. He received Loháni, Satráli and Karurha in *jágrá*. The last village had no water, and his wife had to bring it up from a distance below. One day, being wearied, she placed the water-vessel on her head instead of carrying

¹ Gaz. XI, 534, 539, 567.

it in her hand and when she met her husband he said :—“ Now that you have put the water-vessel on your head its contents are of no use for my service.” His wife was annoyed at this and replied :—“ If that be the case you had better go and draw the water yourself.” The husband replied :—“ I will ask the idol, but be not surprised if you see the water coming.” He then pulled up some *kusa* grass and called on his deity, when the water at once came. The woman could not restrain herself and called out ‘ *hai, hai,*’ so that nine-tenths of the supply intended disappeared, but the rest remains in Sri Ballabh’s *dhara* at Karurba. His descendants are also found in Kánde and are called Kándyáls, and in Thapla, Jhárkot, Kotagaon, Bheta and Khárlhi. Many of them call themselves Pándes, other than the Pándes of Pándekhola already noticed. The Lohánis like the others now chiefly occupy themselves with agriculture, service and priestly functions and are for the most part, like the other hill Brahmans, Sáktas.

The Páthaks belong to the Bháradváj, Sándilya and Kásyapa
 Páthaks. *gotras*; Mádhyandiniya *sákha* and Tripravara and Panchpravara *pravaras*. The Kásyapa branch declare that their ancestor, Kamalakár, came from Senaranpáli in Oudh and took service with the Mankoti Rájás of Gangoli.¹ The Sándilya branch call their ancestor Janárdhan, who came from Thanesar and obtained a village in *jágr* still held by them. The Páthaks marry with Pánts, Pándes, Joshis, Tiwáris and Bhattas, and are now chiefly *baidas*, traders, servants or cultivators. The Pályáls call themselves a branch named after Páli vil-
 Dugáls. lage. The Dugál or Durgpál Brahmans are of the Bháradváj *gotra* and Mádhyandiniya *sákha*. They say that they came from Kanauj in the time of the Katyúris and have marriage connections with Bishts, Lohánis, Pátanis, Tripáthis and others. They worship the orthodox deities, they eat animal food and follow the occupations of cultivators, service, reciting the Vedas and Puránas, and in former times were inoculators and now vaccinators. The Mathpáls or Marhwáls are of the same *sákha* and *gotra* as the preceding and of the Tripravara *pravara*. They say that two Bhattas, Madhu and Syáma, came on a pilgrimage to Badrináth from the Dakhin They were

¹ Gaz. XI., 540.

so skilled in the mysteries of astrology as to be able to describe in a horoscope the features and sex of the unborn child of the Rája and tell all its future. When the child was born all the marks predicted were found on it, and the Rája gave the brothers the village of Ghusila in *jágr*. Some of their decendants became Joshis and others became Bhattas and settled in other villages. Badrináth at Dwára Hát was served by Budhini Brahmans, who, neglecting their duties, were expelled by Trimal Chand,¹ who also placed these Bhattas in charge of the temple, and they enjoy the endowments to the present day. From being in charge of a *math* they are called Mathwáls. They marry with Harbola, Brahmapuriya, Paneura, Pályál, Pujári, Kashmíri and Dugál Brahmans and represent the better class of Khasiya Brahmans. They practice astrology, and physic, and also take to service and husbandry. Many do not worship idols and the majority are Vaishnavas.

Bhattas belong to the Bháradváj, Upamanya, Visvámitra, and Kásyapa *gotras*, the Mádhyandiníya *sákha* Bhattas. and Tripravara *pravara*. Some follow the Rig and others the Yajur-Veda. They say that they were formerly called Bhatta-Achárya and came here in the time of Abhaya Chand²; others say that they came from the Drávira country in Bhíshma³ Chand's reign, and others again that many generations ago two brothers, Sri and Har, came to Kumaon and entered a Rája's service and from that time were named after the villages they occupied :— Bharua, Kaphuli, Dhankota, Dálakoti and Mathpál. These septs, though belonging to the same *gotra*, intermarry, but the better off take wives from PANTS, Pándes and Joshis and the lower classes from Nánagotri Brahmans. They represent the Mahábrahman of the plains in funeral ceremonies and take the food and offerings up to the eleventh day.⁴ Also at an eclipse when people bathe and make presents, the Bhattas receive them, also when the asterisms and planets are worshipped and the gift of a pony, buffalo or goat is made. Other Brahmans do not receive gifts of animals unless they be cows. They receive gifts of coin called *dakshina* on occasions of domestic ceremonies, such as marriage, naming a child,⁵ investiture with the sacred thread, &c. They are also cultivators and make and sell sweetmeats, and the

¹ Gas XI. 560.² *Ibid*, 501.³ *Ibid*, 539.⁴ *Ibid*, 917.⁵ *Ibid*, 693.

latter is their principal occupation near towns. The Pujáris or temple-priests are for the most part Khasiyas or the offspring of *soi-disant* celibates of any religious fraternity. Any Brahmans may adopt the profession, although it is apparently despised as much as it was in the days of the *Mánavas*. The Pujáris are in fact of the lowest class and include both Brahmans and Kshatriyas. To the latter belong the Ráwats so numerous in Garhwál and the Tapasis. Some can give no account of their lineage, knowing only that their reputed fathers have been from time immemorial temple-priests. Others ascribe their origin to Pandas or temple-priests of Kámáksha Devi in Kangra and others call themselves Bhattas, Pándes and Tiwáris. The Brahman Pujáris intermarry with the same class and the Rájput Pujáris with Rájputs. A Pujári is not too proud when necessity arises to plough or enter service, but he, as a rule, lives on the offerings made at temples and on the proceeds of the glebes attached to such buildings. He almost invariably bears a bad character. The Pan-

Pandas of Jágeswar. das or temple-priests of Jágeswar are called Barúas or Baróras. They say that they were Bhattas of Benares who came here in the reign of Rája Udyán Chand,¹ but the more common and accepted statement is that they are the descendants of a Dakhini Bhatt who came with the Jáugamas placed here by Sankara Achárya.² This Bhatt married the daughter of a Khasiya Brahman, and their offspring were called Bátuks, and hence Baróras or Barúas. They marry with Amolas, Dingrias, Cháhális, Chagethas, Pályáls, and Bughánas. They cultivate the temple lands and also engage in agriculture on their own account. Only 77 were recorded under this name in the census of 1872.

The lists give some 250 septs of Khasiya Brahmans, of whom the majority are cultivators and plough themselves. They worship sometimes Siva and Vishnu, but chiefly Bhairava, the more common forms of the Sáktis and the village deities. It would be useless to give a list of their names, which are chiefly derived from the villages in which they live. Some claim common origin with plains Brahmans: thus the Sháranis, Doháls, Gahtyáris, Kanyánis, and Garwáls, say

¹ Gaz. XI., 627.

² *Ibid*, 780.

that they were originally Tiwáris ; the Múuwális that they were Chaubes ; the Papanois that they were Upretis of Doti ; the Chauráls that they were Chaubes of Muttra who settled in Mánili in Káli Kumaon and took the title Pánde, and their present name on emigrating to Chauni ; the Kuttháris call themselves Pants ; the Ghushuris, Daurbas, Shanwáls, and Dhunilas call themselves Pándes ; the Laimdáris, Chavanráls, Phuloriyas, Oliyas, Naniyáls, Chaudasis, Dálakotis, Burhalakotis, Dhuláris, Dhurátis, Pancho-lis, Baneriyas, Garmolas, Walauniyas, and Birariyas allege that they are Joshis : the Banáris and Nainwals that they were Phulári Brahmans ; the Kaphulis, Dhankholas, and Bhagwáls that they were Bhattas of Benares ; the Muráris that they were Bhattas of Doti ; the Jális, Nakhyáls, Thapaliyas and Haribols that they were Upádhyas ; the Bhanotiyas that they were Gauris, the Mashyáls that they were Kanaujiyas ; the Pátasis that they were Páthaks ; and the Baraniyas that they came from Benares and were astrologers to the Rája. Septs named after villages and who do not attempt to give any account of their origin are the Kholiyas, Kunwáls, Lwesháls, Kaphariyas, Bithariyas, Mehalkbánias, Nainoliyas, Melis, Taráriyas, Hátwáls, Pokhariyas, Chhatguliyas, besides some one hundred and fifty others. They do not know either *sákha* or *pravara* and often have little knowledge even of their *gotra*. The Kanseris worship Siva as Bibhándesewar, a name for which there are few temples. Akariyas derive their name from the fact that they were free from taxation ('*a*' privative and '*kar*,' a tax). Balarias belong to Purnagiri in Káli Kumaon. Ghughutyáls are Rájputs of Ryúni degraded from Brahmans on account of an offence committed by their ancestor. Rasyárs say they are so called because they were Brahman cooks (*rasoya*) to Rájás. The Namgis supply *purohitis* to the Bhotiyas of Jubár. The Phuláras supplied flowers for worship at the Nanda devi temple. The Gairbhanariyas perform funeral ceremonies for people who die without heirs. Panerus are suppliers of drinking water. The Dohháls of Doba village are also called Jagariyas or exorcists and are authorities on the possession by devils and are called in on such occasions. The Oliyas, on the other hand, avert the evil effects of hail-storms and in Kuár wander about from village to village begging their dues, a *mána* of rice. The Chilakutis act as priests

of the village god Sain in Chaugarkha. If we turn to the census list of 1872, the last one in which the septs of Brahmans are enumerated, we find out of 108,283 that 44,122 could not give any distinguishing name, and of the remainder some 50,000 must belong to the Khasiya class, and although the caste statistics in detail are still very unsatisfactory, we must accept these figures as near the truth; that is, that nearly ninety per cent. of the Brahmans in Kumaon belong to the Khasiya race and are so classed by the people themselves. A few of the better class and better educated worship the orthodox deities alone, but the great mass serve the Bhairavas, Bhúts and Bhútinis and are to all intents and purposes as much priests of non-Brahmanical deities as their representatives further east who know not the name of Brahman. They are a simple race and not to be confounded with the hill *pujári* or temple-priest or the Náth, but at times of rejoicing assume the functions of religious directors in the very simple ceremonies deemed necessary. The Khasiyas never tried to connect themselves with the plains until of late years, when they see that such connection adds to their personal dignity, and they now prefer to be thought 'Normans' or 'Saxons' rather than 'Britons.'

The religious fraternities represented in the hills are numerous, but the whole may be arranged under six classes: the Gosháins, Jogis, Bairágis, Udásis, Sádhs and others. The Gosháins¹ have already been noticed: 3,860 were recorded under this name in 1872 and 2,940 in 1881 in Kumaon and 2,050 in the Taráí. The Jogis of the Kánphata class have also been noticed² and the Jángamas from the south.³ The Udásis are Sikhs connected with the Dehra Dún establishment or the similar one in Srinagar. The Sádhs are Hindu secretaries of the same character as the priests of the lower classes of Chamáras and others of a plains origin. They profess certain purificatory observances taught by one Birbhán some two centuries ago and are common in the upper Duáb. They do not smoke and affect great personal cleanliness and eat together frequently in a semi-religious love-feast. The Pírs are Musalmán Jogis of a semi-Hindu origin and are noticed here in connection with the Musalmán Meos of the Bhábar frontier. Kálu Shahíd is named

¹ Gaz. XI., 862, and article 'GABHWÁL.'

² *Ibid*, 865.

³ *Ibid*, 86a.

after one of them. The Jogis called Binakánphatas in the lists are also called Augars and are often found as cultivators. The Sanyásis are Saiva ascetics akin to the Gosháins and include many miscellaneous sectaries of a Saiva tendency. They may be considered as the equivalent of the Bairágis, who are Vaishnavas and an important class in these hills, serving as they do in most of the Vaishnava temples. Their rules for investiture are very similar to those of the Gosháins, and like them they have several sub-divisions, such as the Rámanandi, Rádhaballabhi, Nimanandi and Rámanúja : 233 were recorded in 1872. A stray specimen of the thoroughly human brute known as Aghori is occasionally seen feeding on filth and human carrion, drinking spirits from a skull and little removed from the jackal or hyena which he leads about. The census of 1872 record 1,726 Jogis, chiefly belonging to the Kánphata and Binakánphata sections, and the Náths who, perform domestic priestly service for many classes of Khasiyas and tend the Bhairava temples. They follow the doctrines of Gorakhnáth and his preceptor¹ Machohhendranáth, whose shrines at Gorakhpur are visited by their followers from all parts of India. One or more in each Náth household usually pierce the ear and become Kánphatas. Gosháins, Jángamás, Bairágis and Náths sometimes marry and become cultivators, retaining the religious name as a caste name. The Náths have eighteen sub-divisions :—Dharmnáth, Satyanáth, Vairágnáth, Kafáni, Daryáonáth, Mustnáth, Ráwal, Gudar, Khantár, Rámnáth, Aipanthi, Niranjani, Kankái, Bhúshái, Mándiya, Mannáthi, Páopanthi and Muskini.

The Rájputs of Kumaon were returned at 181,633 in 1872 and at 216,247 souls in 1881. In the former

Rájputs.

census alone, are the septs enumerated,

and those having more than one thousand were Bhotiyas, 5,738; Chandrabansis, 1,380; Khasiyas, 124,383; Kinwára, 21,922; Káthis, 4,816; Mánuráls, 2,875; Negis, 1,230; Tamotas, 2,387; and unspecified, 7,563. Here, as in Garhwál, more than ninety per cent. of the Rájputs are Khasiyas and belong to that race as distinguished from the immigrants from the plains. Amongst those who claim descent from immigrants from the plains are (a) the descendants of the Surajbansi Katyúris, represented by the Rájbars of

¹ Gaz. V., 371; XI., 508.

Askot and Jaspur, the Mánuráls and others, and (b) the Chandrabansi descendants of the Chands, represented by the Rátelas scattered all over the district.

The Mánuráls¹ of Sult in Páli are so called after the village of Mánil, to which the Katyúris retired on the approach of Kírati Chand. This branch is descended from the Lakhanpur Katyúri family, and to it belong the Rájbars of Jaspur in Chaukot; the Sain, Mánúr and Chachroti Mánuráls, those of Udepur, Bhalatgaon and Hát in Chaukot; those of Kuhergaon and those of Támádhann. All these were reduced to the ordinary condition of cultivators by Báz Bahádur Chand. The Mánuráls belong to the Shaunkásyapa *gotra* and Panchpravara *pravara*. They intermarry with the better class of Khasiya Rájputs and are landholders or cultivators, but some are poor enough to take to daily labour for a living. The better classes are much respected and held for a long time the chief offices of *saydnas* in Páli. The pedigree of the Askot Rájbars has been given elsewhere.² The present representative, Pushkar Pál, is an Honorary Magistrate and has power to try certain cases. The Rájbars or Rájwárs of Chaukot take service as

Rájwárs.

Katyúris. The women of Rájwárs are called Bahúránis and of the Mánuráls are known as Rájáins. Neither Rájwárs nor Mánuráls will, as a rule, eat food cooked by their women, but an exception is made in regard to the following articles:—*pálak* or spinach (*Portulaca oleracea*); *sem*, bean (*Canavalia ensiformis*); *baigan*, egg-plant (*Solanum esculentum*); cucumbers; *ghuiya*, (*Colocasia antiquorum*), and a few other vegetables. They will not touch any vegetables mixed with curds and cooked by their women; at least such is the custom of the better classes. Women eat, but men abstain from *manduwa* (*Eleusine corocana*), and neither men nor women will touch onions, garlic, yams, radishes, flesh of the wild pig, or of sheep. The Rájwárs worship their ancestors, the Katyúri Rájás and the commoner Sákris. They intermarry with Rátelas, Bishts, Sahun and Báryas: and the poorer with ordinary Khasiyas.

The Rátelas are the descendants of the junior members of the Chand family, whether legitimate or illegitimate, and as each successive Chand largely

Rátelas.

¹ Gaz. XI., 496, 535, 560.

² *Ibid*, 531.

increased the supply, it became necessary to give them employment or means of subsistence at a distance from Chaupawat and Almora. Accordingly we find them planted all over the district. The principal villages still occupied by the descendants of the Chands are Jamrari and Raotelakot in Dhyánirau, from the first of which came Sib Singh, the last attempt at a Native Rája.¹ This village and Parewa in Kota are esteemed the principal of all the Raotela villages, and with Jibi and Salmora in Shor have marriage connections with the Vaisya Rájas of Doti in Nepál. The others all intermarry with the Khasiyas and Baniyas of the hills. In Bárahmandal there are Batgal, Sula, Rainjul, Kayali, Pithoni, Chháua, Chhabisa, Ubhyári and Khári. In Chaugarkha, Bilori, Mutela and Chhauna, all occupied by Raotelas. In Páli we have Tipula, Surra, Mahonir, Mási, Sábali, Phulsor, and Sirkot; in Mahryári, Bachkande; and in Dhaniyakot, Simalkha, &c. These villages were given as fiefs to dispose of the superfluous members of the Chand families, and now, owing to the increase in numbers and intermarriages, little but the name remains. Some go in for service as soldiers, others as cultivators. They belong to the Kásyapa *gotra*, Mádhyandiníya *sákha* and Tripravara *pravara*, and are chiefly Sáktas. The men will not eat cooked rice or *mandua* from the hands of their females. Kharkus are sprung from Raotela Gosáins as the junior members of the Katyúri house were called, and have also had some influence in former times. One of them, Sukhrám,² held power in the early part of the seventeenth century in the time of Bijaya Chand.

The Bishts belong to the Kásyapa, Bháradváj and Upamanya *gotras* and the Mádhyandiníya *sákha* and Tripravara and Panchpravara *pravara*. The name is more correctly 'Vasisht,' meaning 'excellent,' 'respectable,' and its origin is a title rather than a caste name, though now to all intents a caste name. Ráwat, Rána and Negi have a similar meaning. Following modern custom they claim descent from a band of immigrants from Chitor, and the Upamanya *gotra* state that they came to Sábali in Garhwál from Ujjain and thence to Kumaon. They marry with Mánurál and Kálakoti Katyúris, Negis, Raotelas, Lútwáls, Kharkus, and Maharas, only avoiding

¹ Gaz XI, 542, 553, 606.² *Ibid*, 605.³ *Ibid*, 558.

the same *gotra*, and are now found in the following sub-divisions:—Bora, Son, Darmuál, Gaira, Bisariya, Kharku, Káthi, Khandi, Ulsi, Bhilaula, Chilwál, Dahila, Bhainsra, Ohamyál, Báni, Dhaniya and Bágdwál. The Bishts have played an important part in Kumaon history. They were civil officers of Som Chand at Champawat¹ and again with Rudra Chand.² The Garhwál Bishts were brought in by Báz Bahádur,³ and we find them again with Debi Chand.⁴ The Adhikáris are a sub-division of the Bishts of the Bháradváj *gotra*, and marry into the same septs and like them are principally cultivators, though some take service as soldiers. The principal occupation of all, however, is agriculture. The Adhikáris make Káli of Purnagiri their household deity. The following clans attach themselves to the Adhikáris:—Ryūniya, Neniya, Múliya and Maut.

The Boras of Borarau and the Kairas of Kairarau are by some held to be subdivisions of the Bishts. They belong to the same *gotra* and *sákha* as the Bishts, and state that their ancestor Dánukumer or Kumbhakaran lived at Kotalgarh in Káli Kumaon and joined Kíratí Chand in his invasion of the Katyúri territories at the end of the fifteenth century and secured large estates in *jágr*,⁵ enlarging the frontier from Devi Dhúra to the sources of the Kosi. They are still found in Dhyánirau and Káli Kumaon. Their customs are much the same as those of other Khasiya Rájputs, and they worship the Sákti of Siva and the village deities, Haru, Bhairava, Bhumiya, &c. They are cultivators and go in for service as soldiers occasionally. Around Almora they manufacture the hemp bags known as *kuthela* and make mill-stones and other utensils. But those Boras who pursue these handicrafts are despised by their land-holding fellow-tribesmen and are sometimes indeed not allowed to eat with the latter. Like all Khasiyas, they have stories regarding their origin not worth relating; and regarding their name, they explain that an ancestor, Hamíra, lent money to the Rája and in return received the title Bohara, or money-lender. They in fact may have originally represented the money-lenders of the hills, but now-a-days they are

¹ Gaz. XI. 508.² *Ibid*, 550.³ *Ibid*, 568.⁴ *Ibid*, 581-4.⁵ *Ibid*, 535.

essentially agriculturists and very successful ones too, and are found all over the hills as far as the Kangra valley.

The Ránas also belong to the same *gotra* and *sákha* as the Bishts and have a similar honorific appellation. They derive their origin from Chitor, and say that they were brought here by a Mathpál of Dwára Hát in the reign of Báz Bahádur Chand,¹ in the seventeenth century. They chiefly worship one god or are Sáktas and intermarry with Sahus, Chaudhris and Bishts not of the same *gotra*. They follow agriculture or service. The Míralas, Raunas

Máhras.

and Bijipuríyas claim to be offshoots of the

Ránas: The Máhras or Múras or Maharas

belong to the Bháradváj and Kásyapa *gotras* and the same *sákha* as the Bishts. Those of the Bháradváj *gotra* claim descent from some Mainpuri Chauháns who settled in Sirmoli in parganah Káli Kumaon. Those of the Kásyapa *gotra* call themselves Panwárs from Jhúsi, opposite to Allahabad, who came with Som Chand, who gave them the name Mára from their battle-cry 'maro!' 'maro!' The first of the former branch who came to the hills had two sons; the descendants of one were called Máhras and of the other Phartiyáls, and from the earliest times of which we have notice these became the heads of factions (*dharras*) who have wrought much evil to Kumaon.² They are Sáktas, but most of them worship the village deities too. Their occupations are principally cultivators, cattle-herds and soldiers. The better classes marry with Ránas, Rájbárs, Bishts and Tarágis, and the poorer with any Khasiya Rájputs.

Negis.

Negis belong to the Kásyapa, Bháradváj, Gautam and Sándilya *gotras*, the Mádhyan-

diniya *sákha* and are of the three-invocation *pravara*. They say that they came from Dáranagar; others that they are Chauháns of Mewár. The names of their subdivisions are given in the article on Garhwál and need not be repeated here; they show a very miscellaneous origin with Musalmán names like Fateh Bahádur and Salárya, and western names like Dogra and Nugarkotiya. The word 'neg' means 'perquisite' or due, and 'Negi,' a person entitled to such by virtue of service, civil or military. The Negis³ are those Khasiyas of Garhwál and Kumaon who took to military

¹ Gas. XI. 561-9. ² See notices in Gas. XI. 507-8, 519, 530, 559, 583, 591-4, 611, 647, 657. ³ *Ibid.* 555.

service, whether under Musalmán rulers in the plains (hence the subdivisions with Musalmán names) or under Hindu Rájas, and gradually, owing to the vicissitudes of such a life, they separated into a caste, but are all none the less Khasiyas pure and simple. In 1872, they numbered 15,880 in Garhwál, 1,230 in Kumaon, and 147 in Dehra Dún. In Kumaon, the Nagarkotiyas say that they came from the Kangra valley; the Dogras here call themselves Jammuwáls from Jammu and the Puraniyas say that they came from Puranpur; other subdivisions in Kumaon are the Haruwáls, Kanhoniyas, Jutaniyas, Marhariyas, Tilaras, Shutárs, Chaunas and Dánis. They now chiefly take to cultivation; some go into service and some into trade, whilst others devote themselves to the breeding and tending of cattle. The Dáninegis are pimps, and say that this honorable office was conferred on them by one of the former Rájas. The Negis intermarry with every *gotra* of Khasiya Rájputs except their own. The Haruwáls, who are descended from a dancing-girl attached to the shrine of Nanda devi, and the Dánis are, however, considered below the salt, and, as a rule, intermarry with only the lowest class of Rájputs and Náyaks, Sauns, Gaurs and others, who have only three threads in their *janso*.

The Padyárs of Chaugarkha belong to the Bháradváj *gotra*,
Dhanushi *sákha* and Tripravara *pravara*.

Padyárs.

They call themselves Mallas from Doti, and were known under that name in Garhwál and in Kumaon as Bishts until they settled in Padyárkot in Chaugarkha, whence their present name. Elsewhere in Kumaon they are called Bishts. They were always a tribe addicted to war and their name crops up occasionally in the history of Kumaon and Garhwál.¹ Their principal occupation is now cultivation, but they will not plough themselves, and some take service and act as peons.

There are a few who call themselves Panwárs or Pramrabanis and belong to the Saunaka, Kásyapa,

Panwárs.

Bhauma and Bháradváj *gotras*, the Mádh-yandiniya *sákha* and Panchpravara *pravara*. They state that their ancestor, Narendra Singh, came from Ujjain in Katyúri times and entered a Rája's service: others ascribe their origin to Dáranagar,

¹ Gaz. XI. 496, 591, 554.

and their first master was Baitál Deva Katyúri and since then their descendants have founded villages and taken their names therefrom. Thus the Shálanis, Shuranis, Airáras, Basheris and Mers are all Panwárs. They are Sáktas and on festal occasions make a point of paying reverence to their weapons. Every third year there is a great service in honor of Sákti, the expenses of which are defrayed by a subscription amongst the brethren. On this occasion the *ashbali*, or offering of eight kinds of animals, is made. The Panwárs live principally by cultivation and service. Their better classes intermarry with Rájwárs, Mánuráls, Bishts and Adhikáris, and their poorer classes with Negis, Bhojaks, Tirwas and Bajetas. Tákulis are a sept who claim connection with the Ráwats of Garh-

Tákulis. wál (*q.v.*) They belong to the Bháradwáj *gotra*, but know neither *sákha* nor *pravara*.

They say that their ancestor, an officer of Rája Puran Chand,¹ was sent to collect revenue in Dánpur, and was so successful that he received a village in *jágr* on the sole condition of supplying snow and ice to the Rája's kitchen. It was, however, not till several hundred years after Puran Chand's time that the Chand Rájas approached Dánpur, so that this story is a myth. Some Tákulis wear the *janeo*, others do not; but it is usually considered respectable to wear it in public. The chief of the clan is called Búrha, and the occupation of its members is husbandry, service, tending cattle and the like. Their women weave blankets or work in the fields. They intermarry with the lower classes of Khasiya Rájputs, to whom they themselves belong, and worship the Nirriti Sáktis and the village deities Haru, Chhurmál, Kálchand, Látu, &c.

The Kairas or Kairhas of the Krishnásan *gotra* are like the Boras and call themselves Chauháns like the Máhras
Kairas. and Mers. They give their name to Kairá-
rau, which they colonised at the same time that the Boras took possession of Borárau.² They are also found in Káli Kumaon and Dhyánirau. It would profit little to record the different stories of their origin, which are clearly recently invented for villages acknowledging an origin from a common ancestor, Jítráj, to whom they ascribe a residence as far apart as Mainpuri is from Mewar.

¹ Gaz. XI. 509.

² Gaz XI. 535.

There is no reason for considering the Kairas as different from other Khasiya Rájputs. Still a curious tradition exists that the Chauháns and others fought with and put down the Buddhists, and that it was the descendants of the purohiths of these anti-Buddhist tribes who preached the efficacy of pilgrimages to Badrináth and Kedárnáth. The Bhandáris or Bhanáris also claim, with the same justice, to be Chauháns. They state that their ancestor was attached to Som Chand's establishment in Káli Kumaon as house-steward and hence the name. They first settled at Bájirakot near Champáwat and on the migration to Almora received a plot of land close by, on which they located the village of Bhandárgaon and also the well called Bhandári-naula. Another story is that they came from Nepál, where also this caste name is known, and this is the more probable, as in early times Káli Kumaon belonged to Doti. The Bhandáris of Nepál claim to have come from the Konkan. The Kumaon Bhandáris intermarry with all kinds of Rájputs. They worship Siva the Sáktis, Saim, Haru, Goril, Kalsain, Nágimal, Chburmal, &c., and believe in their power to possess men and even animals. Agriculture and in a few cases service are the occupations of the Bhandáris of the present day. The Katháyats also claim to be Chauháns of the Kásyapa gotra. Bhíma Katháyat was a celebrated minister under the Katyúris, and his sprite is worshipped with them¹ and Nalu Katháyat was equally known for his services to Gyán Chand,² and a descendant of his became chamberlain to Trimal Chand,³ so that the clan has been of some consideration. The Tyári Rájputs claim to be descended from a Tiwári Brahman and a Rájputni. They wear three threads in their *janeo* and intermarry with Rájputs of other than their own *gotra*, the Gautam. They are chiefly found in Phaldakot. The Kharáyats are an old and warlike clan in Káli Kumaon who composed part of the Chand force in the conquest of Phaldakot and received part of the conquered territory in reward.⁴ Phaldakot was then held by a tribe of Surajbansi Rájputs called Káthis,⁵ whilst a Chandrabansi clan held Mánkot in Gangoli for several generations and their Rátela descendants are still there.⁶

¹ Gaz. XI. 831.² *Ibid*, 522.³ *Ibid*, 560.⁴ *Ibid*, 537,⁵ *Ibid*, 496, 537.⁶ *Ibid*, 497, 540.

There are some two hundred and eighty septs of Rájputs in my lists, but the great mass of these are simply Khasiyas, called after the villages inhabited by them or from some fanciful cause akin to the "canting mottoes" of our heraldry put forward as explanations of family names. They call themselves Rájputs of the Bháradváj *gotra*, but really know nothing of the meaning of the word 'gotra,' or of the intricate rules which govern the relations of one *gotra* to another. Some wear the *janeo* of three threads, others of six threads, and others do not put it on at all.¹ Their occupations are primarily agriculture and service and sometimes trade and coolylabour. Some keep cattle and sell milk and *ghi*. They form marriages with all Rájputs except those of their own village. They worship Siva and his Sáktis and all the village gods. They eat cooked rice only from their own caste or that of their purohit, and when necessary prepare unleavened cakes for a week's consumption at a time and consider them purified and fit for consumption when touched with a little *ghi*. They are a simple, frugal, hard-working race, troubling themselves very little about anything outside their own village, and ready always to join a feast in honour of some of the sylvan deities. Many of the septs claim some special origin. Thus the Mers say that their ancestors made leaf-platters for the Rájás. and hence their name: the Beriayas used to make baskets; the Bhojaks say that they came from Kangra; the Ponjis were potters; Sháukas are goat-butchers; Mahuts were elephant-riders; Sauns, amongst whom are members who wear the two kinds of *janeo*, and others who wear none at all, and are out of caste as regards their brethren; Báriyas are gardeners; Páiks are wrestlers; the Jainoliyas and Pilkholiyas claim to be Máhras; the Dármwáls provided pomegranates (*dárim*) for the Rájá; the Muchhayas were fishermen to the Rájá; the Chaláls were decorators; Thathwáls were jesters; Rájkolis were weavers; Batanniyas sifted the flour for the Rájá's kitchen; Tatwánis prepared warm water;

¹ The etiquette of the sacred thread has considerable influence in questions of eating and drinking. To the Sudras, or those outside the pale of Aryan practices, the thread was not given, and if a Kshatriya took to the non-Aryan custom of making the widow of an elder brother his wife, his thread was reduced from six strands to three strands. Brahmans ordinarily have nine strands to their thread, Rájputs and Vaisyas, six. All the three castes may drink water brought or touched by a caste wearing a thread of three strands, but not by such as the Bhotiyas, Doms, Lúls, Rájis, and the like who wear none.

Dyokas, descendants of temple prostitutes, and Tapasis, descendants of professional ascetics (!) and hill women. The Sammáls call themselves Ránas from Nepál, Nauniyas claim to be Bishts and the Ghugutiyas claim to be Chauháns. The Chauriyas, Kála-jhundiya and Harkotiyas are Bhotiyas admitted to Rájput honors: the Binsariyas are from Binsar, where Siva Bineswar is worshipped. Then there are a large number of local clans of the Dúnavas of Dánpur, such as Malita, Oranga, Jyána, &c. Some of the jingling derivations are singular: thus the Bhatrolas are as ugly as the bird of the same name: the ancestor of the Kálas was so called because he was as stupid as a 'deaf man'; the Dosádhs because they lived on the borders of Kumaon and Garhwál; Chakánas because their ancestor was a quarrelsome person, and others of a similar import. Many septs are named from the villages inhabited by them, thus the Shutárs from Shutargaon; Neriya from Neri; Shuránis from Shuruna; Chaumwáls from Chaumu, near Almora; Daphautis from Daphauta in Gangoli; Garholias, immigrants from Garhwál; Jákhwáls from Jákh, Banolas from Banaulikot, &c.

Amongst the Baniya class, the Agarwáls from the plains have some importance in Kumaon, and although
 Agarwáls. some account of them has been given elsewhere,¹ it will be interesting to record that told by an intelligent member of the community at Naini Tál. They claim descent from Rája Agrasena of Agroha in the Sirsa district of the Panjáb, who had eighteen sons, for seventeen of whom he provided wives from the daughters of the Nága Rája Vásuki and gave in addition to each a female slave: hence Bísas, offspring of the Rája's daughters, and Dásas, offspring of the slave-girls. There is an additional or half *gotra* for those who married by mistake into the wrong *gotra* and known as the Gaín *gotra*. The seventeen lawful *gotras* of the Bísas are named after the sons thus:—Sihal, Mangal, Mítal, Táyal, Garak, Goyam, Kachchhal, Bindal, Dhálan, Jítal, Jangal, Kausal, Baisal, Nágal, Indal, Airan and Madhkal. The offspring of other than the Bísas and Dásas are called Dása-Gurákha. The Agarwáls claim to have been Rájputs, but failing to oppose Shiháb-ud-dín Ghorí when he destroyed Agroha, they took to trade. They neither eat fish nor flesh nor do they drink spirits, and have many

¹ Gaz. 11, 295.

strict ceremonial observances. Marriage in one's own *gotra* is prohibited. Some Bisas refuse to eat or smoke with Dásas and Gurákhas, but sometimes receive a cocoanut *hukka*, but not a brass one. Some wear the sacred thread always, others only on festal occasions, and at other times shut it up in a box. A few are Saivas, but the majority are Vaishnávas or Jainas, and many worship the 'unseen god', 'Parameswar nirakár,' and do not bow to idols, considering that the 'Supreme essence, omnipotent and omniscient,' requires no temple made with hands, nor do they believe in the efficacy of pilgrimages. Most, however, reverence Kurukshetra and the Ganges. The eighteenth son of Ugrasena became a Brahman and his descendants eat with the others. They address a Brahman with the words '*Pranám*' or '*Pailagan*;' Kshatriyas with '*Rám, Rám*,' '*Jaiopál*' and '*Jai Jogadish*;' and others with '*Salán*,' '*Bandagi*.'

The Saraugis or Jainas, who are frequently spoken of as a caste,

Saraugis. are named after the religion professed by them.¹ Their temples are separate and contain

naked images of their Tirthankaras. Their great teacher was Párasnáth, and they hold within their pale people of very different origin. They are very scrupulous in their ceremonial observances with a view to avoid doing injury to the slightest living organism: some called Bháures go so far as to wear a bandage over their mouths lest anything should enter by accident. The bride passes the night before marriage in the temple of Párasnáth. As a rule, few of the ceremonies enjoined by orthodox Hindu custom are observed. The Sahus of Dora belong to the Bháradváj, Vasishtha

Sahus. and Kásyapa *gotras* and Mádhyandiníya *sá-kha* and Panchpravara *pravara*. They are

further divided into Thulgarhiya, Gangola, Jákháti, Kálibhuturiya and Kumáya. These all eat and drink together indiscriminately, but do not intermarry in the same *gotra*. One of the Sahus was in former times appointed Chaudhri of the Almora bazár with the duties of a *Chakráyat* or superintendent, and managed to keep the office hereditary in his family for some generations, so that his descendants still call themselves Chaudhris. The Sahus profess to be Rájputs, but they are neither Rájputs nor Vaisyas, but one of those outside castes difficult to place correctly. In Kumaon, they claim

¹ Gaz. III., 497.

descent from the Agarwáls already noticed and intermarry with Gosháins, Ráotelas, Itájbars, Chaudhris, Mánuráls and Miráls. They first came into notice when employed by Rudra Chaud in the latter half of the sixteenth century.¹ They now occupy themselves with trade and service. The Chaudhris of Dwára Hát

Chaudhris.

ascribe their origin to Kangra, and they still worship the Kot-Kangra Devi of Jwá-lamukhi. They belong to the very miscellaneous *gotra* called Vatsa-Bhargava, to which all stray clans belong. The name 'Chaudhri' is given by courtesy as in the plains to the heads of particular occupations amongst the Baniyas. They intermarry with the same castes as the Sahus, whom they replaced in the civil administration, and are still kanúngos in parts of Kumaon. The

Khatris.

Khatris of Kumaon come from the plains, and are of little importance either as to numbers or influence. They belong to the Vatsa-Bhargava *gotra*, and are divided into two great classes, the eastern and western. The latter are further subdivided into Khauna, Mehra and Kapúr, with the affix Kausal, Seth, &c. They marry members of the same division outside their own subdivision. They have no prejudices as to food, and follow the occupation of cloth-sellers, brokers, money-changers, and occasionally service and agriculture. They assume the sacred thread before twelve years of age and generally follow Hindu customs. They claim to be descendants of a Kshatriya clan who were destroyed by Párasuráma.² Another of the doubtful castes is the Káyath. These perhaps go further than any

Káyaths.

others in their attempts at establishing some respectable origin for themselves, for they claim descent from Chitrágupta, the 'head-clerk' or 'recording-angel' of Bhagwán the Creator himself. They are of the Kásyapa *gotra* and have twelve sub-divisions:³—Sribástah, Máthura, Bhatnagar, Saksena, Súryadhvaj, Anvashta, Ganra, Karna, Válmiki, Aithána, Nigam and Kulasreshta. Chitrágupta had two wives, the first a Surajbansi, from whom came the Máthura, Saksena, Karna and Bhatnagar subdivisions, and the second a daughter of a religious person. All these are further divided into *als*, the members of which cannot marry into their own *al* or out of their

¹ Gaz. XI., 650.

² *Ibid.*, IV., 282.

³ *Ibid.*, 281.

own subdivision. Here they intermarry with Nánagotri or Khasiya Rájputs. They adopt the same customs and ceremonies as the hill Brahmans and Rájputs and wear a *janeso* of six threads. Some are Saivas and some are Vaishnavas. The latter avoid fish, flesh and spirits, but the former assimilate all three with pleasure. They eat together, it only being necessary that those who adopt the less scrupulous diet should eat at a little distance from their more ascetic brethren. They affect clerkly service above all things, but of late years, owing to the spread of education and the increase of their numbers, many have had to take to cultivation. There can be little doubt that their pretensions to an origin other than outside the pale of the Brahmanical and Rájput races is ill founded, and the position they have attained is entirely due to their being the scribes of the other illiterate classes for generations. Dhúsars are another peculiar clan of whom there are both Brahman and Baniya members. The *gotras* are Bandhlás, Kachchhlás, Bachhlás, &c., and are the same for the two divisions. They say that the name is derived from the Dhosi hill near Nárnau, where their ancestor Chimand practiced austerities. Their head-quarters are still at Rewári in the Gurgaon district of the Panjáb. Chimand married the daughter of a king of Káshi (Benares), and hence Dhúsars. The practices of both Brahman and Baniya Dhúsars are the same, and in one point both differ from ordinary Hindus. They take their food before *púja* or morning prayer, whilst ordinarily all perform their *púja* first and then eat. Of late years, however, they have begun to adopt the more orthodox custom. They do not eat animal or other prohibited food, nor do they drink spirits. They worship the orthodox deities and consider Brahma, Vishnu and Siva as one god under different forms. The Brahman Dhúsar marries with his caste-fellows and the Baniya Dhúsars with Baniya Dhúsars, avoiding always the same *gotra* or a family having the same favourite deity. Their occupation is trade, service, and sometimes husbandry.

The most important of "the other castes" of the census tables is the Doms or Dums, the serfs of the Khasiya race in Kumaon, Garhwál, and along the hills to the westward as far as the Indus valley. In the tables of 1872, they are chiefly entered according to their occupations, only

Doms.

7,331 being entered as Doms, but in the 1881 census they are all more correctly shown as Doms and number 104,936 souls. According to popular estimation, they are divided into four grades, all equally impure and outside ordinary caste life, but furnishing certain distinctions from occupation and the like which bring up the first grade very close to the lower forms of Rájput clans and these again connect with Brahmans, so that no link in the chain of social distinction between the highest and the lowest is wanting. To the first class belong the Kolis, Tamotas, Lohárs, Ors, &c., numbering about 44,000 souls in 1872 :—

1. The Kolis of Kumaon were returned at 14,209 in 1872 and are cloth-weavers and agriculturists. They keep *gái-dangar*, or all kinds of animals, pigs and poultry.

2. The Lohárs or Lwárs, numbering 18,688 in 1872, are the blacksmiths of Kumaon, and are to be found in every part of the district either as blacksmiths, when they usually receive some service land (*khandela*), or cultivators. The Tirwas (Sikalgars), or cleaners of arms, appear to belong to this class.

3. The Tamtas or Tamotas are the Thatheras or braziers of the plains and numbered 140.

4. Orh or Ors, to whom belong both carpenters, masons and stone-cutters and similar trades, numbering about 11,000 in 1872. They include Báres or quarrymen.

5. Dháris are Khasiyas degraded for caste offences.

To the second class belong the Ruriyas, Chimyáras, Agaris, Pahris, Bhúls.

6. The Ruriyas manufacture baskets of all kinds from the *ningál* or hill bambu and matting, and are also cultivators. They include the Bánsphor and Báruris or Bairis of the census reports.

7. The Chimyáras are turners and make wooden vessels for milk and household purposes.

8. The Agaris are miners and ore-smelters and give their name to patti Agar in the Rámgarh valley. They numbered 806 souls in 1872. They marry with Ors and do not wear the *janeu* nor have they *gotras*, but of late years, as they have increased in material prosperity, they have begun to assume respectability by professing many of the purificatory observances of the better classes and are fast becoming Hinduised. They eat animal food except

pork and beef, and from any caste except the lowest class of Doms. For centuries they were the serfs of the mines, but of late years have found far more remunerative occupation in road-making, and some are now wealthy men and good cultivators.

9. Pabris are the village messengers and *factotums* and represent the *goraits* of the plains. They do all the odd jobs about villages, collect supplies and coolies, and act as aids to the head-man. They receive dues and a small rent-free field, of which they cannot dispose. Land given to village Doms for service is called *khandela* and the possessor *Khandeluwa*.

10. Bhúls represent the Telis or oil-pressers of the plains, but are also cultivators. They include the Baryas, and like all the rest keep pigs and poultry. They numbered 9,892 in 1872.

The third class comprises Chamárs, Mochis, Bukhuriyas, and perhaps Dhúnas and Hándkiyas.

11. Chamárs or tanuers and Mochis or leather-workers have assigned to them the plains appellations designating their crafts. They call themselves Bairsuwas. They numbered 2,323 in 1872 and 6,974 in 1881.

12. Bukhuriyas are grooms chiefly employed by the Rájas and are few in number.

13. Dhunas are cotton-cleaners and are few in number and occur only in the towns.

14. Hándkiyas are potters and represent the Kumhárs of the plains. They are few in number.

The fourth class comprises the vagrant tribes of musicians, dancers, jugglers, acrobats, &c., and include the Bádi, Hurkiya, Darzi, Dholi, Dúmjogi and Bhánd.

15. The Bádi is the village musician and acrobat. Some account of him has already been given¹ and in addition to his juggling feats, he prepares and sells flesh and wanders about begging from village to village, usually an unwelcome guest, for he often appropriates what he wants, and when not satisfied with a gift, abuses the giver. He also catches fish and birds and keeps pigs and poultry.

16. The Hurkiya plays on a sort of drum (*hurka*) and the females dance and prostitute themselves. To this class also belong the Bhánds, some of whom are Musalmáns.

¹ *Gaz.*, XI., 834.

17. The Darzi class, also called Auji, are tailors and also cultivators and labourers. To the same subdivision belong the Dholis, who play on the *dholak*, a sort of drum, tell stories, act as drummers and exorcists of evil spirits. Some few are cultivators.

18. The Dámjogis are beggars, and a few of late years have become cultivators.

The portion of the village site assigned to Doms is known as Domaúra or Domtola, like the Chamrauti of the plains' villages.

The name Háliya was given to those employed as ploughmen, from 'hal,' 'a plough,' and, up to 1840, he and his family could be sold with or without the land. The Chyora or domestic slave lived on his master's meals, and had to obey every order and eat the leavings of his master's enclosure. He and his family could be sold or given away without any reason assigned, though he were a Khasiya who had from poverty voluntarily become a Chyora. None of the other Doms could be sold, though each was obliged to do service for the villagers according to the trade or occupation he practised, but was entitled to receive a present in return. At other times they could dispose of their services as they pleased. The first and second classes intermarry, and the third and fourth. Sangtaráshi is the trade of stone-cutting, not a caste, and may be followed by any caste from Rájputs to Doms; stone-cutters are also called Domphors. The Doms, like all the others, claim an exalted origin and say that they are the descendants of a Brahman named Gorakhnáth and were turned out of caste for eating forbidden food. It need hardly be said that they have no pretensions to such an origin. They are simply the hereditary slaves of the Khasiyas, and are only found with them and have no connection with the scavenger Doms of the plains. Their montane and non-Brahmanical origin is sufficiently shown by the names of the deities worshipped by them: Gangauáth, Bholanáth, Masán, Khabísh, Goril, Kshetrpál, Saim, Airi, Kalbisht or Kaluwa, Chaumu, Bádhan, Haru, Látu, Bheliya, the Katyúri Rájás, Rúniya, Bálchan, Kálchanhausi, Chhurmál and others, all of whom are noticed elsewhere.¹ Most of these gods, goddesses and deified mortals are known under the generic name *bhút-pret*. These too possess their followers and cause them to dance and leap and cry out and throw

¹ Gaz. XI. 817-833.

ashes on their heads and beat themselves with nettles. They eat greedily of uncooked rice and split pulse and altogether appear demented. Their relatives then call in the aid of the Dholi or Bádi as an exorcist and offer at the nearest shrine of the demon said to possess the patient some of the following articles:—whole pulse or rice, cooked rice and *dál*, goat's dung, *roli* red paste from the fruit of *Mallotus phillipinensis*, *sindúr* (cinnabar), white, yellow, red or blue cloth; *halwa* or *batása* (sweetmeats), *supári* (betel), spices, couries, *dugáni* (copper pice), coconuts, nails, iron tridents, milk or curds. Young male buffaloes and goats, fowls and pigs are also offered. The shrine (*marhi*) is usually placed on a ridge or eminence and is composed of two to four or ten to fifteen stones placed upright with a flagstone on the top. Within is a stone or a carving taken from some other temple to represent the god, and to this offerings are made on feast days. The stone is often placed in a corner within the house or on the ridge of the roof (hence called *dhuri*). At births, marriages, when building a house or entering on any speculation or returning successful from a suit in court, offerings are made to the stone as representative of the tutelary deity of the house or clan.

Doms do not wear the sacred thread or the bracelet (*rákhi*), nor do they have caste marks, or wear, as a rule, the *sikha* or top-kot; but on holidays they make a mark with *roli*, and in a rough way imitate the customs of the better classes, especially those that have made money in their contracts with Government. Their *sráddhs* when made at all are performed on the *amávas* or last day of the *kanyagat* or dark-half of Kuár. The sister's son, younger sister's husband, or son-in-law act as Brahmans on the occasion and receive gifts as such. Doms eat the flesh of all animals and use their skins, and eat food from all classes except Bhangis, Musalmáns and Christians. There is no fixed time for marriage. When an elder brother dies the younger takes the widow to wife, whether she has had children or not: hence the proverb,—‘*mal bhir udhari ber talai bhir men onchh.*’ ‘When the upper walls fall they come on the lower wall.’ When the elder brother dies the burthen falls on the younger. The elder brother, however, cannot take to wife the widow of a deceased younger brother, and contracts a stain if even her shadow crosses his path. He transfers her to some other

of the brotherhood ; but during the lifetime of her second husband, if he or she be dissatisfied, another may take her by paying the cost of her marriage. This may be repeated several times. The prohibited degrees are only a daughter, sister, uncle, aunt, brother, and those they cannot eat or smoke with. Many bring up their daughters as prostitutes and teach them for this purpose. These are usually frequented by Musalmáns and European soldiers, and the offspring may follow the religion of their fathers.

Amongst the miscellaneous clans mention must be made of the singular Náyaks or Naiks, whose pretty village in the Rámgarh valley and settlements at Haldwáni are so

Náyaks.

cleanly and striking. They owe their origin to the wars of Bháratí Chand with Doti, when the first standing armies in Kumaon took the field, and the soldiers contracted temporary alliances with the women of the place, whose descendants became known as Khatakwalas and eventually Náyaks from the Sanskrit *náyaká*, a 'mistress.' The offspring of these professional prostitutes, if a male, is called 'Náyak,' and if a female 'Pátá,' 'one who has fallen.' They soon became celebrated all over India, and in 1554 A.D. Sher Shah undertook the siege of Kalinjar to secure possession of a Pátá kept by Kírat Singh.¹ Notwithstanding their origin, the Náyaks contrive to belong to that well-abused *gotra*, the Bháradváj, and to the great mid-Hind *sákha*. They even wear the sacred thread, though with only three strands like the common Khasiya. They marry their sons into Rájput families on paying a considerable sum, but devote all their daughters to prostitution. Náyaks live by cultivation and trade, and their villages in the Bhábar are amongst the best. The son can succeed to the property of his uncle and the daughters can leave their property to any relative. If a daughter has a son, he performs her funeral ceremonies ; if not, her brother performs them. They are attached to the left-hand Sáкта ceremonial, and eat animal food, and are, strange to say, reported as being careful in ceremonial observances. They have a story of their own of a brother and sister going on pilgrimage to Badrináth, and the latter falling into evil ways ; but the account first given is the more probable, and has better evidence to support it.²

¹ Gas. XI, 529.

² *Ibid.*, I, 452.

The census of 1872 records 145 Ahars in Kumaon and that of 1881 gives 2,393 in the Taráí. They are purely a plains tribe, who-oke out their professional livelihood of robbery and cattle-tending by just enough cultivation to support themselves throughout the year.¹ Ahírs, too, in 1881 numbered 309 in Kumaon and 1,754 in the Taráí.

Ahírs. These too are professional cattle-breeders.²

So also are Garariyas, who numbered 695 in Kumaon and 2,572 in the Taráí. The latter are sheep and goat tenders and weave blankets. Barhais are Chamár carpenters from the plains and numbered 309 in Kumaon and 1,458 in the Taráí: they represent the Dom carpenters of the hills. The Bhangis or sweepers numbered 1,262 in Kumaon, 292

Bhangis. in Garhwál, and 2,164 in the Taráí. Some

call themselves sons of Valmíki, the writer of the Rámáyana, their ancestor being made a sweeper through ignorance, and others say that they were prisoners taken in the wars between Kumaon and Garhwál and made to do sweepers' work. When the Musalmáns entered India, a section became converts and were called Shaikh Mehtars, whilst the remainder continued Hindus and are called Lál Begi from a great *guru* of theirs. They still call their purohits Lál Gurus and circumambulate the fire-altar at marriages. Lál Begis are divided into Jhándes, Multanis, Bherwáls, Saudes, &c., divisions which are looked upon as *gotras* in marriage ceremonies. They have no caste prejudices and eat from all classes except low-caste Hindus. Any member becoming a Musalmán or a Christian becomes *ipso facto* out of caste. Bháts number 269 in Kumaon and

Bháts. 313 in the Taráí. They profess to be genealogists and minstrels, but really belong to

the 'sturdy beggar' class, at least such as have not devoted themselves to agriculture. They have a bad reputation. There are about fifty Dhánaks in the Taráí, a low

Dhánaks. caste who live by fowling and thieving, akin

to the Aheriyas and Baheliyas, both of whom are also represented in the tract along the foot of the hills. In 1872 there were 1,553 Baheliyas in the Kumaon Division. In 1881 there were 491 Dhobis

¹ Gaz. II., 397.

² *Ibid.*, IV., 557.

in Kumaon, 18 in Garhwál, and 1,262 in the Tarái. These are probably all Chamár washermen from the plains.

Dhobis.

Those settled in the hills are considered a little higher than the Doms and even intermarry with low-class Rájputs if they have taken to agriculture ; but, as a rule, they form connections with their brethren from the plains who come up to take service at the different stations. The villagers wash their own clothes for themselves, and the Dhobi is not such a necessary part of the establishment as in the plains. Those that have settled in the hills follow the Khasiyas in their worship of the Sáktis and village deities.

The census records in 1881 give 24 Gújars in Kumaon and 1,056 in the Tarái, all are occupied in tending cattle, and have a bad reputation here as cattle-stealers. The same returns show 66 Játs in Kumaon and 1,438 in the Tarái, chiefly occupied in agriculture and cattle-grazing.

Gújars, Játs.

Káchhis number 54 in Kumaon and 968 in the Tarái, and Kahárs number 363 in Kumaon and 8,722 in the Tarái. The former are cultivators, and the latter are both cultivators and in service. The Kahárs are divided into twelve classes, which they regard as *gotras* for marriage arrangements :—Rawáqis, Ghániks, Gariyas, Kharwáras, and Náwars are litter and palki bearers, and also act as scullions and attendants : Bathmas follow the same occupations, but are also grain-parchers ; Dhímars add to them the trade of fishermen ; Malláhs that of boatmen ; Turáhas and Bots that of greengrocers and cultivators, and Bárís that of basket-makers. The Kahárs intermarry amongst themselves, avoiding, however, the same clan. They will eat food from Brahmans, Kshatriyas, and Vaisyas, and they worship the Panch Pándavas, Náráyan, the Sáktis, Guru Rám Rái, Dodiya Siddh, and Hanumán. Their hereditary trade of palanquin-bearers is usurped in these hills by various castes, including Brahmans, Rájputs, and Doms. But there are, indeed, few castes in Kumaon and Garhwál who adhere strictly to their hereditary occupations. One Brahman is a cultivator, his brother carries a palanquin, and a third brother is perhaps a professional beggar or a temple priest. All the above are castes from the plains.

Kahárs.

There were eight Kalwárs in Kumaon and 566 in the Tarái in 1881, and 52 Kathíks in Kumaon and 133

Other castes.

in the Tarái. The former are distillers and

vendors of spirits and the latter are swine-breeders and poultry keepers, found chiefly in the Káshipur and Jaspur parganahs. There were 129 Koris in Kumaon and 718 in the Tarái and 437 Kumbárs in Kumaon and 39 in Garhwál: the former are cultivators and the latter are potters, and must include many of the Dom Hándkiyas. There are a few Kurmis and Lodhs in the hills, but in the Tarái the former numbered 9,020 in 1881 and the latter 4,508. The former are pre-eminently coolies and cultivators and very few live in the hills. In the Bhábar and Tarái, the Kurmis are numerous, and are represented in the hills by the Sauns or Shauns. The Shauns will do any kind of labourers' work, but refuse to carry palanquins and similar conveyances. Their principal occupation is mining, and the reason they give for not carrying litters is that all castes will not drink water from their hands though drinking it from the hands of Kahárs. Lodhs are agricultural labourers and like the preceding a plains tribe. Chamár blacksmiths known as Lohárs are common in the Tarái (2,471). Mális or gardeners numbered 2,214 in Kumaon and 6,564 in the Tarái. They are chiefly market gardeners rather than cultivators, and belong to the plains. Náis or barbers numbered 605 in Kumaon and 1,549 in the Tarái. They have their *gotras* like the better classes and here belong to the Chánwal, Kásyapa, and Bháradváj. They eat from the hands of the three upper classes, but these will not take in return water from them. They follow their own trade and agriculture and also service. They marry into their own class avoiding their own *gotra*. There are some Pásis in Kumaon and the Bhábar. The Sonárs numbered 2,211 in Kumaon and 922 in the Tarái. They are workers in the precious metals by trade and bear a bad reputation. Some are agriculturists. Their *gotras* are the Bhauma, Kásyapa, and Bháradváj. Some call themselves Baniyas, others Rájputs. They intermarry with Khasiya Rájputs, but few of the latter, however, take daughters from them. They worship the Sáktis and village deities, and are, as a rule, considered undesirable neighbours in a village. Bhurjis or Bharbhunjas (or grain-parchers) are cultivators in Kumaon, though a few follow

their caste occupation : only nine were recorded in 1881 in Kumaon and 948 in the Taráí. Banjáras are nomadic grain-carriers and merchants, found in the Bhábar travelling with pack-bullocks and ponies and transporting grain, salt, and other commodities from one mart to another. Banjáras are both Hindus and Musalmáns. To the former belong the Lamwáns and Ládánís. The Lamwáns sometimes settle down as cultivators, but the Ládánís are carriers only. All other castes engage in the same occupation. Sánsiyas are a low class living on wild animals and wild fruits eked out by thieving. They are found in the Bhábar and Taráí, and are said to eat snakes, rats, and dogs. The Nats or gipsies are found at the foot of the hills, but very seldom within them where the Dom Hurkiyas and Bádís take their place. Tamolis or pán-sellers may be Vaisyas, or indeed, any other caste, and the term should be considered as representing a trade. Patwas are Musalmáns and Hindus, and manufacture lac armlets for men (*anant*) and women (*dor*), bead necklaces and bracelets. Any caste may engage in this occupation, which should be expunged from the list of castes.

Some account of the Rájís has already been given and they have been identified with the Rájya-Kirátas of the Puráns.¹ To what has been recorded may be added the following facts :—The name of one of the favourite objects of worship with the Rájís is Khudái, a name that has no connection with the Musalmán name for ‘god.’ They do not marry within three generations, and as a rule no money is given for a bride. The Askot Rájís have, however, taken to this practice, and under the pretence of contributions for worship of the family deity receive money for their daughters and the Chau-garkha Rájís accordingly look down on them. They wear the *sikha* or tuft of hair like other Hindus. In accordance with their pretensions to royal origin when they visit a Rája, they sit down close to him and call him *bháo* or younger brother and the Ráni *biátri* whilst they themselves expect to be addressed as *dajyú* or elder brother. Above Barmdeo there are several villages inhabited by Lúls,² and in Chhakháta a few villages are occupied by Ráots or Ráwats, who lay the same claim to royal origin, and are believed to be akin

¹ Gaz., XI., 270, 359, 362, 305-68.

² *Ibid*, 346, 509.

to the Rájjis and the Ráuttas of inscriptions.¹ The Lúls have lately taken to wear the sacred thread, but the Ráots do not assume it. Now-a-days both call themselves Rájputs. The Lúls are probably connected with Lola, a country mentioned in the list given in the *Varáha-sanhita*.²

A few words as to the appearance of the people themselves. Raper in 1803 writes :—

“ Their customs, manners, and dress display a much greater advancement towards civilization than those of their neighbours, the Garhwáls, whose country, although it be considered more sacred from its being the seat of many holy places of pilgrimage, does not hold forth equal advantages for colonization. The natives of Kumaon are in their person slender, of the middling size, and their complexions are rather dark. Their dress differs little from that of the inhabitants of the lowlands, excepting that instead of a turban, they generally wear a round cotton cap. It is rather uncommon to see an inhabitant of Kumaon appear in a dress of home-spun materials of hemp or wool. All their garments are made of cotton, and this general adoption of a foreign manufacture which may be considered another proof of refinement, does not form one of the least striking differences in the appearances of the natives of this country and Garhwál. In forming an outline of the character of the Kumaonis, one would be led to represent them as a mild, inert people, free from any glaring vices, and possessed only of negative virtues. Indolence would appear to be a prominent trait in their character, if we judge of the men by the part they take in their agricultural pursuits. The labours of the field are conducted chiefly by the female sex, while the household affairs are under the superintendence of the men. This unnatural division of labour has given rise to polygamy, which is very generally resorted to by the lower classes of people ; most of them taking as many wives as they can procure for the purpose of transferring to them the drudgery of the field.”

With the exception of the Bhotiyas and Doms, the population is generally characterized by the same cast of countenance, lank, and with prominent features. In the northern parganahs the frame is shorter and stouter, and the complexion comparatively fair : in the southern, the stature is taller, the figure sparer and the complexion sallow. The children of both sexes are generally pretty ; but as adolescence approaches, the boys become coarse-looking and hard-featured, while the girls, condemned by custom and necessity to toil and exposure to the weather, become early broken down and haggard, and as age advances, are remarkable for extreme ugliness. Women in easy circumstances, and allowed more indulgences, are represented to be invariably fair, and sometimes handsome. The dress of the peasantry is very primitive, consisting of a blanket thrown over the shoulders, fastened across the breast by a skewer of wood or metal, and girt round the waist by a kamarband of cotton or hemp. Beneath the blanket is a dhoti or breech-cloth, kept up by means of a string round the waist. The head-dress is a thick woolen cap. The legs and arms are uncovered,

¹ Gaz., XI, 517.

² *Ibid*, 359.

except in very cold weather, when trousers of blanket-stuff are worn. Women wear a sort of bodice as well as the blanket, which they allow to hang down to the heels: to these is added a small scarf. Their noses and ears are distended with rings of metal, precious or otherwise, according to their means; and the silver bracelets and anklets which they generally wear, contrast singularly with the poverty of their attire. Those in the neighbourhood of the plains assimilate their dress to that of the population there. Traill thus sums up their character:—"Honest, sober, frugal, patient under fatigues and privations, hospitable, good-humoured, open, and usually sincere in their address, they are at the same time extremely indolent, fickle, easily led away by the counsel of others, hasty in pursuing the dictates of passion, even to their own immediate detriment, envious of each other, jealous of strangers, capable of equivocation and petty cunning, and lastly, grossly superstitious. To personal courage the lower order makes no pretensions. The high Rájput families, who are for the most part descended from western adventurers, are in no way deficient in the inherent spirit of their race. Conjugal affection has scarcely any existence in the hills: wives are universally considered and treated as part of the live-stock; and little or no importance is attached to the breach of female chastity, excepting when the prejudices of caste may thereby be compromised. To their children, however, they evince strong affection." "Of the honesty of the hill people too much praise cannot be given. Property of every kind is left exposed in every way without fear and without loss." It would not be easy to reconcile all the parts of this description; but it is gratifying to find the reputation of the people for some of the good qualities ascribed to them, supported by the testimony of Heber, who writes:—"Of the inhabitants everybody seems to speak well. They are, indeed, dirty to a degree which I never saw among the Hindus, and extremely averse to any improvement in their rude and inefficient agriculture; but they are honest, peaceable, and cheerful, and in the species of labour to which they are accustomed extremely diligent."

The villages or *gons* in Kumaon present a neat appearance

Habitation.

from a distance, but on closer examination this impression is entirely effaced by the filthy accumulations in and around the dwelling house. The house (*ghar* or *kúro*) consists of the lower story (*goth*) used for housing the cattle with a slight verandah (*gothmal*). The first floor (*majhyálo*) has a verandah in front, which if open is called *chhájo*, and if closed is known as *chák*. This runs along the whole front of the house, and as this is generally long, the verandah often runs to upwards of sixty feet. Sometimes there is a third story called *pand*. The back part of the house is usually shut up entirely. The walls are built of stone and the roof (*pákho*) of slates. The door is called *kholi*; a room, *khand*; the front or reception room, *tiwari*; courtyard, *angan* or *chauk*; a large courtyard *utangan* or

patáingan ; the space behind the house *kuriya* ; a row of houses together, *bákkhal* or *kholo* ; houses in a separate cluster *tánd*, and wooden raised place for sitting on in the evening *chaunro*. The cattle-path is called *gauno*, and that for the people *bdto*. The road through the village is commonly a stone causeway about two feet broad, and three or four high running through the centre of the street, from which there are small raised paths leading to the upper apartments of the different houses and forming with the central parapet a kind of compound or enclosure for the cattle. So little attention is paid to neatness within these enclosures, that they may be considered merely as nurseries for manure. This disregard to cleanliness is undoubtedly one of the chief causes of the fevers which are very prevalent during the hot months. The inside of the habitations keep pace with the exterior and appear equally ill-arranged for health or convenience, the apartments being very low, dark, and confined.

Some of the phrases used in connection with the land may be noticed here. *taldon* or lowland usually irrigable, *sera*, *stra*, *kulon* or *pánikhet*, irrigated land; *upar-don*, upland usually not irrigable: *stn* or *gánjo* or *semar*, land not requiring artificial irrigation, swampy; *chor*, *tappar*, good flat land; *ttt*, *ukkar*, unproductive land not reclaimable; *sár*, *tok*, *táno*, a sheet or plain of cultivation, including many fields and usually bearing a separate name; *báro*, a garden; *guro*, *khet*, *kanulo*, *páchuro*, *hango*, names for fields according to situation; *gair*, cultivation along the sides of a valley; *kumuno*, cultivated land; *banjo*, fallow or waste land; *relo*, cultivation in very steep places; *sr* land kept in cultivation by the proprietor himself; *tailo*, sunny land; *selo*, shady land; *malla*, upper; *talla*, lower; *pugar*, *bír* or *btra*, *paira*, terrace walls in fields; *ijhar*, *mán* or *kil*, forest land taken up for temporary cultivation; *thála*, big; *náno*, little; *utár*, *waláru*, a descent; *charádi*, *wakálu*, an ascent; *ghat*, *panchaki*, a water-mill; *okal*, *okriáls*, hole in the threshing-floor for husking grain; *khor*, a sheep-pen in the hills, and *goth*, *kharak*, *gár*, place for tying up cattle. Many of these will be found, as affixes to the names of villages or even as names themselves, and will serve to explain the nomenclature.

It is a very convenient form of censure here as in the west to com-

Fiscal history under the Chands. pare the present with 'the good old times,' but all comparisons result in the one conclusion, that now people possess immeasurably greater liberty, not always well used, and a security for life and property that was formerly absolutely unknown, no matter who the person was or who the rulers were. Under the Chands the cultivating community comprised three great classes:—*thátwáns* or proprietors, including grantees of various kinds; *khdyakars* or cultivators, *ie.*, those who eat (*khána*)

the produce of the land on the condition of paying the land-tax (*kar*), including *sirthans* who paid in cash and the *kainis*, including the *chyoras* or household slaves. *Thátwán* or *thátui* was the name given to the proprietor of a *thát* or parcel of land assessed with revenue. The *thátwán* paid direct to the Rája's treasury his revenue, which consisted of dues of thirty-six different kinds, of which the following were the principal :—

1. *Jyúliya* or *Jhúliya*, assessed on the *jhala*.
2. *Sirthi*, assessed in coin.
3. *Báikar*, grain in kind.
4. *Rákhriya*, dues on the occasion of wearing the bracelet of silken thread put on at the ceremony known as *rekshabandi* (Gas. XI., 886).
5. *Kát*, grain in kind by appraisement.
6. *Bhat*, extraordinary dues on visits by the Rája or near member of his family.
7. *Ghoryálo*, for the Rája's horses.
8. *Kahuryálo*, for the Rája's dogs.
9. *Básár*, coin to the keeper of the banks.
10. *Bájanriya*, coin to the musicians and dancers.
11. *Bukhuriya*, presents to the groom.
12. *Mánga*, present to Rája, on his requiring it.
- 13, 14. *Sahw* and *Ratgalli*, presents to the keepers of the records and scribes of those families.
15. *Kheni-Kapáni*, personal service as coolies.
16. *Katak* or *Khatak* service with the army and providing for its wants.
17. *Syúk*, offering to the Rájás on certain occasions.
18. *Kamínáchári Sayanáchári*, &c, dues to Kamins and other officials.
19. *Gharha-negi*, &c, a local *patwári* or village accountant.

A *thátwán* could not voluntarily relinquish his *thát*, and was

Rights and duties.

responsible for the land-revenue and dues no matter who actually tilled the soil. The

regulations for collecting the revenue were extremely stringent, and no remission or suspension was ever granted until the property and persons of all within the *thát* had been sold. A *thátwán* could make over portions of the land to others for cultivation. These cultivators became his *khyakars* and paid *jhúliya* or *sirthi*, but none of the other dues to the Rája, his servants or the village officers. The Khasiyas were mostly *thátwáns*, the better classes calling themselves *gharkas*: but there were *kainis* and *chyoras* also amongst them. A *thátwán* might become a *kaini* where the Rája gave the *thát* in (1) *sankalp* to a Brahman, or (2) in *rot* to the heirs of a person who fell in battle, or (3) in *jadgr* to courtiers and others

which he had the power to do as the real owner of the soil. In such cases the *thátwán* became the *kaini* or vassal of the grantee. If the *thátwán* refused his new position he could relinquish his status by bringing a clod of earth or a stone from his *thát* and a pice, and placing them before the Rájá in *darbár* request to be relieved of his duties. No *thátwán* could be forcibly made a *kaini*, but as a rule he accepted the new state of things and sank from the grade of *gharka*, and could no longer have rights of eating, drinking, or intermarrying with them, but if he abandoned the land altogether, he remained a *gharka*. *Thátwán* was pre-eminently the title of Khasiya proprietors: others holding in *rot* or *jágr* called themselves by these names, though in cases of dispute referring to their grants as their '*thát*.' *Kháyakars* being cultivators within a *thát* were not affected by changes in the tenure. They might be of any class, proprietors of other villages or even Brahmans, though, as a matter of fact, owing to the practice prevailing amongst most of these latter of not putting their hand to the plough, it was not customary for them to become *thátwáns* nor did the Rájás often give them lands, but instead an assignment of the State revenue. Brahmans seldom became *kháyakars* or *sirtháns*.

The *kháyakar's* tenure was under the Chands purely a personal one. He could be ousted at any time and
Thátwáns and kháyakars. could give up his land at any time; nor did his heirs succeed without the consent of the *thátwán*. Rents were paid in kind and were the subject of individual contract, and the *kháyakar* was in addition required at times to give personal service on certain occasions. His rent was fixed as a rule at a part or all of the land-tax due from the *thát* to the State according to the proportion of his holding to the whole arable area. There was no written contract, and if cultivators were scarce, the *thátwán* had to give very favourable terms. If there was no lack of applicants, the rate was decided by competition and naturally varied with the circumstances of each estate. There was no limit as to time and a *kháyakar* could only claim the value of the seed sown as his right on being ousted, but in practice there were few disputes. The land-tax was fixed on the *thát* without reference to the number of tenants, but in cases of difficulty the *thátwán* made over his land to a *kháyakar* rather than to a *sirthán*, who paid, on the whole, propor-

tionately less. As already explained, the *sirthán* paid in cash only, and was not subject to any demand from the State. The *kaini* had many menial duties to perform, and amongst them he had to carry the litter or *dandi* of his overlord, wash his clothes and cooking pots, accompany him in time of war as a servant, give wood for the funeral pyres in the family and assist in the funeral ceremonies, shave his head and face on the death of his overlord or any near member of his family, or on the death of the Rájá, and generally to obey every order. The only difference between the *kaini* and the *chyora* or household slave was that the former did not eat his master's leavings, but the latter did. It was often customary to excuse the *kaini* from performing the more menial duties, but if he refused to perform them without obtaining permission, he could be punished by the Rájá and expelled from his lands. The *thátwán* could sell the *kaini* with the land and was absolutely attached to it, but could not be sold without it, but the *chyora* could be sold at any time. A *kaini* could sell his rights and duties to a proper substitute, and the grantee would not object, and his heirs succeeded to his lands, but on failure of heirs, the lands reverted to the grantee.

Between the actual cultivators whom we have just described *Sayánas, Búrhas, Thokdárs* were in some places a number of middlemen who, under different names, possessed rights in the land. In Páli they were known as *Sayánas* and were four in number, two *Mánuráls*, one *Bisht*, and one *Bangára*. In Káli Kumaon, Juhár and Dárma they were called *Búrhas*, and in Káli Kumaon were also four in number of the *Tarági*, *Kharku*, *Bora* and *Chaudhri* clans; but these being divided into two factions or *dharras*, the *Máhra* and *Phartiyál* the *Búrhas* were doubled, allowing one for each faction in each division. *Patti Cháral* owes its name to the *áls* of the four *Búrhas*, thus *Tarági-ke-ál*, &c. In Juhár and Dárma there was only one person in each entitled to the name though many now assume it. *Thokdár* is the name given elsewhere to these middlemen. To all these titles were formerly attached both duties and rights. *Kamíns* were an inferior grade who had only duties to perform. *Sayánas, Búrhas*, and *Thokdárs* possessed rights in the land as well and could sell their villages and exact certain fees and dues. The Páli *Sayánas* of the *Mánurál* clan were inducted with beat of drum (*nakára*) and standard

flying (*nishán*); a right conferred on the *Búrhas* of Jubár and Dárma by Báz Bahádur Chand. The *Sayána* had a right in the *thát* of his villages and in acknowledgment of it received food for himself and his followers when visiting the village: every second year one rupee from each house; dues at festivals and aids for his household ceremonies; presents of grain from the cultivators at each harvest and a due called *dala*, equivalent to the *mánnga* of the Rájá, being a special contribution on extraordinary occasions. When the grant was made, the Rájá fixed the contributions that the *Sayána* was entitled to demand. The people within his circle were also bound to give him personal service. *Sayánas* were obliged to pay the usual taxes imposed upon *thátwáns* and even grantees in *rot* or *jágr* were seldom excused all dues. In return, he could dispose of any of the villages in his circle and relieve himself proportionately of the State burden, but with the consent of the Rájá as to the amount and the substitute.

The *Búrhas* of Káli Kumaon differed in no way from the *Sayánas* of Páli, except that they very frequently formed a consultative body in state affairs, especially when the succession to the *ráj* was doubtful, consequently they have all along played a very important part in Kumaon history. The *Búrhas* of Jubár and Dárma bore merely honorary titles, and never possessed any great authority. The *Thokdár* was a step below these. He received the same sort of dues, but to a less extent, and his title was of less significance and more of a fiscal nature. He had no right to drums or standards at his installation, and was not called on for advice in matters of State. These three classes of fiscal officers were bound to assist the military and civil officers in their administration, but had no special duties such as were subsequently assigned to them. The

Kamíns. *Kamín* was altogether of an inferior grade, and what influence he possessed was due to his office and its emoluments. He had no *thát* right in the villages of his circle nor could he sell or mortgage them or his rights. He supplied *bardáish*, that is, coolies and supplies for the State service, and paid dues to the *Sayána* or *Búrha* above him, but not to the *Thokdár*, and indeed the latter seldom existed in places where there were *Kamíns*.

Under all in each village was the *padhán*, who had very much the same duties as at present, and the same emoluments. He collected the revenue, attended to the police duties of his village, represented the coparcenary body whenever necessary, and was in charge of all *sáyar* or miscellaneous produce within the village boundaries. The office was usually hereditary. Under him was the *kotál* as his deputy, who was usually chosen by and removeable by the *padhán*. The *kotáls* are still found in many villages. In Páli especially, there was still another official,

Kotals, Pahris.

usually a Dom, called a *pahri*, whose duty corresponded with that of the *gorait* of the plains, general village messenger, collector of supplies, watchman and general servant. He was remunerated by a grant of grain at each harvest from each *máo* or family and at festivals. He also exists still in many villages, though dropped out of the arrangements sanctioned by our rules. The preceding description gives, I believe, a faithful account of the fiscal arrangements under the Chauds and was communicated to me by Rudradatta Pant, a nephew of Harak Deb Joshi, whose name fills the pages of Kumaon history during the last quarter of the past century and up to 1815. I have compared it with other records, and especially with all the reports of Mr. Traill, and have found nothing unworthy of credence. On the contrary, the other notes of Rudradatta when tested by contemporary records have always been found remarkably accurate and trustworthy, and I can therefore thoroughly put this account forward as an unique record of the civil administration of a Hill state untainted almost by any foreign admixture, for until the Gorkhúli conquest and subsequently the British occupation Kumaon was always independent.

One principle that clearly guided the old fiscal administration which has never been lost sight of and which has been reiterated by both Gorkhúli and British settlement officers is that then, as is now the case in Nepál, the property in the soil is vested in the State.¹

Mr. Traill on Chand ad- The revenue of the Rájás of both Kumaon
ministration. and Garhwál was not as we have seen wholly confined to a land-tax, but included dues of various kinds and in addition taxes on commerce, mines, the administration of

¹ To Govt 22nd January, 1817.

justice, law proceedings and forest produce. An impost was laid on *ghi* or clarified butter payable by the owners of the cattle at a rate fixed for each animal, and amounting to four annas on each female buffalo.

"The weavers throughout the province," writes Mr. Traill, "were also subject to a separate tax. The assessment of land was, generally speaking, light, the government demand on agriculture being rated at only one-third of the gross produce in ordinary lands, and at one-half in the very fertile. In mines, the royal share amounted to one-half. The collection was made in two forms, being imposed one year on the land, and a second year levied by a capitation tax on the inhabitants. As these, however, consisted solely of persons connected with agriculture, the source from which the payments were made was necessarily the same, though the mode and detail of cess varied." The *gdi-churdi* or grazing tax had from time immemorial formed a portion of the public assets in the assessments made in the tract immediately below the hills. In one of Mr. Traill's many valuable reports¹ he writes:—"The agricultural assessment or *sirthi* (cash payment), as originally fixed, was extremely light, and its rate and amount would appear to have been very rarely revised. To supply the increasing expenditure of the State numerous other taxes were successively imposed on the landholder. Of these the principal were a capitation-tax and a house-tax, and the whole were summed up under the designation of *chhatis-rukhs* and *butis-kalam* or the thirty-six items of revenue and the thirty-two items of ministerial fees. These numbers appear to have been used arbitrarily as including the regular and contingent cesses, the total to which the landholder was liable never actually amounted to sixty-eight; but they were sufficiently onerous to leave him little beyond the means of subsistence. As the public demand was not regulated on any consideration of the produce, the relative proportions which they bore to each other can only be estimated by the analogy of the rates paid to the free holders by the *khadyakurs* and *hainis*. These varied in different parganahs from one-third to two-fifths of the gross produce. Rents were commonly paid in kind (*hat*) at an invariable rate fixed on the land and payable in some specified description of grain without reference to the annual fluctuations in the amount and nature of the produce."

"Rice, as the staple crop, formed the principal item in these engagements. The maximum parganah rates of *hat* may be stated at twelve *pradis* of 4½ maunds of wheat per *bisi* (forty yards less than an acre); the average crop per *bisi* in medium land cannot be estimated higher than twenty-six maunds of rice and ten maunds of wheat per *bisi*. These tenants were, at the same time, subject to other demands; the *khadyakar* was called upon for *bhet*, fees and other dues; whilst the *haini* was subject to personal service in cultivating the overlord's *str* or home-farm and in carrying his baggage when required. In some instances where no specific *hat* had been fixed, the landlord took one-third of the actual produce, exclusive of the petty items of *bhet*, dues, &c. In *pahikashi* lands, the rates of rent were extremely variable; in the most favourable lands lying near a populous village, the rent was somewhat lower than that paid by resident tenants; whilst for lands unfavourable in soil or situation a mere quit rent or *sirthi* was paid. Under

¹ To Govt., 2nd January, 1829.

the Gorkhali government, a complete revision of the old revenue system took place; the cess on agriculture was considerably augmented and most of the extra demands contained in the *chatts-rukhn* and *buffs-kalam* ceased. *Maukar* (capitation tax), *landkar* (loom-tax); *mijhdri* (tax on Doms); *ghikar* (tax on ghi); *saldmi* (presents to officials), and *soniya-phagan* (offerings on festivals) were alone retained and the only ministerial fees which remained in force were those to the *kauungo*, *kamin*, and *padhan*. The cess on agriculture was moderate, being imposed on the area at a determined rate which was equalized in different districts according to the scale of measurement in force: all other assets and means of the landholder were reached by the extra cesses abovementioned, so that the gross demand became an income-tax on all classes connected with the land. By the injudicious mode of management which was then introduced (that of military assignments) the resources of the country were rapidly deteriorated, agricultural produce diminished, prices were arbitrarily depressed, and a year of excessive drought supervening, the disposable capital of the agricultural classes was dissipated."

The Gorkhali revenue-roll for 1812 A. D. showed on account of Gorkhalis.

land revenue	Rs. 85,525; for <i>saldmi</i> or <i>nazar-ana</i> ,	Rs. 2,743; <i>ghikar</i> ,	Rs. 2,252; <i>mijhari</i> or tax on Doms as carriers,	Rs. 621; Rs. 50,741 <i>landkar</i> or tax on looms;
	Rs. 1,360, <i>Soniya Phagan</i> or <i>bhet</i> on festivals;	Rs. 7,500, customs and transit duties;	Rs. 2,400 mines and mint duties;	Rs. 3,200 <i>kuersul</i> or <i>kath</i> (catechu);
	Rs. 1,200 <i>kath bans</i> (timber and bambus);	Rs. 162 other customs; and	Rs. 2,500 <i>asmáni-farmáni</i> or fines and forfeitures	total Rs. 1,64,426. The transit duties were farmed out under one lease, and at the British occupation it was resolved that until more accurate information was obtainable, the former practice should continue, with the exception of the duty on the sale of children, which was at once abolished. From May, 1815 to May, 1816, these miscellaneous items yielded a net revenue of Rs. 7,234 and for the following year, when they were let out in farm Rs. 8,489 and for 1817-18, Rs. 9,867. Owing to the vexatious nature of the imports and the check thus caused on trade, Mr. Traill recommended their abolition. A correspondence then arose between the Board and Commissioner, and it was considered that though licensed and allowed by competent authority, these transit duties on merchandise partook more of the nature of arbitrary exactions than of regular customs duties, and their abolition on the expiration of the existing lease was eventually sanctioned by Government. ¹

¹ The following references will give the entire correspondence:—To Government, dated 24th May, 1816; from Government, dated 2nd June, 1815; to Government, dated 23rd June, 1816; from Government, dated 23rd July, 1816; from Board, dated 10th June, 1817; from Board, dated 10th February, 1818; to Board, dated 21st February, 1818; from Board, dated 22nd May, 1818; from Board, dated 10th July, 1818.

The only duties retained were those on forest produce, which partook more of the nature of a land-tax on uncultivated land, and these formed the nucleus of what subsequently became the revenue of the Forest Department of which an account has been given¹ elsewhere.

As the records of the Gorkhálí period yielded little or no information of the rents of lands and villages, rent-free to individuals in tenure of service, or assigned to temples, it is impossible to form any correct estimate of the income derived

Administration. from the country by the Government or their representatives. Judging, however, from the very superior degree of population and cultivation which then existed, the sovereign's share of the gross produce of the country may be computed at about four lakhs of *kachás* rupees for Kumaon, and two for the district of Garhwál. The extraordinary revenue was levied in the form of a general house-tax, and, of course, varied in its amount according to the nature of the emergency for which it was imposed. To account for the subsequent deterioration in the resources of the country, a short view of the Gorkhálí revenue administration is necessary. On the successive conquests of Kumaon and Garhwál by that power the existing system was continued, and the country including all the villages hitherto reserved for the support of the court and their attendants, was parcelled out in separate assignments (*jaeddá*) to the invading army, and as this was kept up on a large scale, with the view to further conquests, the value of each assignment was estimated at an excessive rate to meet the expenditure. The consequences may be easily surmised: the troops considering themselves merely as temporary holders, and looking forward to a change of assignment on every new acquisition, felt no interest in the condition or welfare of the landholders made over to them, nor were they allowed any indemnification for balances. The emigration, in the first instance, of a large portion of the principal landholders, tended still further to increase the evil. The villages were everywhere assessed rather on a consideration of the supposed means of the inhabitants than on any computation of their agricultural produce. Balances soon ensued, to liquidate which the families and effects of the defaulter were seized and sold, a ready market for the former presenting itself in the neighbouring towns of Rohilkhand.

The consequent depopulation was rapid and excessive, as is fully proved in the numerous waste villages deserted at that period, and in the incomplete state

Commission from Nepal. of cultivation which prevailed generally in the villages still inhabited. After the conquests of the Nepál government had been further extended, and the subjection in this quarter fully established, measures were adopted to remedy these disorders. A commission was accordingly deputed immediately from Kathmándu, for the purpose of fixing the revenues at an equitable rate. The settlement was formed on an actual inspection of the resources of each village, but as the estimated profits of the trade carried on by the residents were taken into consideration, the assessment must be viewed rather as a tax founded on the number of inhabitants than on the extent

¹ Gas., X., 845.

of cultivation. On the completion of this survey, a detailed account of each *par-ganah*, showing the numbers, names, size, and extent of the villages, was submitted for the approbation of the court of Nepál. From thence a copy, under the seal of State, was issued to the *Asamas*, or heads of local circles, as a standard of the revenue demandable from their respective circles, corresponding instructions being issued to the officers holding assignments. The demand thus authorised, generally speaking, was by no means excessive or unreasonable, but the absence of a controlling power on the spot rendered the arrangement almost nugatory, and the Military chiefs were enabled to evade it by the power vested in them, of imposing fines, at their own discretion, in the administration of the interior police. In Garhwál, where the conquest had been more recent, these exactions were more heavy: the revenue imposed soon exceeded what the country could yield, the deficiency annually increasing from the attempt to enforce the full demand, so that the condition of this district at the conquest by the British was much more deteriorated than that of Kumaon and the progress of improvement was consequently much slower and more incomplete.¹

We shall now take up the settlement in Kumaon and Garhwál separately and endeavour, as far as possible, to give the substance of the numerous reports and letters of Mr. Traill for the earlier periods and those of Mr. Batten for the settlement of 1843. There is little to be gathered beyond the statistics from the report on the current settlement in Kumaon, excellent and far surpassing all others in thoroughness and laborious accuracy though it be.

Taking the area as it stands after some interchanges of villages

with Garhwál, the land-tax² of the first settlement of Kumaon yielded Rs. 85,191.

First settlement. This was effected by the Hon'ble Mr. Gardener in 1872 *sanvat* (1815-16 A.D.). The assessment was based on the actual receipts of the Gorkhális during the preceding year, as, owing to the destruction of records and the ravages caused by the war, it was impossible to obtain any more reliable data on which a calculation could be made. In Káli Kumaon and Bárahmandal it was necessary to make some reductions as many villages had been destroyed by the enemy. One-fourth, too, was deducted to enable the people to pay in the coin current in the plains instead of the Gorkháli *timáshas* and rupees which were hitherto current. The settlement of Bhot also was fixed in the Government currency instead of partly in Gorkháli currency and partly in kind, as had hitherto been the practice, and with a light assessment and the introduc-

¹ Traill to Government, dated 22nd January, 1817. ² To Government, dated 22nd March, 1816, which gives the assessment as Rs. 85,746, but it is better to take the district area as it now stands.

tion of security to life and property it was believed that the revenues would be realised without difficulty, and a progressive increase might be hoped for in future years. So far had matters progressed

Second settlement.

that it was resolved to place the administration of the province under the general superintendence of the Board of Commissioners, the representative of the present Board of Revenue. At the same time, the authorities did not contemplate the introduction into Kumaon of the regulations generally as a part of the proposed arrangement, but "it appeared expedient that the Commissioner should, in his capacity of Collector of the Revenue, be placed under the control of the Board of Commissioners, and that their relative powers and duties should be defined by the general principles established throughout the provinces." In practice there was little interference with the work of a man so peculiarly fitted for the charge which he undertook as Mr. Traill. The second settlement was formed by him in 1817 at Rs. 89,537 with the *padhāns* or headmen for their respective villages¹. This mode of collection was new to the people and as the power and responsibilities of the *padhāns* remained to be ascertained, the arrangement was only partially introduced and the leases were restricted to one year. Mr. Traill thus describes the principles on which this settlement was formed:—"The rights of no individual have been compromised, as the *kamīns* continue to receive their established dues from the villages included in their sub-divisions and are the channels of communication in matters of police between the government and those villages. In a few villages, owing to their smallness or the difficulty of communication, the *kamīns* were still admitted to engagements. The first settlement was formed in whole parganahs or in patti, hence, on the formation of a village settlement, it became necessary to fix the land revenue according to the actual produce, and as this, from the nature of the country, could not be ascertained by actual measurement or survey, and as the estimates of the *kánungos* exhibited only the gross estimated assets of each patti, recourse was in consequence had to the village landholders themselves. The gross demand on account of each patti being

¹ The records of the Gorkhāli regular settlement in 1864 San., which was fixed in general on actual observation of each village, were also referred to.

communicated to the whole body, they were directed to fix the detailed assessment themselves—a task which they executed with much equity and fairness as no complaints were received.”

The third settlement was effected in 1818 and was for three years and gave a land-revenue¹ of Rs 98,991 which Mr. Traill still considered extremely light, and short of what Government on a strict calculation of the assets might consider itself entitled to demand. The settlement, except in the Bhotiya parganahs, was everywhere made with the village proprietors, and the number of individual engagements was considerably increased. The mode of settlement was the same², the estimate of the proportional share of the cultivation of each village to the whole patti being completed, the statement was signed by each village representative, and the gross increase demandable from the patti was then added proportionately to the previous assessment of each village, and engagements were interchanged with the landholders themselves. As the patts were very small, and the interference of native officers was not allowed on these occasions, this mode of assessment was probably as fair and equitable as any that could have been made under the circumstances. The increase demanded from each village was too small to render it an object to the village proprietors to protract the settlement by making unfounded objections, and thus to escape with a lighter revenue and at the same time it was difficult for any individual present at the general arbitration to conceal his assets and pass a portion of the burden on to other villages. The general fairness of the arrangement was shown by the fact that the entire revenue of the first two settlements in which it had been tried was realised without having had recourse, in any instance, to any form of duress.

At the close of the first triennial settlement, the smaller landholders, in general, were found unprepared to engage for a long term of years owing to the wandering disposition of their tenantry who continually changed from one village to another without any adequate reason. This habit owed its origin to the oppressive system of the late government, and had ample field for its exercise in the great excess

¹ To Government, dated 21st June, 1818. ² *Ibid.* dated 15th February, 1820.

of arable land when compared with the population, and so great was its influence on the character of the cultivating population, that Mr. Traill recommended that the next settlement should also be for only three years.¹ His proposal received the sanction of the Board. The same causes led to the number of inhabitants in a village being considered of more importance in calculating the assets than the area of arable land, and also led to the almost universal practice of a portion of the cultivation being carried on by persons residing in other villages and who were termed *pati-kásh* cultivators. The culturable area entered in the village accounts of the *kánungos* appears to have been a mere arbitrary estimate of the capabilities of the village handed down through successive governments, and in few instances bore any relation to the actual state of the village. Indeed, the mere fact that the record of area in use throughout the province was based on the quantity of seed which could be sown would lead one to suppose that no actual survey of even the cultivated area had ever taken place. No estimate even of the area of the waste and forest land was ever made by the former governments nor was it taken into account by them in calculating the assets of a village. At the Gorkháli settlement, an attempt was made to establish one common standard of measure for the whole of Kumaon, but when this was applied to the actual measurement of the terraced cultivated land, the labour and expense involved was found so great that the whole scheme finally terminated in a loose method of approximating the areas to the given standard by estimation. As no fixed principle seemed to have been adopted in the execution of this measure, the Gorkháli records had also to be abandoned, and finally the *bási* was taken as the standard of land measurement. The *bási*, as its name implies, should contain the area which requires twenty *nális* of seed to sow it but as this area varied in each parganah, it was at length taken to be equivalent to forty yards less than the British acre, and this is now the standard measure in Kumaon. It was found impossible owing to the number of sharers to prepare a record-of-rights for every village, but the proprietary body was protected as far as

¹ To Board, dated 4th January, 1820; from Board, dated 21st January, 1820; to Board, dated 15th February, 1820; from Board, dated 3rd March, 1820.

possible by placing them entirely under their own *padhāns* and by forbidding the *kamīns* to interfere in the collection of the revenues of any village not their own property. The parganah records, however, gave the name and estimated extent of every parcel of land of every village from which it was possible to identify its boundaries and eventually form a record-of-right. Mr. Traill considered the rate of the government assessment to be yet far behind the scale which should require a minute classification of the culturable area and its capabilities, such as had now been prescribed for the settlements in the plains by Regulation VII of 1821. Taking the average of the entire revenue, it did not amount to one-third of the gross produce whilst the custom of the hills gave the sovereign one half. At this settlement, in 1820, the total revenue demand amounted to Rs. 1,08,327.

Writing¹ in 1821, Mr. Traill was able to call attention to the improvement visible in the condition and prospects of the Kumaon peasantry. The value of land had largely increased, the quantity of waste land newly brought under the plough was far in excess of any previous year, the people were beginning to build substantial houses for themselves, and great numbers of the smaller landholders themselves now carried on the trade in the produce of the hills which was formerly monopolised by a few wealthy families of Sāhus. The causes of this prosperity are not far to seek, and may be briefly summarised thus; firstly, the lightness of the general assessment; secondly, the high price of grain which rose some four hundred per cent. since the introduction of the British rule; thirdly, the large sum, amounting to four lakhs of rupees, expended on public works, private holdings and the carriage of stores, nearly all of which fell to the labouring classes; and fourthly the reduced price of merchandise from the plains owing to the abolition of all transit duties.

Later² on Mr. Traill writes:—"The landed tenures in these mountains have never been disturbed by foreign conquest, nor have the rights of individuals ever been compromised by public sales of lands. The different districts of the province have indeed frequently changed their masters, but there have always been natives of the mountains following the same religion and pursuing the same revenue system as their predecessors. In these successive revolutions, the property

¹ To Government, dated 14th March, 1821.

² To Government, dated

27th May, 1821.

of individuals has necessarily suffered, but the rights and tenures of land vested in the population at large, together with the normal institutions, have never varied, but remain at present in the same force and to the same extent as they existed centuries past. No difficulty, therefore, presents itself to the fullest ascertainment of the rights of every individual cultivator, and the smallness of the village communities offers every facility to this investigation * * * No sales have ever taken place in this province. On the principle stated previously, the purchasers at public sales ought to be considered as having acquired only the right of *malguzari* (engagement for the revenue). In the event of a balance being due from the person engaging for the revenue (*malguzar*), he might be liable to forfeit his office and emoluments as such, and the same might be given to any other sharer in the estate engaging to make good the balance. When this may be due from a sharer not entitled to engage for the revenue his share may be made answerable either by being made over in property to the other sharers in the estate or to the *khdyakars* according to the circumstances of the landed tenures in the estate, the *malguzar's* individual share to be liable in the same manner where the whole balance cannot be realised by the disposal of the right to engage. By this arrangement, although the shares might be subject to alteration, yet the estate would always remain vested in the same family, and if the shares be made valuable by rendering their quota of the revenue fixed, the proprietors would be careful to prevent their alienation, while for the same reason others would be eager to obtain them. It is probable that many of these suggestions have already formed the subject of legislative enactment. If so, I have only to offer in excuse that as the Regulations do not extend to this province, I have not been furnished with or seen a single Regulation for the last six years."

The last paragraph shows the man who had responsible duties and did not seek to evade them. The whole of the work of reducing the chaos he received to some semblance of order was his own, unfettered by rules, which however well they may work amongst a people of another race and subject to different climatic and physical influences, would have simply perpetuated disorder were they introduced into these hills. The existing prosperity of the people of these districts is primarily due to the fact that the three great men intrusted with the administration—Traill, Batten and Ramsay—have steadily refused to allow the hills to be inundated with the rules and regulations of the plains and have accepted only those suited to the habits of the people and the peculiar nature of the country occupied by them. I cannot help trusting that the same wise discretion will be exercised in future.

The difficulties caused by the habit of migrating from one village to another common to most of the cultivators had not ceased on the expiration of the second triennial settlement in 1823, so that a settlement for

Fifth settlement: first
quinquennial.

five years¹ was agreed to as most acceptable to the people. Strange to say this habit of deserting was seldom due to any objection to the individual assessment and occurred most rarely in the parganahs which were most heavily taxed and which had a numerous population. The report² on this settlement gives no details and merely states that the general result of the revision was an increase of about twelve per cent. and the final result was a revenue of Rs. 1,19,430. It was suggested also that in all the parganahs where the cultivation was advanced and where the landholders did not object, the present settlement should be extended for a second period of five years from 1828 A.D. By this arrangement leisure would be afforded hereafter in the resettlement of the remainder of the province for the ascertainment of the existing resources of villages. In Kumaon alone there were over six thousand estates separately leased, and in consequence the proceedings in each case were very summary and the adjustment of the new demand was made rather on a previous knowledge of the state of each village obtained by a lengthened residence in the interior of the district than on any new investigation of the assets. Sanction was accordingly given to a settlement for ten years in parganahs Páli, Bárahman-

Sixth settlement.

mandal, Changarkha, Phaldákot, Dánpur, Rámgar, and Dhaniyákot, and in the rest of the district a revision and resettlement for four years at the expiry of the existing quinquennial leases. This revision³ took place in 1829, giving a net result for the whole district of Rs. 1,22,495. The greatest improvement took place in the parganahs bordering on the Bhábar owing to the number of new villages established there. Taking the whole tract along the foot of the hills from the Ganges to the Sárda, the revenue, exclusive of forest dues, in 1815 yielded only Rs. 1,450, whilst in 1829 it gave a land-revenue of Rs. 14,800. Writing⁴ in 1825 :—

Mr. Traill states that in the greater proportion of villages throughout the province cultivation is in the hands of the actual proprietors of the soil ; in others again the right of property is vested in the descendants of some former grantee, whilst the right of occupancy and of cultivation remains with the descendants of

¹ To Board, dated 1st June, 1823 ; from Board, dated 24th July, 1823 ; to Board, dated 20th September, 1823.

² To Board, dated 28th June, 1825 ; from Government, dated 26th February, 1826 ; to Board, dated 19th September, 1826.

³ To Board, dated 2nd January, 1829 ; from Government, dated 16th February, 1832.

⁴ To Government, dated 28th June, 1825.

the original occupants who were in possession at the time of the grant. In both these cases there can be no difficulty, as the cultivator is only liable for his quota of the State demand, whoever may be the *mālguzār*. In other villages, however, the cultivation is carried on by resident tenants who have no right of occupancy, either acknowledged or prescriptive; these tenants pay their rents either in kind (*kūt*) or in money (*sir̄thi*) according to existing rates or engagements or to former usage. In the fourth description of village the cultivation is *pahikāsh*, that is by non-resident cultivators. In these the *mālguzār* makes as much as he can from his estate, and under this head are included new settled villages, as in the Tarāi, in reclaiming which a considerable outlay is always requisite. The State demand is for some years merely nominal with a view to that circumstance and to prohibit the adventurer from collecting beyond that demand must preclude all prospect of reimbursement and must at once tend to prevent further improvement. In *pahikāsh* lands under full and fair assessment the farm is commonly an uncertain speculation, as the fickle disposition of cultivators of this description may sometimes be the occasion of loss and in other years of gain to the farmer. Where several individuals join together in reclaiming waste lands the adventurers all of course fall under the head of proprietors, though the name of only one of them should be entered in the lease. This observation applies equally to the villages of Brahmans which are cultivated chiefly by the slaves or servants of the several proprietors. In most of the old established villages a recorded portion of *śr̄* land is enjoyed by the *mālguzār* rent-free as *hak padhānchāri*, under which name it is detailed in the lease. This system might be extended on fixed principles to every village in the province, while in newly cultivated villages a term might be fixed after which the *mālguzār* might be precluded from collecting beyond the public assessment from his tenants. The engagements between *mālguzārs* and tenants are almost invariably verbal and written leases except for whole villages are unusual."

"In Pāli, Bārahmandal, Dhaniyakot, Dānpur, the present assessment exceeds that of the Gorkhāli settlement more than twenty-five per cent., and it may be stated generally that upwards of four-fifths of the arable land in these parganahs are in a state of full cultivation. In Chaugarkha also, the assessment exceeds that of the last Gorkhāli demand, but only a small portion of the villages have attained a fair state of cultivation: in others, the waste lands form the largest proportion: in these an extension of the present leases might be considered premature. In Phaldakot the demand is on a lower scale of improvement apparently, but it is in fact the highest assessed parganah in Kumaon. The Gorkhāli demand was calculated on the income of the people, rather than the assets of the land: the landholders here, being the chief carriers of the hill trade, were, therefore, taxed more highly than others whose means were derived wholly from the land. Rāmgār contains the principal iron mines. In the demand of 1816, the revenue of the whole of such mines throughout Kumaon proper is included: the mines situate in other parganahs have now been brought forward in them. A deduction of Rs. 1,020 has been made in the demand of the present year by this measure: the farm of the mine should be left for revision. In Kota, Chhakhāta, the great visible improvement arises from the reclaimed villages in the Kumaon Tarāi. It is not recommended to extend the leases in this district. In Gangoli, owing to the continued ravages on human life committed by tigers, it is the least improved in comparison to its

extent of any in the province; full one half of the arable land being uncultivated, an extension of the present leases would in many instances be declined and if they were accepted would preclude Government from a share in the improvement of the next three years; from the demand of the present settlement, Rs. 3,000, must be deducted Rs. 500, the assessment of the copper mines in this parganah now brought forward with the land-revenue assessment, though hitherto separate"

I shall give another extract¹ from a letter of 1829, as these give life to the dry statistics of the various settlements and allow us to see the principles on which they were made: "On the introduction of the British Government in 1816, the most fostering attention was found necessary to enable the cultivators to recover from their destitution. The public assessment was imposed under a single head and was founded on the acknowledged collections of the preceding year. All extra cesses were struck out of the demand, and though the remission from this measure was for the most part nominal, the simplification of the system of collection proved no small boon to the landholders. At the five succeeding settlements, the State demand has progressed with the improvement of the country, though still in the aggregate below the Gorkhali settlement of 1812. In its detail, the settlement is formed separately for each village, the engagement for which is taken from some one of the sharers under the designation of *padhan*. This officer is remunerated by a small parcel of rent-free land set apart for the purpose, and can demand from the other sharers no more than the exact quota of the public assessment which may attach to their individual shares. These sharers hold in severalty: consequently in the greater part of the province, that is, in the villages cultivated by the actual proprietors, the settlement has all the advantages of a *ryotwari* assessment without its uncertainty; the cultivator is thus secure of enjoying the whole profit of his farm after payment of the public dues, and before he puts his hand to the plough, he knows the exact sum which he will have to pay. But though the revenue of the Government and the individual income of the landholder be circumscribed by the existing state of landed property, it is by no means certain that the interests either of the public or the individual would be benefited by a more unequal division of land. Large farms require for their support either a local consumption or a foreign market. Now the population of the interior is wholly agricultural and the sole unproductive consumers are the few government servants stationed here. From the nature of the country and consequent difficulties of transport few articles of agricultural produce can bear the expense of carriage in exportation. The Bhotiyas, it is true, take off a large portion of the surplus produce of the northern districts for the Tibetan market, but only in the way of barter, in which salt or borax is exchanged for grain. The only certain demands on which the interior agriculturist can here depend are the markets at the military stations."

The settlement in the parganahs, in which agreements for four years only were taken, expired at the end of
 Seventh settlement. August, 1832, and just at the moment the new assessment was being made, flights of locusts settled down all

¹ To Government dated 2nd January, 1829.

over the country and so injured the growing spring-crops that a bad harvest was the result. In the following year, when the remainder of the leases fell in, a deficiency in the rainfall caused some injury to the rain crops.¹ Although these unfavourable circumstances were more formidable in prospect than destructive in their actual effects, they effectually alarmed the landholders and rendered them averse to enter into new engagements. Their influence, also, on the entire settlement caused the increase gained to be much less than what might have been expected from the extension of agriculture in the province. Actual abatements were in many cases necessary, many being due to transfers of estates from one parganah to another. The number of the leases at the former settlement was 5,704 and averaged only Rs. 37 each in amount, and in such petty estates casualties amongst the cultivators were met with difficulty and rendered frequent revisions of settlement necessary. An attempt was therefore made to reduce the number of separate engagements, so far as the wishes and interests of the landholders would allow, with the result that in 1833 there were 4,605 separate leases, giving an average land-revenue of Rs. 46 for each lease. For these reasons Mr. Traill proposed a settlement for five years only, which resulted in a revenue for the entire district of Rs. 1,24,729.

The Board of Revenue recommended that the settlement of 1832-33 should be extended for a period of twenty years;² but the Government refused to sanction this arrangement without having the opinion of Mr. Traill, who wrote as follows:—

“The extension of the new settlement for a term of 20 years would doubtless be attended with advantage in those parganahs of which the villages are fully populated and cultivated; but in other districts where population and cultivation are at a low ebb, and where waste lands abound, such a measure would shortly be followed by a loss of revenue from the facilities with which new locations are there obtainable. The habits of the cultivators are extremely unstable and migratory; vacancies arising from desertion are not readily filled by new tenants, while the general poverty of the landholders and tenantry render them

¹ To Commissioner, Bareilly, dated 24th December, 1833; from Commissioner, Bareilly, dated 3rd January, 1834. ² From Commissioner, Bareilly, dated 15th June, 1834; to Commissioner, Bareilly, dated 23rd June 1834.

incapable of meeting from their own funds, the additional burthens entailed by such desertions. In these cases, the lease would be thrown up and remissions in the demand indispensable to save the village from total desertion ; at the same time no advantage could be taken of the growing improvement in other villages. It may be doubted whether the landholders in these districts would willingly engage for so long a period unless the tenants of their respective villages should be considered as parties in the engagements and remain bound for the same term. Under the Gorkhali government, when a fixed village settlement was promulgated, the above principle was fully recognised, and the claim of the landholder followed his tenant wheresoever he might migrate."

According to Traill's last report, written in 1833, the total revenue had risen from Rs. 1,17,730, exclusive of transit dues in 1815 to Rs. 2,34,410 in 1833 over the united districts of Kumaon and Garhwál.

In the meantime, Mr. Traill was succeeded by Colonel Gowan, who was directed to report in what parganahs the extension of the term of settlement as proposed by the Board of Revenue would be acceptable to the body of the landholders.¹ All he could say was that he could get no information that could be relied upon, that he believed that in Askot in Kumaon the people were willing to take leases for ten years, and that in portions of Garhwál they would accept a settlement for twenty years. He was told that "nothing of a satisfactory reason palpable or probable was shown by him for the stated repugnance to the extension of the term of settlement, nor did there appear any reasonable ground which could account for the people or the tahsildárs declining to answer the question-which he was directed to put to them." He was therefore requested to continue his investigation and report the reasons for the disinclination shown by the landholders. In reply, Colonel Gowan repeated Mr. Traill's observations on the previous settlement, and some conversations that he himself had with the people in which it was said :—"Twenty years is nearly the term of a man's life. Who can tell what may happen to a man in that period, the cholera

¹ From Commissioner, Bareilly, dated 2nd May, 1836 ; to Commissioner, Bareilly, dated 2nd September, 1836 ; from Commissioner, Bareilly dated 8th September, 1836 ; to Commissioner, Bareilly, dated 14th September, 1836 ; to Mr. Thomas, Bareilly, dated 9th March, 1837. The arrangement by which the landholders near Lohughát supplied grain to the troops at fixed prices was, abolished, dated 5th June, 1837.

or some other epidemic may break out and sweep of all our cultivators, and then what is to be done?" The people declined to be pressed for a reply as they generally were averse to any prolongation of the settlement. He was then directed to continue the existing settlement for one year and in the meantime to do all in his power to induce the landholders to agree to a settlement for twenty years. Sections 5 and 7 of Reg. X of 1831 gave jurisdiction to the Board of Revenue over revenue matters as well as customs, excise and stamps in Kumaon, and by Act X of 1838 it was further enacted that the functionaries who are or may be appointed in the province of Kumaon shall henceforth be placed under the control and superintendence of the Board of Revenue at Allahabad in revenue cases and that such control and superintendence shall be exercised in conformity with such instructions as the said functionaries may have received or may hereafter receive from the Government of the North-Western Provinces.

The ninth settlement was made by Mr. Batten during the years 1842-46 and was for twenty years. This Ninth settlement. was the first partial attempt to measure and examine the capabilities of the land and to form a record of rights. The result of the revision was a revenue of Rs. 1,30,094, which in the average of the last five years of the currency of the settlement amounted to Rs. 1,29,765 a year. In his final report on the settlement Mr. Batten states that the general rules adopted for the leasing and management of estates (*maháls*) and the appointment of *padhás*, the boundaries of villages and settlement of disputes concerning them, the right to waste lands, pasture grounds and forests, the assessable area of estates and measurement of lands, and finally the record of settlement noticed by him in his report on the settlement of Garhwál equally apply to Kumaon, and as these matters have been dealt with in some detail in the notice of that district, the reader is referred to it for the detailed principles observed in the assessment.

"The only repetition that appears necessary is that the remuneration of *padhás* in land, money or dues or all these combined was in Kumaon, settled by the mutual agreement of the parties, and failing that.

by decision of arbitrators, and that the allotment of *hak-padhani* land recorded in the statement papers represent actual facts and not the nominal figures of the old records."

It was further arranged that no attempt at actual demarcation of waste lands included nominally within a village boundary should be made where there was no dispute owing to the existence of the rule to lease newly broken up lands to the nearest village or to offer them to the landholders of such villages first rather than to strangers. It was not through any fault of Mr. Batten that the detailed survey and record effected by Mr. Beckett at the recent settlement was not taken in hand twenty years earlier. He writes:—

"A revenue survey of the mountain pargannahs founded on the principles adopted in the plains can hardly be expected after the Government has been informed by its district officers that such a survey, however useful, in determining existing agricultural possessions would not favourably affect the total amount of revenue in regard to the State, and if permitted to modify the distribution in regard to the inhabitants would perhaps end in seriously injuring the budget. For would not its tendency at least be to equalise the payments strictly derivable from the gross produce of the soil; to fix a Government share of that produce founded on experience elsewhere and to exclude from the fiscal capabilities assets which the people have been hitherto content to consider available for the nominal land-tax."

The latter consideration forced eventually the actual survey and appraisalment of the produce of the land on the authorities which was carried out by Mr. Beckett. As to the assessment itself, Mr. Batten was of opinion that—

"No great increase of the land-revenue under the present system need be expected. In opposition to the prevailing opinion Kumaon is over-assessed rather than under-assessed: that is a large portion of the rent of the land in the old occupied tracts is now taken by the State as both *de jure* and *de facto* landlord, and though no actual hardship is experienced, though pauperism is unknown, though a hill labourer is always better lodged and often better fed and clothed than his fellow of the plains, and though a general feeling of content and loyalty exists, still one can perceive in the present state of affairs (1846) no elements of increasing wealth of which revenue will be the future sign and expression. In the ill-inhabited tracts, the low assessment is owing to causes which except in the most insalubrious valleys, may give way before the march of population. But in the well-inhabited tracts, the revenue is paid by the people themselves more as a capitation tax than anything else, in the same degree that the rise improves in Katyur and Gaugoli will it in all probability decline in Pali and Parah-mandal."

These lines were written before the tea-industry attained its present development and brought into the province large amounts of capital every year to be expended within Katyur, Gangoli and Lohba, and before the hill sanitarium of Ránikhet and Naini Tál, brought willing mouths capable of consuming, not only the existing surplus produce, but all that the lands capable of cultivation can yield. Although Mr. Batton's hope that "the present generation may yet behold the now jealous occupants of rice and wheat fields humble applicants for tea-seeds" has not been fulfilled, the results expected from the introduction of the tea-plant have been fully justified. Upwards of 12,177 *bits* are now held in fee simple, chiefly for tea-gardens in Kumaon alone, and the capital expended on them has found its way into the pockets of the poorer classes of these hills and of the Nepál district of Doti, vastly raising their physical and moral status and placing them in a position which from all we know of their history, they never before attained to.

As already noticed the characteristic of Mr. Batten's settlement was the record-of-rights that was framed for each village. This contained a complete description of the rights of every occupant; the past history of the assessments; the boundary arrangements; the engagement paper (*ikrárnámah*) of the inhabitants in regard to the remuneration of the *padhán* and the collections of all sorts to be made under the heads of *thokdári*, *sayánachári* and *hissahdári* dues and also binding themselves down to a conformity with certain rules in regard to the public service and good administration and the *phard-phant* showing the names of the *padhán*, the distribution of the revenue payers amongst the several *padhán*s whose more than one were elected; the quotas of revenue payable by the several shareholders or occupants; the division of the non-proprietary tenantry amongst those recorded as proprietors and the names and liabilities of the *pahikásh* and other cultivators whenever discoverable. In addition to these documents there was a memorandum (*rubahkári*) summarising the whole and the numerous petitions presented depositions taken, and orders passed during the course of

the settlement on miscellaneous matters formed separate files in the proceedings.

The following table gives the results of the settlement under Reg. IX of 1833 effected by Mr. Batten in 1842-46 :—

Parganah.	Number of estates.	Number of vil- lages.	Assessment in rupees.							Assessable area in bisis.				
			1816.	1816.	1817.	1820.	1823.	1828.	1833.	1841.	Total esti- mated.	Cultivated.	Culturable.	Rate on cul- tivation per $\frac{1}{100}$.
			Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.				Rs. s. p.
Bhot (Juhár Darma).	80	337	9,367	10,910	9,580	3,860	4,714	4,753	4,822	4,791	13,779	8,045	5,012	0 8 10
Jánpur	210	473	3,487	3,543	4,164	4,432	5,522	5,570	5,657	5,837	12,439	6,697	5,354	0 12 5
Gangoli	381	753	1,820	2,035	2,120	2,698	3,278	3,538	3,720	3,972	16,302	7,742	6,061	0 8 3
Ohaniyakot	93	102	2,767	3,003	4,061	4,465	4,743	4,738	4,783	4,819	5,776	5,325	204	0 14 6
Phuldakot	107	180	6,324	6,524	7,191	7,475	7,919	7,889	8,040	8,050	13,109	12,540	551	0 10 3
Sira	146	228	1,791	2,183	2,356	2,730	2,884	3,103	3,188	3,195	13,566	8,390	4,884	0 6 1
Shor	285	407	3,481	4,004	4,539	5,493	6,134	6,020	6,635	6,690	23,741	15,330	8,113	0 7 0
Jakot	2	109	709	858	915	990	1,095	1,095	1,174	1,174	1,404	853	611	1 0 0
Káfi Kumaon.	539	814	8,970	9,706	10,907	12,180	14,101	15,321	15,529	15,969	41,790	32,079	9,407	0 7 9
Ohyanirau	100	182	4,101	4,320	4,902	5,456	5,748	6,047	6,126	6,212	9,450	7,789	1,647	0 12 9
Rámgar	20	530	1,944	1,946	2,317	1,969	1,859	1,860	1,862	1,864	1,617	1,402	209	1 6 10
Chaugarkha	203	02	4,118	4,515	5,123	6,817	7,714	7,736	7,808	8,119	21,214	15,893	4,717	0 8 2
Chhakháta	48	83	1,715	1,625	1,741	2,024	2,231	2,527	2,595	2,623	2,828	2,620	100	1 0 0
Kota	53	76	2,183	2,367	2,430	1,962	1,886	2,315	2,317	2,285	2,591	2,154	982	1 0 8
Báribmandal.	506	665	9,300	10,219	11,194	15,044	17,344	17,381	17,854	18,172	19,542	17,732	1,197	1 0 11
Páil	507	1,057	20,303	20,011	25,593	31,240	32,597	32,630	33,139	33,793	30,704	27,828	1,865	1 3 5
Total	3,350	5,955	82,979	89,568	99,199	1,06,856	1,19,989	1,23,104	1,25,331	1,27,10	2,29,893	1,72,912	52,363	0 11 9
Waste villages.	39	95	03	72	98	103	120	141	263	...	1,620	20	1,602	...

Besides the above, 344 villages having a total area of 11,225 bisis, exclusive of unmeasured waste, were held free of revenue as endowments of temples, and 93 villages having an area of 2,382 bisis were held free of revenue by individuals.

The tenth and current settlement of the Kumaon district (excluding the Bhábar) was effected by Mr. Beckett during 1863-73, and runs for thirty years.

Unfortunately Mr. Beckett was obliged by ill-health to proceed on furlough before writing a report, so that we have nothing but two ponderous volumes of figured statistics and a short introduction by Sir Henry Ramsay to give us an account of this the most important, for its procedure and results, of all the settlements of Kumaon. Although Sir H. Ramsay has been good enough to say that details and particulars will be found in Mr. Atkinson's *Gazetteer*, the following account of the settlement proper is mainly based on his own summary. As has already been noticed, there was a considerable revision of patts and parganahs at the recent settlement, which altered the areas so much that, when writing of a parganah and its revenue in the time of

Mr. Batten and Mr. Traill, it may not represent the area known under the same name at the present day. As the details of each patti will be found under separate notices in the alphabetical arrangement, it will be here only necessary to give the details by parganahs and the total for the district. The following statement shows the particulars of the current and past statements according to the present arrangement :—

Parganah.	Number of—		Assessment in rupees.									Termination of settlement in each year.
	Estates.	Villages.	1815.	1916.	1917.	1920.	1923.	1928.	1833.	1943.	Current.	
Brahmandal...	510	601	9,241	10,143	11,074	12,767	16,956	16,996	17,328	18,075	30,833	1,310
Chhakhata ...	51	61	1,520	1,449	1,471	1,099	1,898	2,164	2,204	2,304	4,009	1,304
Chaugarkha ...	362	474	8,992	4,433	5,917	6,776	7,644	7,407	7,800	8,013	15,972	1,319
Dampur ...	314	517	3,584	3,900	4,380	4,514	5,740	6,953	6,956	6,920	16,362	1,310
Darwa ...	37	43	4,518	5,768	4,530	1,225	1,345	1,368	1,405	1,400	1,886	1,308
Dhanyakot ...	81	98	3,154	4,139	4,699	5,092	5,412	5,413	5,494	5,508	7,164	1,309
Dhyaniwau ...	134	171	4,078	4,250	4,835	5,429	5,746	6,052	6,190	6,257	10,454	1,309
Gangoli ...	495	747	1,717	1,919	2,011	2,559	3,065	3,298	3,469	3,642	12,944	1,309
Juhar ...	107	212	4,843	5,140	5,052	2,634	3,382	3,380	3,439	3,373	5,975	1,309
Kali Kumaon ...	590	711	8,960	9,764	10,907	12,346	14,152	15,363	15,555	15,621	25,873	1,307
Kota ...	51	67	2,009	2,227	2,257	1,831	1,819	2,139	2,144	2,122	2,894	1,309
Pali ...	773	1,048	21,050	21,166	25,769	31,316	32,684	32,704	33,249	34,893	57,320	1,309
Phaldakot ...	128	151	5,887	6,133	6,091	7,001	7,404	7,404	7,528	7,565	10,340	1,309
Rangar ...	26	31	1,944	1,947	2,317	1,989	1,859	1,901	1,912	1,914	2,304	1,309
Sira ...	166	236	1,905	2,199	2,383	2,759	3,011	3,120	3,223	3,205	5,999	1,308
Shor ...	280	303	3,636	4,002	4,593	5,495	6,141	6,676	6,657	6,857	14,114	1,308
Askot ...	2	142	709	858	915	995	1,095	1,095	1,174	1,174	1,350	1,308
Total ..	4,108	5,673	82,707	89,537	98,991	1,08,327	1,19,430	1,22,496	1,24,729	1,36,573	2,30,628	
GRAND TOTAL...	4,469	6,573	85,328	90,688	99,328	1,08,599	1,19,730	1,23,829	1,25,121	1,40,633	2,40,970	

The following statement gives the particulars of area and population on which the assessment was based :—

Parganah.	ASSESSABLE AREA IN <i>bis</i> .				RATE PER ACRE ON—		POPULATION.		REVENUE-FREE, IN <i>bis</i> .	
	Total.	Cultivated.		Culturable.	Total area.	Cultivation.	Males.	Females.	Genl.	Modf.
		Irrigated.	Dry.							
Brahmandal...	34,724	2,840	23,678	8,208	Rs. a. p. 1 1 0	1 6 3	31,740	28,434	1,346	1,333
Chhakhata ...	4,255	487	2,217	1,552	0 15 1	1 7 9	3,750	3,857	10	...
Chaugarkha ...	22,397	723	14,348	7,215	0 11 5	1 10 0	14,802	12,643	1,960	206
Dampur ...	19,019	3,977	5,832	9,210	1 12 11	1 9 1	10,097	6,769	1,440	399
Darwa ...	2,347	271	1,436	641	0 12 5	1 1 1	2,593	2,138	...	103
Dhanyakot ...	5,702	950	3,494	1,229	1 4 1	1 9 7	6,008	5,759	...	852
Dhyaniwau ...	13,381	660	5,101	4,419	0 12 6	1 2 9	9,996	7,756	36	...
Gangoli ...	19,647	3,379	6,186	10,081	0 10 6	1 9 6	10,167	8,953	693	164
Juhar ...	6,332	1,079	2,317	2,936	0 15 1	1 12 2	5,074	4,468	61	...
Kali Kumaon ...	37,079	1,563	22,257	13,283	0 11 2	1 1 5	22,696	19,164	1,969	262
Kota ...	2,866	373	1,448	1,045	1 0 2	1 9 6	2,399	2,207	...	...
Pali ...	62,641	3,294	49,340	10,406	0 14 8	1 1 7	48,064	4,304	1,763	60
Phaldakot ...	9,832	704	7,133	1,996	1 0 10	1 5 1	5,562	48,269	27	...
Rangar ...	2,611	19	1,469	1,123	0 14 1	1 8 9	2,683	2,474	...	...
Sira ...	5,960	1,768	1,865	2,336	1 0 1	1 10 6	4,215	5,079	210	...
Shor ...	14,287	3,460	5,917	4,860	0 15 9	1 7 11	10,012	6,936	191	...
Askot ...	4,169	689	2,144	1,355	0 4 9	0 7 1	3,139	2,761	...	...
Total ...	2,67,178	25,472	1,59,810	81,895	0 13 10	1 3 11	1,94,967	1,73,900	9,437	3,297
GRAND TOTAL...	3,00,027	28,944	1,71,312	80,591	...	...	2,09,176	1,89,300	...	...

If assessed to land-revenue, the *gánth* or temple grants would yield Rs. 8,447 per annum and the *mudfi* or personal grants Rs. 3,412 per annum. In addition to these the *sadúbart* villages comprising those whose revenues are devoted to charitable purposes, chiefly keeping up the dispensaries and rest-houses along the pilgrim routes, numbered 124, with an area of 6,718 *bísis* of assessable land and assessed at Rs. 5,800 per annum. Further, 12,177 *bísis* were held in fee-simple at a quit-rent of Rs. 1,083 per annum including the sites of nineteen villages. Eleven villages were held by Government itself in fee-simple and 237 villages were waste or covered with forests and held no place on the revenue roll. The 'total' line at foot in both the preceding tables refers only to the revenue-paying area, the 'grand total' line includes the statistics of the revenue-free areas above enumerated and gives the real total of the district. Distributed by tahsils the statistics are as follows:—

Tahsil.	Revenue-paying.		Sadúbart.		Gánth.		Mudfi.		Fee-simple.		Waste villages.
	Villages.	Revenue.	Villages.	Revenue.	Villages.	Revenue.	Villages.	Revenue.	Villages.	Revenue.	
Almora ...	3,795	Rs. 1,57,667	121	Rs. 5,474	363	Rs. 6,624	69	Rs. 2,248	15	Rs. 1,003	104
Champáwat,	1,526	51,582	...	...	77	1,783	12	208	3	46	87
Bhábar ...	552	21,379	3	326	8	40	11	956	1	34	16
Total ...	5,873	2,30,628	124	5,800	448	8,447	92	3,412	19	1,083	207

The Almora tahsildár has a deputy or peshkár for Páli in Almora and the Champáwat or Káli Kumaon tahsildár a deputy at Pithoragarh. The Bhábar tahsil includes a portion of the lower hills but has chiefly to administer the revenue affairs of the Bhábar proper.

There was no actual measurement of the land on which any reliance could be placed beyond the estimate made by Mr. Traill in 1823, which was of little use except for boundaries. It was prepared by native officials who sat on some commanding position and summoned the *padhans* of the villages within sight, and from them noted down the boundaries and estimated the areas and thus afforded some

very rough idea of the size of each village. The *phard-phant* of Mr. Batten gave information only of the number of sharers and cultivators and the revenue demandable from each. Being prepared by the villagers themselves, whose object was to conceal their numbers and make their village appear as poor as possible, the revenue was distributed amongst a very few of the shareholders, and except where the permanent tenants (*kháyakars*) were on bad terms with the proprietors, a very large proportion of them was omitted. It was of use, however, in accustoming the people to think that they had rights worth recording and during the currency of the past settlement many villages were properly surveyed, trained surveyors arose, and the people became accustomed to the idea that an accurate record of the capabilities of the land formed the best basis for the contract between them and those from whom they held and between their village and Government. Consequently when measurement operations actually commenced; the staff found the people ready to receive them and indeed willingly to co-operate in the objects of the survey. The measurement was carried out on these principles:—(1) all terraced land was to be measured unless it had relapsed into forest but forest clearings and slopes cultivated only after the lapse of eight or ten years, known as *khil* or *kaunla*, were not to be measured and each enclosure or field was to be measured separately:—(2) the whole of the terraced land was to be shown under four qualities, *a*, irrigated; *b*, good dry; *c*, second-rate dry and, *d*, casual cultivation or *ijrdn*. The surveyors, however, did not adhere to these instructions and it was found necessary to classify all the culturable area under, *a*, permanent cultivation; *b*, casual cultivation, and *c*, waste. By 'waste' all through the records is meant terraced land thrown out of cultivation and does not include the grassy slopes or forests within the nominal area of a village.

The instrument used was a hempen rope sixty feet long divided into ten lengths of six feet each, and if to
 Procedure. this we add that the terraces are usually of the most irregular shapes in length and width, the result must be at the best little more than an approximation, but one of the greatest value and far superior to anything in existence before as a basis for assessment. As a record-of-rights, regarding the occupation and

ownership of each terrace, they are particularly valuable, the more so when we consider the fact that in some villages there are upwards of six thousand of these terraces, some not more than ten square yards in area and yet each can be readily identified by means of the village maps. As a check on the surveyors each occupier was given an extract from the survey record (*purchah*) relating to his own holding and he had thus means to bring before the settlement officer any omissions before the final record in the books, on which the assessment was made. An ingenious procedure was then had recourse to in order to bring all the land in the village to one common standard of quality. That of second-rate dry land known in the hills as *duvam uprāon* was selected and each of the other three classes was brought to this standard by trebling the irrigated, by adding one-half to first quality dry and by reducing casual cultivation by one half. Thus a village with an area of ten *bisis* irrigated had 30 estimated for that class; twelve first quality dry was held equal to 18 and twelve *ijrān* was held equal to 6, or all were equivalent to 54 *bisis* of second quality dry cultivated land for assessment purposes. The next difficulty was to ascertain the rates to be applied to the areas thus found and in the absence of *jamabandis* or rent-rolls, it was necessary to estimate the produce of each class of soil. In irrigated land it is very common for the proprietor to take one half the produce; in first-class dry, one-third, and in second-class dry one-fourth to one-fifth. Then comes the question of the produce per *bisi* which varies with the position, cultivation and soil. In some places, irrigated land yields as much as 60 maunds of unhusked rice per acre and 40 maunds is a common yield and good first-class dry land gives 40 maunds of wheat or *munduwa*. The following table shows the general result for the district:—

Crop.	Average yield per acre.			Average money value.		
	Irrigat- ed.	1st dry.	2nd dry.	Of pro- duce 2nd dry.	Add half for se- cond crop.	Total.
	Mds.	Mds.		Rs.	Rs. a.	Rs. a.
Rice ...	20	12	8 @ 20 seers	16	7 8	23 8
Wheat ...	16	12	6 @ 16 "	15	7 8	22 8
Mandawa ...	...	16	10 @ 30 "	13	7 9	20 8
Mandua ...	...	16	10 @ 30 "	13	7 8	20 8
Urd ...	...	10	6 @ 16 "	15	7 8	22 8

In the second money column, the return of half an acre is only given, as land is usually left fallow for a second crop every second year. The total shows the average yield per acre of second class dry land. Taking everything into consideration, an average rate of one rupee per *bisi* (forty yards less than an acre) was held to be the average rate in second quality dry land, and thus the good land was made to help the bad land in the rates assessed. How this compares with the rates fixed at previous settlements and how it falls on the total assessable and cultivated areas in each parganah may be seen from the figures given in the preceding tables. Broadly, Traill's assessment in 1823 fell at Re. 0-12-2 per *bisi*: Batten's in 1842 at Re. 0-8-11 per *bisi* on the total assessable area, and Beckett's in 1870 at Re. -0-13-10 and subsequent experience shows that in the greater part of the district this is not too light.

Other considerations were taken into account in applying these rates to the particular villages: the vast changes due to the great amount of money brought into the district by the tea-planters and the public-works at Ránikhet; the great advance in the price of grain, which has almost doubled, and the increase in population. The last has always been an important factor in hill assessments and is well recognised by the people themselves, who frequently urge, as a cause for remission of revenue, the death or desertion of a wife or daughter. In many places, owing to the paucity of inhabitants, the able-bodied cultivators are of equal importance with the land in estimating the assets of a village. Another of Mr. Beckett's processes was applied to bringing out the value of this factor in the assessment. He ascertained (a) the average population per each one hundred measured acres for the whole district; (b) the average population per one hundred acres of the cultivated area; (c) the average population per one hundred acres for the cultivated area with half the *ijrdn*; and (d) the average on three-fourths of the total area. For example, the average population per one hundred acres on the whole district being 141, a village with a population of 70 to the hundred acres would give a rate of eight annas, the land-rate being one rupee, the mean of the two or twelve annas gives the average rate according to population. Were the population of the village 280 under the same circumstances the average rate would be

Re. 1-8-0. Under the second form of calculation the average population per one hundred acres of cultivation being 195 and the revenue rate only Re. 0-14-6 per acre, a population of 98 would give a rate of Re. 0-7-3, or taking the mean of the two, eleven annas per acre. Under the third calculation the population average being 185 per one hundred acres and the revenue rate Re. 0-13-6 per acre, if the population were 92, the population rate would be Re. 0-6-9 and the mean, ten annas. The average of the resultants was considered the population rate of the village.

The statistics of area compiled for each village also aided in the assessment. These comprised (1) the Application of area rates, total area measured by the villagers; (2) cultivated land with addition for quality (*i.e.*, the application of the process already described for reducing all to the standard of second-class dry land, (3) cultivation with half *ijrán*; (4) three-fourths of total measured area with addition for quality. Any excess in 1 over 3 showed that there was much waste land; excess in 2 over 3 showed a large predominance of permanent cultivation, and if 2 exceeded 1 it was seen that the land was exceptionally good or well irrigated. Excess in 3 over 2 showed too much *ijrán*; in 4 over 3 too much waste and in 4 over 1 that the land was good. With all these indications before him Mr. Beckett formed his statistical average rate for each village. But in addition to this, he personally inspected each village and had before him its history from the conquest, and it was a consideration of the facts thus brought to light that led to modifications of the statistical rate. Thus it will be seen, that much care and trouble was bestowed on the collection of materials and their application such as would give an assessment fair alike to Government and the people. Although the phrase '*nám bikat kám bikat*' has passed into a proverb, we may well agree with Sir H. Ramsay that the assessments as a whole are fair, though in consequence of their having been raised so high in comparison with the old land-tax, they are sufficiently high, the increase amounting to Rs. 1,03,518 or 81.43 per cent.

Cultivation and population have increased to a remarkable extent, and during the work of survey many parcels of land which had been concealed and villages connected with the court officials who had managed to underestimate the assets were now brought

for the first time at a fair value on the revenue-roll. Mr. Beckett was careful to omit from his calculations all waste of the description already noticed, although the villagers themselves desired it to be measured. The people have full power, however, to use such land as they like, as well as to extend their cultivation into unmeasured forest tracts without any increase to the demand during the currency of the settlement. The only exception is in the neighbourhood of Almora, Ránikhet, and Naini Tál where forest land is of great value for timber and fuel, here cultivation can only be undertaken with the special consent in writing of the district officer and covenants to this effect have been entered in the settlement records. It is to this system that we owe the extension of cultivation that has taken place and in the less cultivated parts, industry will enable the people to make the heavier assessment less burdensome in a very short time. Still summary settlements may be found necessary. Sir H. Ramsay writes :—

“Land may be washed away by floods or destroyed by landslips; cattle-disease, the death of cultivators or other necessity may arise for rendering relief, permanent or temporary, necessary; and in my opinion such relief ought to be offered readily: because all cultivated land has been now assessed and the loss of cultivators or cattle might imperil the existence of a village which could be averted by a little trouble and the expenditure of a few rupees. Small villages are more likely to require relief than large ones; but it must be remembered that one proprietor may lose all his land and he can get no relief from the other shareholders, therefore his individual case ought to be considered if necessary.”

Sir Henry Ramsay was the guiding spirit in all these arrangements, to him was submitted the assessments in every village almost, and with him lay the decision on doubtful points of procedure. To the administrative powers of Traill, Sir Henry Ramsay has added also the love of order and law so marked in Mr. Batten's work, whilst, perhaps, he has had a more difficult charge than either; for in his time came the flood of circulars and departments, each of the latter trying to justify its existence, not by doing its own work but by asking the already overworked district officer to do it for them. Perhaps Sir Henry Ramsay will have gained as lasting a reputation from the stern ‘No; not applicable to Kumaon’ with which he greeted many of the purely routine circulars, as from the many and solid benefits that he has conferred on Kumaon during his long and valued career. The settlement department

owes to him that it was able to achieve the great work accomplished at the recent settlement without the detailed procedure solely applicable to the plains, which at one time it was resolved should be adopted in Kumaon. Pargana rates are hardly valuable in a district where the tract within the boundaries of a single village has climates varying from the Arctic regions to the Tropics : the people, the tenures of land and the mode of agriculture are utterly different from the practices of the plains and should not be forced to appear uniform to them in theory or practice.

The working of the settlement will be best understood from the following table showing the demand, collections and balances since 1872-73. The years 1877-79 were years of scarcity which affected Kumaon as well as all Upper India, and the balances of 1880-81—1882-83 both recoverable and nominal were due to the floods of the year 1880 ; the column ' irrecoverable ' shows the real remissions :—

Year.	Demand.	Collection.	Balance.	PARTICULARS OF BALANCE.				Percentage of real balance to demand.
				Real.			Nominal.	
				In train of liquidation.	Doubtful.	Irrecoverable.		
	Rs.	Rs.	Rs.					
1872-73	1,64,432	1,63,896	536	455	65	...	16	32
1873-74	1,64,236	1,61,554	2,682	449	416	16	1,803	53
1874-75	1,63,858	1,61,883	1,975	227	454	10	1,284	42
1875-76	1,96,996	1,93,786	3,209	675	...	...	2,534	34
1876-77	2,37,537	2,32,318	5,219	2,757	...	...	2,462	10
1877-78	2,35,134	2,29,521	5,613	5,557	...	...	56	236
1878-79	2,35,146	2,21,756	13,390	13,384	...	...	6	569
1879-80	2,84,824	2,19,549	15,275	15,275	...	...	...	65
1880-81	3,34,427	2,31,657	2,770	1,950	197	623	...	178
1881-82	2,34,494	2,30,768	3,726	1,189	...	2,485	52	157
1882-83	2,34,563	2,31,228	3,335	852	...	...	2,483	36

Although the tenure of land and its rights¹ and duties have undergone many changes since the conquest, still the maxim that the property in the soil rests in the paramount State has never been forgotten. This principle has not only been theoretically acknowledged under former Governments by their subjects, but its practical existence is

Tenures.

¹ To Government, 2nd January, 1829.

also deducible from the almost unrestricted power of alienation which the sovereign always possessed in the land. The occupant landholders held their estates in hereditary and transferable property, but their tenures were never indefeasible; and as they were derived from grants made by the supreme power in the State, so they might be abrogated by the grantor or his representative even without any allegation of default against the holder and without any reservation in his favour.

From the extreme attachment of the landholders to their estates, the frequent exercise of such a prerogative would doubtless have been highly unpopular. In the interior, it appears to have been infrequent, as may be judged from the length of time which villages have remained in the possession of the same families. But in the neighbourhood of the capital and on the border, such arbitrary transfers were not uncommon; and where a provision in land was called for to reward military services, or to remunerate the heirs of those slain in battle, it was usually made at the expense of existing rights. Land held in proprietary right is still termed *thát*, and a proprietor is called a *thátwán*, the term *samándár* or landholder being restricted to its ordinary and natural meaning of cultivator actually holding or occupying the land, whether a proprietor or tenant. Grants in tenure of *thát* and *rot* (the term under which lands were usually given to the heirs of those slain in battle) conveyed a freehold in the soil as well as in the produce. Where the proprietors are a coparcenary body, the tenure is that usually called *bháyachára* in the plains and here *bháya-bhant*, in which the proprietary right is in an extreme state of subdivision, each estate being shared amongst all the coparceners. Traill found that three-fifths of the district were held by these proprietors, so that the settlement represented in a great measure the *ryotwári* settlement of other provinces. The origin of such property is traced either to long-established hereditary occupancy; to a grant from the State; or to purchase from some former proprietor.

Mr. Traill writes (1821):—

“ Under the former Governments all servants of the State, both public and private, received, on their appointment to office, a grant of land for the support and establishment of their families. These lands have under succeeding sovereigns been subjected to rent,

Mr. Traill on tenures.

but the proprietary right has generally remained with the original grantee or his descendants. Grants of this nature are wholly distinct from those in tenure of *manâd*, *naukari* or *jâdad*, which conveyed no property in the soil; like the latter, however, their continuance or annulment has ever been subject to the pleasure of the ruling power. The descendants of the above-described grantees form the first class of landholders in the district.

A second class derive their title solely from long-established occupancy: this class is composed of aborigines of the mountains, while the former consists almost universally of descendants of emigrants from the plains.

A third class of proprietors, created during the Gorkhâli Government, are those who, in consideration of receiving the proprietary title, have brought waste lands into cultivation. To this class a considerable addition has been made under the present Government, as with a view to the encouragement of cultivation, the practice of the Gorkhâli Government in this respect has been continued.¹

With regard to the Doms, they are almost invariably throughout the district the property of the landholders, and reside in the villages of their respective owners. The only separate establishment of Doms are those which come under the first description of proprietors, and consist of carpenters, masons, potters, blacksmiths, miners, and a variety of other trades which are here carried on solely by persons of this caste."

Sir H. Ramsay writing in 1874 states:—

"During an experience of thirty-three years I have observed much change under the head of tenure, from the advancing positions of the parties concerned. As stated in Mr. Traill's report,² the paramount property in the soil rested with the sovereign, not theoretically only, for the unrestricted power of alienation was exercised at the will of the ruling power in the time of the Râjas and to the end of the Gorkhâli Government. A village was given to an astrologer, a doctor, a cook or a barber; and the cultivators in possession, whatever their former status, became to all intents and purposes the cultivators of the new owners. If they did not like the grantee's terms, they moved elsewhere and they retained no rights in the land which they could assert to the prejudice of the grantee. Again, this grantee might be ousted in turn to provide for some other favourite. In those times, land was abundant, cultivators were scarce, and the cruel oppression to which the people had been long accustomed, sometimes drove them away to parts of the district where they could be comparatively free from the exactions of their oppressors."

On the whole, the tenure of land suffered few violent changes under the former rulers. Where land was given in *thât*, the former proprietors, if in occupancy, at once sank to the position of tenants of the new grantee, who, moreover, by the custom of the country, was at liberty to take over one-third of the cultivation into his own hands as *sh*.

¹ To Government, dated 14th March, 1821.
² To Government, dated 22nd January, 1817.

¹ To Government, dated

In the remainder of the estate, the right of cultivation rested with the original occupants, who were now termed *kháyakars* or occupants, as distinguished from *thátwáns* or proprietors, and paid their rent in *kút* or kind at an invariable rate, fixed at the time the grant was made. In villages in which the right of property and the right of occupancy was recognized as vested in the same individuals, the person who engaged with Government for the revenue had a right to demand the full extent of the *Malik-hissah* or State-share, supposing no fixed agreement had been made between him and his tenants, but such imprudence on the part of the latter seldom occurred. This description of village includes *naubád* or those newly brought into cultivation, and lands cultivated by non-resident cultivators (*pahikásh*). The custom being to grant the proprietary right to the person who reclaimed the waste, as some return for his trouble and expense.

The resident tenants may be divided into two classes, the *kháyakar* and the *kaini* or *kharní*. The former, in addition to the land-tax which he paid in coin, used to pay to the proprietor under various names nearly a tenth more. Since the conquest, the *kháyakar* has by custom an hereditary right of occupancy at fixed rates, but cannot dispose of such right, though he may carry on his cultivation through a tenant-at-will. The rent of the *kháyakar* cannot be increased under any circumstances during the currency of the settlement, and so long as he pays his rent and the share of the village cess recorded against him he is safe from any interference.

Mr. Traill writes:—"In Páli and in Badhán and in other parganahs wherever military assignments¹ were numerous under the Rájás, tenants of this description are common. Their origin may be easily traced back and may be referred to the fact of the former proprietors having emigrated or become extinct when the village was assigned to the ancestor of the present proprietors. The grantee was in consequence compelled to settle the land with new tenants who occupied as *kháyakars*. The *sayáns*, *kamíns*, and *thokdárs* with their relations are the proprietors of these villages. The point whether the occupant tenant be a *kháyakar* or *thátwán*, that is, proprietor of the land he cultivates, may be generally easily ascertained by an inquiry into the whence and how the tenant derives his title: if it be from an ancestor of the *thokdár* that he received the land, he is merely a *kháyakar*; if he plead a grant from a Rája, or purchase from a former proprietor,

¹ In these cases, the cultivators derived protection from the grantees and were so far better off than the rest that they had to please only one, instead of being worried by any official or soldier requiring their services.

the deed ought to be forthcoming or proved to have existed; if, lastly, he aver himself and ancestors to be occupants from time immemorial, such assertion can be proved by the evidence of adjoining proprietors. Should the tenant have the name of the village attached to his name as Bir Singh Mahta, that is, of Mahatgaon, &c., it may be at once determined that the tenant's claim to immemorial occupancy is well founded. The converse is not always the case: a proprietor of a village on settling in another still retains the name of his original village attached to him, which designation descends to his posterity. But by purchase, grant or gift, such individual or some one of his descendants may have acquired a proprietary right to a share in the village where they have settled. During the Gorkhali Government, migrations of landholders from village to village were extremely common, and many of those emigrants still continue in the villages to which they then emigrated; by such voluntary absence they are deemed to have forfeited their hereditary claims in their original villages. Generally speaking, on such migrations taking place, the landed property of the emigrant was divided among the remaining sharers, and has been since enjoyed by them in full proprietary or has perhaps been transferred to others. After a lapse of twenty years and upwards, the claims of these emigrants to their original share are not admitted in the court unless it be stated and proved that on quitting their villages they entrusted their share to another, with the express engagement of resigning the same when called upon."

Sir H. Ramsay writes:—

"The *khayakar* enjoys an hereditary though not a transferable right in the land he cultivates; and on the death of a father, the sons generally make a subdivision of the land, which not unfrequently reduces the holding of each so much that these *khayakars* are obliged to cultivate other lands as *sirthans* or tenants-at-will, or in *pahikdsh* in some distant village where they make their own terms with the proprietor. *Pahikdsh* cultivators of long standing have now the position of *khayakars*; new ones are only *sirthans*." In some villages *khayakars* are alone in possession, and the proprietor residing elsewhere has no power to interfere with them or their land, waste or cultivated. A *ghar-padda* realizes the demand and the proprietor's cess and pays over to him. In such villages, the *khayakars* were formerly the real proprietors, but in some way the right became recorded in the *thoddar's* name, and though every effort was made to right these wrongs at the recent settlement, it was not possible to do so in all cases, and special arrangements had to be made to remove what was an endless source of litigation."

The *Kaini* under the native government held more the position of a slave, or at least of a vassal, and was bound to the estate of his lord. Theoretically, they were obliged to give personal service in cultivating the proprietor's *str*, or land which he keeps in his own hands, and in carrying his *jhanpan*, *dandi*, and baggage. Gradually, they have assumed the character of tenants permanently resident on their overlord's estate, and by long-continued occupancy have come to

Kaini.

be considered in the light of *kháyakars*, from whom indeed they differed in little, except in the nature of the rent to which they were liable. As a rule, they pay in *kút* or kind agreeably to former rates, which may be taken at one-third of the produce. In Garhwál the fusion is almost complete, necessity compelling proprietors to give the most favourable terms to all occupants of the land. *Háliyás* or domestic servants (chiefly Doms), were still found in 1840 in all the principal estates. They were kept to perform all the labour of the fields required on the private farms of the landholders. The *sirthán* or tenant-at-will pays *sirthi*, but no personal services are required from him.

The difficulty experienced in getting new tenants should the old ones leave is alluded to by Mr. Traill
 New tenants. in the following words:—

“From the facility with which new locations are here obtainable, the habits of the cultivators are extremely unstable and migratory. Vacancies arising from desertions are not readily filled by new tenants, while the general poverty of the *málguzárs* and tenantry renders them incapable of meeting from their own funds the additional burthens entailed by such desertions. In these cases the lease would be thrown up, and remission in the demand would be indispensable to save the village from total desertion; at the same time no advantage could be taken of the growing improvement in other villages. It may be doubted whether the *málguzárs* in these Districts would willingly engage for so long a period, unless the tenants of their respective villages should be considered as parties in the engagements, and remain bound for the same term. Under the Gorkháli government, when a fixed village assessment was promulgated, the above principle was fully recognised, and the claim of the *málguzár* followed his tenant to wheresoever he might migrate.”

In these remarks both Mr. Batten and Mr. Beckett agree and the former adds—

“In Garhwál, owing to the comparatively small value of land, the scantiness of population, and the almost entire dependence for their position and wealth, even of the most considerable landholders, (as for instance the Bhartwál family in Nágpur and the Aswál family in Sila), on the actual influence which they may happen individually to possess over the agricultural communities, and not on any nominal legal rights—the enforcement of which, even if possible, would soon leave the claimants without a tenantry, and would only enrich their neighbours—hardly one estate, with the exception of the *nauábdá* estates, could be correctly entered under the head of *pure zamíndári*; while the class of tenure called imperfect *pattidári* is found in some parts of the district to exceed in numbers the *pure bháyacháru* tenure, which again exclusively prevails in other parts.”

When a share in any estate may lapse from death or desertion, it is divided among the remaining proprietors, who become answerable for its assessment; but

this responsibility is, generally speaking, far from being deprecated, as the landholders are for the most part anxious to enlarge their petty tenures; as a precaution to prevent such a contingency from becoming individually burthensome, the small hamlets and parent lands are now leased with the *pahikásht* village to which they properly attach. The village revenue is apportioned on the several shares, agreeably to the nominal interest possessed by each in the estate. If any sharer claims an abatement on the ground of deficiency in the portion of land actually in his possession, a measurement takes place, and a record is made of the quantity of land found in the occupation of each proprietor, agreeably to which the future cess is regulated, but without retrospective effect. From damages by mountain torrents and from gradual encroachments on the shares of absentees, inequalities of this kind are pretty general, and applications for measurement frequent. Pleas for abatement on the grounds of inferiority in the quality of a share can very rarely arise, as each individual share comprises its due proportion of every part of the village, good and bad. This class, the *thátwán* cultivators, pay on a general average about one-fifth of the gross produce to Government. The share of the gross produce, as enjoyed by the different classes of cultivators above enumerated, may be summed up as follows:—

Thátwán cultivator ...	...	...	...	80 per cent.
Pahikásht tenant ...	...	...	...	75 „
Kháyakar „ ...	...	...	...	70 „
Kaini „ ...	...	...	...	60 „

Mr. Beckett writes thus concerning the tenures in Garhwál in the report on the current settlement there:—

“The tenure question has undergone many changes since the introduction of British rule in Garhwál. At first, *thokdrs* and *saydnas* were the prominent characters. They assumed to some extent the position which had been held by various parties who under the Government of the Rájás and of the Gorkhális had been responsible for the land-revenue or who had held the land free of revenue. Mr. Traill recorded his opinion that—

“Three-fourths of the villages were wholly cultivated by the actual proprietors of the land; and that of the remaining fourth, the right of property and occupancy was vested in the same individuals. Since Mr. Traill's Report was written (1824), thousands of acres of jungle have been reclaimed, and the proprietary class has consequently increased. The Garhwál settlement may, therefore, to a great extent, be considered a peasant settlement, as individuals only pay their quotas of revenue due, plus cesses and land-revenue. Where hereditary tenants occupied land, they had, during the past settlement, paid small fees, such as one rupee on the marriage of a daughter, a leg or breast, or both, of every goat killed, and other indefinite cesses which caused great litigation. When ill-will grew up between a proprietor and his tenants, the former tried to ruin the latter by perpetual suits for perquisites, and the tenant continued to deprive him of his rights by trying to prove that the proprietor had received all that he was entitled to. These perquisites were very well when the people were quite uncivilised and required the support of a man more intelligent than themselves. Practice has proved that these cesses could not now be upheld, and they have been commuted

to a payment of twenty per cent. on the assessed land-revenue, which gives the proprietor more than he was ever entitled to demand ; while without adding to his former actual payments, it makes the tenant safe against all irregular indefinite demands. The hereditary tenant is called *kháyakar* in Garhwál ; he holds a hereditary but not a transferable right, though he may sub-lease his land to a tenant-at-will. *Pahikáshí* or non-resident cultivators have hereditary rights not transferable and are protected similarly to the *kháyakars*. The *sirthán* or tenant-at-will has no permanent rights whatever and his holding is not entered in the record-of-rights ; all other rights are entered. Tenants-at-will are rare in Garhwál. *Kháyakars* sometimes cultivate in *sirthi* a field or fields adjoining their own."

The incidents connected with the occupation of land were such under the former governments as gave little encouragement to industry or enterprise. No one knew when he might be reduced to the position of tenant in the land that he or his ancestors had wrested from the forest, and any sign of comfort in a dwelling was certain to cause an increase of the irregular burthens to be borne by the people. As observed by Sir H. Ramsay, "this state of government for a number of years took the spirit out of the people, and they were so accustomed to obey those immediately over them that even those who had not been ousted became quite accustomed to obey the *thokdár* as if they were his slaves." As a rule, such was the state of the country at the conquest. Traill had to make use of the *kamins*, *sayúnas* and *thokdárs* for his earlier settlements, but at the first triennial settlement he took, with few exceptions, the engagements, village by village, from their own *padhúnas*, a procedure that was completed and followed at the second triennial and all subsequent settlements.¹ But in these settlements, the people had recovered so little that the lease was often held to include the proprietary right. As the country prospered, the people began to feel that they had rights, and that Government, if they only knew how, would protect those rights, so that by the time of Mr. Batten's settlement in 1842 the more wise knew how to avail themselves of the ignorance or apathy of their brethren to have themselves recorded as sharers (*hissahdár*). Mr. Batten in his settlement was hampered with the charge of the entire civil and criminal work of the district and had little assistance. He had, too, to commence a record novel to the people and with bad material and worse instruments as a whole than are usually met with. The

¹ To Government, dated 14th March, 1821.

consequence was that, after the twenty years' settlement, the courts were simply flooded with cases regarding rights of occupancy and proprietary claims. These suits sharpened the wits of the people, who, before the end of the settlement, came to know from experience what each of the ordinary terms, sharer, occupancy tenant and tenant-at-will intended, their rights and liabilities. These distinctions were merely nominal in Mr. Traill's time, for then, in most parts of the district, the cultivator had it very much his own way, owing to the smallness of the population. At Mr. Beckett's settlement, population had considerably increased; good arable land had become scarce, and the cultivator was consequently not of such paramount importance. Every one, too, desired to be recorded as a proprietor. "The old generation had passed away: the existing one could not realise the position of their ancestors half a century previous. It was, therefore, very difficult work to determine the real position of many who claimed under Mr. Traill's settlement, the measurement book of 1823, the *phard-phant* or record of Mr. Batten, decrees of court, or were relations of those who claimed on those grounds." Mr. Beckett endeavoured to put each one in his right place, and where dissatisfied they were referred to the regular courts.

In the 6,352 villages in Kumaon there are 94,924 proprietors, of whom 49 are Europeans and 188 Musal-
 Statistics, proprietors, tenants. máns. The remainder are Hindus, of whom 29,632 are Brahmans; 59,570 are Rájputs; 1,370 are Baniyas and 4,115 are Doms. There are 36,622 *kháyakars* or permanent tenants, of whom 35 are Musalmáns and the remainder Hindus. Amongst the Hindus 7,427 are Brahmans; 19,437 are Rájputs, 604 are Baniyas and 9,119 are Doms. Of the 6,352 demarcated villages, only 4,437 have inhabited sites and the remainder are cultivated by the people of other villages in *palikásh*. Of the total number 3,060 are cultivated solely by the proprietors; 2,727 by proprietors aided by tenants; 543 by permanent tenants only and 22 by tenants-at-will only. The distribution of the assessable area amongst each class of cultivators in each parganah may be gathered from the following table compiled from the settlement records:—

Parganah.	Number of—		Area in <i>bhis</i> in possession of—				Villages.	
	Proprietors.	<i>Kháyakars</i> .	Proprietors.	Tenant- at- will.	<i>Kháyakars</i> and <i>sirkás</i> .	<i>Pádhán</i> or <i>Padháchétri</i> .	Ceparconary.	One proprie- tor.
			Rs.	Rs.	Rs.	Rs.		
Bárahmandal ...	16,036	5,007	31,074	5,394	3,880	64	42	31
Chhukháta ...	1,339	622	3,130	639	778	18	4	4
Chaugarkha ...	8,142	3,148	16,500	3,943	3,953	66	117	36
Dánpur ...	7,197	1,065	21,284	3,909	1,810	63	116	92
Dárma ...	1,353	2	2,344	206	1	...	6	2
Duaniyakot ...	2,267	1,267	4,395	931	1,313	26	9	10
Dhyaniánu ...	4,582	1,749	9,393	2,303	1,949	29	10	3
Gangoli ...	6,989	390	20,441	3,339	437	20	166	120
Juhar ...	4,821	236	5,211	850	326	6	87	8
Káli Kumaon ...	10,658	3,809	31,173	5,596	2,961	10	60	43
Kota ...	867	219	2,111	351	300	16	5	12
Páli ...	17,025	13,418	27,386	4,933	31,085	599	136	146
Phaldakot ...	3,466	1,423	7,545	900	1,320	23	9	3
Rámgar ...	1,621	114	2,240	258	102	7	5	1
Sira ...	1,677	374	4,366	1,462	340	4	43	35
Shor ...	3,459	1,653	10,333	3,019	2,083	17	66	46
Askot ...	227	717	694	1,013	2,462	1	6	120
Sadabart ...	3,011	1,525	4,698	368	1,367	18	12	1
Total ...	94,924	36,622	2,04,106	37,563	56,181	997	887	720

These figures with the preceding explanations should give a vivid picture of the distribution of landed property in Kumaon. The proprietor has an average holding of $2\frac{1}{2}$ *bhis* whilst the *kháyakar* has only $1\frac{1}{2}$ *bhis*. Many of the latter have by repeated subdivisions such an infinitesimal share that they are obliged to cultivate in other villages (*pahikásht*) or go in for service as litter-bearers, wood-cutters and coolies.

The state of the peasantry has changed for the better since Mr. Traill's time. Cultivators are numerous in the more highly tilled parts and good arable land is scarce. The hill man is very much attached to his home and now few show the migratory spirit so observable in Mr. Traill's time. Sir H. Ramsay writes:—

“My experience is that villagers will put up with great hardship in regard to revenue rather than give up their village. If a tiger or sickness carry off shareholders, the remaining few will never give up if they can pay the revenue by any means. Some of the Káli Kumaon people are, however, exceptions to this rule. There they are headstrong, obstinate, and spiteful. If they had a *shokár* or *padhán*

whom they disliked, a whole village would rather resign and go elsewhere than be compelled to pay him the recognised dues. Excluding revenue-free holdings and those of some of the more powerful proprietors whose ancestors—very influential men when Kumaon first came under British rule—had at once assumed the position of proprietors, which they steadily maintained and improved on every opportunity, it may be said that the proprietary right is vested in those whose ancestors occupied the land at the time the province was taken from the Gorkhális and who have advanced the cultivation from its former backward state to its present prosperity. Or in another class who, by their influence and money or by their own labour, have changed the forest into prosperous villages."

Many years ago former revenue-free grantees, whose rights had been ignored by Mr. Traill, defrauded many of the villagers of their rights, and so bound them down by agreements and decrees that at the settlement they could claim little more than permanency at tenants-at-will rates. A few villages have passed into the hands of usurers at sales by auction, but with these exceptions the proprietary right may be said to be in the hands of the descendants of those who held it in the days of the Rájas and the Gorkhális.

"Where revenue-free rights which had been undisturbed since the conquest existed, they invariably include proprietary rights and the cultivators are only *khdyskars*. Where proprietary rights which had been recognised at the twenty-years' settlement or rights of the same kind acquired by purchase existed, they could not be interfered with; but with these exceptions, the cultivators have been recorded as the owners of the land they occupy, while the permanent tenants can never be disturbed or interfered with by the enhancement of rent. In fact, these tenants are in all respects equal to proprietors with the exception that they cannot sell their holding, and they pay a small sum in addition to the quota of revenue due from the land recorded in their names."

The subject of rights to waste land has been fully noticed under Garhwál. Here I shall quote from the

Waste lands.

valedictory report (1884) of Sir Henry

Ramsay on this subject:—

"I have observed a tendency of late years, as land has become valuable, of proprietors to imagine themselves *zamíndárs* with *zamíndári* rights attempting to appropriate all waste and forest land within the boundaries of their villages. It should be checked because it would lead to serious complications and retard prosperity. Some village boundaries contain upwards of fifty square miles, and Government has an equal right with the village to all jungle land, with power to appropriate any that may be required; while the villagers are allowed to increase cultivation if Government do not object. This assumption on the part of proprietors is of very late date, and on every occasion when brought to my notice I have refused to recognise it."

On the British occupation, it was found that considerable sum of money and tracts of land had been granted by the Nepálésé to temples and individuals, and no small portion of the work of settlement was the investigation of these revenue-free tenures. The broad principle on which the greater portion of the claims was decided, was that only those for which grants of the Chand Rájás of Kumaon or grants of the Nepál Rájás under the red seal, were forthcoming should be upheld. Besides these, other grants were made from the proceeds of the transit duties, and on the abolition of those duties the payment was continued pending the results of an investigation into the character and validity of the grants.¹ In 1819, Mr. Traill forwarded a list of lands and villages held in assignment to temples in Kumaon for religious purposes,² known under the name of *gúnth* and those assigned to individuals and known as *muáfi*. The *gúnth* villages then numbered 973 and contained one-fifteenth of all the arable land in the province, and the *muáfi* villages numbered 175 with an area of 3,000 *bísis* or one-seventieth of the total culturable area. The largest revenue-free estate held by an individual was valued at a revenue of Rs. 1,000 a year, but many of the old estates and grants had been resumed by the Nepálésé, and by 1823, some 150 villages had been added to the revenue-roll, the greater number of which had been surreptitiously concealed by the connivance of the executive officers of the Nepálésé government. The pensions chargeable on the revenues of the province amounted to Rs. 21,670 a year, of which Rs. 2,152 were from former governments, in perpetuity to religious establishments, and Rs. 348 for life to individuals. Rs. 9,600 were granted for life to individuals by the British Government and Rs. 9,570 as military invalid allowances. At Mr. Batten's settlement, the *gúnth* amounted to Rs. 13,455 *bísis* in Kumaon alone, of which 2,230 *bísis* were within villages assessed to revenue and the remainder in villages altogether free of revenue. Of these, parganahs Katoli and Mahryúri belonged to the *saddábart* grants, of which an account has been given under Garhwál. The *muáfi* lands comprised 2,913 *bísis*, of which 531 formed part of revenue-paying villages and the remainder were contained in 93 separate villages. These grantees

¹ To Government, dated 19th June, 1816.

² To Board, dated 20th May, 1819.

were for the most part Brahmans of the Shástri, Joshi, Pant, Pánde, Tiwari and Upreti clans, who still furnish a great proportion of the officials in Kumaon. The *gúnth* and *muáfi* grants in Kumaon were closely examined in 1855-56 and Government sanction was obtained to all that were upheld. The result at the settlement was that there were 444 *gúnth* or temple holdings, which if assessed to revenue would yield Rs. 8,447 per annum on 9,476 *básis* of cultivation. The *muáfi* grants are 92 in number aggregating 3,297 *básis*, which if assessed to land-revenue would yield Rs. 3,412 per annum, but these are exclusive of the *sadábart* pattis above mentioned.

The administration of each *mahál* or estate separately assessed to revenue, and which may consist of one or more villages or hamlets, rested with the *padhán*. He was the ministerial executive officer of the village, and is entrusted with the collection of the land-tax from his coparceners, and with the supervision of their simple police arrangements. The fiscal officers intermediate between the *padhán* and the State, and known as *kamíns*, *thokdárs búrhus*, and *saydnas*, at one time played an important part in the revenue administration of these districts, and their existence is still felt in the levying of certain dues which belonged to their offices now partly abolished. The land assessed to revenue was under the Gorkháli government assigned as *jáedád* for the support of troops, and the collection of the revenue was intrusted to the commandants of the different regiments. As these officers, from their military duties, could seldom be present for any length of time in their respective assignments, they were under the necessity of employing deputies; and, as the most simple and economical plan, intrusted the details of assessment and collection to some-one of these principal landholders whom they made responsible for the amount of the revenue assessed on the assignment. Hence arose the middlemen that we have mentioned both in Kumaon and in Garhwál. Neither *kamíns* nor *thokdárs* possessed any rights in the soil over which they exercised authority

Kamíns.

beyond what they derived from their appointment.¹ Their office was to collect from

a certain number of villages the fixed demand and for which they became themselves answerable. They retained their situation only

¹ To Government, dated 22nd January, 1817.

during pleasure, and under the former governments appear to have been changed almost every year. They were, however, almost invariably chosen from amongst the principal *padhāns* of the parganah, for a portion of which they engaged; and in consideration of the local influence possessed by them, the choice usually fell on one of the family of the old *kamīns*. The *kamīns* in turn appointed one of the proprietors of each village under the designation of *padhān* to levy and account to them directly for the demand on his village. These again were removable at the will and pleasure of the *kamīn*. The influence, however, once obtained in an office of this importance generally led to its continuance in the same family even when the individual holder was changed, and in some instances the *kamīns* themselves succeeded in obtaining the grant on the usual terms, an arrangement which led to the appointment of under *kamīns* such as are found in some parganahs. As a consideration for the responsibility entered into by the *kamīns*, they received under the name of *kamīnchāri* either a small portion of land to hold free of revenue, or a remission of revenue, but at no specified or fixed percentage. They were also authorised to collect from each village in excess of the State demand a small gift or due (*nazarāns*) varying in its rate in different parganahs from three annas to one rupee per village. They were also entitled to some trifling dues on all marriages occurring within their circles.

The *padhān* like the *kamīn* derived no rights from inheritance. He simply collected from his coparceners and tenants the demand

Padhāns.

and passed it on to the *kamīn*, and as a compensation enjoyed dues of an exactly similar

nature. He held one field free of revenue and received certain perquisites¹ at marriages and births, which were called *padhānchāri*. The nomination of the *padhāns* was for the most part vested in the *kamīns*, but as with themselves the tendency was to keep the office in one family and in some cases the right to act as *padhān* became hereditary. No gradation of rank existed between the *padhān* and the cultivator. As the country from its mountainous character presents within a large area but a small portion of culturable land, the villages are therefore small and only occasionally consist of more than

¹ *Hak padhānchāri* was first recorded at the triennial settlement. To Beard, dated 14th March, 1821.

fifteen houses, or yield a revenue of more than Rs. 150 a year. Taking the two districts, the average number of houses is about five, and the average land-revenue less than twenty rupees a year. Such small communities cannot afford from their poverty a constitution similar to those that exist amongst the village communities of the plains.

The power granted to the *kamíns*, as is the natural result in similar circumstances all over the world, was abused by them. Gradually, finding themselves uncontrolled and the power of distributing the patti assessment over each village entirely in their hands, to arrange as they liked, they set at nought the village assessment directed to be formed by the Nepálese Government. This was not difficult, as there was no one resident on the spot who had the power or the inclination to enforce the orders of the supreme power. The ruin of the *padhíns* ensued, and they were severally ousted from their situations, as soon as former extortions left them unable to comply with further demands. By the responsibility abovementioned many of the lesser *kamíns* and *thokdárs* also were ruined and sunk into obscurity, but this circumstance only tended to increase the power and means of the other *kamíns*, to whose patts the villages of the ruined landholders were immediately added. As already noticed, the proprietary right of only a few villages is generally vested in the *kamín*; on the remaining villages included in his patti he has no claim except for his dues. The first blow against the usurpation of the *kamíns* was struck at the first triennial settlement when the village proprietary body was, as a rule, admitted to engagements. But even at the second triennial settlement, in 1821, it was found that the remembrance of their former power enabled the *kamíns* to extort with impunity, on various pretences, sums of money from the village *padhíns* in excess of the land-revenue; until his exact dues were eventually reduced and he was expressly forbidden to interfere in the collection of the revenue in any villages not his own property.

Such was the machinery for collecting the revenue found at the British occupation of Kumaon. Mr. Traill transferred this duty to the *padhíns*, and the *thokdárs* were limited to interference in matters of police. In lieu

of the former numerous dues, certain fixed fees were established. As ministerial officers, they were removeable for neglect or misconduct, but in consideration of the influence possessed by the families from which they had been selected, the office was nominally continued to one of its members. They were required to report offences and casualties, also the deaths of individuals dying without heirs on the spot, together with an account of the property left unclaimed by such individuals. The search for stolen property and the seizure of offenders devolved on them. They were also expected to collect the coolies and supplies (*bardáish*) indented for on the public service from the villages under their charge, and they assisted at all inquests made by the *patwáris* within their *pattis*.

At Mr. Batten's settlement in 1840 these *thokdárs* were of Settlement of 1848. two kinds :—

“ First those who were merely entrusted with the charge of the police in a certain number of villages, who were paid by a fee of one rupee on the marriage of the daughter of each village *padhán*, and a leg of every goat killed by the *padhás* within their jurisdiction, and who, if they could prove the receipt of such a payment from the commencement of the British rule were entitled by the law to receive dues through the *padhás* from the village, amounting altogether to about three per cent. on the land-revenue. Secondly, there were those *thokdárs* or greater *sayánas*, who were heads of the proprietary families, whose ministerial duties in reporting offences and casualties, were the same as those of the former class; but who, being descendants of great grantees and officers of the Gorkháli time, or that of the Garhwál Rájás, possessed much greater influence, who often, in the course of the different settlements, engaged with Government for whole sets of villages, sometimes for a whole *patti* (as in Kaurhiya and Sila) and whose remuneration for ministerial offices thus became mixed up with their *sayásachári* and *his-sahdári* rights; and who often possessed decrees of court showing the proprietary division into shares of certain sets of villages between them and their relations, at the same time that the villagers themselves possessed their own *padhás*, holding separate revenue engagements, but together with the villagers acknowledging the right of the *sayána* to receive a larger sum as *sayásachári* does, than those granted to ordinary *thokdárs* in one or more of the villages included within the *thokdári* leases, those *sayánas* and their brethren possessed without opposition the lands, and the tenantry, though often hereditary and not removable at will, cultivated such portions only as might be assigned to them by the proprietor, and paid *kút* or a share of produce, commonly one-third or a moderate money rent called *sirihát*, and in some few parts of the country, chiefly towards the Taráí, a certain rate per plough; all these payments being exclusive of *bhet*, *dastár*, *nazarána*, *ságpát*, and other offerings usually made to superiors in the hills.”

During the settlement it was found to be a matter of difficulty in many cases to determine the position of the *thokdári* families. In places the *kháyakar* or occupancy cultivator often asserted his right to be recorded in the rent-roll as a sharer in the land and not unfrequently as *thátwadn* or proprietor, and as such resisted the claims of any person to the proprietary right in the village, declaring the decrees of court and the ancient Gorkháli and Rájás' grants had merely reference to the position of the *thokdár* or *sayána* as the fiscal and judicial administrator of the district. As far as possible all the profits derived by the *sayána* were commuted to a fixed money payment, each village being allowed its own *padhán* or head-man who engaged with Government separately on behalf of the sharers. Though originally a sort of land-agent managing the assignments made in favour of the military commanders, in process of time prescription gave the *thokdár* a colour of right which Government acknowledged and further made its enforcement legal.

A few instances will show the character of the collections made by the *sayánas* and sharers (*hissahdárs*) in different parts of Garhwál, in addition to the land-revenue and which were commuted in 1840:—

In the village of Mangu-Kharnoli in patti Talla Nágpur the person who collected the revenue and made engagements with Government on behalf of the sharers (*málguzár*) had an assignment of two *bísis* (about two acres) of land and also received a *timasha* (five equal one rupee) on the marriage of every occupancy-tenant's daughter and a leg of every goat killed. *Hissahdári* dues consisted in the payment by each *kháyakar* to the sharer within whose share the *kháyakar* cultivated of four *timashas* on the marriage of his daughter and a leg of every goat killed. The four sharers in the village also received from their *kháyakars*; one, 88 seers of rice and the same quantity of barley; a second, 84 seers of each grain; a third 72 seers of each grain and the fourth received 80 seers of each kind of grain annually in addition to the rent of the land. Owing to the relationship of the sharers there were no *thokdári* dues in this village. In village Bariyun in patti Sila the *thokdári* dues accrued from the payment of eight *timashas* by each *kháyakar* on his daughter's marriage, a leg of every goat killed and a seer of *ghi* or clarified butter and a joint annual contribution from the village of one rupee as *nasardna* or present and sixteen seers of grain. There were no *hissahdári* dues distinct from these. The *málguzár* had three *nális* of land and received eight *timashas* on the marriage of each villager's daughter, a leg of every goat killed and a seer of *ghi* in Sáwan. As the goats are usually killed at a temple and the officiating priest gets the head and breast, there is little left to the owner. In the small village of Sonwara Palla in patti Badalpur the *thokdár* received from

each sharer eight *timdshas* on the marriage of his daughter, a leg and rib of every goat killed and two *timdshas* annually as *nakardna*, while the inhabitants made a joint annual contribution of 64 seers of grain. The sharer who acted as *padhan* received similar marriage fees from his co-sharers and similar dues on goats killed and also held ten *adhs* of land.¹

As police officers the *saydnas* and *kamins* were soon found to be worse than useless, and owing to their universal habit of letting off criminals for a bribe and their appointment taking away the village responsibility for the prevention of crime, on the joint representation of Sir John Strachey and Sir Henry Ramsay, then in charge of Kumaon and Garhwál, the *kamins* were relieved of all police duties in 1856. At the revision of settlement in Garhwál, those who could not be upheld in their appointment were removed, while those who remained were paid, in lieu of irregular cesses, at the rates of three, six, and ten rupees per cent. on the Government demand, according to the nature of the rights established. This sum is entered in the record-of-rights and collected with the land-revenue and then paid over to the *saydnas*.² In his report on the current Kumaon settlement Sir H. Ramsay writes :—

“Since that time (1856) I have been compelled to change my views. The people have altered so much that it was absolutely necessary to retain *thokdars* as far as possible to ensure the due performance of police duties on the part of *padhanas*, and I saw that the abolition of the office of *thokdar* would be highly unpopular with the mass of the people. In the course of appeals I had to go through nearly all the claims to *thokdari* decided by Mr. Traill, and in my opinion the order which reduced their dues to three per cent. on the land-revenue was never acted on, except in the case of small *thokdars*. The chief *thokdars* never came into court, as in those times they made their cultivators do what they liked. At Mr. Batten's settlement the *thokdars* in many instances recorded very heavy payments in the village papers. Others relying on their grants felt it unnecessary to record their dues at all.”

It was accordingly determined with the sanction of Government that some of the more important men should receive ten per cent. on the revenue and some six per cent. as in Garhwál, on all villages in which their right to receive dues was ascertained at Mr. Batten's settlement, and that three per cent. should be given to all whose names were in *thokdari* leases if they were upheld amongst those who were descended from men in office at the con-

¹ This much is sufficient to show the general nature of these dues ; for further details the reader is referred to J. H. Batten's Settlement Report, page 134.

² See Whalley, 39, 45 : Batten II. S. R. 535; Beckett 10.

quest. These dues were deducted from the revenue of the village affected, so that no alteration of the assessment was necessary and the amount (Rs. 2,156) was paid really by Government.

The *padhán* is the *lambardár* or *málguzár* of the plains. As defined by Traill, he is the village ministerial officer intrusted with the collection of the Government demand and with the supervision of the police of his village and is remunerated with assignments of land (*padhán-khangí, jethunda*) or money: this remuneration is known as *hak-padháni, padhán-chári*. He collects the révenue agreeably to their several quotas from his co-sharers and pays also the revenue due from his own share. Uncultivated lands which may not have been divided amongst the sharers are also managed by the *padhán*, who accounts for the proceeds to his fellow-proprietors. There is no hereditary right or claim to the office, but, as a rule, the son succeeds his father, unless incapable from youth or want of talent, in which cases the sharers are called upon to appoint another *padhán* from amongst themselves. As a rule, he resides in the village and is removeable for inefficiency, malversation or at the requisition of the majority of the sharers. In former times he was paid by dues leviable from the cultivators similar to those paid by him to the *kamán* or *sayána*, such as fees on marriages and portions of every goat killed in the village, grain, *ghi* and the like. These dues were the cause of much litigation, and the opportunity caused by the recent revision of the land-revenue has been seized to place these matters on a better footing. They have now been commuted to a money payment of twenty-five per cent. on the revenue. In regard to the appointment of *padháns*, the principles now adopted are that the *padhán* must be a shareholder in the village and, where possible, a resident. Where the *padhán* is a non-resident he appoints a *mukhtyár* or deputy and if he be sole proprietor he appoints a resident *kháyakar*, denominated a *ghar-padhán*, for the performance of police duties, who is always removable by the district officer. As few *padháns* as was possible, compatible with efficiency, were appointed in Garhwál, and the dignity of the office has been considerably enhanced. In Kumaon, as a rule, also only one *padhán* was allowed, but where the *Mára* and *Phartiyál* feud existed, one was allowed for each faction (*dharra*), or, where a large number of cultivating-pro-

prietors existed, one for each caste. Where *padhán-chári* land existed in sufficient quantity, that was the only remuneration allowed. Where there was not enough or none at all, five per cent. on the revenue was allowed from co-sharers. Under the old arrangements certain perquisites were demaudable by proprietors from their tenants under the name *malikána*, which were much of the nature of the dues paid to *padhás* and *kamíns*. The perquisites of this class were commuted for sums equivalent to from one-fourth to the entire amount of the Government demand, to the great relief of all.

There are four *kánúngos* in Garhwál and five in Kumaon.

Kánúngos. They were formerly known as *daftarís*, and under both the Native and Gorkháli Governments performed duties corresponding closely to those of the *tah-síldárs* of the plains. They are thus alluded to in a grant made by Amar Singh Thápa in 1869 Sam. (1812 A.D) quoted¹ by Mr. Traill:—“Whereas Kázi Amar Singh has favourably represented that the said *daftarís* have been most zealous in the discharge of their duties, in conciliating the tenants, in collecting the rents, in recalling the cultivators who had fled to the plains, in restoring the cultivation and population of deserted villages, in preparing and keeping up the revenue accounts and records, and in obedience to orders, we accordingly authorize them to collect the dustoor duftree from the lands included in the assignments to three battalions and three Captains, according to the receipts, and in excess of the revenue of the said lands.” On the British occupation,² the office of *kánúngo* in Kumaon was found divided amongst two families, one of Chaudhris and one of Joshis; the former was represented by Mána and Náráyan and the latter by Ratanpati, Trilochan and Rámkishan. The parganahs had not hitherto been distributed amongst them, and the duties were performed jointly, each being aided by deputies known as *likhwárs*. Practically, however, the Dwárahát Chaudhris furnished *kánúngos* for Páli and Bárahmandal; the Dhaniya Joshis, one for Shor and one for

¹ To Commissioner, dated 2nd April, 1816; to Board, dated 18th October, 1816; from Board, dated 19th January, 1819; to Board, dated 9th March, 1819; from Board, dated 11th May, 1819. ² Under the former Governments these men exercised considerable authority. Ráma and Dharui, the old Garhwál *kánúngos*, were executed by the Gorkhális for holding traitorous correspondence with Sudarshan Sáh. Their heirs received a *jadgr* worth 1212 *Gh.* Rs. = 909 *Fd.* Rs.

Chaugarkua, and the Jijhár Joshis, one for Káli Kumaon ; and all acted generally as collectors of the land-revenue, writers and record-keepers. They were formerly remunerated by lands held in tenure of service and also received half an anna in the rupee on the revenue, from which they paid their deputies in each parganah to look after the collections and the cultivation. These lands were frequently resumed and again restored by the former Governments. The *nánkár* lands were assessed¹ at Rs. 1,979 in 1819 and were brought on the revenue-roll and a monthly allowance of twenty-five rupees was granted instead to each of the kánúngos. The first patwáris were entertained and paid from the surplus revenues of these resumed lands, and as the revenue increased other patwáris were appointed who performed duties somewhat similar to those formerly intrusted to the kánúngos and their deputies. The latter, however, appear merely to have kept up lists of villages and the names of headmen or *padháns*, whilst the patwáris have gradually become a sort of local sub-tahsildár. The office of kánúngo was considered hereditary so far that the succession remained in one family, but both the former Governments and the British authorities have always exercised their discretion of selecting the most capable member of a family for the office without reference to claims of birth or seniority. In 1829, the kánúngos were invested with powers to try civil suits, but these were withdrawn in 1839 and now but little use is apparently made of their services beyond such miscellaneous duties as the Assistant Commissioner can assign them. The present men are, however, better educated than their predecessors and can be profitably employed in keeping up the settlement record like their brethren in the plains.

There were no officers of the description known as *mirdahas* in any part of these hills : the only class of persons at all similar are the *meldárs*, who were found in some of the larger parganahs ; these may be called the hereditary tahsíl chaprásís or messengers of the parganah in which their ancestors were originally fixed as such by former Rájás and where they then received grants of lands in payment of their services. These lands were resumed under the last Government ;

¹ To Government, dated 27th August, 1819 ; to Government, dated 21st May, 1821 ; from Government, dated 1st January, 1819 ; from Government, dated 19th October, 1819 ; from Government, dated 23rd July, 1822.

the *meldárs*, however, being allowed to engage for them as proprietors : some were employed as temporary peons, a practice which was for some time followed in Páli where their services were accepted in the collection ; and while on such duty they were entitled to their food from the villages to which they were sent, agreeably to ancient usage ; no *talabána* or process-fee was in such cases authorized or levied ; many of the *meldárs* have been permanently brought on the establishment as paid *chaprásis* of the various *tahsils*, and in this manner their services are utilised.

Under the former governments, village or other *patwáris* or accountants were unknown, but in large *Patwáris.* *parganahs* like Ganga Salán, Badhán and Nágpur Garhwál there were local deputies of the *daftaris* or *kánúngos* called *lekhwárs* who performed similar duties. They may be considered under-*kánúngos*, as from the extent of their charge, the whole accounts of which were kept by them, it was impossible for them to enter into any minute village detail. In other *pattis*, these accounts were kept by the *kamin* or *sayána*. The *lekhwárs* were remunerated from the half anna cess on the revenue collected by the *daftaris*. On the abolition of this cess at the conquest, the *lekhwárs* were left without employment and no one was appointed to perform the duties previously entrusted to them. On settling the resumed *kánúngo* lands in 1819, Mr. Traill found a surplus of nearly Rs. 500, which he recommended should be devoted to the establishment of *patwáris*, at a salary of five rupees a month, in nine of the principal *parganahs* and that the principle should be recognised that any surplus from these resumed lands should be utilised in the extension of the measure to the remaining *parganahs*.¹ Both of these proposals were sanctioned by Government. At the second triennial settlement, it was found that without the aid of the *patwáris* not one-fourth of the newly reclaimed lands could have been brought on the revenue-roll and the evident advantage which had accrued from their appointment recommended the extension of the measure to three other *parganahs*.² The records of the *kánungos* were imperfect and incomplete as those officers had always remained at head-quarters, and, for the local knowledge of the assets and

¹ To Board, dated 27th August, 1819 ; from Board, dated 19th October, 1819.

² To Board, dated 21st May, 1821 ; to Board, dated 22nd August, 1822 ; to Board, dated 15th August, 1825.

capabilities of each village, trusted to the reports of their deputies who resided in the parganahs. By the absorption of the smaller parganahs in the larger ones to which they formerly belonged, the number was reduced to fourteen and the arrangement now made provided one patwári for each of the larger parganahs. In 1825, a further addition was made, the cost of which was met by a reduction of the tahsíl establishment, and in 1830, the measure was extended to the whole province. At this time, there were over seven thousand estates on the revenue-roll in the two districts. In many of them the land-revenue was less than five rupees a year and the proprietor was the only cultivator. To ensure the collection of such a detailed assessment, peons had hitherto been stationed in each parganah to look after the cultivation and collect the revenue, so that the new measure was only the substitution of what may be called a better class of peons, without the official title, for many educated and respectable persons were found ready to undertake the duties of a patwári who would have considered it a degradation to wear the badge of a peon. Thirty patwáris were added to the establishment and the expense was met by a corresponding reduction in the number of peons.¹ The establishment now consisted of sixty-three patwáris, giving on an average one to every 120 villages and to every Rs. 3,300 of revenue, and costing at Rs. 5 a month Rs. 315 a month. Their duties were first the collection of the revenue; second, the measurement of villages under instructions from the court; third, the prevention of desertion on the part of the cultivators in a village by adjusting quarrels and reporting the existence of such quarrels and desertion to head-quarters; fourth, cases of police, apprehension of offenders, report of crimes, casualties, suicides and intestate estates, through the tahsildár. They are removable for inefficiency or misconduct, and may be transferred from one circle to another.

Previous to Mr. Beckett's settlement there were 42 patwáris in Kumaon each of whom received five rupees a month. These were increased to 91 out of the ten per cent. cess on the revenue imposed at settlement to pay for district post, education and patwáris. Those wholly paid from the cess obtain ten rupees a month, whilst an allowance of five rupees a month from the same source

¹ Board, dated 10th February, 1830.

is given to all the old patwáris who have qualified in survey work. Their circles average now about 50 square miles with a revenue of Rs. 2,500 a year. In addition to ordinary revenue and police duties, they now have to measure land, execute decrees of the civil court for possession, look after the repairs of roads, arrange for supplies and coolies and report regularly to the head-office through the district post. Their duties with reference to the police have been noticed elsewhere, and altogether they are a most useful and efficient body of public servants.

The criminal administration, during the earlier years of British rule gave, little trouble in Kumaon. In 1816, Mr. Traill¹ writes :—

Criminal administration. "The small number of offences committed in this province has rendered the criminal police an object of secondary consideration, accordingly no separate report has hitherto been submitted to Government on the subject. Murder is a crime almost unknown throughout this province, and theft and robbery are of very rare occurrence—a remark which applies equally to all offences the ultimate cognizance of which would by the Regulations rest with the Court of Circuit. From the period of the introduction of the British Government into this province the persons confined for criminal offences here have never exceeded twelve—the greater part of whom have always been natives of the plains. The number of prisoners at present in jail amounts to seven of which four are natives of the plains. Under the late Government² the punishment of offences of a petty nature formed a source of revenue, all cases of infringement of caste, assault, fornication, adultery, abuse, &c., were made subject to fines and the cognizance of such offences and levy of the fines were farmed out in separate divisions or districts to the best bidder. Crimes of a serious nature, including murder, theft, to a large amount, killing of cows, &c., were reserved for the decision of the principal *bhāradárs* present in the province."

In July, 1817, however, Regulation X of 1817 was enacted to provide for the trial of persons charged with the commission of certain heinous offences in the Kumaon district and other tracts of country ceded to the Hon'ble East India Company by the Rájá of Nepál. It applied to Debra Dún, Kumaon and Garhwál, Jaunsár-Báwar Púndar, and Sandokh and other small tracts of country between the Jumna and the Satlaj. By it a Commissioner was appointed for the trial of heinous offences subject to a report to the Court of Nizámat Adálat, who passed the final sentence which was then carried into effect by the local officer. The question

¹ To Government, dated 15th February, 1816.

² See Gaz. XI, 626.

regarding the extradition of criminals with Nepál also arose and was settled on the basis that only those charged with heinous offences and for whose arrest the warrant afforded *prima facie* evidence that they were guilty of the offence imputed, should be delivered to the Nepálese authorities ; otherwise, general usage did not recognize the principle of apprehending or surrendering to a foreign power petty delinquents seeking an asylum within our dominions.

Writing in 1822, Traill¹ remarks that during the previous year there were 65 criminals confined in the jail, of whom only six were charged with heinous offences, and only in three cases were the offenders able to escape detection. Affrays of a serious nature were unknown and even petty assaults were unfrequent. Many robberies occurred in the tract along the foot of the hills, but they were perpetrated by people from the plains who retired there with their booty. The offence of adultery was very common, but it seldom formed a subject of complaint in court unless accompanied by the abduction of the adulteress. Infanticide prevailed amongst certain Rájput families in Garhwál, but these fled from the district on its conquest by the Gorkhális, and since then no cases had occurred. The suicide of females was and is still common.

"The commission of this act," Traill writes, "is rarely found to have arisen from any immediate cause of quarrel, but is commonly ascribable solely to the disgust of life generally prevalent among these persons. The hardships and neglect to which the females in this province are subjected will sufficiently account for this distaste of life as, with a trifling exception, the whole labor of the agricultural and domestic economy is left to them, while food and clothing are dealt out to them with a sparing hand. Suicide is never committed by males, except in cases of leprosy, when, as in other parts of India, the leper sometimes buries himself alive. Deaths from wild beasts are very frequent ; they probably do not fall short of one hundred annually. Complaints against individuals for sorcery and witchcraft were very common indeed ; an infatuated belief in the existence of such power, pervading the whole body of the inhabitants of this province. All cases of unusual or sudden sickness and mortality are immediately ascribed to witchcraft, and individuals are sometimes murdered on suspicion of having occasioned such calamities."

Applications to the court on the subject of caste were numerous, due doubtless to the fact that under former governments,

¹ To Government (Political Department), dated 16th May, 1821 : Stat. Rep. p. 42.

the cognizance of cases involving deprivation of caste was confined to the government court. This description of the people during the earlier years of our rule is confirmed by the testimony of an officer who visited Kumaon charged with the special duty of inquiry into the administration of justice.

Mr. Glyn was deputed to Kumaon in 1822 to hold a sessions of jail delivery and to report on the police and criminal administration. His report¹ is full and interesting and confirms the account already given by Traill. There was a general absence of heinous crime of every description, and the few gang robberies that were reported, took place in the strip of country lying along the southern frontier, and more particularly within the jurisdiction of the authorities of the plains districts. Disputes regarding women were the most fruitful cause of complaint, and the ready attention given to these cases by the authorities without doubt prevented the occurrence of more serious crime. In consequence of suggestions made in this report it was ordered that forced labour for the carriage of goods should cease, and that inquests should be held in all cases of sudden death, a precaution rendered necessary by the number of deaths reported as due to the attacks of wild animals, snake-bites, suicides and accident. In 1824, the number of deaths attributed to these causes was 237. Attention was also drawn to several other matters requiring reform. In the resolution on the report made by Mr. Glyn, the Government of India also bear testimony to the success of Mr. Traill's administration and the entire fulfilment of the sanguine anticipations of his peculiar fitness for the important duties he then fulfilled;² and in 1825, in consideration of the judgment and zeal with which he discharged the duties of Commissioner, he was authorised to draw the full pay of a Judge and Magistrate.³

Amongst the customs of the country which were now abolished two deserve special mention: the right to Adultery : slavery. slay an adulterer and the sale of human beings, children and grown up persons, as slaves. The former was prohibited by a Resolution⁴ in 1819 which runs.

¹ From Nizámat Adálat, dated 24th January, 1824.

² Govern-

ment, dated 19th December, 1823.

³ Government, dated 17th August,

1826.

⁴ 26th August,

“Whereas it appears that, agreeably to the former usages and customs existing in Kumaon, it was allowable to the husband of an adulteress to take the life of the adulterer * * * Be it known that such practice is hereby declared unlawful and is prohibited accordingly : and it is hereby ordained that any person who, in opposition to this prohibition, shall hereafter take the life of an adulterer, will, on conviction before a court of justice, be liable to suffer death. Be it known, however, that according to the laws of the British Government a husband is entitled to redress against the adulterer on application to the Commissioner : such adulterer being liable to punishment for his offence on conviction before a court of justice.”

This will explain the prevalence of complaints of this nature in the local courts and the necessity there was for attending to them to prevent graver crimes.

The sale of children and grown up persons which had arisen during a long period of misrule and oppression had formally received the sanction of the previous governments who levied a duty on the export of slaves. This duty was abolished at the conquest, but the practice itself was too deep-rooted to be at once eradicated. In 1822, Mr. Glyn wrote¹ to the Commissioner :— “The practice of selling children and grown up persons by inhabitants of this province amongst one another or into the hands of strangers is still in a mitigated degree continued, though I am aware of your anxious endeavours to abolish this barbarous practice.” The Bhotiyas on the north and the Patháns on the south were the principal customers. The Government considered that no action was necessary in the shape of enactments and rules for the suppression of the traffic in children; that the natural affections of the parents might safely be relied upon as a remedy against a resort to this course, except as a relief to themselves and children in times of extreme distress. As the prosperity of the province and the comfort of the people increased, so, it might be hoped, this practice would diminish and eventually cease, at the same time the sales of wives by their husbands, of widows by the heirs and relations of the deceased and of children to be taken out of the country chiefly for the purpose of being made household slaves, were forbidden and made penal. But slavery in the form in which it existed continued and flourished, and as late as 1837 the Commissioner reported thus :—

¹ To Commissioner, dated 5th July, 1822; to Commissioner, dated 24th January, 1825; from Government, dated 5th June, 1823.

"Slavery in Kumaon appears to be hereditary. The classes of slaves are distinguishable into household slaves and slaves kept for the cultivation of the land, the former, Khasiya Kájputs, the latter Doms. This state of bondage would seem to have existed from a very remote period. The slaves are dependent upon their owners for food, lodging and clothing, and for the discharge of marriage expenses. The purchase or temporary engagement of such persons for carrying on cultivation as well as the purchase of females for prostitution are still common and have never been prohibited. Such transactions are accompanied by a deed of sale. The recognition of slavery by the courts is confined to the sale of individuals by their parents. Claims for freedom or servitude are heard like other suits."

Thus we see that Mr. Traill's administration had its dark side amid much that was bright. Slavery was extinguished merely by refusing to permit suits for the restoration of slaves or for the enforcement of slavery to be brought in our courts. The prohibition of slavery in its first form was followed by the abolition of *sati* in 1829. In 1837, Colonel Gowan, the Commissioner, reported that murder and theft are yet rare amongst the people, and although crime has increased since 1821, yet the total number of criminals confined in jail on the first of January, 1837, numbered only 142, of whom 28 were convicted of gang robbery in the tract along the foot of the hills and were natives of the plains. Complaints on account of injuries received by sorcery and applications in caste matters were, however, still very numerous.¹

During the same year, however, Mr. Bird records his opinion that it was universally believed that crime Banditti in the lowlands. was less infrequent than had been generally supposed, and that in the Tarái especially banditti were allowed to roam about as they wished. This matter of the presence of armed bands of robbers in the tract skirting the foot of the hills was one of old standing. From very early times the forests and fastnesses of the lower hills afforded a safe retreat to the broken followers of the different petty States who quarrelled and fought and rose and disappeared during the breaking up of the Mughal empire. The former governments, finding that there were no existing means of putting a stop to the depredations of these banditti, took the leaders of each gang into their employment and authorised them to levy certain dues on all merchandise passing through; the lessees engaging on their part to keep up the *chaukidári* (watch and ward) of

¹ Report dated 17th March, 1837.

the borders and indemnify traders for any losses by plunder. On the first establishment of the Gorkhali Government in Kumaon, it was resolved to dispense with these Heri and Mewati watchmen, and parties of troops were detailed for the duty of patrolling the roads, but the attempt proved unsuccessful, and the repeated complaints of merchants who sustained loss at the hands of the lowland robbers induced the Gorkhali Government to have recourse to the old system¹ At the British occupation, the descendants of the original lessees, though they could no longer be called leaders of banditti, were formidable by the numbers of their followers, and owing to this difficulty were permitted to retain their offices. This difficulty was further heightened by the disputes between the officers administering the plains districts and Mr. Traill regarding the boundaries between the hills and plains and the frequent transfer of the Tarai from the jurisdiction of one to that of the other, of which some account has already be given.²

Mr. Seton, one of the earlier Magistrates of the Moradabad district, granted to the Heri and Mewati leaders certain lands in *jagir*; to Ain Khan, the *ilakah* of Kalyanpur - containing thirteen villages and subject to a land-tax of Rs. 3,000 a year, and to Turab Khan four villages, the grantees engaging to put an end to all gang-robberies and to compensate the owners for any property lost by robbery. A regular list of dues was then drawn up and agreed to, and being individually very small they were willingly paid by the merchants to insure the safety of their property. The charge for exports on merchandise per cooly load and on specie per bag ranged, according to the place, at from one to two pice and for imports per cooly load from one to four annas. A bullock-cart laden with catechu and each manufactory paid four annas; each cattle station or *got* paid two pice, and one anna per head was levied as a grazing tax on hill-cattle pastured in the lowlands. In 1817, Ain Khan Heri had charge of the traffic passing to and from Bhamauri, Kota, and Dhikuli with Rudrapur, Chilkiya and Kashiipur and Ami Khan Mewati had charge of that passing by the Kali Kumaon and Chaubhainsi passes with Barmdeo, Bilheri and Pilibhit. Early in 1818, Mr. Shakespear, then Superintendent of Police, brought

¹ To Board, dated 6th December, 1817.

² Gaz. XI-1.

this state of affairs to the notice of the Board of Revenue. He pointed out "the apparently destructive tendency of the system recognised in these leases by which a farmer, for the inconsiderable sum of Rs. 8,881 was empowered to establish a number of posts along a line of country extending upwards of sixty miles between the Rám-ganga and Sárda rivers and to levy customs apparently almost undefined in their amount on all articles of trade with the hills, such duties differing in no respect save their being licensed from those restrictions on the transit of commerce which the Board had forbidden as arbitrary exactions." The consequence of this remonstrance was that the Board instructed the Commissioner to use no efforts for a resettlement of the existing leases on their expiry until further orders, and that the protection of the country should be undertaken by a regularly engaged and paid establishment. There was reason to believe that the responsibility of the leaders for losses by theft and robbery was merely nominal, whilst the exactions to which traders were subjected under the plea of this nominal protection were not capable of being controlled. This advice was partly acted on and military posts were established along the frontier, composed of drafts from the Kumaon Provincial battallion, whilst the leaders of the *chaukidárs* were relieved as far as possible of all police duties. On the death of Aín Khán, in 1822, his *jágr* was resumed, and Mr. Halhed was intrusted with the duty of introducing such measures as might ensure the safety of the persons and property of the traders proceeding to Káshipur or Chilkiya. Provision was to be made by the grant of land for Aín Khán's family, and to his adherents was to be offered every inducement to take to agricultural pursuits by the offer of lands on easy terms. No improvement, however, took place, and in 1823 Mr. Traill had to call attention to the constant *dakaitis* and highway robberies committed in the strip of country lying between the hills and the towns of Najibabad, Nagína and Afzalgarh. From the year 1815, no improvement had taken place and the number of Garhwáli traders who lost their property was so great that in 1823 the communications between the hills and plains had practically ceased. In 1824, the Collector of Moradabad and the Superintendent of the Dún, retorted by formal

¹ To Board, dated 6th December, 1817; -from Board, dated 26th December, 1817; to Collector, Moradabad, dated 4th June, 1823.

complaints against Mr. Traill's military police while Kalu's gang of dakaitis plundered two of his police-stations, killing some of his men and making off with their arms and accoutrements.

Although the efforts made to induce the Heris and Mewátis to take to agricultural pursuits were in a great measure successful, their place in the Tarái was soon occupied by Gújars and other banditti from the Duáb and Rohilkhand. Complaints were continually made to the authorities that organised bands of robbers had taken possession of the Tarái and were preventing the settlement of the forest tracts and were seriously interfering with the trade from the hills. In 1830, Mr. Pidcock, Joint Magistrate of Moradabad, brought to the notice of Government the deplorable state of the low country caused by the outrages perpetrated by these robbers. He showed that between the years 1824 and 1829, as compared with the years 1818 to 1822, dakaitis had increased from 6 to 25, cases of grievous hurt had risen from 17 to 36, house-breaking accompanied with violence to the inmates from 2 to 8 and theft with violence from 12 to 16. On the resumption of the *jágrs* in 1823, pensions, of Rs. 12 a month, were bestowed on Turáb Khán and Ghulám Mahi-ud-din Khán, members of Aín Khan's family and police-stations were established at Bazpur, Jaspur, Barhapura and Kot-kádir with outposts near Kot-kádir, at Gularguji and Patta at a cost of Rs. 6,396 a year. The *Jágr-dárs* formerly paid a revenue of Rs. 300 a year and the resumed grants now yielded Rs. 5,331 a year, making the increase in cost to Government of the measure introduced by Mr. Halhed of nearly Rs. 3,800 a year. Thus there was an increase in cost and an increase of crime. At the same time, the condition of the Heris was miserable in the extreme. They still acknowledged the leadership of Yasín Khán and Nasím Khán, sons of Aín Khán, and more from habit than from the hope of reward attempted to clear the forests of dakaitis. They slew Ahmad Khán, a noted ringleader, and rescued a prisoner from Buláki, who even then (in 1830) was the terror of the neighbouring districts.

The example of Kalwa in the Dún and the neighbourhood of
 Mr. Bird. Hardwár was very attractive. In 1824,
 this man with his Lieutenants Kunwar and
 Bhúra, all Gújars of the Saháranpur district, attacked a police-

station and plundered¹ a considerable village, and growing bold, with impunity, the leader set himself up as a Rájá with a following of over one thousand men. Mr. Shore of the Dún and Mr. Grindall defeated Kulwa at Kunjah, where Kulwa himself was slain with many of his followers. The dispersed banditti were followed and driven out of the Dún, took refuge in the tract along the foot of the Kumaon hills. An attack on a band of pilgrims journeying to Hardwár brought on them Mr. Shore and the Sirmor regiment of Gorkhális from the Dún, who, after some years of patient never-ceasing pursuit, disposed of both Bhára and Kanwar. Their successors as we have seen, still infested the tract along the foot of the Kumaon and Garhwál hills of which Mr. Bird writes in these terms in 1837 :—“ The officers residing in the hills have no sort of control over this tract nor any information of what passes there * * For only four months in the year it is the resort of the hill people and their cattle, and through it pass all the tracks by which the commerce of the hills and the plains is carried on. During the busy season the banditti establish themselves in the forest in overwhelming numbers and commit the most fearful atrocities against the merchants passing through with goods, the herdsmen from the hills and plains who take cattle there to graze, and the inhabitants of the villages and towns bordering on the forest. The information that I could obtain can have no pretension to statistic accuracy, but the histories that were told me of skeletons of human beings being found tied to trees and supposed to be the wretched herdsmen whom the robbers had bound alive and so left miserably to perish, and the accounts of merchants and travellers killed and wounded appeared authentic : and the village of Rudrpur was stated by the remaining inhabitants to have been rendered from a thriving town to a miserable hamlet by the oppression of the robbers.” As a remedy for this state of things a special officer was proposed with joint jurisdiction with the local authorities over all the bordering districts.² The result of this report was that the whole of the Garhwál Bhábar including taluka Chándi, and the Kotri and Pátli Dúns were transferred to Bijnour ; parganahs Thákur-

¹ Williams Memoir of Dehra Dún, 150.
ment, 10th June, 1837.

² Also Batten to Govern-

dwára, Jaspur, Bázipur and Káshipur with the neighbouring Tarái were transferred to Moradabad and Pilibhít received Gardarpur, Rudrpur and Kilpuri with the adjacent Tarái with the condition that no hill men were to be summoned to attend the courts of the plains authorities from the middle of April to the middle of November in each year and that avenues were to be cut through the forest and continually patrolled.¹ Another passage of Mr. Bird's report led to further inquiries.² It runs:— "The system of criminal justice in Kumaon requires also very great reformation. I was credibly informed that persons are apprehended retained in jail and worked in irons for years on the roads not only unsentenced and untried but even without any recorded charge." * * *. "It is essential to the due protection of the people that they should have an appellate authority to which they may resort in the immediate vicinity and that the Commissioner of Rohilkhand or the Senior Judge of that Division would appear to be the most proper selection." Act X of 1838 repealed Reg. X of 1817 and affirmed the control and superintendence of the courts of Nizámat Adálat over the criminal courts of Kumaon. Certain powers had already been given to the Nizámat Adálat by Reg. VI of 1831, and these were now confirmed and the sepoy's of the Kumaon local battalion³ (now 3rd Goorkhas) were transferred from civil to military employ and duties as guards provided for locally. It was finally arranged in 1842 that the Bhábar should be annexed to Kumaon, the Magistrates of the plains having concurrent jurisdiction to the foot of the hills in so far as to warrant their following up and arresting any offender or fugitive who might seek shelter within the limits of the tracts thus transferred. Rules were also framed under Act X of 1838 for the administration of justice in criminal cases but these were superseded by the Criminal Procedure Code, which rules the practice of all Criminal Courts at the present day.

There is no regular police in the hills except a few at Almora,
 Police. Naini Tál, Ránikhet and in the Bhábar,
 and these are not enrolled under the law

¹ From Government, 339, dated 29th January, 1838 and 24th November, 1838. ² From Government, 10th July, 1837. ³ First raised for local duties after the conquest; to Government, dated 11th June, 1816. Mr. B. Lushington took charge as Commissioner 30th October, 1838.

prevailing in the plains. The few peons attached to the courts and tahsils perform, with the assistance of the *thokdárs* and *padháns*, the duty of apprehending offenders and escorting prisoners. The *padháns* arrest offenders and report crime to the patwáris and provide for the forwardal of persons charged with heinous offences for trial. The *thokdárs* are bound to report crime¹ overlooked by the *padháns* and few offences are concealed for the village officials in their duty have to make so many enemies that any concealment on their part can hardly escape detection. Sir H. Ramsay writes :—

“I believe our rural police system works better than in any other part of India, and it would be most unwise to interfere with it. It has the great merit of being cheap, i.e., costs the State nothing (except the Bhábar police) and the absence of annoyance and worry inseparable from a paid police is not its smallest recommendation.”

There is no doubt that the present system is best suited to the people and the country, and it is to be hoped that the desire for uniformity which is begotten of blanks in the fair returns in annual reports opposite Kumaon and Garhwál will not be allowed to absorb these districts and introduce the plains system, which is entirely unfitted for them. There are lock-ups at Naini Tal and Páori in Garhwál and also in the Bhábar, but there is only one jail (Almora).

By an order of the 3rd May, 1815, the Hon'ble E. Gardner was directed to assume the official designation of Commissioner for the affairs of Civil administration. Kumaon and Agent, Governor-General. Mr. G. W. Traill of the Bengal Covenanted Civil Service was appointed as Assistant (8th July) and joined on the 22nd August, when he was at once intrusted with the administration of Garhwál (10th October). On the departure of the Hon'ble E. Gardner (13th April, 1816) Mr. Traill was appointed to officiate as Commissioner and was confirmed in that office in the following year (1st August). As he did not relinquish charge of the province until 1835, the whole of the arrangements made for the administration of both civil and criminal justice originated with him or received his sanction.² In 1821, Mr. Traill in one of his letters³ made several proposals for the improvement of the administration, and in it occurs this remarkable passage :—

¹ It is probable that many of the suggestions have already formed the subject of legislative enactments, if so, I have only to offer in excuse that, as the

¹ Traill to Government, dated 27th May, 1821.

² See also Gaz., XI.,

regulations do not extend to this province, I have not been furnished with or seen a single regulation for the last six years."

This will show more clearly his position as regards Kumaon than any description of mine. Mr. Traill was not only administrator but also legislator for his province, and it will be interesting to record his own description of the rules for civil procedure that he thought necessary and sufficient :—

"The original plaint is now required to be written on an eight anna stamp as the investigation and decision of every suit, whatever the amount of the cause in action, fall to the cognizance of one court. Some discrimination is used in the previous admission; causes which, from the plaintiff's own written statement, must in the sequel be inevitably nonsuited, are rejected in the first instance, the ground for such refusal being recorded on the face of the petition. Cases of this nature are confined to objections of limitations of time or jurisdiction. Where the suit is admitted, an order of the court of the nature of an *ittilanama* is furnished to the plaintiff with the view to its being served by himself on the defendant. In three-fourths of the plaints instituted, this process proves sufficient to induce a private settlement of the claim. In the event of the plaintiff not receiving satisfaction, he returns the original notice into court, when the suit is regularly fixed for adjudication, and a summons to require the personal attendance of the defendant is issued. After a *vide voce* examination of the parties, the necessary witnesses on both sides are sent for. In the examination of these latter an oath is very rarely administered. This omission does not arise from any ignorance on the part of the natives of this province of the nature of an oath, as they are on the contrary remarkably sensible of the religious obligation and are in consequence generally averse to incurring the responsibility of an oath.

Their simplicity of character and common adherence to truth is, however, such as to render it extremely easy to elicit the whole truth without recourse to this ceremony. An indiscriminate application to it on all occasions is therefore uncalled for, and would only tend to weaken its force. Where such may appear advisable to the court, or where it may be required by either of the parties, the witness is always sworn. This is, however, of rare occurrence; and, indeed, from the reasons above mentioned, the evidence of any witnesses is seldom required, as the parties commonly agree wholly in their statements and admissions. No licensed law-agents as in the courts below, are allowed to practice here; but parties who may be unable to attend are permitted to appoint any person as their agent. This regulation at once precludes all vexatious litigation and prevents any unnecessary delays or procrastination by the parties in their proceedings. From the date of the summons to the defendant, seldom more than twelve days are required for the investigation and decision of the suit; generally the proceedings are completed in even a shorter period: and as no technical forms of pleading are required, the want of experienced *vakils* proves no inconvenience to suitors. Copies of the decree are furnished to either of the parties requiring it on an eight-anna stamp being furnished for the purpose. The price of this together with that of the paper on which the original plaint is entered, and with

occasional fees to process-servers employed, form the whole costs of a suit in this court.

The non-payment of a debt proceeds here generally from the want of means rather than of inclination ; while the existence of the debt itself is commonly owing to some unforeseen difficulties, and not to any profuseness or want of principle on the part of the debtor. Such being the case, the hill-creditor seldom proves inexorable, but, after obtaining a decree, he is usually content to wait for its gradual liquidation by fixed instalments. Only one sale of real property in satisfaction of a decree has yet been made by order of the court."

"For a series of years," Mr. Traill remarks, "only one Court, the Commissioner's, existed in the province Munsifs appointed. for the cognisance and adjudication of civil claims. In this Court no arrears of public business were ever known.¹ From the gross abuses which characterised the native Courts under the British Governments, when the administration of justice was sold or farmed to the highest bidder, such establishments as at present exist were not in the first instance deemed expedient. As, however, a period of fourteen years might be presumed to have induced some appreciation of our better system, a recourse to local tribunals was considered likely to consist with the ends of justice and good government ; while from the increase of wealth and the enhanced value of landed property the gradual increase in proportion of litigation which resulted, rendered it in some measure necessary. Accordingly eight munsifs were appointed of whom seven were kánungos and the title Sadr-Amín was given to the Court pandit on investing him with civil jurisdiction.² Rules were framed in the spirit of Regulation XXIII of 1814 for the guidance of these officers, and they continued to exercise the functions of Civil Judges in petty causes until 1838, when their offices were abolished and other arrangements were made.

This change was chiefly due to Mr. Bird's minute on the administration of justice in Kumaon, which recommended the introduction of what were known as the Assam rules, and that some order should be observed in the gradation and powers of the Courts.

¹ That this Court had enough to do may be shown from the fact that in 1824 there were 2,790 civil suits instituted of which 1,000 came to decision. Of the cases disposed of, 313 were decided in favour of the plaintiff, 278 in favour of the defendant, 58 were non-suited, and 339 were compromised. ² The Sadr amín for Almora and Bárahmandal ; the Munsifs for Páti, Phal-dákot, Chaugarkha-Gangoli, Sor, Káli Kumaon, Chandpur and Srinagar. Mr. Traill took three months' leave preparatory to furlough, 28th October, 1835, and was succeeded temporarily by Mr. M. Smith. Colonel Gowan was appointed Commissioner, 5th March, 1836, and was succeeded by Mr. Lushington in 1836. Mr. Batten was appointed to Garhwal, 15th October, 1836, with Captain E. Thomas as Assistant, and Mr. Phillips in Almora.

Act X of 1838 provided that there should be two districts, Kumaon and Garhwál, in each of which were to be stationed one Senior Assistant, one Sadr-Amín and one Munsif ; the rules for Assam to be in force with certain limitations applicable to Kumaon for the administration of civil and criminal justice. In the revenue management, the Commissioner had the same powers as the Commissioner in the plains, subject to the orders of the Board of Revenue. A Senior Assistant was to exercise the same power as a Collector and a Junior Assistant the power of a Deputy Collector. From 1836 to 1838 there was a great change in the administration. Mr. Traill was no longer there, and his successor had, perhaps, to pay by the most searching investigation into his procedure and the most minute instructions for his guidance for the unlimited autocracy of the first period. We find it forbidden to hear causes for the sale of slaves and purchase of Doms for agricultural labourers ; the use of the ordeal by hot iron in Munsif's courts in caste cases was also abolished as well as suits for losses occasioned by witchcraft and the jurisdiction assumed over temple lands in Tihri was abandoned. All these orders promoted regularity. In 1855, revised rules for the guidance of the revenue courts in summary and regular suits were introduced and with modifications continue in force to the present day.¹ The Assam rules were superseded by the Jhánsi rules in 1863 and validity was given to their extension to Kumaon by section 2 of Act XXIV of 1864 from the date of their extension until the Act quoted came into operation and portions of them providing for the establishment of courts and the periods of appeal were to continue permanently in force. It further provided for the extension of the law of limitation to Kumaon and declared that the Indian Penal Code was in force. " It is a question," writes Mr. Whalley, " which admits of a doubt whether the rules prescribed under Act X of 1838 and known as the Assam rules do not retain their legal force so far as they overlap or cover more ground than is covered by the rules that were designed to supersede them. They have never been expressly abrogated and in matters not provided for by subsequent legislation, as, for example, the law of mortgage contained in section 8, the courts are practically still guided by their provisions." Section 13 of Act XXIV of 1864 empowered the Local Government to extend

¹ G. O. No. 4085, dated 6th October, 1855.

the Code of Civil Procedure to Jaunsar Bāwar and certain tracts¹ in the Robilkhand Division which had been removed from the jurisdiction of the tribunals established under the general Regulations and Acts, but section 4 distinctly ruled that the proceedings in all civil suits in Kumaon and Garhwāl should be regulated by the Code of Civil Procedure. No instructions were, however, issued regarding other matters, and the courts follow the ancient usage in all cases for which there exists no special provision in the Civil Procedure Code. The Sadr-amīn is not styled a subordinate judge since Act XVI of 1868 was not made applicable to Kumaon. Similarly the rules for the service of process are based on the lines laid down by Mr. Traill as Act XI of 1863 was not extended to Kumaon. Fees are levied on all processes, civil, criminal and revenue, and from the fund thus raised the process-servers are paid. Similarly neither the revenue nor the rent laws of the plains are applicable to Kumaon, and its police were never organised under Act V of 1861. The court of the Commissioner in civil causes is not subordinate to the High Court. He submits to the Government through the High Court each month a statement of all suits disposed of or pending in the subordinate courts and all appeals, regular and special instituted, disposed of and pending in his own court, and with regard to which he has all the powers of a High Court. From the above description it will be seen that the revenue, civil and police jurisdiction of the several courts is based on rules specially applicable to local circumstances. The forest department, except in the Kumaon Bhābar, has the charge of the forests and centralisation has so far made inroads that all special departments, such as jails, education, vaccination, stamps, registration, public works, &c., are now each under the control of their respective provincial heads.

The duties on spirits locally manufactured and drugs formed a portion of the revenue from the British occupation. The following figures show the statistics for a number of years in the earlier part of the British rule :—

<i>Spirits.</i>		<i>Drugs.</i>		<i>Spirits.</i>		<i>Drugs.</i>		<i>Spirits.</i>		<i>Drugs.</i>	
	Rs.	Rs.		Rs.	Rs.		Rs.	Rs.		Rs.	Rs.
1820-21 ...	579	240	1827-28 ...	558	274	1832-33 ...	975	264			
1821-22 ...	270	264	1828-29 ...	733	274	1833-34 ...	923	252			
1824-25 ...	483	274	1829-30 ...	847	252	1835-36 ...	804	372			
1826-27 ...	602	274	1830-31 ...	996	240	1836-37 ...	682	372			

¹ Tarāi parganahs.

The figures for the first year include the entire farm for Kumaon and Garhwál; for the succeeding years the Kumaon figures are separately given. If we compare the modest Rs. 534, the produce of the spirits and drugs farm in 1822-23 with Rs. 29,013 the produce in 1882-83, in Kumaon alone, the increase seems to point to a very great spread of drinking habits amongst the people; but we are assured, on the good authority of the Commissioner, that this is not the case. "There is no consumption among the rural population of the hills—and I sincerely hope there never may be. Shops ought never to be allowed except at stations." With these pious aspirations we cordially concur. Similarly, the report of the district officer states that there are very few shops and the hill people, as a rule, do not indulge in liquor; the principal customers being the troops and the lowland people connected with the sanitarium. In all districts bordering on native States the facilities for illicit manufacture and smuggling form an insurmountable obstacle to the introduction of the distillery system, so that it has been found necessary to lease the right to manufacture and sell to one or more individuals who are sufficiently alive to their own interests to prevent others from trespassing within the area of their license.

The following table gives the statistics for several years:—

Year.	Licenses.		Drugs.	Opium.		Chandu and Madak.	Fines, &c.	Gross receipts.	Gross charges.
	To sell and make country liquor.	To sell English liquor.	Dues.	License fees.	Excise duty.				
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.			
1872-73	9,265	1,342	4,521	...	3,150	349	36	18,663	1,565
1873-74	10,177	1,358	4,091	...	2,275	1,007	16	18,924	1,412
1874-75	12,377	1,079	4,322	...	3,710	999	...	22,487	1,498
1875-76	14,222	1,244	4,210	...	4,961	1,005	...	25,642	1,797
1876-77	15,119	1,201	3,952	...	5,084	850	...	26,206	1,884
1877-78	13,429	1,218	3,716	50	4,288	940	15	23,706	1,632
1878-79	13,821	1,301	3,075	859	4,716	320	...	24,092	1,512
1879-80	14,873	2,119	2,841	1,078	5,609	170	3	26,693	1,345
1880-81	14,387	2,035	3,458	688	6,116	367	...	27,051	1,416
1881-82	18,403	2,027	4,392	851	6,528	655	1	32,787	1,512
1882-83	15,988	2,461	3,670	700	6,177	...	17	29,013	1,445

There are eight licenses for the sale of drugs and a similar number for the sale of opium.

The stamp revenue commenced by the imposition of a fee of eight annas on all petitions originating a suit but no institution or other fees were levied.¹ Subsequently a fee of eight annas was also imposed on applications for copies of documents more than a year old.² Gradually with the introduction of other reforms came the assimilation of the procedure in stamps to the practice of the plains and now there is no difference. The following table gives the receipts and charges of this source of revenue from 1872-73 to 1882-83 and at foot for comparison the figures for the last year for Garhwál and Dehra Dún. The Kumaon figures include those for the Taráí district from 1878-79 :—

Year.	One anna adhesive.	Handi stamps.	General stamps.	Others and penalties.	Total receipts.	Charges.	Court-fees stamps.	Charges.	Total net receipts.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1872-73 ...	936	890	11,235	21	13,082	1,932	28,487	504	39,133
1873-74 ...	1,682	122	10,818	162	12,784	1,003	37,594	423	48,952
1874-75 ...	1,554	266	11,220	129	13,169	1,153	36,606	390	48,332
1875-76 ...	1,952	168	11,577	158	13,855	1,101	37,282	..	50,036
1876-77 ...	1,879	99	10,460	741	13,169	1,562	39,423	64	51,466
1877-78 ...	2,029	83	11,964	285	14,361	1,060	41,498	..	54,799
1878-79 ...	2,031	80	13,442	822	16,375	756	45,964	312	61,271
1879-80 ...	1,985	71	13,058	234	15,348	646	40,607	309	55,000
1880-81 ...	2,334	100	13,193	975	16,602	642	42,234	397	57,797
1881-82 ...	2,420	145	13,708	258	16,531	1,414	43,830	323	58,634
1882-83 ...	2,279	308	12,886	308	15,781	654	43,165	370	57,922
Garhwál ...	121	5	2,712	38	2,876	205	17,195	309	12,557
Dehra Dún ...	4,216	440	8,211	1,933	14,801	910	15,774	182	29,483

The following statement shows the registration statistics for Dehra Dún, Kumaon, Garhwal and the Taráí for the years 1881-82. Under the head 'compulsory' are those documents affecting immoveable property which the law states shall be registered; under the head 'optional' come documents also affecting immovable property which need not be registered: both these classes are registered in Book I. Wills and written authorities to adopt are entered in Book III. and documents affecting movable property are entered in Book IV. In the Dehra Dún district there is a Registrar, and Sub-registrars at Dehra and Chakráta. In the Kumaon and Garhwál districts there

¹ To Board, 14th November, 1830.

² *Ibid*, dated 29th May, 1840.

is one Registrar, and Sub-registrars at Almora, Naini Tal, Ráníkhēt, Champáwat and Srínagar, and in the Taráí district a Registrar, and a Sub-registrar at Káshipur :—

		TOTAL DOCUMENTS REGISTERED.				Total.	Fees realised.	Charges.	Net receipt.
		<i>Book I.</i> (<i>immovable</i>).		<i>Book III.</i>	<i>Book IV.</i>				
		Compulsory.	Optional.	Wills and adoptions.	Movable property				
		Rs.	Rs.	Rs.	Rs.				
Dehra Dún ...	...	377	41	4	157	679	1,850	886	964
Taráí ...	...	181	67	1	51	280	505	263	252
Kumaon ...	...	521	146	44	77	788	2,022	1,571	451
Dehra Dún ...	...	295	30	7	124	456	1,630	898	732
Taráí ...	...	158	68	...	55	281	495	247	243
Kumaon ...	...	518	159	37	60	766	1,674	1,551	123

The average cost of registration to Government in Kamaon is Rs. 1-15-5 and in the Taráí is Re. 0-14-0. Registration was first introduced in 1843 with a maximum fee of one rupee.

The Kumaon and Garhwál districts form one circle, of which the postal statistics may be shown as follows :—

		<i>Despatched.</i>				<i>Received for delivery.</i>			
		Letters.	Newspapers.	Books.	Parcels.	Letters.	Newspapers.	Books.	Parcels.
1861-62 ...	...	99,457	4,035	964	309	84,404	10,797	1,761	1,499
1872-73 ...	...	1,41,206	6,804	514	1,068	1,09,234	20,708	2,710	2,072
1882-83 ...	...	...	...	...	...	1,37,514	37,544	4,128	2,938

The increase is marked and satisfactory, and shows the progressive improvement of the district as much in this as in other departments. There are post-offices at Rámnagar, Káladhúngi, Naini Tál, Almora, Ráníkhēt, Haldwáni, Pithoragarh, Lohaghát, Baijnáth, where money-orders may be obtained, and also at Búgeswar, Berenág, Kausáni, Dwárahát, Chaukuri, and Champáwat; all in Kumaon. In Garhwál, there are postal and money-

order offices at Páori, Srínagar, Rudraprayág, Karnprayág, Nand-prayág, Joshimáth, Dádamauli, and Kotdwára. These are in addition to the local post maintained from the district post cess, and which has its separate organisation. It is maintained as much for public convenience as for administrative purposes, and is the great channel of communication between the patwáris and the head-office. Without the district post, the police arrangements of the district would break down, and the certainty of information coming from all parts of the district, keeps the patwáris up to their work. About 6,000 square miles have to be looked after and in this area there are 91 patwáris in Kumaon alone, through whom the police arrangements are carried out, and a great many men are required on the district-post establishment to convey reports to and from Almora. The same system obtains in Garhwál, where there are 44 patwáris. No charge is levied for conveying the private correspondence of the people themselves.

Amongst the diseases either endemic or epidemic in the hills are the plague, cholera, small-pox, fever, goitre and leprosy, and we shall here devote a little space to their description. The plague, or *mahámari* as it is called in Kumaon, and *gola-roq* or *phútkiya-roq* in Garhwál, is a pronounced fever of a typhoid type almost identical in its symptoms with the Levantine plague, and has been proved to be highly infectious.¹ Dr. Renny gives the following description of this disease:—

“*Mahámari* is a malignant fever, of a typhus character, accompanied by external glandular tumours, very fatal, and generally proving rapidly so in three or four days; it appears to be infectious, and is believed not to be contagious. The usual symptoms of fever are present, and might be enumerated in every variety, but the cases observed were too few to rest upon them the diagnostic marks of the disease on all occasions. Heat of skin, accelerated pulse, lassitude, chilliness, nausea, thirst, a white and furred tongue, were all noticed. Headache was prominent in all, increasing to the most acute pain with blood-shot eye, and it is supposed the brain will be found the most morbid seat of disease, though all the organs may, no doubt, partake of the highly septic quality of the pestilence. The external swell-

¹ Dr. Govan of Almora believes it to be contagious; Dr. Renny, in his report (73, dated 19th August, 1850) gives reasons for holding it to be not contagious and simply a typhus of a very malignant kind, most probably infectious at all times and certainly so when many predisposing circumstances favour its extension. Subsequent experience tends greatly to confirm this view, as men who were employed to collect the dead were entirely exempt from the disease. For aid in this note I am indebted to Colonel Garstin and Dr. Govan, late Civil Surgeon of Almora.

ings, suddenly rising, indolent, and not very painful, are the most characteristic proofs of the malady; glandular swellings in various parts of the body, the groin, axilla, neck, and even in the legs, are described as occurring, but in the cases witnessed recently as well as those of the few who had survived an attack, the tumours or buboes, if they can be so called in that state of incomplete inflammation and suppuration, were only in the groin, a long diffused tumefaction with an enlarged gland in the centre of the size of a nut; they are looked upon by the natives as the most deadly sign of the distemper, and are really to be considered an unfavourable prognostic. Symptoms similar to those of cholera have been reported by the natives, but none at all corresponding were seen; the stomach and bowels were little affected, and the latter were inclined to costiveness. The lungs did not appear to suffer, and the respiration was not labored except in one case far advanced. From unavoidable obstacles, the state of the kidneys and the secretion was not ascertained. The most remarkable circumstance in the disease is the mild nature of the entire symptoms under so rapid a termination, little febrile or other constitutional excitement presenting itself where death was certain in 24 or 36 hours. Such trifling derangement of the functions of health would be a startling and unaccountable anomaly and not to be reconciled with the speedy fatal result, had not the same thing been observed in other epidemics in India, and even in the plague itself."

It was first discovered and recognised in Garhwál in 1823 and has ever since appeared occasionally in the Badhán and Ohánderpur parganahs of Garhwál and sometimes in Malla Salán and similar tracts in Dánpur and the upper Kosi valley. Dr. Renny gives the following account of the various outbreaks in Garhwál and Kumaon:—

"Its most remarkable appearances have been as follows:—It began near Ké-dárnáth, in the snowy range, and for some years confined its ravages to Nágpur and Badhán, which form the subject of the first¹ report upon it in 1834 and 1835; in the latter parganah it again prevailed in 1837, along the higher parts of the river Pindar; in 1846-47, the *mahámari* found its way to the sources of the Rám-ganga in Patti Lohba, and devastated the village of Sarkot, situated at above 7,000 feet on a high easterly spur of the great mountain Dudu-ke-toli; at the same time a village in Kumaon proper, near the source of the Kosi river in Patti Borá-rau, was visited. In 1847, a village within 15 miles of Almora, situate among the pine forests of the Siyáhl Devi range, was attacked. At the latter end of 1848, a few villages in parganah Dánpur, along the line of the river Pindar, were threatened with the disease, but the alarm subsided; on the whole, the year 1848 and part of 1849 may be said to have been remarkably free from *mahámari* throughout the province. During the rainy season of 1849 it broke out with great virulence in Choprakot, and although the disease did not spread through the country, it proved very fatal in particular villages, Marora and Dadoli."

Mahámari broke out again in 1852 and again in 1876. In the former year Messrs. Francis and Pearson formed a commission

¹ To Commissioner, 15th February, 1836: Dr. Bell's report, 13th April, 1836, 8th July, 1840, and 23rd July, 1849 to Mr. Batten.

of inquiry, and in 1876 Messrs. Planck, Watson and Campbell, so that we have some fairly connected records of each visitation. In 1876 some 535 men, women and children fell victims to the disease.

Colonel Gowan in his report on *mahámari* in 1836 notices the belief of the people that it was communicable by contact with articles in use in an infected tract, such as a jar of *ghi* or clothes. Others say that it came into existence for the first time at the Hardwár fair. Most natives believe "that everywhere it appears first to have attacked the rats and then the men," which may be accounted for in this way. The villages in which the *mahámari* first breaks out are noted above all others for their cultivation of *chua* (*Amaranthus frumentaceus*) and it is where this grain is chiefly used that the disease first breaks out. It is possible that under some conditions of weather and surroundings a chemical change may take place in this grain which the rats who feed on it are the first to suffer from, and then the people themselves. Some change like that producing the ergot of rye would suffice and lay the match to the magazine of diseases ever present owing to the insanitary condition of the villages. Sir H. Ramsay writes:—

"The death of rats previous to the actual outburst of the disease amongst the people is so invariable, that if the inhabitants only avail themselves of this sure warning and vacate a village at once, they might escape the disease altogether. It is a standing order that on the death of rats they are immediately to vacate; but they linger on in hopes of the disease not appearing and flee only when too late, *vis.*, not until infection has appeared, and then many lives are lost. Those villagers who have heeded the warning entirely escape the disease, as proved in numerous cases."

As to the grain theory, the same authority considers the reasoning bad, as many who took the grain from the villages with them remained unaffected. Still the fact remains that the first outbreak of the disease usually occurs in villages in which the amaranth *chua* forms the staple food of the people. In 1852, Messrs. Francis and Pearson were deputed to inquire into *mahámari* in Garhwál, and there can be little doubt that the remedial and preventive measures adopted in their recommendation, the isolation of the infected, the burning of infected villages and articles, the enforcement of personal cleanliness, the clearance of the accumulated filth from

within and around the dwelling houses, and other similar measures, undoubtedly did much to ward off the attacks. There can be no question that the disease is mainly attributable to the filthy habits of the people who keep cattle and fowls and animals in their dwelling houses and throw all refuse and litter just outside the doors; to their using old and bad grain; to their raising and training cucurbitaceous plants over their houses; to their planting hemp immediately in front of and around their dwelling, which grows to a considerable height and obstructs the circulation of air and emits a distinctly miasmatic odour; and to their want of personal cleanliness.¹

Another endemic disease is a species of typhoid fever known as *sanjar* or *kájjar*. When it breaks out in a village, the death-rate is very high, but it is of comparatively rare occurrence and is usually confined to low, hot and damp valleys or in villages so situated. The origin of this fever also is clearly due to the filthy state of the villages. When this disease breaks out, the entire village is at once isolated and, if possible, the people leave their houses and live in the jungle until the disease has abated. Before returning, all the dwellings are cleaned and plastered or whitewashed. The harrowing accounts of the utter mental and moral deterioration caused by these outbreaks need not be noticed here, but I must quote from Dr. Pearson's report one passage:—

“When *mahámari* breaks out in a village, the terror and mental anxiety of the inhabitants are past description: then the strongest family ties are broken, fathers and mothers forsake their children, wives and husbands separate, mutually distrusting each other. One and all precipitately abandon their homes, leaving behind them all their household goods, provisions and standing crops to face, for them, the less frightful alternative of a solitary and wretched existence in the jungle, without food or shelter, perhaps to die of starvation, and their bodies to become the prey of wild beasts.”

Another endemic disease is malarious enteric fever, which might be called yellow fever, as the sufferer becomes of a turmeric yellow colour and frequently vomits blood and, becoming insensible, rapidly sinks. This fever prevails in densely-wooded villages in the Bbábar. The ordinary remittent and intermittent fevers also are common, and amongst Europeans a very distressing form of

¹ Rules for the sanitation of villages for the prevention of *mahámari* were drawn up by Dr. Pearson and have been found perfectly satisfactory, backed by the provisions of Chapter XIV of the Indian Penal Code and Chapter XXV of the Criminal Procedure Code.

dyspepsia. Measles and chicken-pock also occur, and sometimes the former is very fatal to children, when it takes the epidemic form. Small-pox was a characteristic disease of the hills and was

Small-pox. that form of disease regarding which the

Tibetan envoys made special inquiry every year before permitting the opening of communications. But since the introduction of vaccination, proposed by Mr. Traill in 1818 and again by Mr. Batten in 1840, the disease has almost been stamped out, and it now appears chiefly in an epidemic form. At first, inoculation was practised, and during the Gorkhali administration a *jagir* was set apart for an inoculator in Kumaon, and in the Dún a person was allowed to have the monopoly of this practice and make his own charges,¹ but Government prohibited the official use of inoculation. Up to 1854, however, the inoculators had it all their own way. Commencing their operations in the spring of the year, they started an epidemic which ended in a large mortality. In 1854, Dr. Pearson with Mr. Batten's concurrence commenced with two vaccinators. At first there was some slight opposition, but it soon became popular as the results became known, and the number of operators was increased and arrangements were made to supply the plains' districts with vaccine virus. Matters progressed so that in 1868, Act XXIV of that year was passed to prohibit the practice of inoculation in any form and was accepted by the people, with the result that now an epidemic of small-pox seldom occurs and the deaths from this cause are less than from almost any other disease. The wonderful success of vaccination in the hills appears to be due to the fact that a similar remedy against small-pox had been known to the people in inoculation, and they therefore were prepared to accept vaccination as a substitute when they found it to be harmless and free from the dangers of inoculation and also more efficacious as a prophylactic. The average number of deaths from small-pox in Garhwál from 1867 to 1873 was 23 and from 1873 to 1877 was 15 : in Kumaon the figures were 22 and 27 respectively. During the year 1877-78 there were 72,410 primary vaccinations in Kumaon and Garhwál, of which

¹ To Government, dated 5th December, 1818 : Shore to Traill, dated 5th October, 1828.

62,596 were successful, giving an average of about 56,000 successful vaccinations for the previous five years. In 1880-81 the total number of persons primarily vaccinated for the whole Kumaon Division including the Bhábar and Taráí was 71,909; in 1882-83 was 40,865, and in 1883-84 was 38,855. There are dispensaries at Srínagar and along the pilgrim road in Garhwál and at Almora, Naini Tál, Haldwáni, Káladhúngi and Rám Nagar in Kumaon.

Leprosy is very common in parts of the hills. It is divided locally into eighteen kinds, but there are really only two—the white and the common leprosy. It is considered to be contagious and hereditary. The Leper Asylum at Almora

Leprosy.

supported by voluntary contributions, receives inmates from all parts of Kumaon and Garhwál and even Nepál. Cholera visits the hills in an epidemic form, chiefly coincident with the breaking up of the great Hardwár fair. This was

Cholera.

especially noticeable in the great cholera years 1857, 1867, and 1879. In the first and last it ascended as far as the Bhotiya villages. In Garhwál, the pilgrims who flock in great numbers every year to the sacred shrines of Badrináth and Kedárnáth used formerly to introduce many diseases, but of late years when any epidemic contagious disease is rife in the plains about the time of pilgrimage, ingress is forbidden. In all epidemics, the Doms who form the labouring classes are the first to be attacked. They are exceedingly filthy in their habits and eat meat of any kind, even carrion, hence disease when it attacks them finds in them victims prepared for its ravages and they easily succumb. *Mahámari* and cholera are for the most part fatal, but malarious fever and small-pox only to the extent of about one-third. Goitre (*ghega*) is not uncommon, but it is confined to certain localities and aspects, with regard to which no general rule can apparently hold good. Perhaps a combination of debilitating influences, such as humidity of the atmosphere, infected air in close valleys, marshy soil, habits of the people, abrupt changes in temperature, and water from calcareous sources, all combine to produce this disease. Madden notices the use of the *gilar-ke-patti*, a sea-weed imported from the west, in the native treatment of goitre.

The following statement compiled from the official returns shows the causes of death for eleven years :—

Year.	Cholera.	Small-pox.	Fevers.	Bowel com-plaints.	Injuries.	All other causes.	Total.	Ratio of deaths per 1,000.
1872	26	30	4,452	2,113	269	2,054	8,944	20.78
1873	2,107	79	4,492	2,165	225	1,976	11,144	25.74
1874	1	16	3,063	1,499	229	2,014	6,822	15.76
1875	12	5	4,051	2,061	283	2,325	8,750	20.21
1876	608	12	3,657	2,012	166	2,576	9,221	21.32
1877	18	21	3,461	1,926	197	1,917	7,545	17.43
1878	393	39	3,922	1,828	197	1,744	8,123	18.76
1879	6,894	20	4,364	1,852	174	2,038	15,318	35.44
1880	5	1	7,035	1,869	253	1,850	11,133	25.72
1881	68	30	7,367	1,513	173	1,156	10,307	20.88
1882	83	81	6,745	2,302	199	1,739	10,150	20.96
Garhwál	...	9	4,046	3,331	226	294	7,911	22.69
Tarái	67	292	9,533	1,286	89	283	11,550	60.06

I add the figures of 1882 for Garhwál and the Tarái for comparison. It will be seen that nearly five per cent. of the Tarái population died of fever chiefly between October and January, raising the death-rate to two per cent. over the birth-rate. The birth-rate per 1,000 of the population during the same year in Kumaon was 23.6 ; in Garhwál was 40, and in the Tarái was 37.2. The figure for Garhwál appears excessive, for, from 1867-68 to 1871-72, the birth-rate averaged 24 against an average death-rate of 20 per 1,000. The average death-rate per 1,000 of the population for the five years preceding 1882 was 21.25 in Kumaon ; 20.74 in Garhwál, and 41.67 in the Tarái.

Both Kumaon and Garhwál have a bad reputation for cattle-diseases. Rinderpest broke out first in 1850-51, and again appeared in 1864-65, and 1872-73, since when it has been practically endemic. On each of the three occasions mentioned it caused great loss, and has varied much in its course and virulence. It has not followed in its epidemic form any particular line of country, but has passed over some villages to come back again after a time. In some, ninety per cent. of the cattle died ; in others, hardly one-fourth. Isolation and burying the dead cattle are the only preventive measures that have been of much use : medicines have been tried and have failed perhaps from not having been used in time. Foot and mouth disease

or *khuriya* is more of an endemic than an epidemic disease in these hills. The symptoms are : the animal becomes thin and weak, scabs appear about the mouth and sores on the tongue, from which a slimy fluid exudes. The animal scratches its mouth with its hoofs and the hoof becomes affected with a sort of rot. In the majority of cases the symptoms are mild and pass off with careful treatment¹ in a few weeks and the animal recovers, but in some cases the tongue and hoofs fall off and the animal dies. This disease is contagious for animals using the same pasture, and children drinking the milk of animals so affected frequently suffer from bowel complaints.

Throughout the hills the mode of calculating the measure of land was based primarily on the quantity of seed required to sow it. The denominations therefore varied in area with the quantity and character of the land, and the confusion that ensued was still further heightened by the practice of remunerating the whole of the public servants by assignments of land in which the initial term varied in value with the class to which the assignee belonged. Of all these terms the *bisi* was most commonly used in Kumaon, and on it the present standard *bisi* has been founded. Another mode of calculation in common use was the number of sheaves (*bilkas*) that the land was estimated to produce which should correspond with the number of *nális* in each *bisi*. The following terms were used in Kumaon, and were computed to represent the number of standard *bisis* annexed :—

<i>Jhála</i> ... 3 to 12 <i>bisis</i> .	<i>Ali</i> ... 2.5 <i>bisis</i> .	<i>Taka</i> ... 0.5 <i>bisis</i> .
<i>Bhara</i> ... 2.5 „	<i>Bisa</i> ... 4 „	<i>Másha</i> ... 0.75 „
<i>Ans</i> ... 3.1 „	<i>Náli</i> ... 0.5 „	<i>Rini</i> ... 1 „

In Upper Dánpur the *bhara* was equivalent to six *bisis*, and required from six to eight *rinis* of seed to sow it, each of which weighed a maund. In Lower Dánpur the *jhála* was used, and was equal to two to three *bisis*. In Juhár, the terms *kanch* or *tola*, *másha* and *rati* were used, and in Dárma the *swalo* was equivalent to 40 *nális* or two *bisis*, the *wuera* to 30 *nális* and the *khar* to 60 *nális* of grain. In Shor and Síra, the *jhála* was equal to six *bisis* of 40 *nális* each; whilst in Gangoli the *jhála* was only 2½ *bisis* of 40 *nális* each. In Páli to the west of the Rámanga the *jhála* contained six *bisis* and to the east nine *bisis* : here 40 *bilkas* made a

¹ Deodár oil and soap and coal-tar used outwardly.

Government *bīsi* and 32 *bīlkas* formed an *akra bīsi* :¹ a *kārdewa bīsi* required² 4 *pirāi* of seed, an *akra* three, a *kama* five and a *danda bīsi* two *pirāi*, each of which contained 16 *nālts*.

In Garhwāl, the denomination in use was the *jhūla*, but here, too, it varied in extent according to the description of person holding the land, according to the following list showing the number of *dons* of seed required to sow the *jhūla* of each class (a *don* is about a maund) :—

		Dons.				Dons.
<i>Thakurāli</i> (chiefs) was equal to ...	16		<i>Kotkarkh</i> (militia) ...	...		12
<i>Thāni</i> (principal land-owners) ...	12		<i>Tob</i> (regular troops) ...	...		10
<i>Raulia</i> (<i>padhāns</i>) ...	...	8	<i>Kotiya</i> (followers) ...	...		6
<i>Chakar</i> (tenantry) ...	...	4	<i>Topchi</i> (huntmen) ...	...		4
<i>Tyargān</i> (temporary cultivators),	16		<i>Seuk</i> (personal servants) ...	...		4
<i>Amrāi</i> (courtiers) ...	...	8	<i>Jāgrādar</i> (grantees) ...	...		12

The *jhūla* was further divided into *chakrīs* or fourths and *annas* or sixteenths. In the Nīti valley they had a *damola* which represented six rupees, which was again divided into sixteenths.

Properly the *bīsi*, as its name implies, should contain only twenty *nālts*, or that amount of land which requires forty *seers* or one maund of seed for its cultivation. After carefully considering the standards in use in the various parganahs the measure now known and established in Kumaon and Garhwāl is the *bīsi* of 4,800 square yards, or 40 square yards less than the English acre. Each *bīsi* contains twenty *nālts* of 240 square yards and each *nāl* sixteen annas of fifteen square yards. The *nāl* is computed to contain the area that requires two *seers* (about 4½ pounds) of grain for seed,

			Sq. yds.	Acres.	Roods.	Poles.	Yards.
1 <i>nāl</i>	= 1	=	240	...	...	7	28½
5 <i>nālts</i>	= 1 <i>māshi</i>	=	1,200	...	...	39	20½
2 <i>māshis</i>	= 1 <i>bhadki</i>	=	2,400	...	1	39	10½
2 <i>bhadkis</i>	= 1 <i>bīsi</i>	=	4,800	...	3	38	20½
6 <i>bīsīs</i>	= 1 <i>chakri</i>	=	28,800	5	3	32	12
2 <i>chakrīs</i>	= 1 <i>jhūla</i>	=	57,600	11	3	24	4

In the Bhābar, the land measures follow the use of the plains and there 20 *kachwānsis* make one *biswānsi* and 20 *biswānsis* make one *biswa* and 20 *biswas* make one *biḡha*. Six *biḡhas* are equiva-

¹ The *akra-bīsi* was always considerably less than the common *bīsi* owing to the practice of former Rājas who in making an assignment of land revenue-free invariably increased the nominal area of such lands in the grant. As these lands were successively reannexed to the revenue-roll the augmented area remained under the designation *akra* or revenue-free. Traill, March 17, 1821. ² For Pāli, to Government, dated 14th March, 1821.

lent to one acre and 64 yards or 4,904 square yards. In the Taráí 20 *gantas* of four feet each make one chain : one square chain is equivalent to a *bigha* and 6·8 *bighas* make one acre.

Measures of capacity follow the same rule and grain is sold by bulk and not by weight :—

- 12 *múthiyas* = one *mánda* or *chapiya*.
- 4 *mánda* = one *nálí* (4½ lb)
- 15 *nálís* = one *párái*.
- 20 *nálís* = one *ráni*.

In Garhwál the *náli* is called a *pátha*, and is subdivided as follows :—

		Ton.	cwt.	qrs.	lb.	oz.	bushel.	peck.	qts.	pints.	
A handful or	1 <i>múthi</i>	=	...	...	...	...	1½ =	...	...	...	$\frac{1}{12}$
6	<i>múthi</i> = 1 <i>adhúrhi</i>	=	...	...	...	...	6 =	...	...	...	$\frac{1}{2}$
2	<i>adhúrhis</i> = 1 <i>mánda</i>	=	...	...	...	1	=	...	...	...	1
4	<i>mánda</i> = 1 <i>pátha</i>	=	...	...	...	4	=	...	...	...	2
8	<i>páthas</i> = 1 <i>kol</i>	=	...	...	1	4	=	...	2	...	...
2	<i>kols</i> = 1 <i>don</i> or <i>párái</i>	=	...	...	2	8	=	1	...	...	...
20	<i>dons</i> = 1 <i>khari</i>	=	...	11	1	20	=	20	...	...	...
20	<i>kharis</i> = 1 <i>biswa</i>	=	11	8	2	8	=	400	...	...	...

The above measure is used for small quantities of oil, ghee, milk, liquor and unground grain.

In the sale of metals such as copper, brass, &c., the products of the country, the weight is commonly ascertained by a steel-yard. In this instrument the weight is fixed and the object to be weighed is moved along the lever which is divided into *pals* and *paisa* as follows :—

Weights.

- 6 *tolas* = 1 *pal*.
- 20 *pals* = 1 *dam* or *taka* about 2½ pounds.

The measure for gold, silver and precious stones is :—

- 4 grains of rice = 1 *rati*.
- 8 *ratís* = 1 *másha*.
- 12 *mashas* = 1 *tola*.

A rupee is equivalent to 12 *mashas* ; ten rupees are called a *kach* in Kumaon.

The Kumaon liquid measure is :—

- | | |
|------------------------------------|--|
| 1 <i>páli</i> = ½ <i>chhatak</i> . | 5½ <i>tolaks</i> = 1 <i>chhatak</i> = 2 oz. or ½ pint. |
| 12 <i>pális</i> = 1 <i>tami</i> . | 4 <i>chhataks</i> = 1 <i>pao ser</i> = 6 ,, ,, ½ ,, |
| 4 <i>tamis</i> = 1 <i>nálí</i> . | 4 <i>paos</i> = 1 <i>ser</i> = 2 lb ,, 2 ,, |
| 2 <i>nális</i> = 3 <i>ser</i> . | 40 <i>ser</i> = 1 <i>man</i> = 80 lb ,, 5 pecks. |

The last is also used for grain in the bazar. The terms *adhser* (or half a ser), *dhari* or *panseri* (= 5 sers) are also used. The *náli* has been fixed in Kumaon at two sers of 84 standard rupees each. The Bhábar and Taráí ser contains 100 rupees and the

standard rupee contains 180 grains Troy weight. In the Tará, 16 sers make a *kachcha* man and 40 sers a *pakka* man; there a *dhari* is two *panseri* and a *panseri* only two sers.

Besides the division of rupees into annas and pice, which are the same all over the British possessions, an anna in Garhwál is subdivided into two *takka* or 4 pice, each pice into two *kachchi* or four *dhelas*; 20 cowries (shells) go to one *dhela*. Another mode formerly in use was four annas make one *timáshi*, two *timáshis* one *dheli*, two *dhelis* one *kachoha* rupee and five *timáshis* one *kuldár* or milled Farukhabad rupee. The Tibetan or Lhása *timáshi* weighs 40 grains, and one hundred of them are worth Rs. 23-7-9 of our money. The old Gorkháli *timáshis* weighed 33·2 grains each, whilst the modern Nepál *timáshis* still current in parts of the hills are of less value, one set being worth little more than nineteen and the other about nine rupees per hundred. The old Srínagari rupee weighed 85·5 grains.

The Bhotiyas in their transactions with Tibet have peculiar measures of their own. Grain, salt, and borax are sold by measures of capacity thus:—eight *máthiyas* make one *phúrúwa*: eight *phúrúwas* one *de* and twelve *de* one *dobu* or *guama*. The *dobu* is about equal to the *kachoha* maund of twenty sers and for some articles contains only eighteen *de*. Within the passes, these articles are sometimes estimated by the *karbach* (*pháncha*) or saddle-bag taken at four *nális*.

Grain is also computed by the *suyator* or large *karbach* at 20 *nális*; *swalo* or basket at 60 *nális* and *tahauch* or skin at 60 *nális*. Wool, sugar, and hardware are weighed by the steel-yard which is divided into *nega*. The *nega* is equal to ten sikka rupees weight. Prepared tobacco, raw sugar, &c., are divided into small cakes called '*pola*' or balls called '*beli*.' Cloth is measured by the '*thu*' or cubit or the '*khák*,' '*khagam*' or breadth. In fine goods the price is computed at eight '*khák*;' in coarse calicoes at 28 '*khák*.' Broad-cloth is commonly sold by the '*baku*' equal to two breadths and is so called from the quantity required for a robe of that name. Gold is calculated by the *larswo* or *phatang* equal to $7\frac{1}{2}$ *máshas* (112·5 grains Troy). Gold-dust tied up in *phatangs* is current as coin for eight rupees. Silver is computed at the *jyá* or *timáshi* (three *máshas*) and four *jyá* make the current rupee or '*gormá*' called *ganga-tasi* here. In large payments ingots called *lakka* or *doja* are used, worth about 165 rupees each.

A cloth-measure standard was introduced into Kumaon by Mr. Traill who made the *gaj* equal to the English yard :—

8 barleycorns	equal	one angal	or	$\frac{1}{4}$ inch.
3 angals	ditto	girah	or	2 $\frac{1}{2}$ do.
4 girahs	ditto	bilast	or	9 do.
2 bilasts	ditto	háth	or	18 do.
2 háths	ditto	gaj	or	36 do.

Five *gaj* make a *báns* (bambú) or 2 $\frac{1}{2}$ fathoms. A *kos* is supposed to be equal to 1 $\frac{1}{2}$ miles; *goli ke tappa* or gunshot is about 200 yards; a *bisona* or resting place for a coolie about 3 miles; a *tirwa* or arrow's flight about 100 yards; a *bhát khane ke wakt*, or as far as a man can travel before his eating time, about 7 or 8 miles. In the Tarái, a *kos* is equivalent to 1 $\frac{3}{4}$ miles English.

The Saka era is in common use, though that of Vikramáditya is observed by those who adhere to the use of the plains. A fortnight is called a *paksh*, *pak* or *pachya*, the dark half is known as the *krishn-paksh* and the light half as the *sukl-paksh*. From 7 to 8 A.M. is called *chilkauli*; noon, *dopáhar*; 4 P.M. *brahikali ber*; 5 to 6 P.M. in winter and 6 to 7 P.M. in summer is *sánj*. In general 60 *pals* or *chakhas* make one *garhi* (about 24 minutes); 7 $\frac{1}{2}$ *garhis* make one *páhar* and four *páhars* one day of 12 hours. Two months make a *ritu* or season; three *ritus* an *áyan* or half a year; that from Sáwan to Pús is called the Dakhináyan and from Mágh to the end of Asárh the Utaráyan. Twelve years are called a Kúmb or guru-kalp or chota yúg: 30 years a *pirhi* or *sakhi*.

The foreign trade with Tibet has been noticed at some length

Trade.

in the article BHOTIYA MAHÁLS. There remains the foreign trade with Nepál which

centres at Jhúla-ghát near Pithoragarh and at Barmdeo where the Sárda debouches on the plains. The statistics for Barmdeo commence from 1876-77 and those for Jhúla-ghát from 1878-79, and are as follows in value in rupees :—

	1876-77.		1877-78.		1878-79.		1879-80.		1880-81.		1881-82.		1882-83.	
	Ex.	Imp.	Ex.	Imp.	Ex.	Imp.	Ex.	Imp.	Ex.	Imp.	Ex.	Imp.	Ex.	Imp.
Barmdeo.	57,000	87,000	74,356	66,655	78,626	86,199	88,647	107,326	98,540	101,810	96,298	113,985	98,640	135,851
Jhúla-ghát.	...	..	...	...	12,525	12,799	23,673	13,313	15,391	22,696	18,174	21,516	23,480	19,904

The imports consist for the most part of wild forest produce, fibres, turmeric, grain, ghí and spices, and the exports of cotton

goods, metals, salt and sugar. The import of drugs in 1881-82 amounted to 1,552 maunds, valued at Rs. 9,869, and in the following year to 2,824 maunds, valued at Rs. 17,797. Dyeing materials (turmeric, &c.) and fibres were imported in 1881-82 to the value of Rs. 6,691 (1,041 maunds) and in 1882-83 to the value of Rs. 10,879 (1,847 maunds). Grain valued at Rs. 1,106 and metals valued at Rs. 566 were imported in 1881-82, and to the value of Rs. 647 and Rs. 509 respectively in 1882-83. *Ghi* or clarified butter weighed 2,076 maunds, valued at Rs. 41,590 in 1881-82 and 1,988 maunds, valued at Rs. 39,760 in the following year : 2,299 maunds of spices, valued at Rs. 43,833 were imported in 1881-82 and 2,522 maunds, valued at Rs. 48,506 in the next year. The exports in 1881-82 comprised 1,406 maunds of cotton goods, valued at Rs. 81,050 ; 4,382 maunds of salt valued at Rs. 19,039 ; 1,507 maunds of sugar, valued at Rs. 7,078 ; metals worth Rs. 3,315 and tobacco worth Rs. 1,015. The figures for 1882-83 are 1,388 maunds of cotton goods, valued at Rs. 80,086 ; 4,480 maunds of salt, valued at Rs. 16,749 ; 2,097 maunds of sugar, valued at Rs. 6,465 ; metals worth Rs. 7,155 ; tobacco worth Rs. 1,156, and rupees worth Rs. 9,208. The exports to the plains consist principally of turmeric, ginger, oil-seeds and potatoes, and in return metals, cotton and woollen cloths, sugar, spices, tobacco, and European manufactured articles, are received.

Traill's account of the local trade with the plains in 1821 (to Government, 25th April) shows the practice sixty years ago, but modern necessity obliges the agency of specialists to make the ventures profitable now :—

“The exports, which comprise the common production and manufactures of the plains, are furnished to the fullest extent of the demand through the trade carried on by the hill landholders. Nearly the whole population of the province from the highest rank to the lowest engage annually in this traffic. The members of three or four neighbouring village communities generally form common stock, the disposal of which is entrusted to the discretion of one of the *pattis* concerned. The original fund consisting commonly of copper, iron, turmeric, ginger, and other hill productions together with a proportion of ready money is exchanged at the nearest marts in the plains for cotton cloths, chintz, sugar, tobacco, salt and hardware. This return cargo after supplying the wants of the villages engaged in the speculation is disposed of at the fairs of *Bāgeswar* and *Askot*, where the proceeds are usually laid out in the purchase of borax, the re-sale of which and of the returns from the plains completes the transaction of the season. As these traders are their own carriers and are satisfied with moderate profits, they are

enabled to outbid the regular merchants and in consequence prove a favorite class of dealers with the Bhotlyas when the latter are not fettered by pre-existing engagements."

There are two breweries in the district, one at Naini Tál and one at Ránikhet. The brewery at Seoni Beer. was open from 1879 to 1881 only. The Naini Tál brewery was established in 1876 and the Ránikhet brewery in 1878. The following figures show the estimated outturn in gallons of ale, beer and porter in each year :—

			1877.	1878.	1879.	1880.	1881.	1882.
Naini Tál	...	...	108,000	108,000	81,000	71,712	134,622	142,020
Ránikhet	...	...	...	...	70,000	61,560	68,850	66,420
Total	...	...	108,000	108,000	151,000	133,272	203,472	208,440

Some account has already been given of the history of tea-cultivation in Kumaon. The following table gives the statistics of any value Tea. regarding the outturn that have been collected of late years :—

Year.	Number of plantations.	Area in acres under tea.	Area taken up but not planted.	Outturn in £ per acre.			Average £ per acre.	
				Black.	Green.	Total.		
<i>Kumaon.</i>								
1875a	...	19	2,211	1,699	94,551	183,871	378,422	183
1876	...	19	2,222	1,689	64,104	196,956	2610,60	169
1877	2,300	2,386	226,483	107,264	333,747	163
1880	...	33	3,342	...	...	...	...	...
1881	...	33	3,342	...	...	...	...	...
1882	...	43	2,825	556	371,125	37,510	408,635	199
<i>Garhwál.</i>								
1875a	...	4	13	...	4,648	...	4,648	357
1876	...	4	13	...	4,891	...	4,891	376
1877b	...b	...b	...b	...b	...b
1880	...	21	634	...c	...	...	...	...
1881	...	21	634	...c	...	...	...	...
1882	...	10	501	107	72,912	...	72,912	149

(a) The figures for 1875-76 exclude 6 gardens in Kumaon and 3 in Garhwál.

(b) Included in Kumaon.

(c) No information

In the earlier days of British rule the want of good roads and great demand for grain for the supply of the troops and the Tibetan trade combined to raise the price of grain in Eastern Kumaon beyond that obtaining in the neighbouring provinces of Doti and in Garhwál.¹ Mr. Traill writes²:—

“The dearness of carriage forms an insurmountable obstacle to a general exportation of grain, from this cause wheat is selling in the interior of Garhwál at the rate of two and a half maunds to the rupee, while the market price of grain of a similar quality at and near Almora is thirty-two sers to the rupee.” The following table gives the prices in 1819:—

Price-current of grain in the Province of Kumaon.

	Wheat.	Coarse rice.	White rice.	Fine rice.	Urd.	Bhut.	Mandua	Barley.
	M. s.	M. s.	M. s.	M. s.	M. s.	M. s.	M. s.	M. s.
Almora and neighbouring parganahs.	0 27	0 22	0 20	0 14	0 22	0 28	1 8	...
Káli Kumaon and east parganahs.	0 24	0 19	0 19	0 11	0 20	0 30	0 30	...
Shor, north-east parganahs.	0 26	0 20	0 20	...	0 25	0 28	1 0	1 0
Srinagar ...	1 25	0 35	0 30	0 20	1 0	2 0	2 5	2 25
Chándpur, north-west parganahs.	2 10	1 4	1 0	0 20	1 4	1 25	3 30	3 30
Dhángu, south-west parganahs.	0 30	0 25	0 22	0 16	0 35	1 2	1 16	...

In 1823 we find for wheat that twenty-five sers for the rupee in Almora represented two maunds in Garhwál. In 1825, the price at Almora never fell below 28 sers, and in Garhwál two maunds, whilst in Páli red rice sold at 27 sers, white rice at 24 sers and wheat at 33 sers per rupee.

The principal commercial fairs are held at Bâgeswar and Thal, but besides these there are numerous less important assemblies where business and

Fairs.

¹ To Government, dated 15th February, 1820.

² To Government, dated 1st March, 1816.

religion are combined of which those given in the following table are the principal :—

Patti.	Name of fair.	Where held.	When held.	Duration of fair.	Number of persons usually attending.
Malla Dora ...	Bibhāndeswar ...	Bibhāndeswar ...	12th March ...	1 night...	3,000
Ditto ...	Ditto ...	Siyāl de ...	14th March ...	1 day ...	8,000
Ditto ...	Mahāshtami ...	Dunagiri ...	October,	Do. ...	2,000
Giwār ...	...	Sobnāth ...	6th May ...	Do. ...	5,000
Ditto ...	Māgh Purnima ...	Agneri ...	12th February,	Do. ...	1,000
Chaukot ...	Karttik do. ...	Briddh Kedār ...	15th Novem-	1 night...	3,000
Nayān ...	Shiurātri ...	Bhikiya-sain ...	25th February,	Do. ...	500
Sult ...	Karttik Purnima,	Sult Mahādeo ...	15th Novem-	Do. ...	5,000
Silaur ...	Ditto ...	Mahādeo ...	Ditto ...	1 day ...	3,000
Ditto ...	Bijaya 10th ...	Kankhali ...	12th August,	Do. ...	2,000
Talla Dora ...	Baisākh Purnima,	Baluwa ...	22nd May ..	1 night...	4,000
Ditto ...	Pūs-ke-itwār ...	Nāgārjun ...	15th Decem-	Do. ...	3,000
Kairaran ...	Mahāshtami ...	Udepur ...	10th August,	Do. ...	2,000
Ditto ...	Jamadwitiya ...	Bagwāli-pokhar...	3rd November,	1 day ...	2,000
Borarau ...	Karttik Purnima,	Gananāth ...	15th Novem-	1 night...	3,000
Ditto ...	Ditto ...	Parath ...	15th Novem-	Do. ...	1,500
Talla Syunara ...	Shiurātri ...	Deothal ...	25th Febru-	1 day ...	2,000
Do. Tikhūn ...	Pūs-ke-itwār ...	Katarmal ...	15th Decem-	Do. ...	5,000
Phaldakot ...	...	Kakrighat ...	6th May ...	Do. ...	4,000
Dhuraphāt ...	Baisākh Purnima	Bujān ...	22nd May ...	Do. ...	2,000
Bisaud ...	Ditto ...	Kapleswar ...	Ditto ...	Do. ...	2,000
Chbakhāta ...	Uttrayini ...	Chitrasala ...	13th Janu-	1 night...	5,000
Ditto ...	Kark Sankrant ...	Bhīm Tāl ...	14th July ...	1 day ...	3,000
Ditto ...	Kailās ...	Kailās ...	25th Febru-	1 night...	2,000
Khāspurja ...	Janmāshtami ...	Almora ...	2nd August,	3 days ...	6,000
Ditto ...	Nandāshtami ...	Ditto ...	10th Septem-	Do. ...	8,000
Darun ...	Baisākh Purnima,	Jageswar ...	22nd May ...	1 night...	4,000
Katyúr ...	Nandāshtami ...	Ranchula ...	10th Septem-	Do. ...	3,000
Ditto ...	Uttrayini ...	Bāgeswar ...	13th Janu-	3 days ...	7,000
Ditto ...	Shiurātri ...	Ditto ...	25th Febru-	1 day ...	300
Ditto ...	Dasabra ...	Ditto ...	16th June ...	Do. ...	2,000
Gangoli ...	Shiurātri ...	Patāl bhubanes-	25th Febru-	Do. ...	1,000
Ditto ...	Mahāshtami ...	Kalika ...	10th August,	Do. ...	1,000
Shor ...	Baisākh Purnima,	Rāmeswar ...	22nd May ...	Do. ...	3,000
Sira ...	...	Thal ...	14th April ...	3 days ...	5,000
Chālsi ...	Sāwan Purnima...	Dobi-Dhūra ...	18th August,	Do. ...	6,000
Shor ...	Haritāli ...	Dhuj ...	Ditto ...	1 day ...	500

Mr. Traill in 1823 writes:—"There are no public institutions of the nature of schools, and private tuition is almost entirely confined to the upper classes. The teachers are commonly Brahmans who impart to their scholars the mere knowledge of reading, writing and accounts. The children of respectable Brahmans are also taught Sanskrit and are occasionally sent to Benares to complete their studies where they pass through the usual course of Hindu education." It was not until 1840 that a beginning was made of the present system of public schools by the establishment of one at Srínagar, the cost of which (five rupees a month) was borne by the unclaimed property fund.¹ After some communication with the Education Committee then sitting in Calcutta, schools were established, costing Rs. 20 a month in Kumaon and Rs. 14 in Garhwál.² Still there must have been a considerable amount of private instruction, for Thornton's report in 1850 based on returns furnished by Messrs. Batten and Ramsay show for Kumaon and Garhwál 121 Hindi and Sanskrit schools held in private dwellings, or the houses of the teachers who numbered 121, of whom 54 taught gratuitously and 67 had fixed incomes averaging Rs. 9-8 per mensem. There were 522 pupils, over four-fifths of whom were Brahmans. In addition there was one school with ten pupils, in which Urdu was taught. In 1857, the present system was inaugurated by the formation of the Kumaon circle under the Department of Public Instruction, and since then the progress has been marked and steady, and fully supplies the wants of the people in this respect. The establishment of the school cess at the revision of the settlement in both Kumaon and Garhwál enabled the authorities to plant schools in which no fees are levied in every sub-division. The average maximum age of the pupils attending the schools is 16, the minimum 6 or 7 years. The average period during which pupils attend school is about 6 or 7 years. The attendance is very irregular as the aid boys can give in the farm and household is so valuable as to be with difficulty dispensed with. The good effected by education is already visible in the increased intelligence shown by the rising generation of young men who have attended the schools, the

¹ To Government, dated 8th July, 1840.
dated 28th May, 1842.

² Government, No. 475

decrease of bigotry and superstition and the increased desire for schools as shown by the applications for their establishment. Parents wish that their sons should be taught Hindi and English ; there is very little desire for Hindustáni. The spread of education has done much to undermine the influence of the Bráhmans which was formerly so absolute in this province.

At Naini Tál there is a Diocesan school for European boys with 124 pupils and a girls' school of the same description with 85 pupils beside private schools. The educational operations of the Almora, Naini Tál, and Ránikhet Missions as given in their reports are noticed elsewhere. There are several printing-presses in Naini Tál: the Government Press during the residence of the Lieutenant-Governor is used for official purposes : the *Naini Tál Gazette* Press and others print for the public. At Almora, the *Almora Akhbar* Press prints in Urdu and Hindi and lithographs in English. At Ránikhet the Press of the Regiment quartered there prints in English. In 1871-72 there were 23 tahsili schools with 1,815 pupils, 23 halkábandi or village schools, with 1,787 pupils, and one girls' school with 21 pupils, all supported by Government. The aided schools were two Anglo-vernacular at Almora and Naini Tál, seven vernacular near Ránikhet and one female school. The figures for 1884 show six tahsili schools with 541 pupils ; 110 halkábandi schools with 6,270 pupils and one female school with 64 pupils. The aided schools comprise fourteen Anglo-Vernacular schools with 1,462 pupils and two vernacular schools with 179. The entire cost of education for the year amounts to Rs. 40,173. The supervision of the schools is under a native Inspector assisted by deputies. " There is great difficulty," writes Sir H. Ramsay, " in bringing education within the reach of all, though we do not attempt to teach more than to read and write, and arithmetic of the simplest kind. Under present circumstances this is sufficient for the mass of the people, and if any sharp boy wishes for a higher education which his father cannot afford, he can obtain a scholarship to the Almora school where a boarding-house for out-pupils has been established. Teachers in the halkábandi schools receive only five rupees a month. This is sufficient to procure men capable of teaching all that is aimed at, and it is considered more beneficial to impart to many the useful knowledge of reading and writing sufficient for their every-day

use than to give a smaller number a better education by employing qualified but more expensive teachers. * * The better classes who are desirous of educating their children well, can afford to pay for them, and though our education was said to be in a state of backward simplicity, Kumaon can, I believe, boast of a higher percentage who can read and write than any other district in the province."

Kuphini or **Kushini**, a feeder of the Pindar river, rises from a glacier amid the south-east recesses of the Nandakot peak and joins the Pindar on the left bank at Diwáli in north latitude $30^{\circ}-10'-35''$, and east longitude $80^{\circ}-2'-10''$ in Patti Malla Dánpur of Kumaon. At the confluence the united stream in the rains is of a dirty milk colour, and the bed is obstructed by some great boulders. The two rivers are separated by a ridge culminating in a peak having an elevation of 17,130 feet. The left bank of the Kuphini is formed by the Kotela ridge, the summit of which, (14,515 feet) far above the forest region, commands the Pindar to its source and communicates by a goat-path with the Dhákuri-Bináyak : see PINDAR.

Kuthi-Yáankti, the longest and most important branch of the Káli river in Kumaon takes its rise in a small glacier at the southern base of the Lunpiya-lekh pass from Patti Dárma Malla into Húndes in north latitude $30^{\circ}-28'$ and east longitude $80^{\circ}-38'$. This spot was visited by Webb, and is thus described by him : "The river, two furlongs distant, its breadth reduced to four or five yards : at two and a quarter miles in a north-west direction, it is covered with snow, and no longer to be traced ; neither is the road passable beyond this point at the present season. After the middle of July, when the thaw is perfected, it may be traced as a small stream for about four miles more, in the direction last mentioned, and from thence to its head in the snow, north-west two miles farther. The stream scarcely flows in winter, being derived almost exclusively from the thawing snow." The Lunpiya-lekh pass itself has an elevation of 18,150 feet. The river takes a south-easterly direction through the Byáns valley to its junction with the Káli, thirty miles from its source. It receives numerous snow-fed torrents on both banks passing by the encamping-grounds of Walshiya, Jhamáthi, Rárab, Jolinka, Sangchúma and Kuthi,

whence it derives its name. To the right and left of the Kuthi-Yáukti there are peaks over 20,000 feet high and the entire valley is bordered by glaciers from which torrents flow into the Kuthi river. At the confluence with the Káli, the latter has a bed 150 yards wide, but contracting into much narrower limits a mile farther up so that the stream in September is all but fordable. The Kuthi river is a third larger than the eastern branch, both in size of channel and volume of water, and nearly four times the length from source to confluence; notwithstanding which the eastern and smaller branch has given its name to the united river. The Gyukdhúra pass from Sela of Dárma to Kuthi in Byáns up the Pechko-Yáukti and by the Chachingti encamping-ground is still used, though difficult.

Ladhiya, a tributary of the Káli river in eastern Kumaon takes its rise in Patti Malli Rau and parganah Dhyánirau on the southern slopes of the range along which passes the road from Dol to Devi-dhúra in north latitude $29^{\circ}-26'$ and east longitude $79^{\circ}-49'$. It has a south-easterly course through Chaubhainsi, Malli Rau, Talli Rau, Palbelon and Tallades to its junction with the Káli on the right bank in north latitude $29^{\circ}13'$ and east longitude $80^{\circ}-18'$. Its only considerable affluents are the Ratiya-gádh which joins it on the left bank near Chaura in Talli Rau and the Kuirála river which joins it on the same bank in Palbelon. A much frequented road to the Bhábar passes down the left bank of the latter stream crossing the Ladhiya by a suspension bridge below their confluence at Chalthi and thence by Bastiya to Tanakpur in the Bhábar. Lower down the Ladhiya is joined by the Bábkola river also on the left bank, and is here crossed by the road from Champáwat to Barmdeo much used by the Bhotiyas in their winter migrations. There are considerable tracts of good irrigated land all along its course and the courses of its tributaries which yield rice of excellent quality.

Lakhanpur Talla, a patti of parganah Chaugarkha in Kumaon, is bounded on the north by patti Syunara Malla and Ríthágár; on the south by patti Khaspurja, Uchyúr and Malla Lakhanpur; on the west by Khaspurja, and Talla Syunara and on the east by Dárún. This patti was separated from Lakhanpur at the recent settlement. It is drained by the Likhwargadh, a tributary of the Suwál river, and is traversed by the Pittoragarh and Askot roads.

For statistics see LAKHANPUR MALLA. The patwári resides at Alai, where there is a school.

Lakhanpur Malla, a patti of parganah of Changarkha in Kumaon, is bounded on the north by the Talla patti of Lakhanpur; on the west by Uchyúr and Mahr úri Malla; on the south by Sálam Malla and on the west by Dárán. This patti was formed from Lakhanpur at the recent settlement. It is drained by the head-waters of the Suwál river. The road to Lohughát passes by Julna tea-plantation, and that to Pithoragarh by Panuwa-naula on the extreme northern boundary. The statistics of the Malla and Talla pattis may be shown thus:—

Lakhanpur.	ASSESSABLE AREA IN <i>bhis</i> .				ASSESSMENT IN RUPEES.				POPULATION.	
	Total.	Cultivated.		Culturable.	1815.	1820.	1840.	Current.	Males.	Females.
		Irrigated.	Dry.							
Malla ...	8,588	45	2,527	1,016	590	869	1,070	2,682	2,757	2,414
Talla ...	2,658	113	1,687	858	425	745	858	2,063	1,694	1,502

Besides the above, 140 *bhis* are exempt from land-revenue in the Malla Patti, and 137 in the Talla Patti. The land-revenue falls at Re. 0-15-5 per acre on the assessed cultivation in the former and at Re. 1-4-8 in the latter. Brahman village communities are numerous in this patti, especially those belonging to the Joshi, Tivári and Pánde clans. The first hold Ulai Joshi and others in *muáfi*. The patwári resides in Bina: there are schools at Gailakot and Bina.

Láldháng, a police station and forest station at the mouth of the Rawásan nadi in Patti Udepur Bichhla of parganah Ganga Salán in British Garhwál, is situate in latitude 29°-52' and longitude 78°-21'. The Bijanagar peak on the right bank of the nadi rises to a height of 1,982 feet. The road from the Srínagar and Hardwár road to Kotdwára crosses the Rawásan close to the station. The village of Láldháng itself lies in the Bijnor district.

Landhaur or Landour,¹ a convalescent depôt for British troops adjoining Mussoorie, is situate in north latitude 30°-27'-30" and east longitude 78°-8', partly in Dehra Dún and partly in Tíhri, with an area of 1,048 acres. In February, 1881, the population num-

¹ I am indebted for much of this notice to Mr. F. Fisher, C.S.

bered 1,746 (436 females ; of whom 1,078 (265 females) were Hindus, 556 (125 females) were Musalmáns ; and 112 (46 females) were Christians. This was before the annual draft of convalescents had arrived. In September, 1880, the population numbered 4,428 (1,074, females) ; of whom 723 (330 females) were Christians. The cantonment is built on the sides and crest of a range immediately adjoining Mussoorie. The highest point, a peak on the north-western boundary, is 7,534 feet above the level of the sea. To the east on the road to Tibri are two peaks having an altitude of 7,699 and 8,569 feet respectively. The latter is known as Top-tíba. Landhaur is reached from Rájpur by the ordinary road to Mussoorie which branches off at Barlowganj to Landhaur on the east and the Mussoorie Library on the west. For all ordinary purposes the two are now one town, for the boundary line near Landhaur post-office passes through perhaps the most thickly populated part of the station. The Landhaur bazár extends from the post-office to Mullingar, that part of the cantonment in which the Caledonian Hotel is situate. From this last point to the Church the approaches are very steep, one road leading to the west in an almost direct ascent passing the orderly-room and convalescent barrack, and the other taking an easterly direction just above the lower Tibri road zigzags up the side of the southern declivity and meets the first road at the Church. From this point, a road almost level throughout, runs round the northern peak, and a second road which similarly skirts the southern peak of Lál-tíba is connected with it by a cross road near the depôt guard-room. Beyond this second road is a third which skirts the hill where the hospital is situate at the extreme east of the cantonment. The length of the roads completing the circuit of the three hills is 2 miles 6 furlongs 74 yards.

The Landhaur hills are not only better wooded than the Mussoorie hills, but also afford finer views, and are by some regarded as more healthy, being less built upon, or rather the houses are further apart and do not overlook each other. The climate is excellent, except during the rains and the sanitation is good, due to the natural facilities for drainage and the absence of a clayey soil, so that the roads rapidly dry even after the heaviest rain. With the exception of pulmonary and rheumatic cases and

advanced stages of organic disease, nearly all maladies appear to be ameliorated in this climate. The permanent residents appear to enjoy as good health here as they would in England. Beyond colds, disease is rarely contracted, and cholera is never endemic, and is unknown except in the few cases where it has been imported from the plains, but even then it does not become epidemic. The public buildings include St. Paul's Church, the Roman Catholic Chapel, post-office, telegraph office, and some twenty-six barracks. The depôt was established in 1827, and has now accommodation for 22 families (including Staff-Sergeants of depôt) and 203 single men, of whom eight families and 27 single men usually remain for the winter. The buildings include male and female hospitals, library, coffee shop, reading-room, orderly-room, school, guard-room, and theatre. There is a Commandant and Station Staff Officer, with a Medical Officer and Chaplain. The Commandant exercises the powers of a Cantonment Magistrate for petty offences within the limits of cantonment, and provides for the conservancy and arrangements of the bazar, which is a large one and usually very well stocked with supplies and manufactured goods.

The receipts of the Landhaur Cantonment Fund for the year 1882-83 amounted to Rs. 5,933, of which Rs. 1,321 were raised by a watchman's-tax; Rs. 2,083 by a house-tax; Rs. 960 by octroi, and Rs. 297 by voluntary subscriptions; Rs. 1,000 were received from the Imperial Government as a grant in aid for arboriculture, and the remainder was received on account of fines and miscellaneous dues. The expenditure during the same period amounted to Rs. 4,899, of which police absorbed Rs. 688 and Rs. 2,903 were devoted to conservancy and other establishments such as tree-tending, gardens; Rs. 900 were devoted to public works, and Rs. 408 to miscellaneous purposes.

Dr. F. H. Fisher in 1831, gives the following readings for that year from a thermometer kept in an open verandah facing north:—

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Maximum	47°	48°	64°	76°	85°	86°	70°	72°	69°	70°	69°	59°
Minimum	31	31	46	44	60	60	61	55	54	51	45	30

Langur, a patti of parganah Ganga Salán in British Garhwál, is bounded on the south by pattis of parganahs Talla Salán; on the east by parganahs Bárashyún and Chaundkot, and on the west and south by other pattis of the same parganah. The two roads from Kotdwára to Srínagar, pass through Langún and meet at Dwárikhál, whence one crosses the Nyár by Bilkhet and the other by Marwára. There are schools at Gúm and Páli. In the centre on the highest peak (6,207 feet) are the remains of the two forts which held out so long against the Gorkhális. The garrisons were under the command of the Aswál *thokdars* of Síla, a powerful sept, so much so as to give rise to the local saying:—

‘*Adha ke Garhwál adha ke Aswál.*’

‘Half is Garhwál, half is Aswál.’ The Koh and an affluent of the Maidi rise on the southern side of the central group and both have fair open valleys. The northern slopes are steep and run down to the Nyár, but there are flats along the bank. The patwári usually resides at Diús and also collects the land-revenue of Karaundu Walla.

Lebun or Libaung, a lofty ridge culminating in the peak of Yirgnajang, separates Patti Byáns from Patti Malla Dárma, both in parganah Dárma of Kumaon. It runs in a direction slightly south-east from the dividing range between Kumaon and Hundes to the west of the Lunpiya-Dhúra pass into Hundes from Patti Byáns. It is crossed by a difficult pass up the Jhuling-Yánkti from Joliaka (14,350 feet) in the valley of the Kuthi-Yánkti in Byáns to Khimling in Dárma having an elevation at its crest of 18,942 feet. Webb, who crossed it in June from Byáns found “a steep, difficult and fatiguing ascent, the lower part over beds of ice, the higher over deep and perpetual snow frozen hard. Severe oppression in breathing, unable to proceed twenty paces at a time without halting.” Still higher up he found the ascent “steep with recent snow in parts knee-deep.” The whole of the distance (2,032 yards) down, on the Dárma side, was excessively steep and the snow nearly knee-deep. The declivity was so great that it was necessary to employ people with hatchets to make small hollows in the snow where hard, in which the foot might be placed. As in the ascent all had felt intolerable difficulty in breathing, so in the descent a violent determination of blood to the head with

severe pain was general. The passage occupied twelve hours for people without loads; none of the laden bearers came up before the second day, and some loads not until the second evening. H. Strachey distrusts the height given here, and notes that two natives of Sipu crossed it in September with difficulty doing three *kos* in six days over very deep snow. His estimate is 16,942 feet. North latitude $30^{\circ}-20'-15''$. East longitude $80^{\circ}-40'$. Colonel Smythe crossed it in June, and made the elevation 19,600 feet. He had no difficulty in breathing though there was a slight snow storm at the top, and the fresh snow was knee-deep wherever the surface was at all level.

Lipu-lekh, the most eastern pass from Kumaon into Hündes, is situate in Patti Byáns in north latitude $30^{\circ}-15'-49''$ and east longitude $81^{\circ}-4'-50''$, at an elevation of 16,780 feet above the level of the sea. See KĀLAPANI, PURĀNG. The following account of a visit to the pass in July, 1877, will be interesting:—

“The night before ascending the pass was spent in a narrow desolate plain, just the only spot which the snow-drifts lying all round have left untouched. From this place, called Sangcha, the way lies first across a moderate snow-field which was settled in the hollow between two ridges projecting from either side of the pass; then along a gentle slope over which and on both sides of it the snow lies thickly, filling the head of the valley like the *névé* of a glacier. Owing to the softness of the surface, the walking is heavy, though the slope is by no means steep. After you are three-fourths of the way, it is plain sailing over the glacier, which is in many places firm and gives good footing. It is only lower down, where the snow is a little too soft, that we often sank in it up to our knees. As we approached the pass, the snow lay pretty uniformly and often very deep. The latter part of the glacier was another gentle slope, leading over the white cowl of the mountain to the summit, which was marked by a cairn of stones surmounted by flags. A few red-beaked ravens were circling about overhead, apparently unaffected by the rarity of the atmosphere (the elevation of the pass is 16,500 feet above sea level), as they seemed to fly with just as much ease as in the vicinity of villages. A couple of Huniyas leading a flock of sheep laden with salt were coming up from Taklakot, walking carefully over the snow fields which sloped up to the pass. Two Taklakot officials as they reached the summit, and caught the first view of the solitary peak of Numunanhil (Gurla, the Momanangli of H. Strachey) above the table land of Taklakot, raised their hands and uttered what seemed a prayer. The view of Tibet from the crest of the pass, formed as it were by the vast shoulders of the snowy range, is very striking. For a short while the mist rising from the valleys had nearly blotted out the lower landscape; but the white, and in some places purple, outline of the summit of Numunanhil was sharp against a clear blue sky, the plain beneath looking very faint, till the sun beat on it, when it appeared of a light-red colour, without a tree or a vestige of vegetation on it. The eastern spurs of this mountain enclosed a valley which was filled with bluish mist. Taklakot itself is not visible from the pass

—a dark ridge of a slate colour, streaked with snow, shuts out the view in that direction; but a couple of houses are seen on a bare plain west of the town. On the southern side the view embraces the mountains both in Nepál and along the watershed of the Dárma and Byáns valleys, which are much higher than any in Tibet; the northern ranges gradually sinking in elevation, till faint and blue in the distance gleam the bare undulating hills of Tibet. South of the ridge which forms the watershed of the Káli and Tibetan rivers there are several deep glens filled with snow and relics of glaciers; bare rocks here and there, and crags rising to a prodigious height, being several thousand feet high, barred black and red, and capped with snow or scanty turf. Valleys of this kind are common in this mountain cluster, presenting an appearance of having been scooped out of the mass. They probably owe their origin to the primeval glaciers, as the streams which at present flow from them are insufficient to account for them. There must have been a great upheaval of the primary mountains of the snowy range subsequent to the deposit of the sandstone formation of Tibet. The rock on the pass and on the ridges north of it is a variety of red sandstone, and belongs to formations entirely foreign to the Himálaya.

The night we spent at Sangcha at the foot of the pass was intensely cold, and we could not light a fire. Returning to Kálapani the next morning, we had to fight against a violent south wind, and towards evening the atmosphere again became decidedly chilly, the thermometer standing at 22°. The scenery on the route from Kálapani to the pass is neither beautiful nor sublime; it is simply fantastic. The crags start up from the bed of snow-covered streams and rise to 2,000 feet, or where there are no crags there are steep slopes of loose *débris*, or bare rocks splintered into fragments and weathered almost to disintegration, while here and there you will see the jagged edge of a projecting cliff overhanging a deep gorge. Such are the features of the strange, chaotic scene around. The cliffs are iron black, belted with red sandstone stripes. I noticed in one place a remarkable rock composed of red sandstone, attaining a great elevation, with a band of granite columns apparently wreathed round it in a spiral form. On my way to the pass, I made several excursions to mountains lying off the road. One of these was a series of stratified crags, and there was only a rude goat track, in many places obliterated by snow, which led to the summit. We passed a few birch trees, torn and battered by the storm, then a few dark-green juniper bushes; and when we had accomplished half the ascent, the ground was covered by a profusion of most beautiful flowers, and especially of the most lovely auriculas of deep-violet hue. From the summit all round there is a wonderful view of snow-clad peaks. The highest mountain visible is one in Nepál called Nampa. It is a smooth, rounded, snowy summit of great beauty and silvery whiteness rising to 23,600 feet. Then there is one on the west bank of the Káli, called Khandadhura; it rises high into the air in the form of a single polished mass, with a bold indented ridge. All the lateral valleys in Western Byáns are enclosed by ridges, whose tops are marked by pointed dark-coloured rocks such as might be shown in water-colours by Indian red and lamp-black, or they are sharp like a knife, or they look like decayed pillars with their capitals built by the gods themselves. If you go up any great elevation, this is the kind of view you have: you look down upon a whole landscape in ruins, a vast labyrinth of desert hills and valleys, "a great and terrible wilderness" in the fullest sense of those words. All is wild, naked, and desolate."—*Pioneer*.

Lipu or **Lipu-ke-Thán**, a very difficult pass in Patti Goriphát of parganah Juhár in Kumaon between Karáo-gár and Lílám in latitude $30^{\circ}-10'-30''$ and longitude $80^{\circ}-16'-50''$ with an elevation of 9,127 feet above the level of the sea. The route is here inclosed between the shoulder of one of the Himálayan peaks rising on the western side and the rapid course of the Gori on the eastern side : and the principal path lies over large fragments of rock. It is seldom used now, a more direct and safer line having been chosen.

Lohba, also known as Gairsen and Ríthiya from the neighbouring lands of those names, is situate in Patti Lohba of parganah Chandpur in British Garhwál in north latitude $30^{\circ}-3'$ and east longitude $79^{\circ}-19'$ on the left bank of the Rám-ganga river distant 13 miles from Ganái and $11\frac{1}{2}$ miles from Abadri. There is a tea-factory at Ríthiya and a large one close by at Silkot and Gandyál on the spurs of the Dúdútolí range. Another tea-factory is passed at Siman on the right bank of the Rám-ganga south of the Thájkharak peak, and there is another a march further west at Beni Tál. Lohba is a station of a *peslikár* or sub-collector of the land-revenue, subordinate to the tahsildár of Srínagar. The traveller's bungalow is built on a flat under Gairsen at an elevation of 5,360 feet above the level of the sea.

Mr. Lushington, when Commissioner of Kumaon, used to reside at Ríthiya for a short time during the year. It has been proposed to remove the offices of the Senior Assistant Commissioner from Páori to Lohba, but as this would leave a large tract of country, wild and rugged in the extreme, far removed from the personal supervision of an European officer, the scheme has found little favour with the responsible authorities. The patti of Lohba is famed for its fertility. Owing to its being surrounded by the high ranges of Dúdútolí and Byánsi, drought is hardly if ever known. Irrigation, too, can be practised and the people possess in their upland pastures grazing grounds for large herds of cattle, and can therefore manure their lands to a greater extent than is common elsewhere. There are mines of copper and iron worked by miners from Kumaon and slates of a good description are also found here. Lohba is named from the fort of the same name which is to be seen on the summit of a high conical hill on the boundary between Kumaon and Garhwál. The walls and remains of build-

ings still exist, and show that the fort must have been of considerable extent. It stands immediately above the right bank of the Rám-ganga river, and in olden times was the scene of many a stiff fight between the people of Garhwál and Kumaon.¹ It was also garrisoned by the Gorkhális during their stay in Garhwál.²

From Ganái the road passes across the Rám-ganga by an iron suspension bridge, and thence up the valley of one of its tributaries 'the Khetsár' in a north-north-westerly direction between the ridge marked by the Gail-ke-poli (4,053 feet) and Kunkhet peaks on the west and that marked by the Khetsári (4,531) and Jamariya peaks on the east. These meet together at the head of the valley in the Lohbagarh peak (6,272 feet) on the east and the Dhauli on the west, both crowned by forts, while the road ascends between them by the Panuwa-khál or pass, near which is the Garhwál boundary close to Semalkhet mine. From the pass a descent of one mile leads to the Ohiraunjiya or Mehalchauri bridge of 79 feet span across the Rám-ganga. Thence the road keeps to the left bank of the river in the same direction to the junction of the Búngidhár road *via* Silkot close under the Ríthiya tea-factory. Here at Saonli is a common encamping-ground, but most go on to the Súmána or Lohba bungalow. To the west the great Dúdútoli range occupies the entire horizon: the Malkhori pass on the Búngidhár road is 8,042 feet high and thence a path leads to the southern peak (10,180 feet) and the northern peak (10,188 feet). On the east, too, a line of noble hills forms the watershed between the Pindar and the Rám-ganga as far as Diwáli-khál, *viz.*, Kankra (10,062 feet); Kánpur (9,522), whence passes the road to Naráyan-bugr and Kandal (8,533). The scenery on this part of the road is very fine; the mountains around are well clothed with timber and are of a sufficient height above the road to look like mountains.

Lohba, a patti of parganah Chandpur in British Garhwál, is bounded on the north by Pattis Síli Chandpur, Sirgur and Pindarwár; on the south by the Chaukot patti of Kumaon; on the west by Patti Choprakot, and on the east by Patti Giwár. Mr. Beckett writes:—"I have a low opinion of their (Lohba people) character, which I am puzzled to account for, as were also

¹ *Gaz.* XI, 596, 560, 572.

² *Ibid.*, 666, 792.

Messrs. Traill and Batten. Lohba should from its position, soil and market advantages, be one of the most prosperous in the district. Except those at the head of the valley, the villages have not been heavily assessed. I think that the cause of this may be due to the prolonged struggles with the Kumaonis and Gorkhális, which has given a martial character to the people and with the cessation of the necessity for it they have not yet given up their martial aspirations." Many overflowed into the Khetsár valley at the conquest, where the soil is better and its prosperity in a measure compensates for the backwardness in Lohba. The land-revenue of this patti is collected with that of Patti Khansar and paid into the *peshkári*; both aggregated in 1864 for land-revenue and *sadábart* Rs. 2,184 and for *gúnth* Rs. 72, paid by 4,854 souls. The patti comprises the tract drained by the upper waters of the western Rámanga rising on the northern slopes of the Dúdútoli range (10,180 feet). Lohba, besides being the head-quarters of the tea-factories of Chandpur, has iron mines at Semalkhet, Kálban, Kálimatti, Mehalchauri, Mailpákha, Nauligadhera and Dwárigár all in working order, and old mines at Gwár, Kúnigár and Naupáti. There are copper mines at Agarsera.

Lohughát, a village and old military cantonment in patti Regarubán and parganah Káli Kumaon, is situate on the Lohu river six miles north of Champáwat and ten miles north of Chhirapáni, 15 miles from the Nepál frontier and 53 miles east from Almora, in north latitude $29^{\circ}-24'-2''$ and east longitude $80^{\circ}-7'-53''$, at an elevation of 5,510 feet above the level of the sea. About twenty miles lower down the Lohu or Lohávati joins the Káli on the right bank. The population in 1872 numbered 98, and in 1881 there were 154 (64 females). Lohughát occupies a pleasant tract of grassy undulating ground sprinkled with *deodárs*. It was formerly a cantonment for troops, but has been abandoned for a long time, owing to the difficulty of access and the unhealthy nature of the country through which the principal roads to it from the plains lie. It is open on the west to the extent of the valley for three miles or so, but on other sides is inclosed by high and precipitous hills. The barracks and bungalows still exist and are kept in repair. The average temperature is 60° and the range is from 30° in January and February (1836) to 82° in May. In September 72° were

registered, in October 68°, and in November 59°. The climate is considered healthy, though new-comers are found to suffer from the common forms of indigestion. Fevers, rheumatism, goitre, and acute ophthalmia are prevalent among the natives.

The granite of Champáwat here disappears and gives place to blue clay slate in vertical strata with some quartz. The ground rises gently towards the north and about three miles distant is backed by the grassy, saddle-back mountain called Jhúm (6,957 feet) along which passes the road to Pithoragarh. This peak belongs to a range continued on the south-east to Khilpati by a level wooded ridge covered with *Quercus incana* and *Rhododendron arboreum*. The groves of *deodars* near Súi are particularly fine, and the tree seems to have spread and perpetuated itself here for centuries; but neither here nor in any other part of Kumaon is it indigenous, and it is only found near temples and villages, and never on the open mountain. There are two roads to Pithoragarh, one by the Kolakot village to Dhuryara and the new and better one by Raikot to Chhira. The tea-plantations of Mr. Lyall at Raikot and other two in the station are carefully cultivated and in full bearing, but are too far away from the market to be capable of yielding very profitable returns. Hence to Champáwat crossing the Lohu by a suspension bridge 6½ miles, to Diuri, 15 miles, and to Janakpur 15 miles, crossing the Ladhiya at Chalthi.

Kedárnáth, a temple situate in Patti Malli Kálíphát in pargana Nágpur of British Garhwál, lies in north latitude 30°-44'-15" and east longitude 79°-6'-33" at an elevation of 11,753 feet above the level of the sea. The temple is built on a ridge jutting out at right angles from the snowy range below the peak of Mahápanth. It stands near the head of the valley of the Mandákini on a level spot, and is a handsome building with a neat façade

The temple. adorned on either side with niches and images. A tower behind built of grey stone and surmounted by a gilded pinnacle forms the adytum of the shrine. In front of the temple are two rows of masonry houses for the accommodation of pilgrims and behind is the courtyard forming the residence of the *pandas* or officiating priests. The present structure, according to Mr. Traill, is of recent construction, the original building having fallen to ruin. It is dedicated to

Sadáshiva, a form of Siva who, flying from the Pándavas, took refuge here in the form of a buffalo, and finding himself hard pressed dived into the ground leaving, however, his hinder parts on the surface, still an object of adoration here. The remaining portions of the god are worshipped at four other places along the Himálayan chain; the arms (*bahu*) at Tungnáth; the face (*mukh*) at Rudrnáth; the belly (*nábhi*) at Madh-Maheswar and the hair (*jete*) and head at Kalpeswar. These together form the 'Panch Kedár,' the pilgrimage to which places in succession forms a great object to the Hindu devotee. The *ráwals* or head-priests of all these temples are on the same establishment and subordinate to the Kedárnáth *ráwal*, who is of the Jarngam sect from Mysore. He only officiates at Guptkáshi and Ukhimáth, while his *chela* or adopted son, goes to Kedárnáth for the pilgrim season from the middle of May to the end of October. The *ráwals* of the other temples retire at the same time, those from Tungnáth to Mokh; from Rudrnáth to Gopewar; from Madh-Maheswar and Kedárnáth to Ukhimáth and from Kalpeswar to Urgam.

The routes to Kedárnáth are two, that *viâ* Karnprayág, Chimoli

Routes.

Tungnáth, and Ukhimáth and that general-

ly followed from Hardwár by Srínagar and Rudrprayág along the Mandákini river. Both routes unite at Kharakoti and all the stages and resting places are separately noticed. Kharakoti is 11 miles 5 furlongs and 36 poles from the temple. To Páti, where there is a bridge of 33 feet span, there is an ascent of 19 chains and descent 64 chains: to Saundwára (a 63-foot bridge) undulating for 89 chains. From Gaurikund (229 chains) the road is bad and intersected with numerous ravines, and very undulating. But from this place commences some of the wildest and most rugged scenery in the Himálaya. There are hot springs here, also an object of reverence. To Bhímudiyár the distance is 290 chains and to the Kedár bridge 324 chains.

The road follows the course of the river sometimes only a few feet and sometimes a thousand feet above, while on each side the mountains rise four to five thousand feet almost perpendicularly and clothed thickly with forest. So narrow is this gorge that it is possible often at five hundred feet from the bed of the river to throw a stone from one side to the other. At intervals along the

road there are magnificent cascades and numerous small tributaries pouring down in every possible form. At one point, the water comes from a considerable height in as perfect a jet as if it had been constructed by artificial means, and falls into a basin of rock which it has hollowed out for itself. The stream again rises from it almost unbroken and, forming an arch, descends on the road in spray. Higher up near Kedár some of the streams are nearly lukewarm and several of them are highly impregnated with sulphur. At Bhím-udiyár there are a number of caves cut out of the rock used as a halting place, and said to have been so used by Bhíma and the Pándavas. Hence the road goes up the valley of the Kedárganga torrent almost due east until within a mile of the temple when it turns to the north. The atmospherical phenomena resembling the Barisál guns are observed here. The great pilgrim road constructed and marked out by Mr. Traill, while Commissioner of Kumaon, must have been a work of great labour and difficulty, and has resulted in saving the lives of thousands.

From time immemorial, pilgrims from all parts of India have
 toiled through these mountains to visit the
 Pilgrims. three great shrines of Gangotri, Kedár and
 Badari, all placed on the one great group of snowy peaks separating the Alaknanda from the Bhágirathi river, the two which together form the Ganges. The latter though much inferior in volume is considered in the Puráúas to be the more sacred. Although, however, the reputation of the Alaknanda does not equal that of the Bhágirathi, it is on the banks of the former river that the most celebrated places of Hindu pilgrimage are found. Gangotri, a little above which the Bhágirathi issues from its glacier, or according to Hindu mythology where the heaven-born goddess first descended upon the earth, is a spot of the highest sanctity, but it fails to attract the crowds of pilgrims who every year visit the sources of the Alaknanda. How this preference of the less sacred stream had its origin, cannot now be determined. Possibly the superior sanctity of the Bhágirathi may be only the poetical invention of a later age, which has failed to shake the traditional feeling, older than any books, that salvation was to be found more easily on the banks of the greater river. The sources of the Ganges were objects of veneration and of pilgrimage long before the

foundation of the temples which now exist there. Austerities and acts of devotion performed in the Himálaya seem to have had a special virtue from the most ancient times. We find examples of this in the extracts from the sacred books already given in the previous volume.

Pilgrims begin to enter the hills after the fair at Hardwár. This great assemblage is held on the first day of the month of Baisákh, the commencement of the Hindu solar year, which corresponds with the entry of the sun into the sign of Aries or *Mesha*. According to our reckoning this takes place about the 25th of March, but in consequence of the erroneous calculation by the Hindu astronomers of the true length of the solar year, similar to that error which made it necessary for Pope Gregory to omit ten days from the calendar, the great day of the fair at Hardwár now falls on 11th or 12th of April. Every twelfth year the planet Jupiter (*Vrihaspati*) is in the sign Aquarius (*kumbha*) at the time of the sun's entry into Aries. These are occasions of peculiar sanctity, and the fairs in these years called '*kumbh*,' after the Sanskrit name of Aquarius, are attended by vast multitudes of people. Every sixth year, or half way between two *kumbhs*, the number of visitors is also very great. On the day of which the Hardwár Fair is the anniversary, the Ganges is said to have first appeared upon the earth. Pious pilgrims flock from all parts of India to bathe in the sacred river and wash away their sins. At the present time a large and very conspicuous portion of the bathers at Hardwár come from the Panjáb and distant parts of Rájputána. Religion, however, is not the sole incentive that draws these crowds together. Trade and amusement are as much thought of. Several hundred thousand people are supposed to be no extraordinary gathering, and occasionally in a *kumbh* year the numbers have been estimated as high as two millions. But there can be little doubt that this is an exaggeration and half this number will perhaps be near the truth.

A small proportion only of the bathers at Hardwár accomplish the pilgrimage to Kedár and Badari. The more bigoted Saivas visit Kedár only, and some Vaishnavas in like manner only pay their devotions at Badari, but the great mass of pilgrims attend both shrines. The Vaishnava worship is so much more popular in Upper India that Badari is considered by far the more sacred of the

two. There is little doubt that to Sankara Achárya is due the re-establishment of the efficacy of pilgrimages to the two great shrines, and it is probable that these institutions have retained to the present day much of the organisation which Sankara himself gave to them.

The institution of which the temple at Kedárnáth forms a part is a good example of what we may fairly call the monasteries of the Hindus. The constitution of these establishments has been well described by Professor Wilson. “The *maths*, *asthals*, or *akáras*,” he writes, “the residences of the monastic communities of the Hindus, are scattered over the whole country; they vary in structure and extent according to the property of which the proprietors are possessed; but they generally comprehend a set of huts or chambers for the Mahant or Superior and his permanent pupils, a temple, sacred to the deity whom they worship, or the *Samadh* or *Shrine* of the founder of the sect, or some eminent teacher; and a *Dharmshala*, one or more sheds or buildings for the accommodation of the mendicants or travellers, who are constantly visiting the *math*; ingress and egress are free to all, and indeed a restraint upon personal liberty seems never to have entered into the conception of any of the religious legislators of the Hindus. The *math* is under the entire control of a Mahant, with a certain number of residents, *chelas* or disciples; their number varies from three or four to thirty or forty, but in both cases there are always a number of vagrants or out-members; the resident *chelas* are usually the elders of the body with a few of the younger as their attendants and scholars; and it is from the senior or more proficient of these ascetics, that the *mahant* is nominally elected. In some instances, however, where the *mahant* has a family, the situation descends in the line of his posterity; where an election is to be effected, it is conducted with much solemnity, and presents a curious picture of a regularly organised system of Church policy amongst these apparently unimportant and straggling communities.” Kedárnáth, although of more importance than most institutions of the kind, is in all essential points a *math* similar to those which have been described in the preceding extract. The community belongs to the sect of Saiva ascetics called Jangama; and the Mahant, or as

he is here called, the *ráwal*, as well as his *chelas*, must all be people of Malabar. The Jangamas here, as everywhere else, worship Siva, or as he is more commonly called in these parts of India, Mahádeo, under the form of the *linga*. Throughout these mountains Mahádeo, the god of everything terrible and destructive, is always represented by this emblem, a symbol of the belief that destruction implies generation and reproduction in some other form, the belief that has the scientific basis that 'nothing is lost.' The worship has often been made a matter of reproach to Hindus, but in this part of India, as a rule, such accusations have no foundation. The worship of the *linga*, as we have already seen, is free from all grossness, and to use the words of Professor Wilson, "it requires a rather lively imagination to trace any resemblance in its symbol to the object which it is supposed to represent."

The ceremonies to be observed by pilgrims are very simple, consisting of a few prostrations at various places, and hearing a short ritual and discourse from the officiating priest. The pilgrim carries away in sealed jars from the sacred pool some water which is highly charged with iron and sulphur. Close to the temple is a precipice on the way to the Mahápanth peak known as the 'Bhairab Jhám,' from which in former times devotees used to fling themselves, but this practice was put a stop to by Mr. Traill. Before proceeding to execute their design it was usual to inscribe their names and the dates on the walls of the neighbouring temples. That at Gopeswar has several such records chiefly of Dakhini and Bengáli pilgrims; the freshest cut bears a date corresponding to 1820 A.D. The income of the temple is derived from endowments consisting of 54 villages, with a rental of Rs. 857 a year, and offerings varying from 5,000 to 10,000 rupees annually. The school, formerly supported by the Ráwal, has been allowed to decline.

Khansar, a patti of parganah Badhán, in British Garhwál, is bounded on the north by Pindarwár; on the west by Lohba; and on the south and east by Kumaon: it was formed from patti Pindarwár in 1864. It occupies the highly mountainous tract to the north of the western Rámganga during its course from Mehalohauri to Kumaon. The land-revenue is paid into the Lohba peshkári.

Kharáyat, a patti of parganah Shor, in Kumaon, is bounded on the north by Bárabisi and Askot; on the west by Seti Talla;

on the south by Mahar ; and on the east by Kharakdes. It lies to the north of Pithoragarh and the road from the latter station running north bifurcates at Sathling in this patti, the one branch running north-west to Thal and the other north to the Dárma pattis. Marh and Dungari are villages close to Sachling ; Láma-khet is on the Thal road, and Satgar on the Askot road. Dhvaj or Dhaj, a remarkable peak a little south-east of Satgar, has an elevation of 8,149 feet above the level of the sea in longitude $80^{\circ}-19'-58''$ and latitude $29^{\circ}-39'-25''$. The drainage mostly flows westward into the Kálapáni, a tributary of the Rám-ganga. The assessable area comprises 1,428 *básis*, of which 397 are culturable and 1,031 are cultivated (419 irrigated). The land-tax yielded Rs. 324 in 1815 : Rs. 512 in 1820, and Rs. 671 in 1843. The existing assessment of Rs. 1,533 gives a rate of Rs. 1-1-2 per acre on the whole assessable area, and Rs. 1-7-9 per acre on the cultivation. The population at settlement numbered 2,001 souls, of whom 1,049 were males. The patwári resides in Bhulgaon and there is a school in Sâtsilingi.

Kharahi, a patti of parganah Chaugarkha in Kumaon, lies between Ríthagár and the Sarju-at Bágeswar. It is bounded on the north and west almost as far as the Pápi peak by the road from Bágeswar to Almora by Someswar, thence an irregular line separates it from Ríthagár on the south : the Sarju river forms the north-eastern and eastern boundary separating it from the Kam-syár patti. The two eastern roads from Almora pass through this sub-division on either side of the Rupdeo peak (5,502 feet). The assessable area comprises 1,213 *básis*, of which 540 are culturable and 673 are cultivated (99 irrigated). The assessment in 1815 amounted to Rs. 69 : in 1820 to Rs. 131 : in 1843 to Rs. 223 : and is now Rs. 886, which falls on the total assessable area at Re. 0-11-8 per acre and on the cultivated area at Rs. 1-5-0. A small patch of 11 *básis* is held free of revenue. The population at the time of settlement numbered 1,126 souls, of whom 585 were males.

The name of the patti is probably derived from the large quantities of steatite found there. It is more remarkable for the mines of soapstone and copper and its luxuriant forests of *Pinus longifolia* than for its agricultural resources. These were never great, for in 1821 Mr. Traill wrote:—"This small sub-division is now gradually recovering from the state of deterioration to which it had fallen under the late

government. The forests at one time harboured so many tigers that the villages had been deserted on account of them." Consequently the Gorkhali settlement of 1807 showed only fourteen hamlets with a total area of 152 *bisais*, of which only 76 were cultivated and assessed at Rs. 80. It subsequently became a *jágir* of Bam Sáh. In 1821, the assessable area increased to 482 *bisais* with as much more in the area of deserted village sites, but only 152 *bisais* were cultivated. Of its state in 1840 Mr. Batten writes.—“ Although it is true that the villages are all surrounded by forests, and that those having the best irrigated lands near the Sarju are in insalubrious situations where only cultivation by non-resident tenants can be introduced, still the people of Kharáhi possess a market for their produce close to their homes at Bágeswar and amongst the Bhotiyas, who in the winter pasture their cattle and sheep in their forests. The copper mines in Kharáhi at present yield but one rupee per annum to the State, and have been practically abandoned by their leasees, who are only the Negi thokdárs of the patti. From the reports on the quality and extent of the ores, it would appear that capital and skill would render the mines of this patti valuable and important. The nature of the soil—(steatitic and talcose mud with springs) in which the cupriferos deposits occur, render the efforts at working the mines by the neighbouring zamíndárs, fruitless. The ores of iron are plentiful in various parts of Changarkha, and are worked at thirteen different spots, at one of which (Thiratoli in Dárún) magnetic ore is found. Goitre prevails to a great extent in Changarkha, especially in Bangor and Dárún, with its usual occasional accompaniment of cretinism.” At the recent settlement 26 villages were transferred to Talla Katyúr and one to Dúg. The patwári resides at Khákar where there is a school.

Kharakdes, or **Kharkdes**, a patti of parganah Shor in Kumaon, is bounded on the north by Talla Askot; on the west by Kharáyat and Mahar; on the east by the Káli; and on the south by Nayades. This patti was formed from Mahar at the recent settlement. The villages are all very small. The assessable area comprises 373 *bisais*, of which 167 are culturable and 206 are cultivated (14 irrigated). The land-tax yielded Rs. 30 in 1815; Rs. 34 in 1820; and Rs. 59 in 1843. The assessment is now Rs. 214, which falls on the whole area at Rs. 0-9-2 per acre, and on the cultivation at Rs. 1-0-7 per acre. The population comprised 259 males and 235 females at settlement. The patwári resides in Bhulgaon.

Khaspurja, the name given to the sub-division of Barahmandal lying around Almora. It is so called because it was given out by the Chands in grants to the followers of the Court. At the recent settlement it contained an assessable area of 3,893 *bisais*, of which 916 were culturable and 2,977 were cultivated (112 irrigated). The land-revenue in 1815 amounted to Rs. 762; in 1820 to Rs. 1,110; in 1843 to Rs. 1,678, and was fixed at Rs. 4,020 in 1865, which falls at Re. 1-0-6 per acre on the total assessable

area and at Rs. 1-5-7 per acre on the cultivation. The population at settlement numbered 10,749 souls, of whom 5,144 were females, much less than the real number if the moveable population of the bazar be included. Up to 1864, Khaspurja contained but very few villages. At the settlement it received over sixty villages from Talla Syánara, 22 from Uchyúr and three from Lakhanpur, which together now form a fair-sized patti.

Khatali, a patti of parganah Mallá Salán in British Garhwál, is bounded on the north by pattis Saindhár and Sábali; on the south by Iriyakot and Gujarú; on the east by patti Malla Chaukot of Kumaon, and on the west by patti Kolagár. The principal villages lie in the valley of the Khátaliagadh, one of the principal feeders of the Eastern Nyár. The roads from Dháron and Rám-nagar to Páori unite in the southern portion of the patti and run northwards by Ghansyáli crossing the Khataligadh and bifurcating again at Domaila where one branch proceeds westward to Páori and a second northward to Kainúr, passing the Almora and Páori road at the Baijirau bridge across the Nyár. The patwári resides in Chandoli and collects the land-revenue including *sadábart*.

Khati, a village and halting-place on the route to the Pindari glacier, is situate in north latitude $30^{\circ}-7'-45''$ and east longitude $79^{\circ}-59'-30''$ in patti Malla Dánpur of Kumaon, seven miles from Dhákuri (q.v.) 64 from Almora and six from Diwáli, and now has a travellers' bungalow without attendants.

The vegetation between Lwárkhet and Kháti differs very much from that further south. The *Hemiphragma heterophylla* appears with the *kharsu* oak (*Quercus semecarpifolius*), *Pyrus baccata* (*ban mehal*) and the *Rhododendron barbatum* (*chímúl*) on the west side of Dhákuri Bináyák. Here also occur *Pyrus lanata* (*guliau*), *Pyrus crenata* (*maul*, *mauli*) and *foliolosa* (*suliya*, *huliya*). Other trees and shrubs are, a ground raspberry with white flowers and orange fruit known as *gangúr*, *Rubus rugosus* (Don), *Viburnum nervosum* (*giniya*), *V. cotinifolium* (*guiya*), *Milingtonia dillenifolia* (*gwep*), *Cotoneaster affinis* (*raus*, *ráns*), *Elæagnus arborea* (*gwál*), *Kadbura grandiflora* (*silangtt*), *Panax decomposita*, *Sabia campanulata*, *Rhus tecturee*, *Frazinus floribunda* (*angan*), *Acer villosum* and *cultratium*, *Alnus obtusifolia* (*uttsh*), *Cornus macrophylla* (*ruchiya*), *Betula cylindrostachya* (*haour* or *shaoul*). Amongst the plants are *Gualtheria nummularioides* (*bhálubor*), *Anemonè discolor* (*hakariya*), *Parnassia nubicola*, *Strobilanthes Wallichii*, *Euphrasia officinalis*, *Geranium Wallichianum*, *Veronica chamædrys* or *Teucrium*, *Halenia elliptica*, *Pedicularis megalantha*, *Sibbaldia procumbens*, *Lycopodium subulatum* (*tula múkha*), *Roscaea spicata*, *Hedychium spicatum* and *Spiranthes amæna*. *Pæonia Emodi* (*bhúniya nar*) abounds in the glades here and higher up (*Mudden*).

Khátsyún, a patti of parganah Bárabsyún of British Garhwál, is bounded on the north by patti Ghurdursyún of parganah Dewalgarh ; on the east by the same patti and patti Mawálsyún of parganah Chaundkot ; on the south by patti Kapholsyún and on the west by the same patti and patti Paidúlsyún. The patwári of Kapholsyún, residing in Sakhyána, collects the land-revenue. This patti comprises a small tract of land on the right bank of the Western Nyár as far south as the Ir stream.

Khilpatti-phát, a patti of parganah Káli Kumaon in Kumaon, is bounded on the north by Regaruban ; on the west by Sui Bisung ; on the east by Gumdeo ; and on the south by Chárál Talla. Khilpatti-phát was separated from Regaruban at the recent settlement, from which it received 16 villages. The principal are Buláni and Kot. The assessable area amounts to 2,466 *bisais*, of which 1,076 are culturable and 1,390 are cultivated (50 irrigated). The land-revenue amounted to Rs. 518 in 1815 ; Rs. 779 in 1820 ; Rs. 954 in 1843, and now stands at Rs. 1,531, which falls on the whole area under cultivation at Rs. 1-1-7 per acre, and on the total assessable area at Rs. 0-9-10 per acre. The population at settlement comprised 1,386 males and 1,293 females. The patwári resides in Khaten, where there is a school.

Khoh or Koh, a stream rising in the Langúr range of hills in Garhwál at an elevation of 6,400 feet above the level of the sea in latitude 29°-56' and longitude 78°-40' in the Salán parganah. The Khoh takes a direction south-west by west and debouches from the hills at the mart of Kohdwára, or as it is more commonly called Kotdwára, from which place a canal has been taken from it for the purpose of irrigating the Bhábar lying on its left bank. After leaving Kotdwára the Khoh is joined by the Saneh nadi and flows towards Nagína in the Bijnor district, where another canal is taken from it, and finally after a course of about 65 miles it joins the Western Rámganga. At Kotdwára during the cold season the Khoh has a volume of about 40 cubic feet per second, but in the rains it is a deep and rapid river, as it has a large drainage area. Elevation above the sea at Kotdwára 1,305 feet, at Sanehi chauki in latitude 29°-41'-10" and longitude 78°-33'-39" the elevation is 1,008 feet.

Kingadigár, a patti or sub-division of parganah Chaundkot in British Garhwál, is bounded on the south by the Taláin patti of

parganah Malla Salán, and on all other sides by pattis of its own parganah. The sub-division is drained by the upper waters of the Machhlád stream, a tributary of the Nyár. The road from Páori to Dháron passes through the south-western corner. The patwári of Pingala Pákha, residing in Kánde, collects the land-revenue of this patti. Chamnaon, where there is a traveller's rest-house, lies in longitude $78^{\circ}-56'$ and latitude $29^{\circ}-51'$. There is an iron mine at Gudari in this patti.

Kolagár, a patti of parganah Malla Salán in British Garhwál, is bounded on the south and west by the eastern Nyár river; on the north by patti Gurársyún of parganah Chaundkot and patti Taláin of parganah Malla Salán and on the east by pattis Saindhár and Khátali of the same parganah. The road from Páori to Dháron passes through this patti by Kúnj and Pániyakhet to the Nyár river at Chauráni, about seven miles. The Alsa peak above Gudari between Kola and Kúnj attains a height of 6,685 feet above the level of the sea. The patwári of Taláin, residing in Chauráni, collects the land-revenue

Kosi, Kosila or Kaushálya, a river rising in patti Borarán Pallá of parganah Bárahmandal in Kumaon in latitude $29^{\circ}-50'$ and longitude $79^{\circ}-35'$ is fed from the streams collecting along the eastern slopes of the high chain of hills in that patti comprising Birchuwa (8,427 feet); Gopáلكot (9,050); Bhadkot (9,086) and Búrha Pinnáth and the northern declivity of Milkáli (7,470 feet). On the east, the range containing the Kausáni tea-plantation forms the watershed between the Kosi and the Gumti, a tributary of the Sarju and eventually of the Káli on the extreme east, while the Kosi joins the Rám-ganga and eventually the Ganges on the extreme west. The Kosi forms a tolerable stream by the time it reaches the broad valley at Someswar in latitude $29^{\circ}-46'-40''$ and longitude $79^{\circ}-38'-55''$ at an elevation of above 4,500 feet above the level of the sea. Here it receives the drainage of the southern declivities of Bhadkot and Milkáli on the right bank and another stream on the left bank. It has a course hence of about twelve miles in a south-easterly direction through the Talla Syúnara patti to Háwalbágh where it is crossed by an iron suspension bridge on the Almora road. In this course it receives numerous mountain torrents on either side, and has a fall of about 1,000 feet. Below Háwalbágh it is joined

on the right bank by the Nána Kosi which drains the valley traversed by the bridle road from Almora to Ránikhet to the west of the Kosi valley and is also crossed by a bridge on the cart road. Hence the course inclines to the south-west winding along the western declivity of Kálimat and the hill on which Almora is built and finding an exit between the eastern base of Siyáhi Devi (7,186 feet) and the south-western prolongation of the Almora ridge at Chaunsila, it receives the Suwál on its left bank. Previously to its confluence with the Suwál it is twenty-six yards wide with a rough bed of large stones and fordable, being only twenty inches deep in the cold weather. At this point where the elevation above the sea is about 3,300 feet it takes a course generally west by Khairna, receiving on the right bank the Ulabugr and Kúch-gadh streams from parganah Phaldakot. Close by at Buján the elevation above the sea is 2,862 feet. The course continues thence more decidedly west and for a portion of the way north-west to Mohan with an elevation of 1,586 feet above the level of the sea. Hence it turns abruptly to the south-east and subsequently south by Dhikuli, entering the plains at Rám Nagar in latitude $29^{\circ}-23'-34''$ and longitude $79^{\circ}-10'-8''$ with an elevation of 1,204 feet above the level of the sea. Owing to the steep gradient (one in one hundred) of the bed of the Kosi from Ukhal-dhúnga to Rám Nagar, the surface of the channel is strewn with boulders. On the right bank from Kumariya to Dhikuli there are numerous torrents with very steep beds through which the drainage water in the rains pours down with great velocity: often joining the Kosi by numerous channels, and, where they are confined to few, being sometimes very destructive. From Ukhal-dhúnga to Buján the principal rock is a hard quartzose sandstone running into metamorphic quartz. The quartzose sandstone, however, only retains its distinct form up to about three miles above Ukhal-dhúnga. Mr. Ryall found the average discharge of the Kosi opposite Mohan to be 310 cubic feet per second. The width of the stream being 60 feet, average depth 1.4 feet and velocity 2.5 miles per hour. There are many islands covered with *khai* and *sisu* trees. The whole route from Mohan down to Rám Nagar is one of extraordinary beauty and affords scenery of the most savage and rich description such as would delight a *Salvator Rosa*. Beyond this it receives the Dhabka, a

small stream flowing through the Kota Bbáhar, on its left bank. It then takes a southerly direction through the plains for about seventy miles and falls into the Rám-ganga in latitude $28^{\circ}-41'$ and longitude $79^{\circ}-1'$ after a total course of between 140 and 150 miles. At Rámpur, eleven miles above the confluence, it is but a small stream from December to June and is fordable, but during the rains can only be crossed by a ferry. At Dariyál between Morádabad and Naini Tál there is a ferry where in the height of the rains it often takes several hours to cross the river.

Kosyan Malla, a patti of parganah Phaldákot in Kumaon, is a long narrow strip of land lying along the right bank of the Kosi river from the summit of the watershed to the banks of the river along which the Almora road runs to Rámnagar and contains the villages of Khairni (received from Dhuraphát) Korurh and Burdon. It is bounded on the west by Chauthán ; on the north by Dhúra-phát ; on the east by the same patti and on the south by Uchakot and Simalkha. The assessable area comprises 1,360 *básis*, of which 349 are culturable and 595 are cultivated (144 irrigated). The land-revenue in 1815 amounted to Rs. 336 ; in 1820 to Rs. 378 ; and in 1843 to Rs. 459. It is now Rs. 875, which falls on the total assessable area at Rs. 1-3-7 per acre and on the cultivation at Rs. 1-7-6 per acre. The population at settlement numbered 1,261 souls, of whom 641 were males. The patwári resides in Joshi-khola, where there is a school.

Kosyan Talla, a patti of parganah Phaldákot in Kumaon, is bounded on the north by pattis Kakalasaun Malla and Chantháu ; on the east by the latter patti ; on the south by patti Kota Talla ; and on the west by pattis Kota Talla and Sult Talla. The Kosi runs through this patti nearly due west from Punt-pípal by Amel, Siti, where the Almora and Ránikhet roads to Rámnagar unite, and Bishmoli to Ukhal-dúnga in the Kota Talla patti. The country is rocky and difficult, and has but little cultivation. The principal villages are Kuthimi, Siti and Amel. The assessable area comprises 892 *básis*, of which 153 are culturable and 738 are cultivated (410 irrigated). The land-tax in 1815 amounted to Rs. 449 ; in 1820 to Rs. 666 ; in 1843 to Rs. 650 ; and is now Rs. 1,410, which falls on the total assessable area at Rs. 1-9-6 per acre, and on the cultivated area at Rs. 1-14-9 per acre. The

population at settlement numbered 1,257 souls, of whom 619 were males.

Kota, a parganah in Kumaon comprises two pattis, the Malla and Talla, each of which is separately noticed. The totals given under the statistics of the Malla patti show the parganah statistics. The incidence of the land-tax on the whole assessable area of the two pattis falls at Rs. 1-0-2 per acre and on the cultivation at Rs. 1-9-6 per acre. There are 51 maháls or estates comprising 67 villages. The population in 1872 numbered 2,236 males and 2,147 females.

The small village and fort of Kota with Debipura adjacent, occupy the mouth of the Dhabka pass, where the river enters the central plain of the Kota Dán. The sources of the Dhabka, the Baur, the Nihál, the Bahmaní, and the Bhakra rivers are all situate in this parganah; while the Kosi river passes through one portion on the north of the Gágar range, before it enters the Bhábar. The lower and upper villages are similar in all respects to those of Chhakháta, but in Kota there is no central level tract like the beautiful valley of Bhím Tál. Chukám is celebrated for its rice, and criminals were banished there to cultivate it on account of the unhealthiness of the climate. The main roads from Almora to Morádabad and Rám-nagar and from Kálidhúngi to Naini Tál pass through Kota, but there are no large villages. The majority are scattered about the mountain forests without connection. The best and largest estates are situated between the heads of the Dhabka and the Bahmani rivers on the spurs from the great Badhán-Dhúra peak of the Gágar. There is also a cluster of good clearings at the head of the Baur between the Badhan-bináyak pass and Chína, the well-known monarch of the Naini Tál hills.

Kota Malla, a patti of parganah Kota in Kumaon, is bounded on the north by pattis Kota Talla, Uchakot and Dhaniyakot; on the west by Kota Talla; on the south by the Kota Bhábar and on the east by parganah Chhakháta. This patti was separated from Pahár Kota at the recent settlement. The entire Kota parganah was locally divided into Pahár and Bhábar, and the former is now comprised in the Malla and Talla pattis, of which the statistics of permanent value may be shown thus:—

Kota.	ASSESSABLE AREA IN <i>bhis.</i>				ASSESSMENT IN RUPEES.				POPULATION.	
	Total.	Cultivated		Culturable.	1815.	1820	1843.	Current.	Males.	Females.
		Irrigated.	Dry.							
Malla ...	1,257	86	647	523	Rs. 1,153	Rs. 823	Rs. 921	Rs. 1,223	1,161	1,103
Talla ...	1,608	286	801	520	916	1,008	1,223	1,676	1,238	1,104
Total ...	2,865	372	1,448	1,043	2,069	1,831	2,144	2,899	2,399	2,207

The land-tax falls on the total assessable area in the Malla patti at Re. 0-15-7 per acre and in the Talla patti at one rupee : the rates on cultivation are Re. 1-10-8 and Re. 1-8-8 per acre respectively.

The more important villages are Kúrpákha, Muhrorha, Mangoli and Syat. These statistics belong to Kota Pahár as distinguished from Kota Bhábar. The patwári resides in Kota, and there is a school in Bánjbugr.

Kota Talla, a patti of parganah Kota in Kumaon, is bounded on the north by the Kosi river ; on the east by Patti Kosyán Talla and on the south and west by the Bhábar. The statistics are given under KOTA MALLA. The road from Rámnagar to Almora passes by Ukhaldhúnga in the north of this patti. The more important villages are Bhágni, Dauna, Saurh and Amota. Five villages were transferred to Talla Sult at the settlement. The patwári resides in Parewa and there is a school in Rewár.

Kota Bhábar, a tract in Kumaon bounded on the north and west by Garhwál ; on the north and north-east by the Kota pattis and Talla Sult ; on the east by the Chhakháta Bhábar and on the south by the Tarái district. The Kosi river from Mohan runs from north to south through this patti and along its right bank the road from Rámnagar to Paori passes along the Paniyáli Sot to the Rám-gauga and that to Mási by the Kath-ki-nau pass. A third road branches off by the Thunguli Sot to Kotdwára and a fourth follows the Kosi to Almora by the Bobani-ke-gadh.

In the lower ranges to the north of this patti there is no cultivation and no villages. Its most remarkable feature is the Kota Dún divided from the Bhábar by the practically most easterly portion of the range representing the Siwálik in the Dehra Dún, for its eastern continuation in the Giwáli cliffs south of Naini Tál is so closely connected with the outer range of the Hímálaya as to be undistinguishable except to the expert : travelling up from Káladhúngi into the Kota Dún a track leads through forest for some six miles and then over the cultivated lands of Haldu-Bajaniya, Pataliya and Gaintigson, a little beyond the last of which are three large mango groves called the Ukali, Siunáth and Bharatgiri groves, in the first of which covering some twenty-five acres is an encamping-ground (2,200 feet) immediately north and perhaps 100 feet below the path is the channel of the Dhabka river, about a mile in width, partly cultivated but chiefly given over to scrub and shingle. Three distinct terraces are traceable in this channel, formed by the river at various epochs, the main and highest bank of boulders and gravel. To the south-west the land is irrigated by channels from the Dhabka which is totally exhausted in the valley. The village of Kota is a miserable place about

three miles above Ukali, on the opposite bank of the river where it emerges from Pahár Kota by a most magnificent gorge. The course of the stream is here diverted by a bluff on which is the remains of the old fort, defended by thick stone walls, wooded precipices and cut off from the cultivated grounds to the south-west by a narrow but deep ditch. The position is very unhealthy and the Gorkhálí garrison had to retire to Dola, a fortified position on a peak to the north-west.

On the same bank but lower down is the romantic temple of Devipur,¹ about 300 feet above the river on a low range of wooded hills, here worked into a ridge by a confluent stream which pours down a narrow but wild and lovely dell from the north. Hence there are beautiful views of the hills, the outer ranges and the Dún, all still almost enveloped in forest. Badhán-dhúra due north of Kota has an elevation of 8,408 feet and between it and China over Naini Tái are three peaks having an elevation of 8,244, 8,612 (Badhán Tohi) and 8,186 feet respectively. To the west the ridge is continued in Sonchuliya (8,504 feet) whose spurs run down to the Kosi. The rock at and above the Kota fort is the usual sandstone; above this is limestone; the three western peaks are chiefly quartzose rock and Badhán-dhúra, the same mixed with slate, dipping north-east as usual: an eruption of greenstone occurs at Saur village (8,863 feet) on the southern face of Badhántoli.

From Kota to Sítaban about six miles south-west by south the route crosses the Dhabka, of which the right bank is high and precipitous and the way through a forest of *kásir* (*Acacia catechu*) trees. Beyond the river, *sal* trees abound. The path then follows the Dhaul or Chuhul from the eastern flank of the Báhmání peak near Báhmangaon. This at Sítaban joins with the Báhmání from the western flank of the same peak to form the Kichari, an affluent of the Dhabka. The scenery around Sítaban is extremely wild and beautiful; *sal* of noble dimensions occupies the plateaus of level, uncultivated land between and west of the streams and to the north is a fine view of the outer range. There is no road here and no cultivation, but the temple amid a fine grove of *asoka* trees (*Saraca indica*) is sacred to Síta, who fled here after escaping from Máwan. The outer ranges to the south are high enough for *chír*. From Sítaban to Dhikuli (*q.v.*) about half the distance is over high table-land covered with forest, the rest is along a series of most picturesque glens, the floors and acclivities of which are equally clad in the same dense and beautiful forest. Close on the north rises the most western prolongation of the Gágar which terminates at Dhikuli in this long wooded spur. It sends down a multitude of torrents which with those of the northern slopes of the Siwálíks form on the east the Baudarpáni and on the west the Gaja streams, both of which unite near Pipaliya-Gaja and fall into the Kosi on the left bank opposite Dhikuli. Nothing can be more exquisite in scenery than the cliff banks and shaggy hills of the Kosi here enlivened by flights of birds (December) which are comparatively wanting in the waterless plateaus. About two miles up the river towards Mohan, the hills recede on each side leaving a level valley which with the exception of one or two small clearings, consists of stony land covered with scrub jungle.

From Dhikuli to Rámuagar the road follows the right bank of the Kosi, one by the high forest land through the Amdanda and Amsot *chaur*s and the

¹ J. A. S. Ben., XVII (1), 376.

other close to the bed of the river, both meeting on the edge of the highlands in Rámnagar (1,304 feet). Four miles on through flat ground covered with bambu, *ber* and grass jungle Chilkiya is reached and next to it Tándá. To the west along the foot of the hills a road connects with Kotdwára and to the east with Barmdeo. From Rámnagar to Káladhúngi, the road passes through clearings, jungle and forest, crossing the Kosi by a ford at Šbankarpur and the Dhabka under Burwa and a canal and a torrent near Belparáo to Bandarjura, formerly the site of a police out-post. The last is about a mile from a base of the low range of the Kota Dún. In the south-west of this, about a mile and a half distant, there is a copious formation of vesicular calcareous tufa or travertine, forming a cliff over one hundred feet high, and most probably constituting the mass of the range, which it does on the Kamola pass, about five miles east, where the summit, far beyond the reach of running water, is flored with it. The Karara-gadh, a torrent rising to the north of the Kamola pass, encrusts everything with lime to a distance of three miles from the hills and possibly much further. This rock at Bandarjura is quarried and carried to the plains. From the crest of the cliff above mentioned the view over the silent, wide-spreading forest is impressive. From Bandarjura to Káladhungi, ten miles, of which five to Kamola and thence across the Bhaula to the Morádabad road and into Káladhúngi (*q v.*) *Madden*.

Kotauli Malli, a small patti of parganah Kotauli in Kumaon lies around the Piúra bungalow on the upper road from Naini Tál to Almora. The assessable area amounts to 812 *bísis*, of which 153 are culturable and 659 are cultivated. The Gorkháli assessment amounted to Rs. 378, and that of 1843 to Rs. 520, the present land-tax is Rs. 938, falling at Rs. 1-4-4 per acre on the assessable cultivation. The population at the time of settlement numbered 1,474 souls, of whom 768 were females : see further the notice of the Talli patti. The patwári resides at Mauna, where there is a school.

Kotauli Talli, a small patti of parganah Kotauli in Kumaon, lies along the left bank of the Kosi in the Khairna valley below its confluence with the Suwál, and is bounded on the south by Dhaniyakot, Agar and Rámgar. The assessable area amounts to 1,601 *bísis*, of which 355 are culturable and 1,246 are cultivated (24 irrigated). The Gorkháli assessment amounted to Rs. 863, increased to Rs. 1,046 in 1843, and now fixed at Rs. 1,602, which falls on the total assessable area at one rupee per acre and on the cultivation at Rs. 1-4-7 per acre. The population at time of settlement numbered 3,715 souls of whom 1,795 were females. The patwári resides at Chimi, where there is a school.

Kotdwara, or Khohdwára is a small, though rapidly increasing mart in patti Ajmer and parganah Ganga Salún of Garhwál

on a flat about 80 feet above the river Khoh on its left bank where it debouches from the hills. There was also a fort at the hill end of this flat, where it is very narrow, and which was used in former days to resist the attack of robbers from the plains. The bazar is increasing in importance partly owing to the cultivation which has of late years been started; but also from increased means of communication, as hillmen, instead of purchasing cloth, *gúr*, &c, at Srinagar, now go direct to this place, where they can procure all they want at cheaper rates, and also barter *ghi*, red pepper, turmeric, hempen cloths, ropes of different fibres, and a few barks and jungle products, for what they require for home consumption. There are two fairs held during the week on Tuesdays and Fridays, and frequently thousands of persons collect to trade. When a bridge can be erected over the Khoh on the road to Najibabad, and this road be improved, the importance and trade of this place must increase, for the railroad now passes through the Bijnor district within 18 miles of it. The forest department also has a large amount of timber and bambu cutting in the immediate vicinity, while a large mill is worked on the canal to which grain from Najibabad and Nagíua is brought to be ground. All these points tend to increase its importance. It is chiefly peopled by petty traders from the Bijnor district numbering over 1,000 for ten months in the year, as a large number of traders from Najibabad and also from the hills keep shops open during this period, only going away for the unhealthy months of August and September. It is 18 miles from Najibabad, 30 from Bijnor and 47 from Páori.

Madhmaheswar, a temple in Patti Malli Kálíphát of parganah Nágpur in Garhwál situate about eleven miles north-east of Ukhimath in north latitude $30^{\circ} 30' 5''$ and east longitude $79^{\circ} 15' 49''$. The temple is on the Kedárnáth establishment, and is one of the Panch Kedár supposed to be visited by all pilgrims who perform the full round, but owing to the difficulties of the road this duty is often avoided. The temple is situate on the eastern face of the Madhmaheswar *dhár*, the peak above it having an elevation of 11,477 feet. Higher up the glen near the sources of the river at a place called Dhola are some rocks and a pool which are also objects of reverence. The priests of Madh retire to Ukhimath during the winter.

Mahar, a patti of parganah Shor in Kumaon, is bounded on the north by Kharáyat; on the west by the Seti Pattis and Wal-diya Bichhla; on the south by Wal-diya Talla and Saun, and on the east by Pattis Kharakdes and Nayades. The valley is drained by the Chandrabhága river, which flows thence south-east to the Káli. Between the fort and cantonments of Pithoragarh and the Jhúla bridge across the Káli leading to Nepál the principal villages are Káshni, Bherkutiya, and Ruinda. The patwári resides in Bajeti. Roads branch from Shor for Askot and Thal on the north; Almora on the west, and Lohughát on the south. The assessable area comprises 3,036 bisis, of which 761 are culturable and 2,275 are cultivated (1,035 irrigated). The land-tax yielded Rs. 1,025 in 1815; Rs. 1,486 in 1820; Rs. 1,853 in 1843; and now gives Rs. 3,877, which falls on the whole area subject to it at the rate of Rs. 1-4-5 per acre and on the cultivation at the rate of Rs. 1-11-3 per acre. The population at settlement numbered 3,465 souls, of whom 1,768 were males.

Mahryuri Malli, a small patti of parganah Mahryúri in Kumaon, is bounded on the north by Bisaud and Dolphát, on the south and east by Chaubhainsi, and on the west by the Bichhla Patti and Bisaud. The principal villages are Bhangadyoli and Nárha. The statistics of the four pattis may be shown thus:—

Mahryúri.	ASSESSABLE AREA IN BISIS.				ASSESSMENT IN RUPEES.			POPULATION.	
	Total	Cultivated.		Culturable.	Under Gorkhalis.	1843.	Current.	Males.	Females.
		Irrigated.	Dry.						
Dolphát ...	849	4	656	188	211	349	636	642	501
Malli ...	806	—	514	291	184	206	605	650	570
Bichhli ...	1,180	7	757	425	367	594	963	1,191	1,017
Talli ...	1,150	12	584	553	327	523	840	1,158	1,022

The incidence of the current land-tax on the cultivated acre is Re. 0-15-5 in Dolphát; Rs. 1-2-10 in Malli; Rs. 1-3-11 in Bichhli and Rs. 1-6-6 in Talli Mahry-

Gri. In 1881, the population numbered 356 males and 335 females. The patwári resides in Dhárkhola, where there is a school.

Mahryúri Bichhli, a patti of parganah Mahryúri in Kumaon, is bounded on the north by Kotauli Malli and Uchyúr; on the west by Kotauli Talli and Agar; on the east by Bisaud and Mahryúri Malli, and on the south by Chaubhainsi. This patti was separated from Mahryúri at the recent settlement. The principal villages are Guhni and Lúisál. The statistics are given under the Malli Patti. Mahryúri comprised a number of villages from different pattis, the revenues of which were assigned for the expenses of the powder manufactory and the carriage of ammunition in time of war by the Rájás of Almora and had no distinct boundaries. Hence the proverb :—

'Jori jári ber ke Mahryúri,'

'having collected a lot of things together you have a Mahryúri;' meaning that there is very little result after all your trouble. Patti Silkána, abolished in 1821, was also devoted to the provision of carriers of ammunition in time of war. The patwári resides in Mauna.

Mahryúri Talli, a small patti of parganah Mahryúri in Kumaon, is bounded on the north by Agar and Rámgar Malla; on the west by Dhaniyakot; on the south by Chhakháta, and on the east by Chaubhainsi and Chhabis Dumaula. The principal villages are Dárhmi, Sharna, and Asorha, near which paths connect Dol with Bhím Tal. The statistics are given under the Malli Patti: the patwári resides in Sunkiya.

Mahryúri Dolphat, a small patti of parganah Mahryúri in Kumaon, lies around the dák bungalow on the road from Almora to Lohughát and is bounded on the north by Bisaud and Sálam; on the south by Chaubhainsi, and on the east by Sálam Malla and Talla. The principal villages are Syúnani, where there is a school; Dol (6,022 feet), where there is a planter's bungalow, and Khákar. The statistics are given under the Malli patti. The patwári resides in Kandára.

Maidi river, a tributary of the Eastern Nyár, which drains the valley forming the patti of Kauriya Walla and the north-eastern corner of Malla Síla in Gathwál. It falls into the Eastern Nyár on the left bank near Ukhlet in latitude 29°-55' and longitudo

78°-45'-30". There are many large villages along its banks connected by a good road following the bed of the river and joining on to the Kotdwára and Khátali road.

Maikhanda, a patti or sub-division of parganah Nágpur in Garhwál, is bounded on the west by Tíhri; on the south by Tíhri and Bámsu, and on the east and north by Malli Káliphát. It comprises the tract lying to the west or right bank of the Mandákini river from the Byúngadh to Sondwára, drained by the Byúng, Gabíni, Walári, Pabi and Sini streams. From Sondwára to the Tíhri frontier the Sinigádh forms the boundary. The population in 1841 numbered 826 souls; and in 1858, 909 (434 females). The entire sub-division is held in *sadábart*, and the revenue is collected by the patwári of Malli Káliphát, living in Guptkásbi.

Malari, a village in Patti Malla Painkhanda of Garhwál, is situated in north latitude 30°-41'-50" and east longitude 79°-55'-50" on the route from Joshimath to the Níti pass, thirty miles south of the latter.

The site is pleasing, being in the eastern angle of a small triangular plateau about a mile long and half a mile broad, of which two sides are bounded by streams and the other by mountains covered to the summit with a bed of snow, thin on the projecting parts and deep in the ravines. The village contains about fifty houses, built of wood and stone intermixed and cemented with mud. Some of the houses are two or three stories high; in which case the lowest story is used for housing cattle. Large stones are hung by means of ropes from the projecting beams of the roofs, to prevent them from being blown away by the violent storms common here. A wooden verandah projects from the upper story, and is ornamented with carvings of flowers and of Ganesa and other Hindu deities. The inhabitants are Bhotiyas of the Márcha clan, who occupy this part of Garhwál only from about the 24th of May to the 23rd of September, when they migrate to less elevated places. Their principal means of support is the trade which they drive between Húndes and the low country to the south, conveying the merchandise on the backs of goats and sheep.

Batten found, in October, only three thousand feet below the line of perpetual snow, the harvest just cut at an elevation of 10,250 feet above the level of the sea. The following account of an attempt to scale Dúnagiri in 1883 by Mr. Graham and the guides Boss and Kauffman is interesting as the only one on record:—

"After a delay of two or three months Mr. Graham and his men started for the second time for the peak of Dúnagiri. The first ten or eleven days were taken up with the preliminary march until the foot of Dúnagiri was reached at a height of 18,400 feet. Here they camped for the night. Our route lay up the west ridge, and for some considerable distance we got along very well. Then we were forced away from the edge to the southern side of the arete, and here,

we suffered greatly from the reverberation of the sun, which took greater effect from the height we had reached. So much did this trouble us that we were all nearly fainting when we reached the summit of the arête; Kauffmann, who had not been quite himself, was quite overcome, and utterly unable to proceed. We did not like to leave him, but he begged us not to turn on his account; and as we thought that we must succeed, we made him comfortable and started by our two selves. We were now on the final slope of the peak, and, though not abnormal, it was a very steep bit of step cutting. The mist crept up and snow began to fall, and we were thinking of turning, for we had been two hours from Kauffmann, and it was already one. Suddenly the mist cleared away, and we instantly saw the great height which we had reached. Actually below us lay a splendid peak, to which we afterwards gave the name of Mount Monal, 22,516. We were quite 22,700, and the summit, not 500 feet above us, was in full sight. We again attacked vigorously, Boss just making notches, and I enlarging them to steps. But it was no use; down swept the clouds with a biting hail and wind, and we had to turn. It was with difficulty that we got down again; the darkness and sting of the hail prevented us from seeing the steps clearly, and I fully expected a slip. We picked up Kauffmann and got down with great trouble, the last part of the way being in darkness. Here another trouble awaited us; everything was soaking wet—matches, food, blankets, and ourselves—while the wind cut us like a knife. Boss insisted on our keeping awake, and I have no doubt he was right; but tired out as I was, it was very unpleasant. Next day we swagged our things, and got down to our lower camp, to the great joy of our coolies, who had given us up for lost. As this was the first occasion on which we reached an unusual height, it may not be amiss to give our personal experience. Neither in this nor in any other ascent did we feel any inconvenience in breathing other than the ordinary panting inseparable from any muscular exertion. Nausea, bleeding at the nose, temporary loss of sight and hearing, were conspicuous only by their absence, and the only organ perceptibly affected was the heart, whose beatings became very perceptible, quite audible, while the pace was decidedly increased."

Mali, a patti of parganah Sira in Kumaun, is bounded on the north by Talládes of parganah Juhár; on the south by Athbisi Talla and Bárabisi; on the west by Baráun and Pangaráon, and on the east by Patu Dindihát. Patti Máli lies along the left bank of the Rámanga river; a small portion is situated on the right bank at the north-western corner close to the Kálinág peak. The assessable area comprises 1,779 *bisis*, of which 947 are culturable and 831 are cultivated (434 irrigated). The land-tax yielded Rs. 270 in 1815: Rs. 442 in 1820: Rs. 550 in 1843, and was fixed at Rs. 1,588 for the term of the present settlement. It now falls on the whole assessable area at Re. 0-14-3 per acre and on the cultivation at Rs. 1-14-7 per acre. The population at the time of settlement numbered 1,750 souls, of whom 954 were males.

Some 68 *bisis* are held revenue-free for the support of temples. The patwári resides at Sát : there is a school at Atalgaon.

Malli Rau, a patti of parganah Dhyáni Rau in Kumaon, is bounded on the north by Sálam Talla and Chálisi ; on the east by the latter patti, Asi and Talli Rau ; on the south by the latter patti and Chaugadh, and on the west by Chaugadh, Biajyúla, and Chaubhainsi. The patwári resides at Pataliya ; there is a school at Joshyúra. At the recent settlement patts Bisjyúla and Chhabis Dumaula were separated from this patti, and what remained was divided into two—the Malli and Talli patts—of which the statistics may be shown thus :—

Rau.	ASSESSABLE AREA IN <i>bisis</i> .				ASSESSMENT IN RUPEES.				POPULATION.	
	Total.	Cultivated.		Culturable.	1816.	1890.	1843.	Current.	Males.	Females.
		Irrigation.	Dry.							
Malli ...	2,075	193	1,296	585	648	1,101	1,175	1,804	1,463	1,377
Talli ...	2,869	338	1,725	805	869	1,162	1,350	2,489	1,501	1,287

Some 36 *bisis* are held as *gánth*, free of revenue. The incidence of the land-tax in the Malli patti on the assessable cultivation is Rs. 1-2-5 per acre, and in the Talli patti is Rs. 1-3-4 per acre. There is a good deal of rich valley land in the Rau patts and the upland villages, too, are large and well-cultivated, and the Kaira, Bora, and Deo clans are particularly well off. Seven villages were transferred to Chaugadh at the recent settlement. The iron mines near Manglalekh in the Talli patti are still worked and supply all the metal required for agricultural purposes in the neighbourhood. They are leased together with those at Nái in Chaubhainsi by the Aguris at Rs. 300 a year. The copper mines at Dharsári and Kimukhet in the same patti are not now worked.

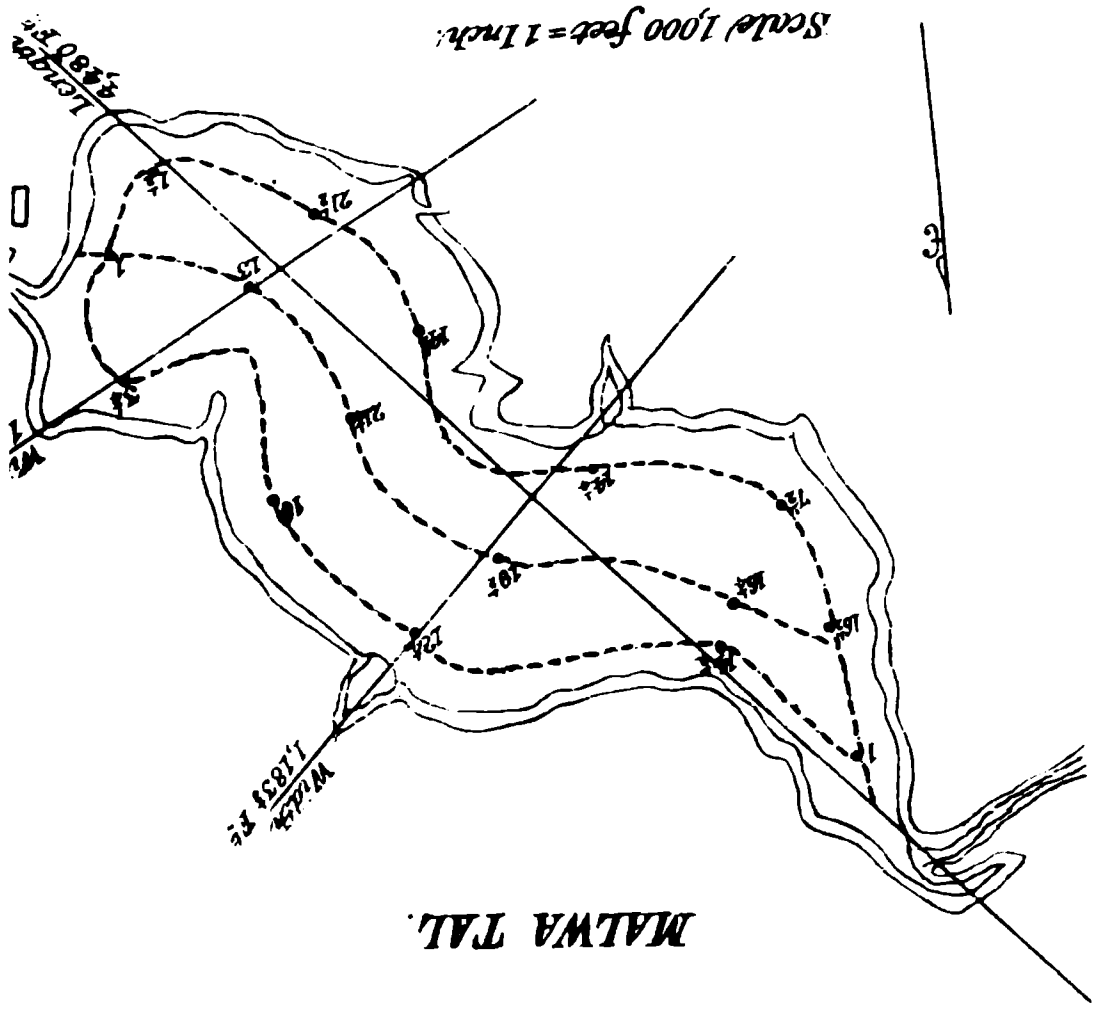
Malwa, or Maluwa Tál, a lake in parganah Chhakháta of the Kumaon district, the Westmoreland of India, lies in north latitude 29° 20' and east longitude 79° 41', distant nine miles from Bhím Tál and twenty-one miles from Naini Tál at an elevation of about 3,200 feet above the sea. From Bhím Tál the road ascends the ridge to the north of the valley, and passing along the crest for a

few miles makes a sudden and very steep descent to the lake of Malwa. There is capital fishing in the lake, and the use of the District Engineer's bungalow may be had on application to the district authorities. The lake, of a very irregular shape, is situate at the base of two ranges and follows very much the outline of the hills within which it lies. At the south eastern end, where its outlet which forms the source of an affluent of the Gaula river lies, an embankment was made with a sluice-gate by which the level of the lake was raised in order to store water for irrigation purposes in the Bhábar at the foot of the hills, but the embankment gave way, and has not been restored. The mountains around are lofty and spring up directly from the margin of the lake. At the western end it receives the Kálsa-gádb, which drains a long and narrow valley extending as far as the Gágár peak (7,855 feet) to the east of the Gágár pass above the Rámgar tea-plantation. This river carries with it great quantities of stone and gravel into the lake, which, added to the landslips continually occurring from the hills on either side, must in time have an appreciable effect on its depth and area. The lake is 4,480 feet long in the centre, 1,883 feet wide at the broadest; and has an area of 121.76 acres with a maximum depth of 128 feet, or, while the embankment existed, of 158 feet. There is a current observable throughout the lake, and directed towards the outlet. The bottom is comparatively level, and is composed of rock, loose shale, fine sand, and quartz gravel. The water is clear and of a beautiful blue colour except in the rains, when it becomes of a dirty muddy colour owing to the immense quantities of *débris* carried into it; for the same reason it is not good for drinking purposes, and whether it is the water or climatic influences of the highly enclosed valley, Malwa Tál has amongst Europeans and natives the reputation of being exceedingly unhealthy. The story goes that in former days there was a Raikwál peasant named Malwa at Chyúrigár, who was a great wrestler and oppressed the people. One day he took a fancy to another man's wife, and, seizing her, hid her in a cave. The gods were offended and sent a mighty landslip which dammed up the Gaula and covered the cave, and thus arose the Malwa lake. High above the outlet on the north-east is an immense scar which the people point to as the scene of the landslip and still call it Malwa-ka-paira.

Mr. Ball describes the range to the "north as chiefly formed of white and purple quartzites with which there are some slates and shales. The dip of these beds is variable, but north-west at a low angle seems to be the prevailing direction. Much of the higher face of this range is steeply scarped, but landslips abound, and have, to a great extent, concealed the character of the lower portions. The range on the south consists primarily of an axis of greenstone, which stretches continuously hence from the neighbourhood of Bhím Tál. Associated with this greenstone are quartzites and shales, the beds in immediate contact often showing signs of much alteration and induration. Occasionally the effect of the former has been such as to cause the affected beds to assimilate to the characters of the greenstone, and to be almost inseparable from it, by mere examination of their outward lithological structure. What the exact nature of the physical relations of this greenstone may be, has not yet been fully ascertained; but that it does not exist merely as a single simple dyke is amply testified by the fact that branches from it cross the valley at both ends of the lake, and are cut through by the infalling and outfalling streams. At the head of the lake is a boulder bed through which the river cuts to a depth of eight or ten feet. This deposit consists chiefly of subangular fragments of trap and quartzite. At first I was inclined to attribute it to the effects of a retreating moraine. Temporarily this view was supported by the discovery of boulders of granite and gneiss—no known source for which exists within the present drainage limits of the Kálsa. It was impossible, however, to overlook the fact that there were no signs of polishing on any of the blocks, and that those which have come furthest (the granite, &c.) are well rounded and water-worn. Taking into consideration the professedly general character of the only existing geological map, it would be clearly unsafe to adopt the view that no source for these boulders exists within the watershed; and this the more especially as in the adjoining basin of the Gaula on the north, the occurrence of gneiss and granite is indicated on the map." (*Gas. X*, p. 114.)

"The importance of determining the source from whence these boulders have been derived is sufficiently obvious. If they have not come from within the limits of this catchment basin, then indeed it might be necessary to invoke the aid of an ice cap to account for their transport; but in the meantime it is impossible to assert that this accumulation of boulders at the mouth of the gorge is other than a delta of diluvial origin. Now as to the character of the lake itself:—Its maximum dimensions are, length 4,480 feet, width 1,833 feet, and depth 127 feet. Unfortunately, as was the case with Bhím Tál, no series of soundings are available, and the form of the basin is, therefore, uncertain. The bounding ranges and their slopes, however, indicate the V (river) rather than the U (glacial) type of valley denudation. Looking up the lake towards the course of the stream, the view just beyond the gorge is quite shut out by a projecting spur, which a glacier could have scarcely failed to modify if not remove. At the outfall no rocks are seen *in situ*. The barrier, now modified by a sluice, appears to be mainly formed of *débris* thrown down by landslips. The first rock which I detected *in situ* in the bed of the stream was the already mentioned greenstone, which will, I believe, prove to be at a lower level than the bottom of the lake."

Mana, a village on the Saraswati, an affluent of the Vishnuganga in parganah Painkhanda, is situate at an elevation of 10,560 feet above the level of the sea close to the pass of the same name, also called Chirbitiya-la and Dugri-la, which has an elevation of 18,650



The map here given supplies a series of soundings made by Dr. Amesbury in 1871:—

feet (18,576 according to the Pandit) and lies in north latitude $30^{\circ} 45' 27''$ and east longitude $79^{\circ} 27' 40''$. The necessity of travelling for many miles over the vast accumulations of loose rock and *débris* brought down by ancient glaciers, or which violent atmospheric changes have thrown down into the valley from the mountains on both sides, render the Mána pass one of the most difficult in this part of the Himálaya. In actual elevation, too, it exceeds that of any other pass in these districts which lead into Tibet. The road or rather the track, for there is generally nothing that deserves even the name of path, ascends constantly the main valley of the Sáraswati¹ until it reaches the top of the water-parting ridge which forms the boundary with Tibet. The pass itself is somewhat remarkable. There is no apparent ridge to be crossed at the head of the Sáraswati, and the latter part of the ascent still lies through a ravine, the inclination of which becomes less steep as we approach the line of water-parting. The pass itself is a narrow valley filled with the *névé* of glaciers, and bounded on each side by mountains almost entirely covered with perpetual snow. This valley is apparently almost entirely level for about a quarter of a mile, and the great bed of snow which it contains gives rise to two glaciers which descend in opposite directions, one northwards into Tibet, the other southwards into the valley of the Sáraswati of which it constitutes one of the principal sources. So little is the inclination of the ground near the pass, or rather of the great mass of snow which covers it, that we cross the line of water-parting without observing that we have done so. The Tibetan glacier descends rapidly for about two miles, or perhaps less, into a valley bounded on both sides by high mountains generally bare of snow in the summer months to Poti, the first encamping-ground in Hundes situate about a thousand feet below the pass. Below Poti hardly a vestige of snow is to be seen.

There is no extensive view to be seen from the pass in any direction. To the north the plain of Hundes is hidden by bare brown hills with rounded outlines, and on the three other sides nothing can be seen

The pass.

¹ The Bhotiyas consider a stream which comes from one of the lateral glaciers to the west, and which joins the stream from the north about ten miles below the pass, to be the true Sáraswati, but to avoid confusion we shall speak of the pass stream as the Sáraswati.

but the overhanging snowy peaks and precipices of the Indian Himálaya. On the southern side near the pass there is a much greater quantity of snow than we generally find so close to the Tibetan frontier, a phenomenon caused by the immense elevation which the peaks close to the line of water-parting here attain. We commonly find all the highest mountains some twenty to thirty miles south; but here there is an exception to the general rule, for a cluster of great peaks rise immediately above the line of water-parting at the extreme northern limit of the belt of perpetual snow above the western sources of the Sáraswati, the culminating point of which, called Kámet, attains an elevation of 25,373 feet above the level of the sea. No other peak in this tract attains an equal height except Nanda Devi. The glacier which descends from the pass on the southern side terminates about a mile below near the pool called Deo Tál at an elevation only a few hundred feet less than that of the pass. This pool which is only a few hundred yards long, but which is inserted on some of the older maps, is filled with the drainage of the glacier just mentioned and is prevented from running off, partly by a contraction of the bottom of the valley, caused by a great eruption of granite, and partly by the lateral moraine of a glacier which descends from the west and enters the main valley a little lower down. From Deo Tál to Rátakún (= red corner) hardly a sign of vegetation exists, except here and there some tufts of grass and a few stunted primulas and saussureas and other plants found at great elevations. The path lies constantly over the moraines of glaciers which descend from every lateral ravine or over the ancient accumulations of the great glacier which must once have filled the main valley itself.

The chief interest of the geology of this tract consists in the fact that from a little above Mána to the pass, the mountains are apparently formed always of granite (gneiss?), a rock not generally met with in such vast quantity in the higher

Geology.

parts of the Himálaya. There can be little doubt that this granitic outburst is directly connected with that which we know chiefly constitutes the mountains to the north of the glaciers of the Vishnuganga and with that which forms the great peaks which rise above the sources of the Bhágirathi. It is not until we approach the pass that we get out of the granite rocks

into clay-slates and limestone, apparently non-fossiliferous, and which constitute, it may be supposed, the basis of the Silurian and more recent formations which the Bhotiya reports of organic remains as well as the analogy that we see elsewhere lead us to believe exist a few miles to the north.

Taking the route up the Alaknanda to Mána, the first stage is usually from Nandprayág to Biri (9 miles), and thence to the Patál-ganga (11 miles, 3 fur., 35 poles), passing the Garur-ganga in the eighth mile by a bridge after a rocky ascent and descent for three and a half miles from Pipalkoti along the left bank of the Alaknanda. From the Patál-ganga to Joshimath (10 miles, 3 fur., 35 poles) for two miles the road is undulating, and descends to the Gulábkoti rivulet where there are some Baniyas' shops; next comes Hilang (1 mile, 6 fur.), also containing shops. Thence to the Koragádh river, a descent, and to the Painsi rivulet, an ascent and level (2 miles, 4 fur., 13 poles). Next comes the Gaunk rivulet to which the road is rocky and undulating, and thence an ascent to Joshimath (4 miles, 1 fur., 5 poles) at an elevation of 6,107 feet above the level of the sea in latitude $30^{\circ} 33' 24''$, and longitude $79^{\circ} 36' 24''$. There is a bungalow for travellers, a dispensary, shops, and dharmshálas here.

From Joshimath the next stage is Kharchechura (7 miles, 4 fur., 11 poles). The road descending crosses the Vishnuprayág bridge across the Dhaulí, and thence to Tharyasánga across the Vishnuganga (3 miles, 3 fur., 7 poles). It then crosses the Ghátmugri rivulet to the Baigar rivulet at Pándukeswar (6,300 feet), and then by Seshdhára to Kharchechura (5 miles, 1 fur., 11 poles). The villages of Ghát, Biundár, Kundi, and Pathari are passed on the road. The next stage is Mána, the last inhabited village in the valley, and the last where there is any cultivation. This is had on a fairly level piece of ground on either side of the Sárswati where *lotu* and *pháphar* are sown in May and gathered in September. There are no forests near, and all wood used has to be brought from the lower villages. From Kharchechura the road follows the bank of the river to Dyásanga where it crosses by a bridge on to Gorsil, where there is another bridge, thence by Kalyánkoti to the Ránganga bridge and to the Duliyasánga bridge (3 miles, 1 fur., 36 poles). Next comes the Rishiganga bridge and the village of Badrináth (2 fur., 24 poles). The river is again crossed before reaching Mána. The elevation of the temple of Badrináth is 10,284 feet, and of Mána village 10,510 feet above the level of the sea. The road then passes by the Tháns stone bridge across the Sárswati by Músapáni (12,100 feet) to Súnasanga, the eighth crossing to Gástoli (13,300 feet) above the Nágtundi rivulet, the next stage. From Gástoli (13,951 feet) the track follows the left bank of the river by the Sárswati double bridge and Chámiráo and Dániráo (14,900 feet) to Rátakún (16,100 feet). Hence one march carries one across the pass or *ánda* to Potí, passing by the Tára bridge (16,587 feet), Rákas Tál, Deo Tál, Jagrái (17,200 feet), and the crest of the pass (18,576 feet). From Músapáni onwards the signs of glacial action are everywhere apparent. Here a considerable stream called the Arhua joins the Sárswati from the east. The glacier from which it springs has now receded so far as to be almost invisible from the track.

From the northeru side of the valley of the Arhua comes a huge moraine right across into the middle of the valley of the Sárswati. It appears to have been brought down by the glacier of the Arhua when the main valley also was filled with ice and after the junction of the two glaciers to have been carried on as a median moraine on the great ice-stream of the Sárswati. Although from Rátakún southwards the valley becomes less devoid of vegetation as the elevation decreases, yet the whole tract as far as Mána is sterile and dreary in the extreme and the want of pasture for their sheep and cattle and of firewood for themselves on the journey to and from Hundes is not the least of the difficulties with which the Máchra traders have to contend. From a little above Rátakún there was formerly a track to Nílang across the high ridge separating the Sárswati from the Mánagadh, but this is now no longer used. From Mána village to the pass there are only encamping-grounds, and all supplies must be carried with the party.

Mána was the pass chosen by one of Captain Montgomery's pandits in his expedition into Tibet in 1867. On the 26th July he left Badrináth, 28th, passed Mána (10,510 feet), Kámet on the right, passed by Tára Sumdo (16,587), and the Chirbitiya-la or Dúngui-la pass (18,576), and reached the Lumarti camp on the 29th (16,317), thence by Churkong, the customs station to Totling, whence roads branch off to Chuprang and Gartoh (Rec. G. I. H. D. LXXIV., 34). At Totling (August 6th) there is a monastery about a mile in circumference which is used as a resting-place by travellers. On the 9th the water-parting between the Indus and Satlaj was crossed by the Bogola pass (19,220 feet), and in two days Gugti close to Gartoh was reached. Thence crossing the mountains to the east by the Gugti-la pass (19,490), on the 14th entered on the Chojothol plain with salt brackish lakes at intervals. Thence crossing the Pabala (17,650) came to the Giacharaf camp on the banks of the Indus (15,732). Then crossing the Chomorang-la pass, Thok Jalang, one of the principal gold mines was reached. Returned to Giacharaf, then down the Indus to the junction of the Indus and Gartoh rivers near the Lujan Chamik spring: and up to Gartoh-gansa (winter quarters) on the Gartoh river. Two marches on is Gartoh yársa (summer quarters), the trading depôt.

The following notes of the marches in Tibet were furnished by an intelligent trader who had often made the journey. First march Delu; second Sibuk; third Chipráo; fourth Chaprang. From Poti to Delu (or Delu Dánu), the path goes along the left bank of the Poti river to Delu so-called from a formidable goblin of that name, who is supposed to have his residence here. To Sibuk is a short march for goats. First ascend from Delu across the ridge that shuts in the Poti valley, then descend a little to a pasture-ground called Lumarti, which is about half way to Sibuk. From Lumarti the track proceeds for a mile along a plain, and then descends to a ravine which has its commencement close by. When near Sibuk leave the ravine and turn to the right to Sibuk which is in the plain on the right bank of the ravine. The ravine joins the Sánkara gár, an affluent of the Satlaj on whose bank is Poting, one of the villages met on the Nílang route. From Sibuk to Chipráo the ground is uneven, but there are no

considerable ascents or descents, and no ravines are crossed. There is no water nor is there any at Chipráo, so that it has to be taken from Sibuk. From Chipráo to Chaprang or Tsáparang is also an ordinary march for goats, and the track proceeds by a deep and broad waterless ravine which joins the Satlaj half a mile below Chaprang. From Chipráo proceed about two miles (one *kos*) along the left bank of the ravine, and then descend and proceed along its bed for $1\frac{1}{2}$ *kos*. Then leave it and ascend the right bank to a pasture-ground known as Lamthangka, and hence onwards for about a *kos* along the bank of the ravine to where the track turns to Chaprang, distant one *kos*. From Chaprang to Toling is one march, and the track crosses the plain to a ravine close by, which is crossed, and again a plain is met for half a *kos* with cultivation, the path lying about half a mile from the Satlaj. The Anchila stream is next crossed, and about one *kos* further lower Mattiya on the bank of the Satlaj $1\frac{1}{2}$ *kos* below Toling. Close above Mattiya a great ravine runs into the Satlaj, very deep but dry, and which is crossed by a bridge called Káng-jáng leading to upper Mattiya, which is one *kos* across a plain to Toling. A return road leads by Bárkyu (one march) to Chipráo (one march). From Chipráo to Mangnang is one march.

Mána is the only purely Bhotiya village in the valley. Its inhabitants are called Márchas, a name also given to the Bhotiyas of the Niti valley. The Huniyas call them Dungi-Rongpas from 'Dung,' the name for Mána and 'Rong' the tract near India. The people of the other villages are not Bhotiyas, and do not differ from the inhabitants of the pargauhs to the south. Their intercourse with the Márchas, however, rather cause them to be looked down upon by the Khasiyas. These villages are Báhmani close to Badrináth, Kiroh, Pándukeswar, Bhyúndár, and Patúri. Pándukeswar and Báhmani belong chiefly to one set of people, the inhabitants living at the latter village during the hot season and returning in the winter to Pándukeswar with the Márchas and the Badrináth establishment. Their caste is called Durijúl, but they are included under the generic term Khasiya. Pándukeswar is the chief of all these villages, and it derives some importance from being the winter residence of part of the office-bearers of Badrináth, and the place of deposit for the valuables of the temple from October until June.

At the time of Raper's visit in 1809, the village of Mána possessed from 150 to 200 houses with a population of 1,400, but in 1822 a great number were destroyed by an avalanche. In 1872 the population was 658. The houses are of stone two stories high, and covered with deal planks: the inhabitants are of the Mongolian type, middle-sized, stout, well made, with olive complexions, enlivened by ruddiness on the cheeks. The dress of the men consists of trowsers, and over them a loose frock, girt round the waist with a cord, and on the head a cap all of wool. The women, instead of trowsers, wear a loose under garment, the upper differing nothing from that of the men, except in the finer texture and gayer colours. Their head-dress is of cloth, wrapped round in the form of a turban; their necks, ears, and noses, as well as those of their offspring, are covered with a profusion of beads, rings, and other trinkets in gold and silver. The Bhotiyas are not now near so well off as they were owing to the falling off in the borax trade, and

the increase of drunkenness amongst themselves, and there are now few wealthy men amongst them. Formerly, it is said, one of them lent the Rája of Garhwál two lakhs of rupees to assist in repelling the Gorkhális; now there are very few worth twenty thousand rupees.

The following table shows the exports and imports for five years by the Garhwál passes (in rupees) :—

	1876-79.	1879-80.		1880-81.		1881-82.		1882-83.	
	Export.	Export.	Import.	Export.	Import.	Export.	Import.	Export.	Import.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Mána...	...	11,256	14,215	12,278	15,566	11,820	18,528	24,439	14,561
Níti ...	...	45,087	1,01,133	35,491	1,04,724	38,447	1,01,010	81,283	92,996
Total...	124,778	56,293	1,15,348	47,769	1,20,290	50,267	1,19,538	55,722	1,06,557

The imports by both passes in 1881-82 comprised 3,948 maunds borax worth Rs. 23,688 : 15,716 maunds of salt worth Rs. 62,864, and 1,234 maunds of wool worth Rs. 26,430. In the following year the figures were—borax 2,413 maunds valued at Rs. 19,304 ; salt 15,252 maunds valued at Rs. 61,008 ; and wool 1,001 maunds valued at Rs. 19,747. The exports in 1881-82 included cotton-goods worth Rs. 4,744 ; 14,983 maunds of grain valued at Rs. 40,961 ; *ghí* worth Rs. 1,174 ; sugar valued at Rs. 1,197 ; and tobacco worth Rs. 1,210. In 1882-83 the figures were—cotton-goods Rs. 3,640 ; grain Rs. 38,147 (18,282 maunds) ; sugar Rs. 3,180 ; *ghí* Rs. 5,734 ; and tobacco Rs. 919. The Mána people trade with Totling and the Nítiwáls for wool and blankets with Dába, and for borax and salt at Shibchilum like the Juháris.

Mánasarowar, or Cho (Ts'po) Mapán or Mapham, a lake in the Kangri sub-division of the Puráng district of Nári-Khorsum in Húndes or Tibet is situate in north latitude 30° 43' and east longitude 81° 30', at an elevation of 15,300 feet above the level of the sea. It is an object of pilgrimage to Hindus, and was visited¹ in 1846 by Captain H. Strachey from whose journal the following account is taken :—

The route followed through Pithoragarh, Chaúdáns, Byáns *via* Lipu-ko-Dhúra and Rákas Tái has been described under those heads. From the north-

¹ H. Strachey, J. A. S., Bon. XVII (2), 537 ; the journey to the Lipu-ko-Dhúra Pass is given under *Byáns*, then see *Rákas Tái* and *Puráng*.

eastern point of Rákas Tál after passing the south and east face of Kailás (see *Kailas*), the track led over the Láchú and Barka streams which were crossed by fords. Then more southerly over sandy ground, but remarkably level with a straight dyke-like ridge some one hundred feet high, close on the left and Rákas Tál visible on the right, about a mile from the path, circling off to a headland, the north end of the projecting rocky bank which occupies the middle of the eastern shore. The ridge of high ground here begins to break into irregular hillocks, a mile further on a large stream one hundred feet wide and three feet deep, running rapidly from east to west by a well-defined channel, is crossed : this is the outlet of Mánasarowar which emerges from the northern part of its western margin and falls after a course of, perhaps, four miles into Rákas Tál, at the bight formed by the projecting headland above-mentioned. Five or six miles on, the middle of the western shore is reached. The Húniya or Tibetan name of the lake is Che Mápán. It is thus described by Captain H. Strachey :—

“In general characteristics this lake is very like Lagan, but so much more compact in form that the position in the middle of the western shore commands a complete view of the entire lake, excepting only the extreme western edge of the water which is concealed by the declivity of the high bank on which we were stationed. The figure of Mápán is, as stated by Moorcroft, an oblong, with the corners so much rounded off as to approach an oval, the longer diameter lying east and west. Moorcroft's estimate of its size is 15 miles in length (E. and W.), by eleven in width (N. and S.), though it appeared to me somewhat larger ; a circumference of some 45 miles at the water's edge, divided by the eye into four quarters, each of them seem a moderate day's journey of eleven to twelve miles, which agree with the accounts of pilgrims who make the *paritrama* (or circumambulation) usually in five or six days according to their stay at the several gumbas (or monasteries) and other circumstances. Mápán is bounded thus : westward by the hilly ground that separates it from Lagan, of no great height (averaging 250 feet perhaps), but rather steep towards the lake, and apparently having little level shore on the margin excepting at small bays here and there. The northern bank begins in a ridge of high ground rising precipitously from the water's edge, and extending along four or five miles of the west end, the “face of the rock,” noticed by Moorcroft in his walk round the north-west corner of the lake “in many places near 300 feet perpendicular.” Thence eastward, the shore is a plain three or four miles wide, sloping down from the base of the Gángri mountains, which rise behind in a continuous wall. This ground appears to be a continuation of the plain on the northern shore of Lagan under Kailas, passing without interruption, or with a slight rise perhaps behind the ridge of hills above-mentioned. Moorcroft estimates the valley of, Gángri to be twelve miles broad and twenty-four long : that length may be right, but the breadth is not clear ; if the twelve miles be intended to include the whole basin of the two lakes it is considerably under the mark ; and the mere plain between the Gángri mountains and the northern shore of the lakes cannot average anything like that width.

Moorcroft was then encamped in the vicinity of Barka, and he possibly estimated the breadth of the plain from its appearance at that point, where it is certainly very much widened by the southing of the eastern shore of Rákas Tál.

At the north-east corner of Mápán the level ground is widened by the rounding of the lake; it looks greener than the rest as though irrigated by streams of water, and is said to be pasturage occupied by Dung, &c. This was noticed by Moorcroft as 'a plain at the foot of elevated land . . . to the north-east.' On the east side of the lake rise hills and mountains sloping down to the water's edge with more or less margin of level ground at the bottom. The northern half of this range is mere hill of no great height, connected at the north end with the base of the Gángri mountains, and on the south joining a cluster of mountains that occupy the southern half of the lake's eastern shore; the latter seemed as lofty as the lower parts of the Gángri range.

On the south side of the lake in its eastern half rises sloping ground, then hills and behind all the Indian snowy mountains, a blank dismal chaos, in appearance rather broad than lofty, the further end receding southward and the nearer advancing towards the lake, till it terminates in Momonangli. This great mountain occupies all the western half of the lake's south bank; its upper and greater part a vast towering mass of pure snow, the base in earthy mounds, almost bare of verdure, sloping right down to the water's edge. The isthmus of low hilly ground that forms the western boundary of the lake joins the foot of Momoqangli. The view of Mánasarowar confirms all accounts of native informants, which all agree in stating that the lake has no other affluents than a few unimportant streams rising close by in the surrounding mountains, and but one affluent, that communicating with Rákas Tál. The two lakes are placed together in a basin, girt about by an *enciente* of hill and mountain from which the only exit appears to be at the north-western extremity opening into the gien of the Lajandák stream. The outlet of Mápán leaves the lake from the northern quarter of its west side.

The permanent affluents of Mápán are three or four: (1) a stream rising in two branches from the Gángri mountains and falling into the lake at the eastern quarter of its north side; (2) also from the Gángri range a few miles further east, entering the lake at the north-east corner, at the very same point is the mouth of the third stream, which rises in Hortol behind the mountain at the east end of the lake, and flows round its northern base. The presence of these three streams accounts for the greater verdure in the ground above the north-east corner of the lake. Sátáling is the name of the pasture-ground on the bank of the second river, through which the Lhása road passes, and thence along the north bank of the third. The fourth affluent is doubtful: a stream possibly comes from the Nepál-Himálaya into the south-east corner of the lake. In the summer season there are many temporary streams from rain and melted snow, and it was probably one of these Moorcroft saw and called the 'Kriahna river,' on the south-west corner of the lake.

There are eight Gumba on the banks of Mápán, *viz.* :—

1. Tokar (Thui), about the middle of the south side; this is sometimes called a village, but it is a mere monastery somewhat larger than the others.
2. Gusur (Guzul), at the middle of the western side.
3. Ju, at the northern quarter of the west side and the north bank of the outlet.

4. Jakyab (Jankheb), at the western quarter of the north side where the high bank terminates; this probably is the "house inhabited by Gelums" (Gelonge), 'with terraces of stone with the usual inscriptions;' near this Moorcroft encamped in 1812.

5. Langbuna, i. e. (elephant's trunk), in the middle of the north side.

6. Bundi, at the north-east corner, between the first and second affluents.

7. Sarluug, in the middle of the east end; and

8. Nunukhar (Pánkpo), at the south-east corner of the lake.

The water of Mápán is quite clear and sweet, and in mass of the same fine blue colour as Lagan. In picturesque beauty the eastern lake is hardly equal to the other, its uniform outline being comparatively dull and monotonous, the surrounding hills blank and dreary, and the gigantic grandeur of Guria less pleasing, perhaps, than the majestic beauty of Kailas. The depth of these lakes is possibly an average of 100 feet or so, and double that in the deepest places.

Thermometer in shade at 3 P. M., October 3rd, 46°; water boiled at 186°; elevation of the lake 15,260 feet, or 500 feet higher than that recorded by Montgomery's Pandit in 1867. There are no boats on the lake, and the only one probably ever launched on its waters was an India-rubber one, conveyed there by an English traveller in 1855, for permitting which, it is said, the Zungpun of Daba was decapitated by the Lhásan Governor. In an old Chinese map, Mánasarowar is represented as a four-headed gargoyle pouring out streams of water from the mouth of each animal—a lion, elephant, cow, and horse. Some account of these and their local names has already been given,¹ as representing the Indus, Satlaj, Kárnáli, and Brahmaputra. The common legend concerning them is, that the Indus is called the 'Lion-river' from the bravery of the people through whose country it flows; the Satlaj is called the 'bull (not 'elephant') river' from the violence of its stream; the Kárnáli is the 'peacock river' from the beauty of the women who live along its banks, and the Brahmaputra is called the 'horse river' from the excellence of the horses in the country through which it passes.²

Mandákini, a river of Malli Káliphát and parganah Nágpur in Garhwál, rises near the Tihri boundary at the south-eastern base of the Kedárnáth peak, in north latitude 30°-47' and east longitude 79°-8'. It holds a course generally southwards, and in latitude 30°-38' receives on the right bank the Sini river near Sondwára, and in latitude 30°-33', on the left bank, the Káli river below Kálimath, and a little lower down, on the same bank, the Madh-maheswar or Bira river near Nálá. Still further south the Agas-kúmni, Kyúnggár and Sangár join the Mandákini on the left bank, and on the right bank are the Pabi, Gabíni, Byún, Raun, Dárma and Lastar torrents: continuing to flow in a southerly direction it falls into the Alaknanda on the right bank at Rudrprayág

Gaz. XI 292 (Note).¹
Dept. LXXI. 166.

J. A. S. Ben. XIII. 172; Rec. G. I., Home

in north latitude $30^{\circ}-17'-10''$ and east longitude $79^{\circ}-1'-32''$ after a course of about 45 miles. The water-parting ridge to the west of the Mandákini forms the boundary with Tibri as far as Agastmuni, thence to Rudrpayág, the Mandákini itself, and further south the Alaknanda. The forests along its banks have afforded large numbers of sleepers to the East Indian Railway.

Mandál, a river rising on the southern slopes of the ranges lying in the eastern parts of Pattis Badalpur Talla and Painún of parganah Talla Salán of British Garhwál, has three main sources. The most westerly rising near Maraura in Talla Badalpur takes a south-south-easterly direction though Painún and passing the villages of Jámri and Dobriya joins the main stream near Jharat. The main branch rises close by in the eastern declivities of the Dhárgaon range. The third branch drains the eastern half of Patti Painún and flowing nearly due south by Badaniyagaon and Kotri joins the main stream at Raunderi. The united stream flows nearly due east through Pattis Painún, Búngi and Bijlot with a course of about twenty miles until it joins the Rámganga on the western bank at the head of the Pátli Dun above Sarapdhúli in latitude $29^{\circ}-34'-40'$ and longitude $79^{\circ}-8'-25''$. The Páori and Dháron road passes along the right bank of the Raunderi feeder, and another road runs up the left bank of the Mandál to its source in the Dhárgaon range, and there crosses the watershed into the Haldgadi valley. In the dry season the Mandál is a petty stream with a breadth of about 24 feet, but its bed is 50 or 60 feet broad, showing that it becomes a river in the rains. For the last ten miles of its course it has a very slight fall. Its water is largely used for irrigation, there being many fine flats along its banks which are highly cultivated. The hills on each side are covered with virgin *śál* forests which form one of the most valuable reserves of the Forest Department.

Manyársyún, a patti of parganah Báralsyún in Garhwál, lies in the south-west corner of that parganah along the right bank of the Nayár. It is occupied by the valleys of the Thanúl and Kún streams and possesses very varied soil and climate. The soil is, as a rule, good but stony; there is no forest, but a good deal of scrub jungle. The people wear cotton clothes and their market is Kotdwára. The roads from there to Srinagar pass through this patti

besides several cross-paths. The name is derived from the *Manyár* caste who colonised the patti. The patwári usually resides at *Dángi* within the patti. The land-revenue assessed in 1864 amounted to Rs. 2,329, including *sadábort*, and Rs. 67 for *gúnth* and resumed revenue-free lands, on a population of 3,315 souls.

Mápa, or **Mápán**, a small Bhotiya village in Patti Mallá Juhár of parganah Juhár in Kumaon, lies on the right bank of the Gori river on the route to the Unta-Dhúra pass into Húndes by Milam in latitude $30^{\circ}-22'-50''$ and longitude $80^{\circ}-12'-20''$, with an elevation of 10,880 feet above the level of the sea. It is distant five miles from Milam, 14 miles from Bo-udiyár, four miles from Martoli, and 116 miles from Almora. The Gori flows below at a depth of 250 feet. The country around is above the limit of forest vegetation producing only a few creeping junipers, barberry and gooseberry bushes and other similar alpine shrubs. On the opposite side of the Gori river lies the route from Milam by Burphu to Rálam and Munsyári. Mápa has an area of about 32 acres of arable land and a population of about one hundred. The rocks are clay slate and greywacke with a good many masses and fragments of quartz.

Martoli, a considerable village in Patti Malla Juhár of parganah Juhár in Kumaon, lies in latitude $30^{\circ}-21'-15''$ and longitude $80^{\circ}-13'-40''$, on the right bank of the Gori river, at an elevation of 11,070 feet above the level of the sea. It is passed by the route through Milam to the Unta-Dhúra pass, from which it is distant 18 miles south: 9 miles from Milam, 10 miles from Bo-udiyár, and 112 miles from Almora. The houses are constructed very low and in hollows and ravines, with a view to protection against avalanches and the furious gales which continually blow from the south. With a similar object, the roofs have a low pitch and are firmly overlaid with a coat of compact clay. The Bhotiyas are obliged to abandon their homes here in the early part of October for the milder climate of Talládes. The route from Milam to Martoli is somewhat difficult. Close to the village, on the north, the Lwálgadh comes down from considerable glaciers on the western slopes of a range having peaks over 20,000 feet high.

Masi, a travellers' rest-house and village in Patti Tallá Giwár and parganah Páli of Kumaon, is situate on the left bank of the

FOR THE NORTH-WESTERN PROVINCES GAZETTEER.



From a Photograph by Bourne and Shepherd.

MUSSOOREE.

Photo-Collotype, Survey of India Office, Calcutta, August 1884.

Rámganga river in latitude $29^{\circ}-4'-30''$ and longitude $79^{\circ}-14'-42''$, distant 12 miles 1 furlong 22 poles from Agaspur on the lower road to Páori : $16\frac{1}{2}$ miles from Dwárahát, $8\frac{1}{2}$ miles from Deghát, 9 miles from Ganái, and 11 miles from Bikiya-ke-sain. From Agaspur to Mási the road descends by Basai to Dhár and thence to the Banau river, 3 miles 5 furlongs 18 poles. From hence the road passes Nangaon and ascends to Chaukotiyadhár, 3 miles 6 furlongs 7 poles ; to Kulchhipa level and Kulchhipadhár, an ascent whence a descent leads to a bridge across the Rámganga, a little below the travellers' bungalow, 5 miles and 8 poles from Chaukotiyadhár.

Maundársyún, a patti of pargana Chaundkot of British Garhwál, is bounded on the west by the western Nyár river, which separates it from pargana Bárahsyún ; on the south by the eastern Nyár, which separates it from pargana Talla Saláu, and on the north and east by pattis of Chaundkot. The Páori and Kotdwára road runs along the left bank of the Nyár to the south of the patti. A cross-path from Ukhlet near the confluence of the two Nyárs runs northwards along the ridge forming the eastern boundary of the patti, and another along the left bank of the western Nyár forming its western boundary. In 1864 twelve villages were received from Patti Badalpur. The patwári resides at Bachheli in the patti, the revenue of which in 1864, including *sadábart*, amounted to Rs. 2,400 *plus* 22 for revenue-free and resumed *gúnth* lands. The population in the same year numbered 4,463 souls.

Máwalsyún, a patti of parganah Chaundkot of British Garhwál, is bounded on the west by parganah Bárahsyún ; on the south by Ringwársyún ; on the east by Kingadigár, and on the north by Khátsyún and Ghurdursyún. The patti is drained by a small tributary of the Nyár which also forms its southern boundary. The name Mawál is that of a caste that colonised the patti. The patwári of Ringwársyún, residing in Gajera, has also charge of Mawálsyún and Jaintolsyún, with an aggregate land-revenue of Rs. 2,392 and *muáfi* and *gúnth* of Rs. 71, total Rs. 2,463. The Nyár is crossed by a bridge at Jwálpa near Buret in this patti on the road to Páori.

Meldhár, a patti in parganah MállaSalán of British Garhwál, is bounded on the north by Dhaundyálsyún and Lohba ; on the

west and south by the former patts, and on the east by Chauthán. The patwári of Chauthán, residing in Thán, collects the land-revenue of this patti also. Patts Meldhár and Dhaundyálsyún form the valley of the Pasol-gádh with a portion of the eastern Nyár above the junction of the two. The majority of the villages are of a superior class; there are extensive oak and pine forests; the rocks are slates. Markets are found at Rám Nagar and Pútiya, and the clothing of the people is hempen, woollen or cotton.

Milam, a village in parganah Juhár of the Kumaon district, is situate near the confluence of the Gori and the Gunka rivers, 170 miles north of Almora and 13 miles south of the Unta-Dhúra pass. The houses are strongly built of large stones laid without cement, and covered with heavy slates overlaid with a compact coat of clay. On the side of the mountain, close to the north-east of the town, is a temple, on a cliff overhanging the river.¹ Around are a few acres of cultivation, producing scanty crops during the interval between June and October, for which period only the place is inhabited, the population for the rest of the year residing in the lower and more southern part of Kumaon, to avoid the deep snows which everywhere overlie the country, and the enormous avalanches which incessantly roll down from one or other of the stupendous mountains in the vicinity. They revisit their mountain abodes in the succeeding summer, less with a view to any advantages derivable from the scanty cultivation and pasturage than to ply their lucrative traffic with Tibet. The Juhári Bhotiyas have the privilege of trading with all marts in Tibet and are the most influential and numerous of all the Bhotiyas. Taking the Kumaon passes alone, the value of export and import for five years are as follows (in rupees):—

	1878-79.	1879-80.		1880-81		1881-82.		1882-83.	
	Export.	Ex- port.	Import.	Ex- port.	Import.	Ex- port.	Import.	Ex- port.	Import.
Juhár ...	85,845	52,578	1,01,084	48,022	1,39,081	52,277	1,58,377	52,134	1,44,684
Dárma & Byáns ...	1,26,113	56,009	1,09,827	51,091	1,24,799	86,308	1,14,486	86,456	90,691

The story of the colonisation of Juhár has been given² elsewhere, and here it is only necessary to state that the inhabitants are called Ráwats by themselves and Sokpas by their neighbours, the latter term betraying their Tibetan origin. At the settlement of the land-

¹ Gaz. XI. 455.

² Gaz. XI. 455.

revenue the population numbered 1,494 souls, of whom 692 were females. In 1822, during the absence of the Bhotiyas in the plains, their houses were plundered by a party of Khampas from Tibet, who were, however, obliged by the Tibetan authorities to restore their spoils. The elevation above the sea of the temple is 11,706 feet, of the town is 11,430 feet, and of the bridge across the Gori is 11,368 feet (As. Res. XVII. 4). The Sumchi Kund, a small pool up the bed of the Gori near the village, is an object of pilgrimage. The seasons of spring, summer and autumn are comprised within five months from May until September inclusive, but intervals of four months without snow are rare. During these seasons the thermometer at sunrise ranges from 40° to 55° and at mid-day from 65° to 75° in the shade and from 90° to 110° in the sun. On September 24, at 8 A.M., the thermometer registered 27° and wet bulb 31°. At 12-20 P.M., barometer 19°9, thermometer, 69°; air, 66°·5; wet bulb, 42°, and covered with black wool and laid on the ground, 102°.

The following account of the route from Milam to Almora is taken mainly from Manson's journal:—

The road proceeds by Pánchhu and Martoli to Laspa along the right bank of the Gori river. The road very fair except immediately beyond Pánchhu, where after crossing the stream there is a very difficult steep ascent for some hundred feet over earth and stones. Formation clay slate as you approach Laspa, near which the river widens considerably and the track passes under some lofty and precipitous rocks, a perfect wall for some distance, where a landslip occurred in 1838. A little beyond this is a fine open space up which at about half a mile is the village of Laspa on a rising piece of ground. The vegetation increases rapidly from Rilkot and the whole face of the country loses the barren and naked appearance of the upper part of the valley. Nothing can be more striking than the passage from the extreme barrenness of the upper passes to the gorgeous vegetation of the lower where first the birch and dwarf rhododendron with firs, yews, cypresses, maples, sycamores, chestnuts, oaks, alders, and box, intermixed with rich underwood and flowering plants, delight the eye.

Thence to Bo-udiyár, the Bo-cave, the Bangdiar of the maps, and the Boodur and Bagdwar of travellers (8,550 feet), ten miles from Laspa and five from Rárgári. The road very bad. Crossed the river twice, once over a spur-bridge, and recrossed over four smaller ones more like ladders thrown from rock to rock where the river has a great fall below a lofty precipice, and where the whole mountain forms a complete wall from the summit to the base which is washed by the stream. Beside the ladder across the stream there are several others along the road which would be impassable without them. From Laspa

passed Rārgāri or Rāra; the village lies about half an hour's ascent up the mountain. The encamping-ground is on the right bank of a torrent-feeder of the Gori (6,910 feet), along which are some grand waterfalls. From Rāra a pass is crossed to Līlam; ascent tolerably easy but slippery in many places with a descent long and tedious to the junction of the Sāl or Jalmiya with the Gori, the first part of which is very steep down numerous flights of steps; the way lying in many places just around the brow of the mountain overhanging the stream below. The whole road lies over a gneiss formation, little or no granite being observed. The ascent hence to Jalath in Munsyāri is very steep and rocky and hardly passable for ponies. About two and a half hours' march from Jalath the Kālamundi range is passed. On approaching the pass, the rock passes from gneiss to mica slate, which continues some way down and then passes into gneiss, again with beds of white talcose slate. A little gneiss is met as the path descends to Girgaon, and hence the road is fair to the Jākala Nadi, a tributary of the Rāmganga along which it proceeds to Kuiti, and the confluence at Tejam. The rock near Girgaon consists of gneiss and a little below of talcose limestone with veins of gneiss. From Tejam the road turns westward and for a short distance up the Rāmganga crossed by a *sasga* near Rāmāri, the ascent to which is very steep. A further ascent brings the traveller to the pass over the range separating the Sarju from the Rāmganga and on to Sāma. Rock of a talcose formation, northern aspect of the rise to the pass well wooded, southern bare of trees. Sāma is a very pretty village, the scattered houses embowered amid some fine horse-chestnut trees; hence an hour's walk to Nākūri and to Baret in two. At Nākūri a second stream joins the one from Sāma. Rock is generally a species of limestone with conglomerate and very frangible; a second rock is nearly black and breaks into numerous small angular fragments. Passing by Khārbagr, the next stage is Kapkot in the Sarju valley on the line to Khāti-Pindari (q. v.)

Mohand, commonly called Mohan, the name of the principal pass between the plains and the Dūn, also called the Kheri pass, from a once flourishing town of that name in the Sahāranpur district, and better known to the people as Lāl Darwāza. It is pierced by an excellent carriage road seven miles long, which, however, often gets broken up in the rains by the constant heavy traffic to and from Mussooree.

The following table shows the principal heights along this road, as ascertained by the Great Trigonometrical Survey:—

Place.	Height.	
Mohand ...	1,489 40	Stone bench-mark embedded about six yards east of the new road.
Shorepur ...	2,606 31	On the highest part of the pass near Shore's Chanki.
Eighth milestone,	2,504 79	Top of pillar from Dehra.
Mahobwāla ...	2,096 56	Stone bench-mark on west side of the road.
Dehra ...	1,957 65	East end of base line marked by a tower.

Munshyari, the name given to the collection of villages on the right bank of the Gori river in Patti Goriphát of parganah Jubár in Kumaon, occupied by the Bhotiyas as their winter retreat and depôt for the trade with the lower sub-divisions of Kumaon, is distant twelve miles from Girgaon, eighty-one miles from Almora, and eight miles from Lílám. Supplies are obtainable here. From Lílám to Jalath there is a fair road crossing the Sái or Jaimiya stream and again the Súrhing stream. The ascent thence to Jalath is very steep and rocky, and not rideable for more than a few hundred yards. Munshyári comprises some twenty or thirty villages inhabited almost exclusively by Bhotiyas. The villages of Jalath, Gorhpáta, Bothi, Daránti, Súrhing, &c., contain not only the best houses in Jubár, but they excel in size and appearance those of the Almora bazár, and, indeed, of any place between the Satlaj and the Káli. The woodwork and the masonry employed are both richly and tastefully carved in the principal houses.

Muscooree (Mansúri) in the Dehra Dún district is situated¹ in north latitude 30°-27' and east longitude 78°-6', seven miles from Rájpur and fourteen miles from Dehra, at an elevation varying from 6,000 to 7,000 feet above the level of the sea, and having an area of 14,214 acres or 22·20 square miles. The following heights have been fixed trigonometrically:—Above the Botanical Gardens, 7,187 feet; top of Camel's Back, 7,029 feet; station of Great Trigonometrical Survey on Vincent's Hill, 7,006 feet; Convent, 6,985 feet; Great Trigonometrical Survey Observatory, 6,923 feet; Library, 6,590 feet; and Jharipáni Bazár, 5,180 feet.² The population varies with the season. On the 17th February, 1881, there were 3,106 souls (692 females), of whom 2,022 (407 females) were Hindús: 644 (134 females) were Musalmáns, and 440 (151 females) were Christians. On the 15th September, 1880, the population numbered 7,652 souls (1,961 females), of whom 4,162 (776 females) were Hindús; 1,625 (287 females) were Musalmáns, and 1,857 (897 females) were Christians. The population is entirely non-agri-

¹ The following notice is based on an article by Mr. F. Fisher, B.C.S., who acknowledges the aid received from Dr. McConaghey; Mr. J. B. N. Heunessy, G.T.S.; Mr. F. Giles, C.S.; Rev. A. Stokes; Mr. F. Duthie; and Mr. G. R. Williams' Memoir.

² Other heights in the neighbourhood are Láltiba, 7,459 feet; a peak to the north-west of Láltiba, the sides of which are occupied by the Landaur cantonment, 7,534 feet. To the north are two low peaks, 6,572 and 5,779 feet respectively. To the west are Háshipaon, 7,068 feet; Banug, 7,432 feet, and Bhadráj 7,316 feet.

cultural, chiefly visitors, servants, shop-keepers, and carriers. The number of inhabited houses, which in 1840 was not more than 100 and in 1862 about 141, had risen in 1881 to 354.

Mussooree is situate on the first range of hills running from east to west parallel to the Dún and Síwálikis, and on the lateral spurs therefrom having a direction north to south. It is approached from Saháranpur, at present the nearest railway-station, by a wide and metalled carriage road as far as Rájpur, which is continued in a narrower and steeper one to a point about a mile out of Rájpur, when the traveller has his choice of two roads: one a steep bridle-path leading directly to the station, and the other a road constructed with a gradient so moderate as to allow of trucks laden with beer-barrels travelling up and down. This last was constructed on a survey made by Mr. Mackinnon and at his expense for the use of his brewery. This road is still kept in repair and used by the two breweries, but the public use the shorter and more steep ascent for riding, coolies and pack-animals, the distance by it being only seven miles, just one-half the distance by Mackinnon's road. At the point where the roads separate there is a toll-bar, which was leased by the municipality in 1880-81 for Rs. 8,000. The bridle-path, as far as Jharípáni, is steep and rugged, and thence to the Mall fairly level. A good pony should ascend in an hour and-a-half to two hours and descend in one hour.

The appearance of the station from the approach above Jharípáni is that of a series of undulating hills extending from the range on the left bank of the Jumna to the west to the heights on which the cantonment of Landaur is situate on the east. The middle space between Vincent's Hill and Landaur contains the greater number of the houses of Mussooree itself.¹ These houses are built at a considerable distance from each other, except in the neighbourhood of the Club, where, perhaps, they are too crowded for proper sanitation. There is no naturally level area of any extent along the portion facing the Dún, and the sites of the houses have in nearly all cases been made by excavation or filling up on the ridges and slopes. Mussooree possesses one wide road, known as

¹ From the first house on the Rájpur road to the last one to the west is a distance of nine miles.

the Mall, which leads from the library to the Landaur Post-office. On the west it divides into two bridle-paths, one leading to Vincent's Hill and the other to the Happy Valley. From the eastern end the road continues from the Post-office through the bazár to the cantonment; a branch road striking off at the foot of the Landaur Hill to Tíhri. Immediately to the east of the library is the hill called the Camel's Back, studded with huge boulders which occasionally roll down after the winter snows and frost have loosened them from their positions. The part immediately below this hill is the only portion of the station which stands in any apparent danger from falling boulders. The southern slope of Vincent's Hill and the hill on which the Club is built, have, however, the reputation of being liable to land slips, and the roads in the neighbourhood of the latter hill are continually giving way after heavy rain.

All along the approach will be noticed the numerous drainage channels which conduce so largely to the healthiness of the station by carrying far down into the valleys the impurities that may reach them. These streams feed the Rispana on the east and the Kiyárkuli stream on the west, which in turn, after some distance, over a sandy bed form the head-waters of the Dún canals. They are, with few exceptions, not used for drinking purposes, the water-supply being drawn in pipes from good springs elsewhere. The slopes immediately below Mussooree are terraced and cultivated and possess facilities for irrigation by simply damming up the drainage channels already noticed. The villages of Bhatta and Kiyárkuli are particularly well situate in this respect. The Crown Brewery above the Bhatta village receives its water in pipes from a spring of pure water at some distance. To the right of Bhatta are the schools known as St. Fidelis' Orphanage and St. George's College. Above these Barlowganj is reached, where the road divides, one leading direct to Landaur and the other to the library. Christ's Church stands to the right of the library above the Mall. The walk round the Camel's Back and Mall is two miles six furlongs 118 yards: that round Waverley by Tullamore and Clairville, two miles two furlongs 114 yards, and the Castle Hill and Landaur circuit, six furlongs 122 yards.

The following short sketch of the geology is taken from a notice in the *Journal of the Asiatic Society* :—

“The formation here consists of beds of compact limestone alternating with others of a soft slate with an earthy fracture, and exhibits certain characteristics, both in its mineral structure and in its general outlines, analogous to the transition limestone of the north of Europe, and the mountain limestone of England. Its most general colour is bluish black, and from this it passes through grey to greyish white, and again, on the other side, to perfect black, not differing there from the lucullite, or compact black marble (as it is called). It is carboniferous and highly cavernous. Many varieties emit a foetid smell, probably of sulphuretted and carburetted hydrogen. Indeed, where the rock is quarried, the smell is similar to that at the mouth of a coal-pit. These carboniferous or coaly varieties have, however, one peculiarity ; they are in some places highly vesicular, so much so as to resemble a grey lava, and in this state appear to have partially suffered from the action of heat.

The slate that alternates with the limestone is of various colours, bluish black, grey, greenish grey, brownish red, purplish and yellow. It is generally soft, and crumbling, and will not split into large plates ; but about two miles west of the station, below the peak called Háthipaon, and nearly half way down the hill, a bluish black variety is found, hard enough to be used as a roofing-slate. Somewhat to the west of this, on the Dudhili hill, a trap rock makes its appearance. It is to be met with at the bottom of a small water-course, and may be traced for about half a mile in a direction nearly parallel to the range of the mountains.

It is composed in some parts principally of compact white felspar and green diallage, in others principally of hornblende. It is not possible to trace the manner of its connection with the adjacent strata, which are evidently much disturbed, though they have not suffered any change in mineral character by contact with it. Probably it has cut through them as a dyke, and the continuation of it may again be met with about a mile to the eastward, where a black heavy trap is to be seen, containing crystals of bronzite imbedded. The general range of these alternating beds of slate and limestone appears to be nearly parallel to that of the direction of the mountains, but not exactly so, as it approaches somewhat more to a north and south line, the dip being a little to the northward of the east, and the angle of it from 20° to 30°. The slopes are very steep, usually covered with a luxuriant vegetation, and remind us of those in Cumberland and Derbyshire, though, of course, on a much larger scale. In the Mussooree rock, however, there is a great deficiency of mineral veins. To the east, at a short distance beyond the Landaur hospital, a quartzzy sandstone comes to the surface of a white and greyish colour lying upon a soft earthy slate.”

Dr. Fisher,¹ in 1831, notes the position and structure of Landaur. He writes :—

“Viewing this mountain from the Dún, its general aspect determines its composition : the gentle acclivity, round-packed summit, and plentiful vegeta-

¹ J. A. S., Ben. I., 193.

tion indicates clay slate Ascending from Rájpur the road is cut through a bed of bituminous slate, passing through alum slate of a bluish green colour, both of which are much decayed, and then traverses clay slate of a faded red colour; black limestone next appears, frequently intersected by flinty slate and Lydian stone; about a quarter of a mile below Jharipáni large beds of primitive gypsum with earthy sulphate of lime occur, and this may be considered the commencement of the Mussooree limestone formation. The road continues with slight variations in a westerly direction, and displays huge beds of grey limestone with one remarkable tract of calcareous tufa; after which clay slate re-appears, generally much indurated, iron-shot, and containing beds of flinty slate, with irregular nodules and schistose veins of brown clay iron ore. The colour of the clay slate now passes into faded red, and running in a northerly direction the road leads to Landaur. The whole of the Mussooree range consists of large masses of stratified limestone inclining at a gentle angle to the east; in colour its bluish-gray passing into black and white highly crystallised."

The comparative bareness of the hills above Jharipáni is due to the wholesale cutting down of the forests for building and firewood since the station

Botany.

was founded, and the demand is so constant and pressing, that in a few years there will hardly be a good tree standing within some miles of the station. So valuable have the few patches of forest become that recently Snowdon and the Park were sold for a considerable sum, chiefly for the timber on them. The list of the plants of Dehra Dún, Garhwál, and Jaunsár-Báwar, prepared by Dr. King of the Royal Botanical Gardens, Calcutta already given,¹ is fairly complete, and should aid the student in naming any local collection. The mildness of the temperature induced Dr. Royle, of the Saháranpur gardens, to establish a branch garden here in 1826, and subsequently a second one was formed as a nursery for fruit-trees at Chhajauri, about four miles off. A proposal is now before Government to remove the gardens to a site near Jharipáni. In 1880-81 the gardens cost Rs. 3,082 and brought in Rs. 917 from the sale of seeds, plants, and fruits. The upper garden possesses some well-grown specimens of Himálayan conifers, deodárs, spruce, cypress, pine, fir, yew, and juniper, besides horse-chestnut, poplar, oaks, box, birch, and maple. There are European fruit-trees, apples, pears, plums, peaches, quinoes, and edible chestnuts; though the aspect of the upper garden is not favourable for ripening the better sorts for which the Chhajauri garden appears to be well fitted.

¹ Gazetteer X., 303.

The climate and health aspects of Mussooree are, as a whole, very favourable. The average rainfall, based on the records from 1844 to 1855, and from 1860 to 1877, or a period of 29 years, give an annual average of 92·08 inches. Distributed month by month the results are as follow :—

January.	February.	March.	April.	May.	June.	July.	August.	Septem-ber.	October	Novem-ber.	December.	Year.
1·93	3·08	3·47	1·77	3·22	8·43	28·48	29·31	10·39	0·77	0·18	1·06	92·08

“The rains,” writes Dr. McCouaghey, “begin almost invariably about the middle of June, preceded by a few showers called the *chhota-barsát*, and continue until near the end of September. This is the most unpleasant and least invigorating period of the year. From the end of March until the beginning of the rains, the climate is delightful, though the sun’s rays are oppressive for a few hours of the middle of the day, the mornings and evenings are always cool. The period of the year from which the greatest benefit to health is derived is unquestionably from the cessation of the rains until the end of December, and this is especially seen in the case of delicate children.”

The temperature varies considerably with elevation and aspect, but in good houses the thermometer seldom records above 70°, whilst as low as 10° is occasionally registered during the winter. During 1879 the maximum and minimum temperature in the shade for some months was as follows :—

	January.	February.	April.	May.	June.	July.	August.	Septem-ber.
Maximum	60·1	63·1	84·3	91·3	89·3	78·1	76·1	76·1
Minimum	34·7	33·7	48·9	55·0	52·0	60·1	60·1	55·0

The ordinary water-supply from natural sources is good in quality and quantity, and the recently executed works for a supply of drinking water by pipes from near the Kulri Hill leaves little to be desired in this respect. In 1881, four samples of water from different sources were examined, with the result that they were

found exceptionally free from organic impurities with an excess of mineral salts. These salts were, however, contrary to the usual accepted idea, chiefly magnesian, not lime, and did not exist in sufficient quantity to render the water deleterious. They almost entirely disappeared on boiling the water—a precaution that should invariably be adopted in the hills.

"The so-called malarious fever," writes Dr. McConeghey, "and their sequelæ, from whatever cause they may be said to arise, are most favourably influenced by the climate of Mussooree. A season's residence almost invariably causes an entire elimination of the unknown poison. Intermittent fevers acquired in the plains will often recur for some months after arrival in the hills, but each successive attack becomes milder, and they soon stop altogether. Remittent fever, as a rule, observes a mild course. Enlargements of the liver and spleen, the result of malarious fever, are much benefited by a residence in the hills, and these organs under favourable circumstances soon resume their normal size and functions. Mussooree is singularly free from fevers of the infectious and contagious class. Their spontaneous generation is exceedingly rare, but they are sometimes imported and afterwards spread. Liver affections are, perhaps, the most common of the diseases from which Europeans suffer, and are doubtless due, in many cases, to not adopting proper clothing immediately on arrival. The reduced temperature, about 20°, interferes with the action of the skin, and congestion of some of the internal organs is often the result. The most common of these are congestion and inflammation, more rarely abscess and cirrhosis. Liver complaints, unless due to malaria, are not readily amenable to treatment in the hills. Respiratory affections are naturally prevalent, more especially among the very young and very old, and in persons debilitated and unable to stand the changes of climate. The most common are bronchitis, croup, pneumonia, and common colds. Laryngial catarrh is often met with assuming the appearance of croup, and like it very liable to recur, but the membrane peculiar to croup is not developed in the air passages. Phthisis is occasionally seen, but patients suffering from this disease do not appear, in my experience, to derive much benefit from a residence in the hills. Heart diseases, on the whole, seem to be unfavourably influenced. Bowel complaints are common, especially diarrhœa, which, however, generally arises from a deranged state of the liver. Bronchocèle, though rarely met with amongst Europeans, is very common among the natives. The quantity of magnesian salts present in the drinking water would appear to account for this. It is readily cured if seen early and subjected to proper treatment. Rheumatism is not common among the Europeans, but natives suffer very much from it. Cholera has never occurred endemically, but several times it has been imported and spread. In 1880, the death-rate was 56 per thousand, a very high rate when compared with the average of all the Municipalities in the north-Western Provinces, 37·37, but it must be remembered that Mussooree is the resort of the sick and infirm. In 1882, the death-rate was only 25·5 per thousand with a birth-rate of 30·58, calculated on a population of 3106, the provincial death-rate in municipalities being 37·75.

Mussooree attracts a large number of visitors from the plains, for whose wants there are several hotels, banks, and schools. The principal hotels are the Himálaya, close to the banks and bazárs; the Charleville, in the Happy Valley; the Woodville close to the Club, and the Caledonian at the foot of the Landaur hill. There are also a few boarding establishments. The banks are the Mussooree, Himálaya, and Delbi and London. The Club, known as the Himálaya Club, comprises a handsome library and hall-room, dining, billiard, and writing-rooms, besides a double-storied range of buildings containing excellent accommodation for twenty-five resident members. The Municipal Hall, reconstructed in 1880, gives a fine large room for ball, theatrical, and other entertainments, with supper and dressing-rooms adjoining. The library is managed by a committee of subscribers and is a favourite institution and well-supported. A paper, called the *Himálaya Chronicle*, is published during the season. The Mussooree School was established by the Rev. R. N. Maddock in 1849, and was purchased by the Diocesan Board of Education in 1867: it gives tuition to some 96 boarders and 14 day pupils. It is affiliated to the Calcutta University and educates up to the B. A. standard. The Roman Catholic School, St. George's College (Manor House), was founded by Bishop Carli in 1853, and has 81 boys on its rolls. The Rev. H. Sells conducts a preparatory school for young boys, as also the Rev. J. Parsons and Mr. H. Wood. Caineville House School is the Diocesan School for girls, and was established in 1865. The average number of boarders is sixty. The Woodstock School is a preparatory school for girls. In addition there is Mr. Birch's School and the Convent School (at Waverley) established in 1845. Amongst the public institutions mention may be made of the carrying agencies who have representatives at Saháranpur and Rájpur, who take charge of the travellers and their baggage and provide for their transit. The projected railway by Hardwár will improve the communication and perhaps render the Dehra railway unnecessary. The headquarters of the General Commanding the Meerut Division, of the Commissioner of the Meerut Division, of the Great Trigonometrical Survey, of the Superintendent of Dehra Dún, and of the Small Cause Court Judge of Dehra are all at Mussooree from the middle of April to the middle of October. The offices of the Superintendent

(Magistrate) and his Assistant and of the Small Cause Court Judge and the Police Superintendent are in one building on the Mall.

There is a post-office, money-order and telegraph offices (Landraur) and a volunteer corps. There are three buildings dedicated to the service of the Church of England: Christ's Church, built in 1836, near the Library; All Saints' Church, on the hill opposite the Camel's Back; and a chapel of ease near the Library, chiefly intended for the Mussooree School. The Union Church, at which the minister is appointed by the congregation, belongs to trustees. There is also a flourishing Masonic Lodge. The English shops are numerous and the bazárs, too, are filled with native shops, at which everything almost can be purchased.

Beer for the use of the troops is the only industry in Mussooree: Mackinnon's or the old Brewery lies to the west of the station beyond the Library, and the Crown Brewery is situate on the road to Rájpur, above the village of Bhatta. There is a considerable import¹ of necessaries for the use of visitors and a small export trade to the Tihri villages. The Dún gives Mussooree a very small part of its supplies. Animals for slaughter are brought from the Saháranpur and other districts beyond the Siwálíks, sheep from Tihri, and poultry from the Panjáb. Mussooree, like Naini Tál, is a dreary place in the winter. The few whom duty or necessity oblige to remain must feel relieved when summer comes again and brings the visitors without whom it has hardly existence.

The Municipality derives its income from a house-tax, site-tax, tolls, and miscellaneous receipts. In 1882-83 the total revenue from all sources was Rs. 34,008. The house-tax was assessed on 380 out of a total of 470 houses, and yielded as follows in previous years:—

	1876-79.	1879-80	80-81.	1881-82.	1882-83.
Houses assessed	396	346	358	370	300
Amount	Rs. 14,477	Rs. 16,141	Rs. 14,866	Rs. 16,218	Rs. 17,194

The farm of tolls at Rájpur at the foot of the hill yielded Rs. 8,533 in 1882-83, and Rs. 8,850 in 1883-84, one-tenth of

¹ The promoters of the Dehra Dún Railway state that in 1877-78 412,536 maunds of goods passed through the Mohand Pass, and 300,000 maunds through other registration posts besides articles entered by value. The principal items were piece-goods, grain, oil, salt, sugar, tobacco, leather and beer (Rs. 224,024 in value), fruits, nuts, forest produce, tea (about 8,000 maunds), timber, Serwood, lime, and charcoal.

which is handed over to the Landaur Cantonment Committee as their share of the proceeds. The Municipal Hall, originally purchased for Rs. 33,000, has had Rs. 15,000 expended on its improvement, and to this must be added over Rs. 20,000 for interest on the unpaid principal, making a total of Rs. 68,000, whilst the receipts have been for some years as follows:—1876-77, Rs. 1,254; 1877-78, Rs. 1,263; 1878-79, Rs. 1,579; 1879-80, Rs. 1,294; 1880-81, Rs. 1,082; 1881-82, Rs. 2,431; and 1882-83, Rs. 2,508. The increase in the income is clearly due to the improvements in the arrangements. The site-tax brought in a revenue of Rs. 2,645, and the remainder of the income falls under fines, pounds, refunds, and miscellaneous.

The expenditure during the year 1882-83 amounted to Rs. 34,396, the principal item was Public Works, of which original works, including the Khattapani water-works, the Municipal Hall improvements, and new roads absorbed Rs. 6,391: repairs took Rs. 8,570, and establishment Rs. 2,579. Conservancy cost Rs. 6,709, and debt to the amount of Rs. 4,600 was paid off and miscellaneous charges including ground-rent due to the Tibri Rája and other landholders (Rs. 1,120) amounted to Rs. 1,695. The Municipality is constituted under Act XV. of 1873, and is managed by a committee of ten members, of whom seven are elected. The population within municipal limits in 1882-83 numbered 7,662 souls. The general result shows a careful supervision of the resources placed at the disposal of the committee, and a progressive improvement which few others can boast of. At the same time it must be said that too little is expended on sanitation and the removal of refuse, very much less proportionately than in Naini Tal. The net annual income for a decade has been as follows:—

1870-71.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.
Rs. 6,170	Rs. 10,876	Rs. 11,088	Rs. 17,971	Rs. 21,922	Rs. 18,869	Rs. 22,896	Rs. 21,395	Rs. 23,595	Rs. 29,368

Mr. Williams in his memoir describes the scenery of Mussooree as "lacking in alpine boldness, though it is difficult to imagine a more lovely panorama than that presented by the Dún valley when viewed from the

Views.

heights above on a clear day or immediately after a storm." Another writes :—"The views are very beautiful, comprising on the north the Himálaya clad in perennial snow ; on the south the rich and varied expanse of the Dún bounded by the Siwáliks ; beyond which the prospect extends over the plains without any other limit than that of the power of vision, or that caused by the imperfect transparency of the atmosphere." The Snowy Range is seldom visible during the rainy season, when the view on all sides is usually obscured to within a few hundred yards by the vast clouds of mist that creep up from the valleys. When, however, these clear, as they do occasionally, the views equal, if they do not exceed in grandeur, those obtained at any other season of the year. To the west, the park is distant about four miles from the Library by Everest's road. It is more than a mile long, and a third of a mile wide, with fine woodland scenery, and is a favourite resort for pic-nics. The top of the Camel's Back is reached by a foot-path from the northern side of the hill, and affords splendid views of the Snowy Range and of the plains on favourable occasions. The Kimpṭí (Kimpati) Falls, five miles down on the Simla road, is reached either by a path from the Happy Valley along the ridge or by the road, and is worth seeing during or immediately after the rains. There are small cascades near the Bhatta and Kiyárkuli villages, and one known as the 'Mossy Falls' near Barlowganj. The Murray Falls are above Sahasradhára (*q. v.*) on the stream which has its rise below the Landaur Hill.

Mussooree became a sanitarium in 1826, the year before Landaur became a convalescent depôt for troops. In 1880 it became the residence of the Afghan détenu Yákuḅ Khan, ex-Amir of Afghánistan, for whose use the Bellevue estates was purchased as a summer residence, and a house in Dehra during the winter. His uncle, Muhammed Sharif Khán, has also been a pensioned political refugee for many years, and lives in Dehra. But perhaps the most noteworthy fact in the history of Mussooree is, that during the year 1884, it was the summer residence of their Royal Highnesses, the Duke and Duchess of Connaught. The general history of Dehra Dún and the country around will be found in Mr. William's Memoir published in 1874. The map given here is from the records of the Survey of India, and the view is taken from the Landaur end.

Nádalsynn, a patti of parganah Bárabsyún in British Garhwál, is bounded on the north by patti Katholsyún of parganah Dewalgarh; on the south by Paidúlsyún; on the west by Gangawársyún, and on the east by Katholsyún and Ghurdursyún. This patti is occupied by the upper valley of the Khanda stream; the cultivation is rich and extensive, and the people are well off with markets at Páori, Srínagar and Kotdwára. The census statistics of 1841 give 1,440 souls; and of 1858, 1,999 souls. The tahsildár collects the land-revenue of this patti and Gangawársyún also; both, in 1864, aggregated Rs. 2,168 for land-revenue and Rs. 120 for *gúnth*, with a population of 4,563 souls. The Gadoli tea-garden is situated to the south of the patti at an elevation of 5,052 feet above the level of the sea. The road by Jwálpa and the road by Chhipalghát unite near the tea-factory at the Búba-khál, and Páori itself is connected by first-class hill-roads with all the other parganahs of the districts.

Nágpur, a parganah of Garhwál, has nine pattis or sub-divisions, each of which is separately noticed, viz :—Bámsu, Káliphát, Malla and Talla, Maikhanda, Nágpur Malla, Bichhla and Talla, Urgan and Parkandi. It occupies the north-west of the district and contains the famous shrine of Kedárnáth. The assessments at each settlement may be shown as follows :—

1815.	1816.	1817.	1820.	1823.	1828.	1833.	1840.	1864.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
3,289	3,080	4,324	5,281	6,016	6,176	6,392	6,372	12,943

The statistics of the current settlement show that there were then 373 estates, comprising 594 villages, containing a total assessable area of 9,934 acres, of which 6,383 acres were cultivated. The mill-rent amounted to Rs. 520 and the land-revenue to Rs. 12,943, of which Rs. 1,150 were alienated in *sadábart* and Rs. 2,518 in *gúnth* and *muafi*. The incidence of the land-revenue on the total assessable area was Re. 0-13-3 per acre, and on the cultivation was Re. 0-15-2 per acre. The population in 1841 numbered 18,516 souls, of whom 8,285 were females; in 1853 there were 30,340 (14,990 females); in 1858, 28,337 (13,693 females); in 1872, 31,058 (15,306 females); and in 1881, 20,993 males and 21,307 females.

The parganah is rich in mineral deposits, and possesses some of the most magnificent scenery in the hills. We concur with Mr. Batten when he writes

that Nágpur will never be forgotten by those who have pursued the torrents of the Mandákini to their source, who have wandered amongst the great forests of the Tungnáth range, or who have spent a day on the banks of the Diari Tál. All through the upper patti there are bits of scenery unsurpassed for grandeur and beauty in the hills, and most of which is easily accessible to the ordinary traveller. The concourse of pilgrims from May to October enable the landholders to sell their surplus produce. They also breed large numbers of sheep and goats for the Bhotiya traders of Mána and Níti. The Nágpuris all dress in woollen cloths even where their residence is situate in temperate or warm valleys. As they do not change their clothes with the seasons, are dirty in their habits, and allow their habitations to be entirely surrounded in the rainy season by jungles of nettles, wild hemp, and similar rank vegetation, they are subject to much illness; and the *maháswari* or plague occasionally commits some havoc in Nágpur. In regard to temperature, the climate of some parts of Nágpur is quite European, and the scenery of the whole tract is highly beautiful, while the vicinity of the eternal snows is characterized by the grandest sublimity. A notice of the mines will be found under the head 'Mineralogy' in a previous volume.¹ Granite, gneiss and mica slate prevail in Nágpur; but clay slate and magnesian limestone are also very plentiful.

Nágpur Malla, a patti of parganah Nágpur in British Garhwál, is bounded on the west and south-west by the watershed between the Bálá-sútí and Nighaul rivers separating it from the Bichhla patti; on the east and south-east by the Alaknanda river and on the north by Painkhanda Malla. From Chamoli on the road to Badrináth, a road branches off to the north-west by Gopeswar and the Tungnáth temple on Chandra Seli (12,071 feet) to Ukhimath and another runs up by the right bank of the Alaknanda to the north-east, re-crossing the Alaknanda at Hát on the Badrináth road. From the same place, a third runs down the right bank of the Alaknanda crossing the Bálásútí or Balkhil stream, and eventually joins the Kedárnáth road. There are iron mines at Bairagna, Jákh-wáni, Hát Jaisal and Kyúser and copper mines at Sugur Polun, all in working order.

Nágpur Bichhla, a patti of parganah Nágpur in British Garhwál, is bounded on the east by Nágpur Malla and the Alaknanda river; on the south by the Alaknanda; on the east by patti Nágpur Talla and Káliphát Talli, and on the north by patti Parkandi. It may roughly be said to contain the valleys of the Nighaul river, and the Sárigádh separated from each other by the Nágnáth (7,038 feet) range. Both flow into the Alaknanda on its right bank. The road from Pátli in the Malla patti crosses the Maidi (7,150)

¹ Gaz. X, 250.

range and, entering the Nighaul valley, crosses that river at Trisúla, whence it mounts the southern watershed and joins the Karu-prayág and Kedárnáth road near Pokhri, where there is a school. This road is also joined near the same place by roads running from the west through parganah Dewalgarh, and crossing the Alaknanda at Chhatwapipal by a bridge. The Nighaul valley has numerous villages connected with each other by cross-tracks. The villages vary much in quality, but there is a prosperous trading community doing business with the pilgrims and the Bhotiyas. There are good forests of oak and pine. In 1864, the land-revenue amounted to Rs. 2,917, including *gúnth*. This patti is rich in mineral wealth; iron mines are worked at Agar Jákholi, Bargaunda, Bhúkandí, Banot, Guleti, Jogyára Diúr, Pokhta Banchara and Warli Tál; copper mines at Khurkhikhetipal, Nautha, Pokhri, Thála, Tál-bonga, Molna, Khurni and Danda. Unworked mines of iron exist at Bairásu, Bartkota, Jarínwar and Kimna, and a copper mine at Sári. The patwári lives in Pokhri.

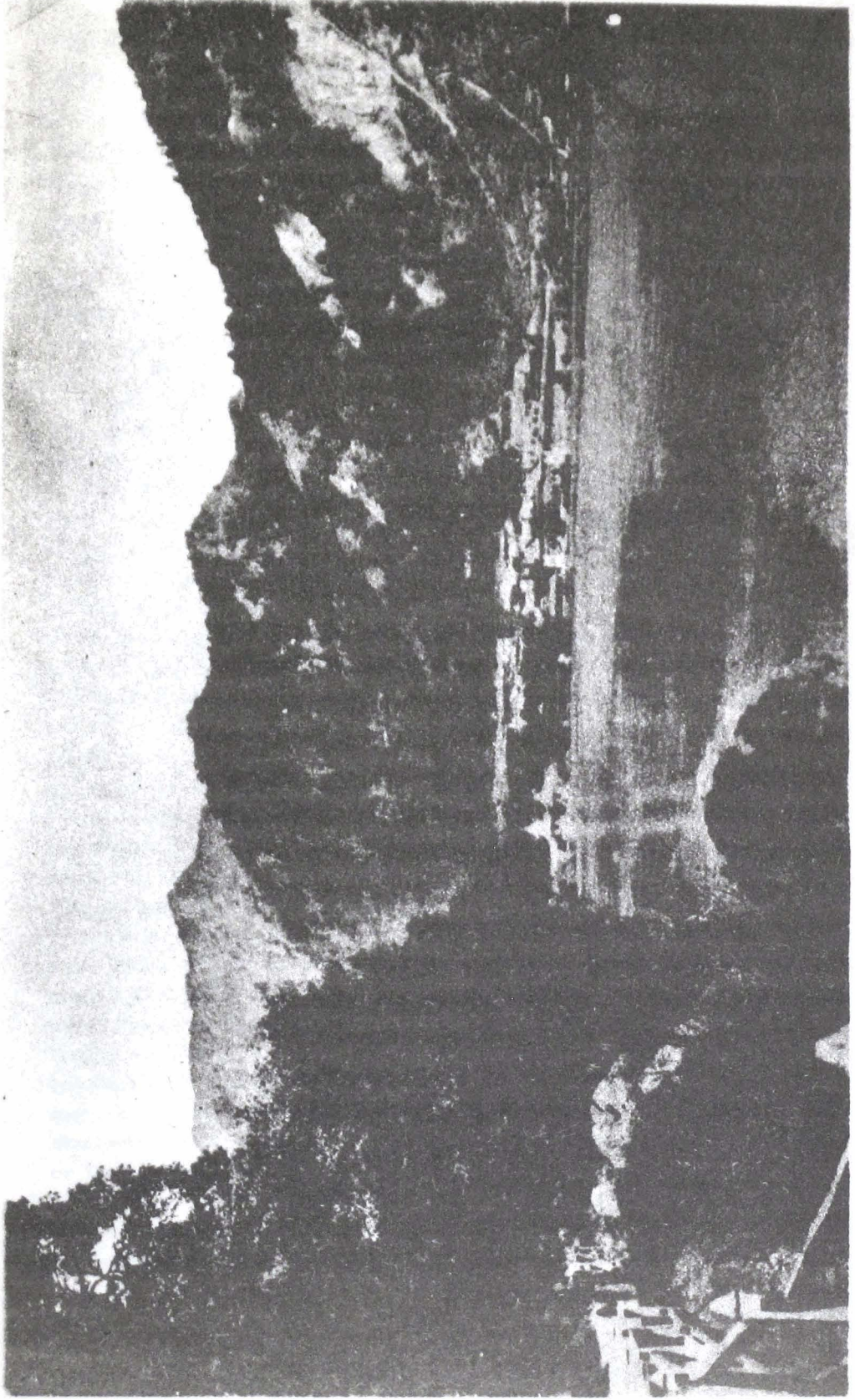
Nágpur Talla, a patti of parganah Nágpur in British Garhwál, is bounded on the north by patti Kálphát Talli; on the west by the Mandákini river separating it from Tihri; on the south by the Alaknanda, and on the east by patti Nágpur Bichhla. The Kedárnáth road runs north along the left bank of the Mandákini from Rudrprayág. A cross-track runs along the right bank of the Alaknanda from Dharkot to a rope-bridge at Bhatwári, where there is a school, as also at Bhawáni. The Sungádha tributary of the Mandákini drains the northern half of the patti, that of the southern half falls into the Alaknanda. The population is dense, the land valuable and good, and the people prosperous. The assessment is now about equal to that of the Gorkháli time, since when the price of grain has trebled and the cultivation increased. The patwári usually resides in Satyári within the patti, which, in 1864, was assessed at Rs. 2,465 exclusive of Rs. 193 *gúnth*. Talla Nágpur is also rich in minerals. Iron mines are worked at Dandhár, Saunri Rájkhán, Ghát Bhaunra, Pangar and Patwára, and in former days at Dhúrna Ghatwara, Ghúrbordár, Munu and Patoli.

Naini, a village, halting-place and travellers' rest-house on the route between Almora and Pithoragarh, lies in patti Dárún of parganah Chaugarkha in Kumaon in north latitude 29°-39'-12" and

east longitude $79^{\circ}-58'-8''$ at an elevation of 5,159 feet above the level of the sea; distant 29 miles from Pithoragarh; 26 miles from Almora; $11\frac{1}{2}$ miles from Gangoli Hât and 11 miles from Panuwa-naula. The bungalow has neither table-attendant nor requisites, but supplies can be obtained from the bahiya resident here.

Ascending gradually from the Panuwa-naula pine-woods on the margin of which the bungalow is placed, the road reaches the crest of the Jagesar ridge at Kutiladanda (7,631 feet) which it follows for the rest of the distance except that some of the highest points of the ridge are cut off. The road rises to not much less than 7,300 feet passing through pine forest scenery, the Tankara of the *Kedara-Ahanda* (Gaz. XI., 309). About half way to Naini we go under the culminating point of the range (7,696 feet) and the view from it, and indeed from all parts of this ridge are of high magnificence. The road for the most part passes along the southern face of the ridge. At its foot on this side flows the Jagesar or Alaknandi river in a deep gorge joining the Sarju a few miles down. Near the head of this gorge is the temple of Jagesar, the most important in Kumaon, and the village of the same name (5,970 feet). Near the temple are two immense *deodars*, standing in the outer courts, one measuring $21'-9''$, and the other $22'-10''$ in girth above the swell of the roots; they are probably between 180 to 200 feet in height. Those trees have evidently been planted here. The custom of planting *deodars* near temples is a common one in Kumaon, and these form the nucleus of a grove of some extent, the gradual diminution of the size of the individuals in which, as they become more distant from the parent pair, sufficiently attests the spread of the whole from them. The change of form so frequent amongst coniferous trees from the elegant bright-leaved pyramidal sapling to the dark massive tree with its flat top and heavy tabular branches, is here strikingly exhibited. In the former state alone the *deodâr* is now known in Europe, but it is quite certain that in its more mature age it will assume the latter character, which is quite that of the cedar of Lebanon. There are also to be seen at Jagesar a number of yew trees which are perhaps of artificial planting also, as they are not usually found much below 8,000 feet. Close to the temple occurs *Dialytra scandens*, a somewhat rare plant, and balsams of various hues abound in the same sheltered locality. The rock is mainly mica schist and gneiss. The valley in which the temple is built is so narrow that the sun can hardly look into it in winter, and early in that season before any snow has fallen the whole place may be seen strangely frozen up, the slated roofs and paved courts covered with sheets of ice or fringed with huge icicles originating altogether in deposits of hoar-frost. The intense cold felt at the bottom of all narrow and deep gorges in these hills, such curious deposits of hoar-frost as these and the dense fogs habitually formed in the warmer valleys during the winter may be readily explained as depending upon the cold air which from its increased density flows down from the slopes of the mountains as its temperature is lowered by the radiation which goes on during the still nights. It is also to be noticed that in this and like valleys gaitre prevails to a great extent. The great temple in the valley is not to be confounded with the small one of Buddh-Jageswar on the road on the

FOR THE NORTH-WESTERN PROVINCES GAZETTEER.



From a Photograph by Major J. Waterhouse.

NAINI TAL.

Photo-Colotype, Survey of India Offices, Calcutta, January 1865.

ridge.¹ The Chand Rájás used to be burned at Jágeswar, and their Ránis became *adfis* here. On the occasion of the cremation of a Rája, a stone from the pyre used always to be sent to Pitrola near Champáwat, and deposited there at the old pyre-place of their family with great ceremony and sacrifices of male kids; a practice still observed by the Almora and Káshipur families. Rájis reside near Jágeswar.

Naini Tál the hill sanitarium of the Kumaon Division, is situated in patti Pahár Chhakháta of parganah Chhakháta of the Kumaon district in north latitude 29°-22'-49" and east longitude 79°-30'-19" (south south-east corner of the lake); distant 16 miles from the foot of the hills at Káládhúngi, 10 miles from Ránibág, 32 miles from Almora by the Rámgar road, 30 miles from Almora by the Khairna road, and 23 miles from Ránikhet. The population on the 17th September, 1880, numbered 10,054 souls (2,957 females), but varies every month with the number of visitors. In February, 1881, it was 6,576 (1,970 females) exclusive of cantonments. The station is situate in a valley running from west to east, and is bounded on the north by the peak of Chína, 8,568 feet high, continued by the Alma peak and the Sher-ke-dánda to the eastern extremity where the ridge descends almost to the level of the lake. On the west the rugged hill of Deopátha rises to the height of 7,989 feet, and on the south Ayárpátha attains an elevation of 7,461 feet, diminishing gradually towards the east. The eastern boundary is the pass through which the surplus waters of the lake find an exit, forming the principal source of the Baliya river which in turn is a principal feeder of the Gaula. The western end of the valley consists of a series of gentle undulations formed by the debris of the

The lake. surrounding hills while the eastern end is filled by the lake of Naini which gives its name to the station. The surface of the lake has an elevation² of 6,350 feet above the level of the sea. In 1871, Dr. Amesbury measured and sounded the lake with the following results:—The length from east to west in the centre is 4,702½ feet or about 1,567 yards; the width at the Smuggler's rock is 792 feet, and at the broadest part opposite Omnibus cottage is 1,518 feet. The circumference by the road is 11,880 feet or a little over two miles. The superficial area is 120½ acres. The greatest depth is 93 feet, and the least depth on a ridge running through the centre of the lake is 20 feet.

¹ See further *Gas.* XI., 778.

² Kumaon and Garhwál Survey.

The colour of the water is generally a bluish green, but after an earthquake, such as occurred in 1871, the colour is more opaque, and turns to a dirty reddish brown from the agitation of the bed of the lake, and the presence of infusoria.¹ There is but one important feeder which collects the drainage and spring waters of the western end of the valley and with it some of the refuse from the whole hill-sides. In the rains this stream must to a certain extent pollute the waters near its entrance into the lake, but as a rule the water of the lake is good and well adapted for drinking purposes as its analysis shows.

The lake is very slowly but surely filling up from the immense quantity of debris swept into it during the rains, though, as it has received that from the landslip without any perceptible diminution of its area or depth, we may well hope that many generations shall pass away before the chief ornament of Naini becomes a thing of the past. Occasionally fish weighing 28 to 35 pounds are caught, but the most common is a small scaleless species which, however, is fit for the table. In the lake itself there is a sulphur spring nearly opposite the Smuggler's rock in 63 feet of water and another outside it near the Talla Tál bazár, which has been found a medicinal agent of considerable value in cases of debility.

Near the brink, the surface of the lake is covered with a tangled mass of *Potamogeton mucronatum*, *Myriophyllum indicum*, *Chara verticillata*, *Polygonum scabrinervium* and the pretty English *Polygonum amphibium*, which, according to Madden, "here and here only in India, raises its pink spikes above the water."

Ayárpátha, so called from the ayár (*Andromeda ovalifolia*) a species poisonous for cattle and goats, is covered with the green oak (*Quercus dilatata*) and this as well as the adjoining mass known as Háni Báni is almost exclusively formed of the transition limestone of Mussooree exhibiting everywhere vast rents, fissures, crags and boulders of all sizes and shapes and falling under Ayárpátha so abruptly to

¹ Specimens of these infusoria were transmitted to England in 1870, and the species found in the lake at Naini Tál has been named *Ceratium kumaonense* by Mr. H. J.-Carter (An. Mag., N. H., 4th Ser., VII., 229). It is a species of horned *Peridinea* allied to that found in the Baltic sea, Red sea, Indian ocean, the Swiss lakes, the fresh-water ponds of Bombay and those of Calcutta, and it is to an assemblage of these minute animals that the rusty brown colour of the lake at certain seasons is due. They are also found in the other lakes.

the edge of the lake that until 1847 there was only a very indifferent pathway in that direction. To the south-east of Ayúr-pátha the Gaiwála estate or Sherwood, now occupied by the Diocesan boys school, comprises a series of swelling lawns thickly wooded and terminated abruptly by magnificent precipices from 1,500 to 2,000 feet high, from the base of which issues the Nihál river flowing by Káládhúngi through the Bhábar to the Tarái. To the east, the cliffs are of clay-slate in the centre of limestone, and to the north-west again of clay-slate distinctly stratified and dipping from the plains. Here, as in the Baliya glen, the rocks appear to rest upon beds of blue aluminous shale and white gypsum, which must be of immense thickness, as they are found nearly to the foot of the mountains where the gypsum assumes the texture of alabaster and has been found useful in manufacturing plaster of Paris. The woods along Gaiwála comprise oak, ash, maple, Siberian crab, cypress and other northern forms, while the sward abounds in the *Primula denticulata*, *Parnassia nubicola*, with pæony; at no great distance and immediately below commences a tropical vegetation connecting it with the plains. The view from Ayúr-pátha shows the Bhábar and Tarái arranged like a map at one's feet and on fine days takes in Bareilly to the south-east and Morádabad to the south-west.

Deopátha on the east rises at a very sharp angle from the

Deopátha.

Abelia pass, whence the road from Káládhúngi enters the valley at an elevation of

6,800 feet above the level of the sea to 7,989 feet. On the north-east it is separated from China by a pass known as the China-kekhan or khál, 7,438 feet high, which communicates with the villages lying along the headwaters of the Bhakra or Baula river. The sides of this peak and its base are strewn with immense boulders of limestone in natural confusion which are clothed with ferns and other epilithal vegetation amidst close coppices of the abelia.

China, the monarch of the Gágar range, raises his furrowed

China.

sides on the north almost precipitously at a horizontal distance of about one mile and

a quarter from the lake. On the north, the crest is prolonged in a ridge known as the Buráns-ke-dánda or 'Rhododendron ridge'

from the number of those trees growing there. The southern face is covered with a forest of noble cypresses (*Cupressus torulosa*) which here alone on the lower ranges appears to be indigenous. The crest is formed of limestone on a basis of clay-slate which appears to dip to the west or north-west. Limestone also appears along the south-western slopes. According to Madden the summit "is clothed with a brushwood of *Indigofera*, *Spirœa*, *Elscholtzia* and *Salix*; *Androsace lanuginosa* covers the rocks; *Anemone discolor* grows in the shady places and at the Surveyor's cairn *Stellaria semivestita* and *Hemiphragma heterophyllum* appear.

The holly (*Ilex dipyrrena*) reaches a great size; one measured near the ground was between 16 and 17 feet in girth: but the characteristic tree of China is the *Quercus semecarpifolia*, which fringes the crest and covers the whole south-west face. Badhán Dhúra and Sât-chúliya, points of nearly the same altitude, and at no great distance, on each side of China, have not a trace of it; and on the former Madden could only find a few specimens of *Colquhounia vestita*, a very common shrub at Naini Tál and towards Badrináth. The *Limonia laureola* too occurs only in this locality on the Gágar range, and though the cypress is said to exist in Dhyánirau, it appears to be very local, limited to a grove or two while they occur on the face of China towards the lake in quantities and on the Gaiwála cliffs as low down as 5,100 feet. The vegetation of China and Naini Tál thus presents some difficult problems, which the natives resolve at once by the assertion that the oak, cypress, *Limonia*, *Colquhounia*, &c., were imported from the snowy range and planted here by Naini Devi herself: and one might really suspect that some of the devotees who did penance on China in days of yore, actually introduced them from the holy *tír-thas* among the snows, were it at all probable that they would have condescended to such humble plants as the *Hemiphragma* and *Anemone*. Moreover, on this principle it might be surmised that "Pilgrim" put the *Polygonum amphibium* into the lake to make it more English."

The view from China embraces Rohilkhand, Kumaon, Garhwál and the snowy range from the sources of the Jumua to those of the Káli. The great Himáchal must be about 65 miles distant in a straight line, and its

View from China.

details are therefore less distinct than from Binsar and Almora, whence the superior limit of forest is perfectly defined—much more so than the snow line—and above which the eye reposes with a never-to-be-satiated curiosity on the enormous shelving masses of rock and snow which appear as if they would squeeze another earth to a mummy. Here we have the Gangotri group running apparently north, with sloping and apparently stratified planes to the east; then comes the great Kedárnáth mass, said to be the original Sumeru, whence Siva regards with jealous rivalry his neighbour Vishnu, who dwells over the way in the still grander mass of Badrináth, or rather on the Nálikánta peak above the temple. Next comes Trisúl about 20 miles more to the south-east and behind this again Nanda-devi with its pyramidal grey peak rising to 25,660 feet. Next comes Nandakot with the tent-shaped peak which is supposed to form the pillow of the *katiya* or cot on which Sita reclines. Further east are the Panch-chála or five cooking places used by the Pándavas and then come the peaks of Api and Namjang in Nepál and its other unnamed mountains. Though perhaps not so clear or distinct a view as is obtained from the hills nearer the snowy range, it is undoubtedly the most comprehensive and impressive in the whole outer range (*Madden*).

The small ridge on which Fairlight (Tonnochy's) is built, separates

Sher-ke-dánda.

Chína from the Alma or Ulma peak, up and around which a road has been made

which commands a fine view of the Khairna valley, the Chína water-fall, Ránikhet and the hills beyond. The Alma-khán separates this from the snow-seat and Government house and the Khairna pass from Sher-ke-dánda or Tiger's ridge which is thickly covered with forest and abounds with beautiful shady walks. The east and south-east extremities of this hill abruptly end in precipices formed of clay-slate which caused considerable difficulty in making the foot road to Almora by Rámgar and the cart-road to Ráuibág. To the north-east, the Tiger's ridge is connected with Liriya-kánta or Luriya-kánta, so called according to native accounts in memory of some forgotten goddess. It attains an elevation of 8,144 feet (8,023 feet, R. S.); its summit is quartz, bold and craggy towards the north and undulating to the south-east where it is clothed with forests of oak and pine. Mr. J. H. Batten discovered greenstone near the north end of the lake running north east to the

summit of Sher-ke-dánda and again to the south between Ayárpátha and Gaiwála passing through limestone and beds of hornstone. The trappean rocks are said to reappear between Khúrpa Tál and Kálapathar where they derange and alter the other rocks as usual.

The valleys around Naini Tál afford occupation to the naturalist, the painter and the sportsman. A list of the plants to be found is given in the first volume as well as one of the *fauna*. Game is abundant close by and scenery unrivalled in the lower hills is within easy distance. The lakes of Malwa, Bhím, Naukuchiya and the seven lakes are only one march to the north-east, and will well repay a visit, while on the west the valley of the Kosi and the sequestered glades along the Rámanga and the Kota and Pátli Dúns afford scenes which a Salvator Rosa would delight to paint. The hills on all sides are thickly studded with the bungalows which are occupied by visitors from the plains from April to October. In the winter there are few European residents and the greater number of the native traders also leave the bazár for their homes. The southern face of Chína and the space around the northern margin of the lake itself appear to be the favourite sites for residences and are fully taken up. Here also are the schools, church, and travellers' bungalow. Between the church and Háni Báni or 'the echo' rock lies Sukha Tál, a depression filled with water during the rains and used also as a quarry for stone and a shooting range for the volunteers. Close to this under Ardwell is the circular hollow covered with grass and flowers known as the Malla Pokhar or 'upper pool' perhaps originally filled with water but now dry at all times. The upper bazár and the assembly rooms are situated at the western end of the lake which also boasts of a fair cricket, tennis, polo, and race ground. At the eastern end is the bazár known as Talla Tál or 'lower lake,' and beyond this at a distance of about a mile the barracks of Kálakhán forming the military convalescent depôt of the Rohilkhand Division. There is no trade or manufacture unconnected with the supply of the wants of the summer visitors. The court of the Assistant Commissioner of Kumaon sits here, and there are besides a police-station, post-office, telegraph-office, dispensary, European shops and several hotels and boarding-houses.

The Naini Tál municipality is constituted under Act XV of 1873, and is managed by a committee of six members. Taking the latest returns, those for 1882-83, the receipts amounted to Rs. 56,602, of which, however, Rs. 9,729 were abnormal, being due to refunds and donations. The actual receipts were therefore Rs. 46,873. The principal sources of income are (1) the octroi on animals brought in for slaughter which yielded Rs. 2,761 ; (2) tax on houses (Rs. 8,335 in the station and Rs. 2,326 in the bazár) Rs. 10,661 ; (3) tolls on vehicles, Rs. 7,453 ; (4) special taxes such as conservancy, stalls for animals and on sites, which yielded Rs. 18,644 ; (5) rents, Rs. 1,939 ; (6) fines and miscellaneous, Rs. 5,425, to which add the abnormal receipts. The expenditure amounted to Rs. 57,531 distributed as follows:—Collection Rs. 1,055 ; head-office, Rs. 1,487 ; public works, Rs. 25,425 ; police, Rs. 2,513 ; education, Rs. 300 ; charitable grants, Rs. 348, conservancy, Rs. 11,025 ; repayment of loans, Rs. 11,527 ; and other items, Rs. 3,818. The large sum under the head repayment of debt is in part liquidation of the loan received from Government (a lakh and a half of rupees) for protective works after the landlip of 1880. These works have been tried by heavy rains since and have thoroughly stood the test, and with the establishment retained to see that all drains are clear, have made the station safer than it was before, and far more pleasant for those who have to walk or ride during the rains.

The receipts of the Naini Tál cantonment fund amounted to Rs. 4,199 in 1882-83 chiefly made up of a grant-in-aid of Rs. 2,189 and Rs. 1,674, dues on grass and fuel. The expenditure almost equalled the income and was devoted to the usual purposes, conservancy, lock-hospital and police.

The American Episcopal Methodist Mission established a branch of the Society here in 1858, which supports a vernacular school for boys having now a large attendance of pupils. Besides this there are eleven other schools supported by the Society in the hills and Bhábar with an average daily attendance of 3 to 400 and a girls' school with 20 pupils. In 1871, a dispensary in connection with the same Society was opened at Naini Tál when, in three months, 1,800 out-door and 30 in-door patients received treatment. Similar institutions were established at Dwárá in 1872. In 1869 a medical

school was formed at Naini Tál where eight young men and four young women received instruction in the rudiments of their profession.

The Naini Tál Diocesan schools owe their origin to a project framed by Dr. Condon, Mr. H. S. Reid and others in 1869 for

founding a school for the children of resi-
Dioceſan ſchools. dents and others of ſmall means. It was felt that, though there were ſeveral ſchools in other Hill ſtations ſuitable for the children of comparatively rich parents, there was no ſchool, elſewhere eſtabliſhed, adapted to the means of the comparatively poor. They determined therefore upon commencing ſuch a ſchool. Their object was to ſecure for parents of ſmall income, a really good education for their children, in a good hill climate, for a very moderate ſum. The public readily met their appeal for help, and in July, 1869, a mixed ſchool was commenced under the charge of Miſs Bradbury. It was continued during the year 1870, and with ſuch ſucceſs that the committee decided upon enlarging their operations and ſetting up two ſchools, one for boys and the other for girls to be conducted on a liberal ſcale and to ſupply a good and ſound education. Every exertion was made to render them efficient, and excellent teachers were engaged. Theſe ſchools commenced work on the 1ſt of February, 1871, and have met with large ſucceſs. The average number of pupils during the firſt year was 70, and, in the caſe of the boys' ſchool, the committee were obliged to reject applications for want of ſpace. In 1872 the number of pupils increaſed to 100, but ſtill many applications were reſuſed in conſequence of the want of accommodation. The committee then appealed to the general public for aid in erecting proper ſchool buildings and met with a generous reſponſe. The ſchool for girls was built from a taſteful deſign by the Rev. W. N. Tribe and in 1873 the Sherwood eſtate with its houſe and magnificent grounds was purchaſed by the committee for the boys' ſchool and is perhaps the fineſt ſite and eſtabliſhment of its kind in India. The reports of the examiners ſhow that both in the internal economy and in the character of the inſtruction imparted, the Dioceſan ſchools thoroughly fulfil the deſigns of their foundeſers.

Naini Tál is entered from Moradabad by the poſtal road paſſing
Roads. through Káládhúngi and Mungauli, at both of which places there are traveller's reſt-houſes. From Káládhúngi there is a ſteady riſe for eight miles to

Mungauli and thence to Síríya Tál, better known as the washerman's ghát, the road is tolerably level. From this a steady rise of a few miles leads to the Abelia pass 6,800 feet high. On the east there is a railway from Bareilly to Ránísbág and a carriage-road thence to Naini Tál. There is also a good cart-road and a bridle road following the valley of the Baliya river to the brewery, whence there is a steep bridle-path of about two miles to the Talla Tál bazár (6,400 feet). On the north two roads communicate with Almora; one by Khairna is level for about 20 miles and the other by Rámgar crosses three separate valleys and ranges before joining the former. The various routes into the interior will be found elsewhere. Supplies of all kinds in any quantity can readily be obtained at Naini Tál at all times.

Mr. Ball in his paper on the origin of the Kumaon lakes notices two theories (a) that they are due to glacial action; (b) that they are hollows of denudation for the most part enclosed by landslips. He

Geology. notices that the China portion of the ridge at the head of the valley is deeply scarped above with an undercliff much concealed by talus. It consists chiefly of shales with which there are some quartzites, and towards the crest there are limestones which so far as is clearly seen may partake either of the nature of beds or veins. Passing hence round by north to south-east the ridge is mainly formed of shales and argillaceous schists which are much contorted and broken; but the prevailing dip is probably to south-west, the beds striking with the direction of the ridge. An obscurely seen trap-dyke seems to observe the same course. To these two facts the dip of the beds and the existence of a rigid trap-axis the present form of the slope is, Mr. Ball believes, under the influence of subaërial denudation to be attributed and not to the friction of a glacier. The range on the south-west of the valley marked by the Ayárpátha and Deopátha peaks is formed of massive limestone, the bedding of which is generally very obscure. There is also some trap, the combined rocks giving a rigid and very steep outline to the range which contrasts most strikingly with that on the north.

Mr. Ball goes on to write:—"All the rocks of this basin, whether shales of limestones, are singularly unsuited to the retention of the minor glacial marks; and if glaciation did take place, it may be from this cause that no such traces are now found. From an inspection of the large scale map, it will be at once apparent that the head of the valley has very much the form of a 'cirque,' as defined by

Mr. Holland,¹ who argues with considerable force that the cirques of Norway and Greenland are due to glaciers. Mr. Bonney, on the other hand, describes Alpine cirques, which he believes to be formed by streamlets pouring down the sides. It has often been remarked how some forms of our Indian alluvia under the operation of heavy rainfalls exhibit in miniature many of the forms of denudation and erosion. Among these forms, cirques and cirque valleys are not unfrequently met with. Invariably, they are due not to denuding action from above, but to subterranean springs or streams. To a similar cause may, I think, be attributed cirque-like valleys in rocks formed of loose shales, and, to some extent, even those where the rocks are limestones. The section of the bed of the lake indicates a state of things very different from what might have perhaps been anticipated, but, however the lake has been formed, explanations to account for the peculiarity about to be described can be suggested."

"The soundings from which the section has been plotted have been taken from the Revenue Survey map on the scale of ten inches to a mile. In some cases the exact character of the bottom is given, but not in all. A knowledge of this character is, no doubt, a very great desideratum for the discussion of this question. It would be especially desirable to know the nature of the bottom all across the lake transversely to this line at the point where the shallowest sounding occurs. As represented in the section, the lake consists of two basins, with the maximum depth nearly centrally situated in each case. They are separated by what appear to be a barrier. If it really be so, then it would lend considerable support to the glacial hypothesis. Indeed, if consisting of rock *in situ*, it would fairly prove the existence of a true rock basin, thus furnishing a strong argument in favor of the glacial origin. Supposing it to be so, the twin basins might be readily explained by the hypothesis that they had been successively excavated by the retreating end of a glacier. Unfortunately the case is not susceptible of so simple an explanation, as the shallow sounding may be caused not by a barrier, but by a mere hummock, which, if (as is possible, so far as is certainly known at present) occurring isolated by deep channels from the margins of the lake, would be, on the other hand, a strong argument against the glacial origin, as such an obstruction must assuredly have been swept away by a glacier capable of scooping out the deeper hollows. Still another view of the nature of the barrier or hummock, be it which it may, is possible. It may be that it is not really formed of rock *in situ*, but is merely the remnant of an ancient landlip."

"In the present state of our knowledge, therefore, no certain conclusion can be drawn from it. But the peculiar character of the basin still remains a subject for some speculation, the more particularly so when it is remembered that the operations of the present day must tend steadily to obliterate these features by the deposition of silt in the hollows. Passing from the lake itself to examine the nature of the barrier at the outfall, we find that it is formed of a confused mass of debris, in which some very large rock masses, some of them ten feet in diameter, occur. Following down the bed of the stream, rock *in situ* is not met with till near the waterfall, or at a level which must be considerably below that of the bottom of the lake where deepest. Mr. Blanford, though he does not expressly

¹ "Cirques are large spaces excavated from the solid rock, bounded on three sides by an almost semicylindrical steep mountain wall, and with a tolerably flat floor."—*Quar. Jour., Geol. Soc., Vol. XXXIII, p. 161.*

state his belief that the large blocks of stone are erratics, suggests that they may be derived, from the limestone at the ridge at the head of the valley (Deopátha). He states that his "impression was that the lake was closed by a moraine." The source of these blocks I believe to be much closer at hand. In great part they have, I think, simply tumbled down from the Ayárpátha ridge and its eastern prolongation, where not only is similar rock to be seen *in situ*, but similar detached blocks are found on the slopes; one remarkably fine example being seen in the compound of Welham house. Others, on the other hand, may have fallen from the ridge to the north of the depôt, where the already described lenticular masses of limestone occur. The remainder may, I think, have simply been eroded from their envelopment of shales at, or very close to, the positions where they are now found. Though it is convenient to speak here of these blocks collectively as limestones, they vary much in character, and some are highly indurated, but only slightly calcareous, mud stones. From these varying characters it may be possible, hereafter, to trace their origin individually with considerable accuracy. As to the other characters of the debris at the outfall, I in vain searched in it for evidence of a glacial origin, and am unable to point to any feature which is inconsistent with the idea of its having been formed by a landslide."

After examining the other lakes (*q.v.*) Mr. Ball sums up the results thus:—

"Reviewing the whole of the facts which are enumerated above in reference to each of the lakes, and considering the limited zone in which they occur—the probability that they are all the result of one general series of operations impresses itself as being an hypothesis of primary importance. If one of the lakes then exhibits indications which seem to connect it with one particular mode of origin, while others of the lakes do not show such or similar indications, it becomes all-important to submit the former to the severest scrutiny. In this way, I think, the appearances suggestive of a glacial origin, which are perhaps strongest in the case of Naini Tál, lose much of their force when we find that other lakes exist of generally similar character, but in which the special indications are wanting. In the single character of the outfall barriers all the lakes agree; opinions may differ as to the origin of these barriers, whether they are remnants of moraines, or have been formed by landslips, but it is almost certain¹ that not one of them consists in any degree of rock *in situ*, and we therefore have not the positive aid of a rock basin to determine a conclusion.

There is one point geologically which links the three larger lakes together, and that is the occurrence of trap-dykes in the vicinity of each. Now, I do not think it at all probable that the lakes are due to the original outburst of trap. Indeed, the above described fact in reference to Malwa Tal, where both the inflowing and outflowing streams cut through trap, renders such a view untenable. But it seems not improbable that, when the great upheaval and disturbance of the rocks of this area took place, the existence of comparatively rigid lines of trap may have been largely instrumental in determining the form which the surface assumed, and that on their flanks the soft shales, &c., may have been so much crushed and broken, as to yield more easily to the subsequent operations of denudation, thus affording an abundant supply of material for landslips, which ultimately

¹ Careful levelling can only decide this point.

served to close the valleys and form the lakes.¹ Or even supposing the outburst of trap to have accompanied the upheaval and disturbance, its effect in determining the subsequently established lines of denudation could not fail to make itself felt. This explanation, in part suggested by Mr. Medlicott's observations in his well-known paper on the Alps and Himalayas,² seems to me more in accordance with the known facts regarding the whole series of lakes than any glacial theory can be."

The year 1880 will ever be memorable in the annals of Naini

Tál for the great landslip which was attended with such melancholy loss of life.³

Landslip of 1880.
The rain commenced to fall steadily and without cessation from Thursday the 14th September, 1880, until Sunday evening, the 19th. During Friday and Saturday 33 inches of rain fell, of which 20 to 25 inches had fallen in the 40 hours preceding Saturday evening. The rain was accompanied by violent gusts of wind from the east; the roads were injured, the water-courses choked, and there was a general saturation of the soil in all places where the loose debris of rotten shale, of which the northern range is composed, allowed the water to penetrate. There was much clearing of new sites during the previous year and the builders did not always provide for the derangement of the natural drainage channels. In many places the water was allowed to sink into crevices in the hill and find new outlets for itself, and this it did with a vengeance. In 1866, a slip occurred to the west of the present one destroying the old Victoria hotel. In 1869 this was enlarged and the scored sides of the ridge below Alma bear witness to its extent. On the site where the slip of 1880 occurred was the Victoria hotel and its offices, and below it was the temple on the margin of the lake, and close to it Bell's shop, and further on the assembly rooms also on the margin of the lake. About 10 A. M. on Saturday morning the first slip occurred in a part of the hill-side immediately behind the Victoria hotel, carrying away a portion of the out-houses and of the western wing of the hotel and burying in the ruins an English child and its nurse and some native servants. Working parties were called for and Mr. Leonard Taylor, C.S., Mr. Morgan, Overseer, and a party of soldiers and officers from the dépôt set to work

¹ It is possible that the basin of Naini Tal may be connected with some local faulting, the existence of which is implied by the sulphur spring at the outfall. That a fault occurs all along the centre of the valley is, however, scarcely probable, as, did one exist, it would show in the scarp of China, the beds forming which appear to be continuous across the head of the valley. ² Quar. Jour., Geol. Soc., February, 1868. ³ From personal observation and Mr. Conybeare's narrative.

to dig out those that were buried. In the meantime, all the residents in the hotel removed to safer quarters except Colonel Taylor, B. E., who retired to a small detached room below the hotel generally used as a billiard room, and Major and Mrs. Morphy with Mrs. Turnbull, who came to offer their assistance, proceeded to the assembly rooms. All had made preparations to leave as nothing more could be done, and about twenty minutes past one I passed from the hotel to the bazar, and whilst passing with Mr. Wright, heard a noise and saw a large boulder falling from the cliff above towards the hotel. I thought nothing of it and went on. In another ten minutes the landslip took place.

The whole hill-side was one mass of semi-fluid matter and required little to set it in motion. The state of the hill has been described as in dry weather a mass of the consistence of oatmeal which when mixed with water spread out like porridge. The motive power was a shock of earthquake, a very common occurrence in these hills, and which was felt on that day by competent observers in the Bhábar below and in Naini Tal itself. This set the fluid mass in motion, and the result is thus told :—

“ A rumbling noise, similar to that occasioned by the falling of large masses of earth, was heard by many in the station ; and such as had an opportunity of looking towards the direction of the crash could plainly see vast clouds of dust rising from the situation above described. It was apparent that a large portion of the hill behind the hotel, from the upper mall, disunited, had descended with enormous velocity and violence, had completely buried the hotel, and had dashed together into an unrecognisable heap, the orderly room, the shop and the assembly rooms. The wave of earth and water, making a clean sweep of the extensive hotel premises, had apparently driven the shop on to the assembly rooms, carrying forward the massive building over 50 yards on to the public rooms, a portion of which were hurled into the lake and the remainder reduced to a heap of ruins. The catastrophe, as far as can be ascertained, was the work of a few seconds only ; so that escape on the part of any who happened to be in the course of the avalanche was practically impossible.”

Another account runs :—

“ Through the dripping rain came the sound of crackling trees. Some oaks on the hill-side, about 400 feet above the Victoria, were observed falling forwards. A boulder or two descended, and a shout of “ Run for your lives ! ” was heard ringing up from the hotel. It was followed by a noise which to those near suggested the rumbling crash of thunder, and to a witness not far distant the hoarse roar of cheering for some person rescued. By others on the ridge above and on the south-eastern edge of the lake this noise was not heard at all ; but it meant that

the hill-side had fallen. In less than half a minute the last stone had splashed into the lake. Several great waves rolled down its surface, whilst a cloud of light brown dust concealed its north-western side and the site of the Victoria from view. As to what had happened in the interval no two witnesses are exactly agreed. For the close observation of details both the time and the mood were wanting.

But here are some extracts from the statements of selected eye-witnesses :—
 “With one fell swoop and awful crash,” writes the Rev. D. W. Thomas, “the Victoria hotel, Bell’s shop, the assembly rooms, and a throng of human beings were almost instantly buried beneath the rocks and the lake. The hotel moved forward, foundation and all, at least a hundred feet before it collapsed ; and Bell’s shop about the same distance. When the slip commenced there were a large number of natives and five or six (British) soldiers passing along the Mall below ; most of whom were buried beneath the shale and rocks.” Mr. Thomas adds that the Victoria and the Hindu temple were carried directly into the lake. The only trace of the hotel main building is the fragment of a pillar ; and this lies on the play-ground, as far distant from the lake as any part of the *débris*. Remains of the temple and its occupants have been dug from the southern end of the assembly rooms.

Mr. W. Gilbert says :—“I was startled by a thundering noise behind me, and on turning round saw that the Victoria Hotel had disappeared. An immense, dark, moving object was passing over its site, reaching the lake in a very, a very short time, carrying everything before it, and crushing up mighty trees like match-sticks. For about a second of time Bell’s and the assembly rooms were overshadowed ; and then there was a tremendous crash, followed by a splash in the lake. The mass of mountain which had detached itself came down with such velocity that for the moment the impression on my mind was that a huge promontory from 30 to 40 feet high had leaped out from the hill-side into the lake, disappearing a few seconds after the awful splash. I am sure I could not have run over twenty paces on open ground and in the best form within the same time.”

Rev. N. Cheney, who was standing about 30 yards from the course of the slip, was startled by hearing above a noise which seemed “to mingle the report of a muffled explosion with what sounded like a high-toned piercing cry. The trees shook and writhed ; the hill-side burst ; the whole mass fell in a headlong avalanche, and rushed down the slope towards the Victoria Hotel. The bursting of the hill was with an upward as well as an outward leap, as if some interior power had accumulated until it could no longer be confined. The hotel was not crushed from above, but was struck near its foundation : and fell back on, and was carried forward by, the advancing slide. Its roof appeared to turn upside down ; for the rafters were for an instant plainly visible in a vertical row. A cloud of dust obscured from view the destruction of Bell’s shop. I was nevertheless able to discern that the central column of shale, in which the greatest velocity and power were exhibited, passed over the Mall at the entrance gate of the hotel, and thence in the shortest line plunged into the lake. It is my judgment that the time from the bursting of the hill to the descent into the lake was not more than eight seconds.”

The dead and missing numbered 151, of whom 48 were Europeans and Eurasians, including Colonel Taylor, Major Morphy,

Captains Balderston, Goodridge and Haynes, Lieutenants Halkett, Sullivan, Carmichael and Robinson; L. Taylor, C.S.; Rev. A. Robinson, Doctor Hannah, Messrs. Noad, Bell, Knight, Moss, Tucker, Morgan (two), Sheils (four), Drew, Gray, five non-commissioned officers and nine privates, Mrs. Morphy, Mrs. Turnbull and two children and 108 natives. The escapes were many and narrow. Sir Henry Ramsay whilst directing operations at the east end of the lake was overtaken by the great wave caused by the *débris*, swept into the lake and though at one time waist-deep, succeeded in reaching safety on an ascent off the road; but a British soldier and several natives were swept away close beside him. A Mr. Walker was covered up to his shoulder by the outer fringe of the mud torrent, but escaped. A soldier and a native lad were swept into the lake and escaped by swimming. Mrs. Knight and Mrs. Gray were in the upper story of the building known as Bell's shop, and were carried with it and found amid the girders of the iron roof landed on a heap of the *débris* almost unhurt. Immediately after the landslip jets of water poured forth from reservoirs within the hill on the newly made face and for some time maintained a direction and volume which showed the great quantity and force of these factors in the landslip. I will pass over the Saturday night when no one knew whether there would be another slip as the rain never ceased and boulders continually came crashing down from the hills above. Great cracks opened up and became more easily traced: one from the Mayo hotel up to Saint Loo cottage, the wall of which was fissured sufficiently to admit of a person walking through and across Government house, an arch in which was cracked, and over the northern slope of the hill. Another line further west split in two a rock on the summit of the little ridge above Fairlight; a third line proceeded from the Club to the end of the China ridge by the road west of Fairlight. All these were caused by the earthquake, which was as destructive on the northern slopes of Alma and China as within the valley. Sir H. Ramsay ably aided by Mr. Willcocks, C.E., and Mr. Lawder, C.E., set to work and soon placed the roads and drainage on a better footing than before.¹

¹ Rs. 60,000 were distributed by Sir H. Ramsay as chairman and myself as Secretary of the 'Relief Fund' amongst the families of those who perished in the landslip.

From its vicinity to the plains Naini Tal enjoys the benefit of the breeze which usually springs up in the evening and in the hottest seasons is never oppressively warm. In the monsoons it receives more rain than Mussooree and nearly twice as much as Almora, which is only 30 miles off; the Gágar range intercepting the clouds before they reach the latter place. Although records of rainfall have been kept for many years, they do not appear to me to be trustworthy.

The water-supply of Naini Tal is good except in one point, *viz.*, that the water is very hard and contains a considerable amount of soluble earthy salts, derived, no doubt, from the magnesian limestone of the hills. Such waters are not generally preferred, as it is believed they are likely to induce diarrhoea in those using them.

The result of Dr. Murray Thomson's analysis of the potable waters at Naini Tal, 1866-67, is as follows:—

Numbers.	Degrees of total hardness.	Degrees of permanent hardness.	Degrees of removable hardness.	Grains of oxygen required for oxidation of readily oxidisable organic matter of 1,000 grains of water.	Total solids in 70,000 grains of filtered water.	Volatile matters.	Mineral matters.	Earthy salts, silica, oxide of iron insoluble in water.	Lime calculated as carbonate.	Silica.	Soluble salts.
1	15.5	12.	3.5	.00084	21.8	1.6	20.2	13.5	8.6	Traces,	6.68
2	18.16	11.	7.16	.00064	25.92	1.08	24.84	12.24	6.48	Do.	8.08
3	13.	13	...	.00064	28.12	1.16	26.96	13.32	7.32	Do.	9.64

The first specimen was taken from a small masonry tank near the centre of the convalescents' barracks, which receives a part of the overflow from the lake. The water before entering this cistern is passed through a large charcoal filter. The second was taken from the surface of the lake about forty feet out from the entrance of the small stream which forms its chief feeder, and the third was

from the centre of the lake opposite the Smuggler's rock. In all three the physical properties of the water after passing through filter paper was good and the reaction neutral. Soda was found chiefly in the form of sulphates with a much smaller proportion of chlorides.

Naini Tál is mentioned in the *Mánasa-khanda* of the Skanda Purána under the name Tririkhi-sarovara, or the lake of the three Rishis, Atri, Pulastya and History.

Puláha. The legend runs that these sages on their pilgrimage came to the peak of the Gágar range now called Chína and were thirsty and found no water. On this they thought of Mánasarovara and dug a large hole, which was at once filled with water from Mána, and hence the lake thus formed by them was called 'the lake of the three Rishis.' It is added that he who bathes in it derives as much benefit as those who have visited Mána itself. The name Naini is derived from a temple to that goddess built on the borders of the lake and destroyed by the landslip of 1880. Traill merely mentions the name of the lake, and the first account of it is found in an issue of the *Englishman* (Calcutta) at the end of 1841, which announces 'the discovery of a lake in the vicinity of Almora.' This was followed up by a letter to the *Agra Akhbár* by Mr. P. Barron of Sháhjahánpur under the name 'Pilgrim' who gives an account of a visit to the lake then almost unknown.¹ He describes the lake and its outlet and then the present site of the recreation grounds:—"An undulating lawn with a great deal of level ground interspersed with occasional clumps of oak, cypress and other beautiful trees, continues from the margin of the lake for upwards of a mile, up to the base of a magnificent mountain standing at the further extreme of this vast amphitheatre, and the sides of the lake are also bounded by splendid hills and peaks, which are thickly wooded down to the water's edge. On the undulating ground between the highest peak and the margin of the lake, there are capabilities for a race-course, cricket ground, &c., and building sites in every direction for a large town." He approached Naini Tal from the Khairna side and returned by Rámgar, the natives at first refusing to guide him and denying the existence of a lake.

¹ His letters were collected and published at Agra in 1844,

In 1842 Mr. Barron again visited Naini Tal, and notes that about half a dozen sites for building had been applied for or granted, and Mr. Lushington, the Commissioner, had commenced the erection of a small house. Rules were drawn up in 1842 for the grant of lands for building purposes at a small ground-rent to be paid by the occupant so long as the land was used for the purpose for which it was required. The lease, too, contained clauses binding the lessee to the observance of such rules as the local authorities with the sanction of Government should from time to time prescribe.

Before 1842 there was not even a hut in the valley, which was only visited by the neighbouring villagers at a festival held once a year in honour of Naini, at which the usual sports and recreations of a small country fair in the hills took place. Mr. Lushington allotted sites for a bazar, public buildings and a church, erected by public subscription in 1846 at a cost of Rs. 15,000 and dedicated to "St. John in the Wilderness." Mr. Barron launched the first boat on the lake, and amongst other incidents records the death of a bear at Smuggler's rock and the wounding a tiger, which fled to the recesses of Ayárpátha. Leopards, langúr-monkeys, chamois and jarau-deer were amongst the other animals found here. As late as 1845, the site of the present upper bazar was filled to a great extent with ringál (bambu) jungle, which even then harboured tigers. Madden records¹ a visit to Naini Tal at the end of 1846, when houses had begun to spring up, and Captain Arnaud began to build at Gaiwála-khet, now occupied by the Diocesan school.

Amongst the more common trees and plants² recorded by Madden are the cypress, *sarai* (*Cupressus torulosa*); pine, *chár* (*Pinus longifolia*); ash, *angu*, (*Fraxinus floribunda*); hornbeam, *chamkharak* (*Carpinus viminea*); cherry-alder, *puya-udesh* (*Betula acuminata*) alder, *udsh* (*Alnus nepalensis*); five kinds of oak, *banj* (*Quercus incana*); *Karshu* (*Quercus semicarpifolia*); *ridnj* (*Quercus lanuginosa*); *tilonj* (*Quercus dilatata*) and *phanat* (*Quercus annulata*); maple, *patanglia* (*Acer oblongum*); *ledh* (*Symplocos paniculata*); *burans* (*Rhododendron arboreum*); *ayár*, (*Andromeda ovalifolia*) after which Ayárpátha is named; holly (*Ilex dipyrrena* and *I. odorata*); *jhatelo* (*Prinsepia utilis*); *jamuna* (*Cerasus cornuta*); *mehal* or pear (*Pyrus variolosa*); *gwala mehal* (*Pyrus baccata*); *gingáru* (*Crataegus pyracantha*); *raus* (*Cotoneaster bacillaris*); *gari* (*Cotoneaster microphylla*); *sánd* (*Photinia dubia*); *Pæonia emodi*; *burau* (*Albizia wightii*); *chamniya* (*Populus ciliata*); *gurul-patta* (*Skimmia laureola*); *malola* (*Coriaria nepalensis*); *chotra* (*Berberis aristata*); *set baruwa* (*Daphne papyracea*); *chamliya* (*Daphne sericea*); *máuri* (*Abella triflora*); *Potentilla nepalensis* and

¹ J. A. S. Ben., 1848, p. 256.

² The botany is recorded in Gaz. X.

aplendens; *Agrimonia nepalensis*; *jadr* (*Spiraea canalicifolia*; *Rubus tilliaceus*); *Fragaria indica* and *nubicola*; *Rosa brunonii* and *macrophylla*; *kagaki* (*Cornus macrophylla* and *oblonga*); rue, *apsaya-phás* (*Ruta albiflora*); *bánúca* (*Rhus vernicifera*); *kúndr* (*Xanthoxylon hostile*); *indigótera desua* and *pulchella*; *Desmodium elegans*, *hexagonum* and *parvifolium*; *Astragalus leucocephalus*, *chlorestachys* and *seebanoides*; *Primula floribunda* and *speciosa*; *Andromeda sarmentosa*; *Sedum sinuatum*; *Thalictrum rupestre*; *Aquilegia pubiflora*; *ghantidá* (*Clematis verticillata*); *bonda*, (*Hedera helix*); *majethi* (*Rubia cordifolia*); *jáhi* (*Jasminum grandiflorum*); *surwá* (*Jasminum dispersum*); *Geranium lucidum*, *nepalense* and *wallichianum*; *shálmori* (*Oxalis corniculata*); *shudwa* (*Hibiscus virgatus*); box (so called) (*Myrsine bifaria*); *bhungsariya* (*Elacholtzia polystachys*), *ganíya* (*Salvia lamata*); *ban-súsi* (*Origanum normale*); *báilmora* (*Colquhounia vestita*); *Platystemma violoides*; *Cynoglossum canescens*; *kapár-nali* (*Strobilanthes glutinosa*); *wirá-má*, (*Erigena roylei*), *páti* (*Artemisia indica*); *chireta* (*Ophelia paniculata* and others); *padariya-jáshan* (*Allium wallichianum*); *ningá* (*Arundinaria falcata*); *shámai* (*Satyrium nepalense*) and *márhá* (*Marsdenia roylei*) besides some one hundred others of the list given in a previous volume, but this is enough for a student to commence with.

The following are some of the birds observed¹ in the neighbourhood of

Naini Tál and Almora: Black vulture (*Oligocephalus, 2*), large tawny vulture (*Gyps fulvus, 3*), long billed brown vulture (*G. indicus, 4*), white-backed vulture (*G. bengalensis, 5*), white scavenger vulture (*Neophron percnopterus, 6*), bearded vulture (*Gypsetus barbatus, 7*), the kestrel (*Tinnunculus alaudinus, 17*), white naped pigmy falcon (*Hierax cutolmus, 30*), crestless hawk eagle (*Nisastus benelli, 33*), crested hawk-eagle (*Limaestus cristatellus, 35*), white-eyed buzzard (*Poliornis tesoa, 48*), common pariah kite (*Milvus geivinda, 56*), tawny fish-owl (*Ketupa flavipes, 73*), common swallow (*Hirundo rustica, 82*), wire-tailed-swallow (*H. rusticeps, 84*), red-rumped swallow, (*H. daurica, 85*), common Indian swift (*Cypselus affinis, 100*), alexandrine parakeet (*Palmornis alexandri, 147*), slaty-headed parakeet (*P. schisticeps, 150*). Of the Ploids or woodpeckers, the himalayan pied woodpecker (*Picus himalayanus, 154*), the brown-fronted woodpecker (*P. brunneifrons, 159*), the rufous-bellied pied woodpecker (*Hypopicus hyperythrus, 161*). Of the Cuculids or cuckoos, the European cuckoo (*Cuculus canorus, 199*), the pied crested cuckoo (*Coccyzus melanoleucos, 212*), the Indian keel (*Eudynamis orientalis, 214*). Of the Heterinids or sun-birds the purple honey-sucker (*Arachnothera asiatica, 234*), the himalayan tree-creeper (*Certhia himalayana, 243*), the white-tailed nuthatch (*Sitta himalayensis, 248*) the European hoopoe (*Upupa epops, 254*). The more remarkable game birds are the pukrá (308); maná (304) lungi (306) and chí r (309) pheasants; the snow-cock (316); snow partridge (317); black-throated partridge (324); woodcock; snipe and quail. The kalí phasant (310) and chakor partridge (320) are both found in the neighbourhood of Naini Tál.

Najangár, a confluent of the Káli near Golam-lá in patti Chandán and pargana Dárma of the Kumaon district, takes its rise in

¹ Brooks, Ibis, 1869, 43, numbers given refers to Jerdon's Birds, besides those given here, Brooks mentions about 60 others for which reference must be made to the article quoted. See further, Jerdon's Birds.

the Yirgnajang peak. It is a most impetuous torrent, falling in cascades rather than rapids, over a very steep rocky bed, through a deep ravine flanked with precipitous mountains, on the other side rises the Naunjang peak on the left close over the Káli, and the Lingaru to the right some 18,500 feet high : while behind the great peak of Api rises to 22,799 feet. The Tampagár stream rises from a glacier under Lingaru plainly discernible from Golam-lá. The Najangár is crossed by a *sanga* bridge about a mile above its confluence with the Káli. Still further north is the Malpagár, another small rapid which also joins the Káli (*Strachey*).

Nákúri, a patti of parganah Dánpur in Kumaon is bounded on the north by Dánpur Bichhla; on the west by Talla Dánpur; in the east by Púngaraun of Gangoli, and on the south by Dúg. Nákúri was separated from Talla Dánpur at the recent settlement. The assessable area comprises 3,126 *bísis* of which 1,468 are culturable and 1,658 are cultivated (989 irrigated). The land-tax yielded Rs. 667 in 1815: Rs. 1,136 in 1820 and Rs. 1,452 in 1843. The existing land-revenue is Rs. 3,167, which falls on the whole area at Rs. 1-0-2 per acre and on the cultivated area at Rs. 1-14-7. The population comprised 1,923 males and 1,567 females at settlement. Eight villages were received from Pungraon. The patwári lives in Maholi and there is a school in Sanoti. The village of Nákúri is ten miles from Kapkot on the Jalath road and the same distance from Tejam : elevation about 5,000 feet.

Nalapáni or Kalanga, about three miles north-east of Dehra in Dehra Dún on the western boundary of Tihri in north latitude 30°-20'-25" and east longitude 78°-8'-30", noticeable for its protracted defence¹ in 1815. The hill on which the fort is built is about 600 feet above the lowlands and has a plateau on its summit about three quarters of a mile long and very difficult of access from the steepness of the ground. Nalapáni is also a station of the G. T. survey with an elevation above the sea of 3,286 feet and is so named from a spring which supplies good drinking water. The remains of the fort are about a mile above the spring.

Nandák, a patti of parganah Badhán of British Garhwál is bounded on the north by Malli Dasoli and Talla Painkhanda, on the

¹ Gaz. XI. 636.

west by Talli Dasoli and Kapíri; on the south by Karákot and Pindarpár and on the east by the same patti and Talla Painkhanda. It is occupied by the upper valleys of the Nandák and Chúkla. The Mokh stream is fed from the northern slopes of the Buldiana (8,589 feet) Bújgala (9,286) and Khariapáni (8,894 feet), peaks. See BANJBUGR. The patwári of this patti lives in Pharkhet and collects the land-revenue of patti Malli Dasoli also; both aggregated in 1864 Rs. 1,519 for land-revenue and *saddábat* and Rs. 84 for *gúnth* paid by 3,967 souls. The higher villages are little better than sheep-farms, being too high for cultivation, and on this account the assessment is low when compared with the area. There are iron mines at Mokh, Kálban and Peri and old lead mines at Mokh.

Nandákini, a river rising in the glaciers on the western slope of Trisúl in Patti Nandák and parganah Badhán of the Garhwál district has its principal sources in north latitude $30^{\circ}-16'-10''$ and east longitude $79^{\circ}-46'-5''$. High up the source there is a temple to Nanda Devi and beyond the temple, a large rock, both of which are visited by pilgrims. The temple is situate near Tantarakharak above the village of Satol whence tracks lead to the grazing grounds in the neighbourhood. To the west of Satol at Nandgarh-kharak passes the road from Almora by Baijnáth to Rámni where again the road from Nandprayág to Tapuban is met with in the heart of the most picturesque tract in the Garhwál hills. The Nandákini receives on either side numerous torrents and eventually joins the Alaknanda on the left bank at Nandprayág on the Badrináth road. It is crossed by an iron suspension bridge at Nandprayág and by a spar-bridge at Ghát on the road to Rámni from Lohba. In 1857 there was a heavy landslip at Jákhana in Malli Dasoli which blocked up the river for three days.

Nandprayág, a small trading mart in British Garhwál, is situate at the junction of the Alaknanda and Nandákini rivers in Patti Dasoli Talli and parganah Dasoli in latitude $30^{\circ}-19'-56''$ and longitude $79^{\circ}-21'-29''$ at an elevation of 2,805 feet above the level of the sea. The road hence from Karnprayág is nearly level, lying along the left bank of the Alaknanda river, close to Karnprayág, the river is crossed by an iron suspension bridge. The villages of Bausáuli Khál, Langásu and Súnta are passed on the road and the several streams are bridged. Nandprayág is a little over nine miles from Karnpra-

yág, and it is usual to pass on to Pursaribugr close under Mathána, about $1\frac{1}{2}$ miles further on, crossing the Nandákini by two bridges, one of 78 feet span. There is a temple here dedicated to the Nág Taksha, hence the place is often called Takshaprayág: there is a school here in the cold weather; many of the Mána and Níti Bho-tiyas dispose of the Tibetan salt and borax to the local traders here, who send the borax on to the refiners in Rámnagar, where it is sold to traders from Farukhabad. The trading time lasts from the middle of November to April, and during this time immense numbers of sheep and goats laden with Tibetan produce, or returning with grain, tobacco, and unrefined sugar may be met along the road; a road here branches off by Bánjbugr to Almora.

Nanda Devi, a group of peaks in Patti Malla Dánpur of parganah Dánpur in Kumaon of which the principal peak is situated in latitude $30^{\circ}-22'-34''$ and longitude $80^{\circ}-0'-46''$ with an elevation of 25,661 feet according to the Kumaon and Garhwál survey, 25,749 feet according to the old survey and Strachey's map. It appears like a spire of greyish rock sprinkled with snow, lying to the north-east of Trisúl and north-west of Nandakot, the sides forming angles of about 70° and rising far above the similarly-formed snow-clad summits which surround it. The summit is altogether inaccessible; but over a mile below it, a *mela* or religious festival is held every twelfth year, though access to the spot is so difficult that it is reached by scarcely fifty of the pilgrims who make the attempt. Further progress is impracticable, in consequence of the mural cliffs of ice which on every side encase the peak. The natives maintain that smoke is sometimes seen to issue from its summit, which they regard as the kitchen of the local deity; but there is no good evidence of volcanic action in the higher masses of the Himálaya, and the appearance probably results from the forms given by currents of air to clouds resting on the mountain and to snow taken up in whirlwinds.

Náráyanbugr, a halting place on the route by Lohba to Nandprayág and from the latter place to Baijnáth, is situated on the right bank of the Pindár river in latitude $30^{\circ}-8'-5''$ and longitude $79^{\circ}-25'$. The route from Lohba leaves the Karnprayág road at Gair or Gwár, and then turns north-east ascending the watershed between the Pindar and Rám-ganga

rivers by the Inorakhál pass between Kánpur (9,522 feet) on the east and Kandal (8,553 feet) on the west. Thence the road passes by Kandauli and Búnga down the valley of the Agangár to its confluence with the Pindar at Náráyanbugr where there is a bridge. From Karnprayág a road follows the left bank of the Pindár river eastwards by Simli to this place and thence on to Bánjbugr by Ming and Ira.

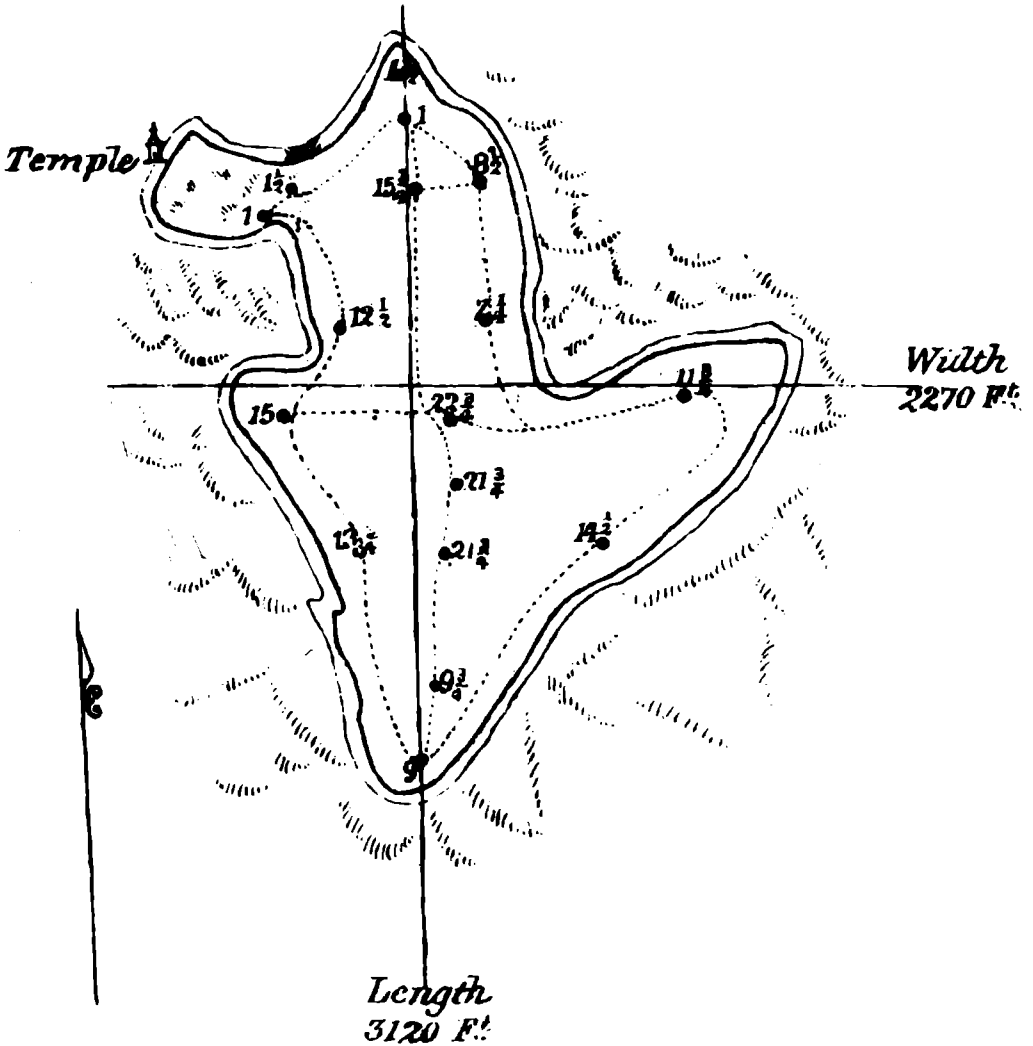
Naukúchiya Tál, or the lake of the nine corners, is situate in parganah Chhakháta of the Kumaun District, distant $2\frac{1}{2}$ miles from Bhím Tál and $14\frac{1}{2}$ miles from Naini Tál, in latitude $29^{\circ}-19'-20''$ and longitude $79^{\circ}-37'-38''$ at an elevation not exceeding 4,000 feet. There is a travellers' bungalow and a shop for the sale of grain at Bhím Tál. The lake is of an irregular shape, somewhat resembling the ace of clubs, elongated at the north-western corner near the temple. On the west it is covered over with weeds and lotus plants to a large extent. It is fed by streams from the neighbouring hills but neither springs, outlet nor current, were detected by Dr. Amesbury at his survey in 1871. The length is 3,120 feet from north to south and the breadth from east to west 2,270 feet. It has a superficial area of 538,833 yards, or 111.35 acres. The greatest depth of $134\frac{1}{2}$ feet is found in the middle near the intersection of the lines of greatest breadth and length, and the least depth of seven feet close to the northern end. "Its shape, the nature of its surroundings, and the narrow winding course of the outfall," writes Mr. Ball, "all seem inconsistent with the view that it is of glacial origin." It is hotter than Bhím Tál but very picturesque and pretty, and when the lotus is in flower well worth a pilgrimage. Fish of various species from one to twenty pounds are found in the lake. The water is of a rich bluish-green colour, clear and still and apparently pure and wholesome. The hills around are thickly clothed with forest which gives cover to *kákar*, *gúral*, wood-pigeons and pheasants. There is every reason to believe that in former years the lake covered a very large extent of surface, some twenty or thirty times its present extent, as exhibited by the surrounding country which bears every appearance of having been subject to the action of water. The waters would appear to have escaped through the lower strata of the hollow now occupied by the lakes—Naukuchiya and Bhím. Tradition has it that if any one sees the

nine corners of the lake at one time he will die within the year, but happily the feat is impossible. An embankment was tried at the apparent outlet, but it was found of little use as the water escapes by subterranean channels.

NAUKUCHIYA TAL.

Area 48,49,500 S.F.

Scale 1000 Feet = 1 Inch.



Nawáda, or Nágsiddh as it is sometimes called, is a well-wooded hill in the Eastern Dún of Dehra about five miles south-east of Dehra with the Súsua river flowing along its southern base. On the hill close to the village of Nawáda are the ruins of a building said to have been the palace of the old Rájas of the Dún. In the village itself is a rest-house for *fakirs* and a temple to Mahádeo at which

the people of Debra and the neighbouring villages assemble annually on every Monday in the month of Sáwan (August).

Nayades, a patti of parganah Shor in Kumaon is bounded on the north by Kharakdes ; on the west by Mahar ; on the east by the Káli river, and the south by Saun. The road from Pithoragarh to the Jhúlaghát across the Káli to Nepál runs through this patti from east to west by Khil and Biskoli. The principal villages are Bhuteri, Bugurtoli, and Gauryáth. The assessable area comprises 1,197 *béis*, of which 359 are culturable and 837 are cultivated (218 irrigated). The land tax yielded Rs. 292 in 1815 : Rs. 425 in 1820 : Rs. 508 in 1843 and at present Rs. 1,272, which falls on the whole assessable area at Rs. 1-0-8 per acre and on the cultivation at Rs. 1-7-6 per acre. The population at settlement numbered 1,063 males and 892 females.

Nayán Palla, a patti of parganah Páli Pachháon in Kumaon, is bounded on the north by Talla Chaukot ; on the west by Malla Sult ; on the east by Nayán Walla and on the south by Walla Sult and Talla Kakalasaun. This patti was separated from Nayán at the recent settlement. It lies along the right bank of the Rám-ganga river and is traversed from north to south by a mountain ridge containing the peaks of Mandhil (6,214 feet) and Puriya-ke-Chauki (5,737 feet). The principal villages are Kúrhidhár, Burkinda, Buserhi, Músyoli and Dúngra. The temple of Nauleswar is situated here at the junction of the Gagás with the Rám-ganga. The road from Rámnagar to Mási follows the left bank of the Rám-ganga which is here fordable except during the rains. The statistics of the Palla and Walla pattis may be shown thus :—

Nayán.	ASSESSABLE AREA IN <i>béis</i> .				ASSESSMENT IN RUPEES.				POPULATION.	
	Total.	Cultivated.		Culturable.	1815.	1820.	1843.	Current.	Males.	Females.
		Irrigated.	Dry.							
Palla ...	2,510	13	1,963	534	786	1,344	1,406	2,206	1,938	1,838
Walla ...	2,829	25	1,187	618	1,465	2,157	2,122	2,530	1,977	1,899

The assessment on the total assessable area falls in the Palla patti at Rs. 0-14-1 per acre and in the Walla patti at Rs. 0-14-4.

per acre : on the cultivation only the incidence is Rs. 1-1-10 and Rs. 1-2-4 respectively per acre. The patwári resides in Jhímár.

Nayán Walla, a patti of Pálf Pachháon in Kumaon, is bounded on the north by Talla Giwár ; on the west by Talla Chaukot and Palla Nayán ; on the east by Talla Dora and on the south by the Gagás river, which separates it from patti Talla Silaur. This patti was separated from Nayán at the recent settlement. It lies along the left bank of the Rám-ganga river south of the Jhaurkot-gadh. The principal villages are Bárhikot, Baman-Chaunda, Inda, Naikana, Naula and Bhikiya at the confluence of the Gagás with the Rám-ganga. This patti lies along the left bank of the latter river containing, however, few important villages. The statistics are given under NAYAN PALLA. One village was received from Giwár at the recent settlement. The patwári resides in Bhikiya-Sain.

Nilang, a village in Tíhri, which gives its name to the passes at the source of the Jádh-Ganga or Jáhnavi (q.v.) into Tibet, is situate in north latitude $30^{\circ}-6'-30''$ and east longitude $79^{\circ}-3'-5''$ at an elevation of 11,310 feet above the level of the sea. The village gives its name to the entire valley from Bhairongháti to the passes into Tibet. It is known as Chongsa by the Huniyas. Mr. Kinney visited¹ it in 1878 and from him we learn that—

The features of the Nilang valley correspond with the general physical characteristics of this portion of the Himálaya as observed in other similar valleys. The main line of water-parting is, as a rule, lower and the slopes about it easier than in the southern belt marked by the highest groups of snowy peaks. Here as elsewhere the groups of snowy peaks forming the line of highest elevation lie to the south of and dominate the line of water-parting and 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 debouche amongst the lower mountains. The entrance to the 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 having here an elevation of 11,000 feet. Falls of 9,000 to 10,000 feet in a horizontal distance of under three miles are not uncommon while sheer precipices of in one or two cases over 3,000 feet overhang the stream.² The valley preserves the same characteristics for a distance of about fifteen miles up past the village of Nilang to the junction with the Mána-gádh. Above this junction, the valley gradually opens out and

¹ Report on the survey of the western sources of the Ganges, particularly the Jádh-ganga or Nilang valley, in 1878 : by Mr. T. Kinney, G.T.S., 1878-79.

² See BHAIRONGHÁTI.

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 flowers and a sort of heather. The grass and heather have a peculiar sickly scent which producing a certain sense of faintness, adds to the difficulty of climbing due to the rarified air. With some people who appear to be peculiarly subject to its influence this faintness becomes overpowering and hence its name amongst the natives ' *bish-ke-Aswa* ' or ' poisonous air. ' It occurs all over the hills at similar elevations and produces violent headache, sickness at stomach and a total inability for prolonged exertion. Above the limit of vegetation, here 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 snow and ice, a perfect chaos of broken fragments. Deep down between the crevices of these rocks appeared solid masses of ice and frozen snow which, melting in the day, made the footing difficult, so that the stones and rocks give way when trod upon and causing others to move create a small avalanche, to the danger and discomfort of the traveller. From the water-parting at the head of the valley the ground slopes down to the Hop-gádh, an affluent of the Satlaj.

There are here two passes into Hundes, that to the west known as Thága-la and that to the east called Tsáing-chok-la.¹ There is a third pass from Raithal to Hundes, but it is seldom followed now. The boundary of Hundes leaves the main line of water-parting near Tára peak and runs along the ridge dividing the Mána gádh from the Mána valley proper and from the Gangotri valley. It then crosses down the glacier opposite Nilang and across the Jádhang-ganga to the Basáhr frontier. The Tihri Rája formerly claimed up to the water-parting at the passes but his customs' post is now at Nilang. There are but two villages in the valley, Nilang and Jádhang, the former with some thirty families and the latter with about ten families. Nilang is within Basáhr but its cultivation is partly in Tihri and partly in Hundes. Jádhang, ten or eleven miles further on, is in Hundes. The two villages belong to the Jádhs, who are here the carriers and brokers with Hundes, like the Bhotiyas of the Kumaon valleys. The *sayána* of Jádhang is subordinate to the *sayána* of Nilang and both pay collectively to Tihri Rs. 84 a year, to Hundes, Rs. 100 a year and to Basáhr a capitation tax of a *Adá* (about eighteen inches) of the local woollen stuff in addition to a small sum in coin altogether valued at about Rs. 60 a year. As is the custom in the Kumaon valleys, the Jádhs migrate southwards in the winter to Dhúnda on the Bhágirathi, some seven or eight marches below Nilang.

On the trade between Nilang and Chaparang (Tsáparang)

Trade.

Mr. Kinney writes in 1879 :—

"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 Rs. 20,000 passes through the hands of the Jádhs, the balance being accounted for by the trade of the Khampas and Garhwális. The Rája of Tihri formerly levied an *ad valorem* duty of one anna in the rupee on all imports, equal

¹ About thirty miles from Bhairongháti.

to 6½ per cent. In 1878, however, a new impost was made of a *timáshi* on each bag of salt, which is equal to about 90 per cent., wool and other imports being taxed proportionate. 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 Dhunda."

The following are the statistics of trade for five years:—

	1878-79.		1879-80.		1880-81.		1881-82.		1882-83.	
	<i>Exp.</i>	<i>Imp.</i>	<i>Exp.</i>	<i>Imp.</i>	<i>Exp.</i>	<i>Imp.</i>	<i>Exp.</i>	<i>Imp.</i>	<i>Exp.</i>	<i>Imp.</i>
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Maunds...	8,234	...	4,164	7,853	8,340	8,754	4,075	4,816	7,828	10,166
Value ...	35,152	...	23,492	47,495	21,946	48,255	19,800	29,543	32,365	62,193

The exports in 1881-82 comprised cotton goods valued at Rs. 520; (grain 3,840 maunds) worth Rs. 10,852; metals valued at Rs. 787; oil-seeds worth Rs. 286 and sugar worth Rs. 140. The imports during the same year included salt weighing 4,506 maunds and valued at Rs. 18,024, wool worth Rs. 3,696 and borax worth Rs. 750. In 1882-83 the exports were cotton goods worth Rs. 1,060; grain Rs. 19,061 (7,145 maunds); metals, Rs. 1,105; oil, Rs. 327; oil-seeds Rs. 1,434; sugar Rs. 476 and tobacco Rs. 870. The imports during the same year were 9,746 maunds valued at Rs. 38,984 and wool and woollen manufactures valued at Rs. 8,800. The trade through the passes to Tsáparang or Chaprang is chiefly in the hands of the Jádhs, though Khampas from Basáhr and a few of the Garhwális from the upper villages also trade with the Húniyas. The Basáhri Khampas have permission to travel all over Tibet without question. The Jádhs go to Toling, Tsáparang and Gartoh while the Garhwális are seldom permitted to go beyond Dokpa-Aur, or, if they do, only under the escort of Jádhs or Basáhris.

Níti, a village of patti Painkhanda in Garhwál, is situate thirteen miles to the south of the pass of the same name which lies in north latitude 30°-57'-59" and east longitude 79°-55'-3" at an elevation of 16,628 feet above the level of the sea (others 16,570 feet).

The village is built at an elevation of 11,464 feet on the left bank of the Dhauli and at the foot of a ridge which sweeping round defends it on the north and north-west from the violent storms which blow from those quarters. There

are a few flat pieces of terraced ground bearing scanty crops of buckwheat and barley, but here, as in Máná, the Bhotiyas pay little attention to agriculture. Moorcroft found the temperature in the middle of June to vary from 40° to 50° at sunrise and at mid-day from 70° to 80°. In consequence of this the Dhaulí and other streams are swollen in the advanced part of the day by the melting of the snows and shrink considerably during the night. During Moorcroft's stay the high mountains were towards the close of day regularly enveloped in clouds, from which snow descended on the more elevated parts, and gentle rain on the valleys. Much of the snow was melted by the heat of the sun during the next day, and again replaced during the succeeding night: and these successive depositions and meltings continued throughout the warm weather. Such great changes affect the health of natives as well as strangers with catarrhs and fevers, active in their effects for a short time, but neither dangerous nor of long continuance. From October until May the inhabitants of the Dhaulí valley migrate to lower situations, completely deserting their villages. The whole country at that season is covered with deep snow. In summer, however, notwithstanding the elevation exceeds 11,000 feet, the land in the neighbourhood of the villages produces crops of barley, amaranth and buckwheat, and the hills and mountain sides yield excellent pasture to large flocks of goats and sheep and a few yaks and *jabus*. The route from the village to the pass is up the course of the Dhaulí, which rises on the southern side of the pass. After the track diverges from the Dhaulí the ascent becomes very steep and encumbered with the detritus from the neighbouring hills. The pass itself once crossed leads by a gentle declivity for some distance to the plains or undulating country of Tibet which even at this elevation produces crops of *sa-jau* (*Hordeum himalayense*). Webb who visited the pass towards the end of August reports that there was not a vestige of snow on the pass nor on the shoulder of the hill which rises some 300 feet above the pass on the left side. The tableland near the pass is very stony and barren, producing only mosses and prickly shrubs resembling furze and intersected by numerous ravines, the channels of torrents discharging themselves into the Satlaj. The rocks scattered over the plain are of blue limestone abounding in fossil remains especially ammonites of which some account has already been given.¹ To the north-east Kailás may be seen (see KAILÁS) but from the great general elevation of the country and the distance which is not much under one hundred miles, its apparent height is inconsiderable.

The Níti pass is esteemed the easiest and safest from Garhwál into Tibet and is open from the latter end of June until the second week in October. (See BUORIYA MANÁLS). The sufferings of travellers from disordered respiration, in consequence of the tenuity of the air, are very severe; and though the Bhotiyas take pains from early age to train themselves to endure it, some can never succeed; and even yaks and other beasts are not exempt from sufferings resulting from it. The most marked symptoms are vertigo, inordinate action of the heart, accelerated respiration, and the most distressing difficulty of breathing. The statement of Batten is conclusive as to the reality of this influence:—"During this walk I was almost killed by mere pain. The rarity of the air along this high road to Dába (nearly 17,000 feet) was perfectly awful. My dandi people would

¹ *Gay.* X, 2151-16.

not go on, and returned to the crest of the pass. One man accompanied me ; and he and I went groaning along at a snail's pace, on a level, and yet in great agony. *Angina pectoris* I now consider nothing in comparison.¹ I felt the pain most at my chest, and suffocation seemed to threaten me at every step." At the same time others who have travelled over the same tract have assured me that they felt no ill-effects and that the complaints of the Bhotiyas are directed to extract the gift of a bottle of brandy. There are two other passes from Niti, one leading by the Malchák pass and Rúnkún to Hoti or Ráj-Hotí and the Tunsum-la (Ting-Jung) pass into Tibet and the other by the Chor-Hoti. Both these passes were visited² by Lieutenants H. and R. Strachey in 1849, and the river at Hotí was explored as far as was practicable. They describe the river as exactly corresponding with those crossed on the road from Milam to Hundes by Unta-Dhúra. The road by Chor-Hoti runs due east and it takes two marches to get across it, but there is always danger from avalanches, while the pass ends in an abrupt slope down which men and animals must slide, though it is not any great length. These difficulties cause this pass to be less used. The regular pass, though only about sixteen miles long from Niti, from the badness of the road and difficulty of travelling in such rarified air takes three days to get through ; but it is not a difficult one. In addition to the common wild flowers found all along the road up to Níti, there is a regular "gorse" with a yellow flower growing all over these mountains from Malári to the Tibetan boundary. The new road or rather an improvement of the old road, is completed up to the village of Níti, and is a great boon to all the traders with Hundes rendering the carriage on animals much less risky than it used to be ; and also benefiting the animals themselves who can travel even longer marches with less tax on their endurance. The usual march for laden sheep is six miles a day.

The following account³ of Mr. Batten's visit to the Niti pass is the best that we yet possess :—

Near Joshimath and the whole way to the junction of the Ríni river, which
comes from the north-west face of Nandi Devi,
Batten's journal. this glen is characterised by the most exquisite
scenery ; the southern mountains sloping down to the river covered by forests of
Quercus semicarpifolia, *Rosa Webbiana* (wild red rose), yew, horse chesnut, alder,
poplars and elms, interspersed with pretty villages of which the chief ornament,
are the fields of red *mársa* (the *battu* of Bisáhr) a species of amaranth, while the
high craggy northern mountains and peaks, that form the separating ridge be-
tween Badrináth and Níti, come down to the Dhauli in the most terrific precipices.
Above the Ríni, both sides of the glen assume the regular Himálayan features of
wild sublimity, although villages are everywhere seen perched upon seemingly
inaccessible heights. The river remains broad and deep, though often broken
into cataracts. The road is carried on either side of the river as most easy, and
is crossed by fine *Sogas* or spar-bridges. There is a very dreary glen without
villages for ten or twelve miles separating upper from lower Painkhanda, or as

¹ *As. Res.* XVII, 4 : XII, 399 ; *J. A. S. Ben.* 1838, p. 313.

² *J. A. S.*

Ben. XIX, 79.

³ *J. A. S. Ben.* VII, 310 ; Traill's intended visit (in letter to Government, 18th December, 1817 and 22nd September, 1818), was to the Gar-pun at Déba.

they are sometimes, but improperly, called upper and lower Niti. After leaving the oaks and elms, &c., the wood becomes entirely cypress, and from summit to base of the mountains no other tree is seen. The larger trees attain not unfrequently an enormous size, some of them having a girth of 27 feet. At Juma Upper Painkhanda is entered, and then the scenery, retaining all its grandeur, also becomes exquisitely lovely. Villages of the true Swiss character are seen on every open spot, surrounded by cedar trees and overhung by crags of the most stupendous character wooded up to the snow which shines on their summits, with similar trees and birch, which latter as well as the sycamores have at this season the true autumnal tints, contrasting finely with the dark branches of the deodár. The bridges now become very frequent; and the river, though still unfordable, becomes a torrent falling over rapids.

Malári is next entered, a very large village. After leaving Malári we marched

Malári.

up a glen of the most beautiful kind, the deodár trees (all of spreading shape) coming down to the waters' edge, and now beginning to be mingled with *chita* pines (*Pinus excelsa*, not unlike the *chir* at a distance), and *rágha* firs (*Abies Webbiana*): a set of large villages is then entered, Bampa, Gamsáli, &c., all varying in elevation from the sea from 10,200 to 11,000 feet and upwards, the highest of which is Nítl. At Bampa, the deodár end,

Bampa.

and no other tree is seen save birch and *Pinus excelsa*, but the ground is covered, as well as the surrounding heights, with beds of ground cypress, gooseberries, currants, furze, (*Astragalus Roylei*) Webb rose, sweetbriar and juniper. The furze is especially plentiful, but there is no heath the *Andromeda fastigiata* of Boyle as at Badrináth. Up to Gamsáli, the rocks have been quartz, mica, schist and gneiss, with granite blocks in the river beds, fallen from the peaks, except in the neighbourhood of Malári where argillaceous and talcose schist is the chief rock. At Gamsáli the granite is met with *in situ*, pervading gneiss and mica schist.

Gamsáli.

The breadth of the veins is sometimes very thin, but sometimes the granite spreads into great broad patches. It is a reddish variety in general, but a highly quartzose variety with large school or tourmaline crystals is very common. Just above Gamsáli the river runs through tremendous gneiss and granite precipices, and the road is carried along scaffoldings. After turning this corner and ascending to Nítl village, the Himálaya peaks are all turned, not one is left to the north, though some of the north-west and northeastern heights are within perpetual snow limits. Nítl limestone (not crystalline) and argillaceous schist, chiefly the latter, are the rocks. After arriving at Nítl I proceeded on to the junction of the Ganesh-ganga with the Dhauli where I met with the first snow near Gildung, more than 14,500 feet high, and this snow was merely a snow-cave in the river, the leavings of last winter. A few masses of gneiss and granite were still to be seen in the bed of the Dhauli, the debris of some of the southern precipices through which I could see the granite veins running along; argillaceous schist and quartz were the rocks of the surrounding hills. There is one very bad gorge between Gothing and Gildung pastures, where there was some trouble in making a road, but after Gildung the hills are round and smooth up to the pass. They were covered with grass and *Saussurea* flowers, the grass of very peculiar kinds and noted for its goodness.

The rivers Ganesh-ganga and Dhauli are mere streams, and were half frozen above Gildúng at their junction, but near Gothing, the Railkauda joins the main river with a large body of water, arising at this season from a glacier, and up to this point, the Dhauli may be said to be unfordable, except at one or two rocky points near Níti. The Ganesh-ganga may be said to arise from a snow bed, for I saw snow-eaves towards its source, but the Dhauli or furthest branch of the Ganges certainly rises from a spring at the southern face of the pass when on the 11th October there was not even a speck of snow. After leaving the source of the Dhauli, the ascent was very steep through crumbling crags of blue limestone which now succeeded to the round clay-slate hills; but the top of the pass was round and open, the limestone interspersed with arenaceous quartz rocks.

The first object that caught my eye was the Kailás peak standing up in the east-north-east. Right in front stretched a dreary plain, shrubless, treeless and houseless, terminated along its whole northern side at a distance of about twenty miles from my position by a low range of rounded brown hills, utterly without shrub or tree or jutting rock, but very broken into ravines and perpendicular faces on this their southern side. The plain is broken into ravines and river-courses running down to the Satlaj which flowed (not visibly as to water) in a deep ravine not far from the base of the round hills. I found the ammonites lying about in hundreds on the top of a small ascent just as the road wound through a kind of pass between two hillocks, before it descended to a ravine. The distance from the Níti pass was about three miles, but at this point the continuation from that pass of the crags forming the first rise of the Himálayan mountains was not very distant. The rocks surrounding the fossils were a kind of mottled grey limestone, i. e. the white veins were more frequent than in ordinary limestone. Tibet is, in fact, entered very soon after leaving Níti village and the peaks seen so grandly towering in the south are the real beginning of the Himálaya mountains and not the crest of the pass. It is possible that fossil ammonites can be found on the south face of the Níti pass, which is in my idea only the highest portion of the Tibetan plain running up to the Himálayan peaks. Even at Níti there are peaks 23,000 feet high due south; and there as well as at the pass itself the spectator wonders how one is to thread one's way into Hindustán through them, no gorge or glen being visible, that seems to be like an introit or exit. Behind Malári the hills become round and Tibetan also, as well as behind Níti, but being higher and within the limit of perpetual snow, they are difficult to cross, and the pass following a river bed is preferred. The time to visit Níti is from the 20th September to the 10th October. In May, Malári even is hardly reachable, and the snow does not melt in any part of Upper Patukhanda till the end of that month. The pass is not open till July. On the evening of the day (11th October) on which I visited the pass, the first snow fell. All night it snowed heavily and next day I could hardly reach Níti. Such are the vicissitudes at this season. At 3 P.M. when the wind got up, the thermometer was 30° in the shade and 42° in the sun at the crest of the pass. On the morning of the 12th, in my camp at 14,500 feet, the thermometer was 16° in the air and 22° at my bedside."

Niyo-dhúra, or Neo-dhúra, a pass into Hundes in Patti Malla Dárma of Kumaon, is often called the Dárma pass and lies in north

latitude $30^{\circ}-27'-10''$ and east longitude $80^{\circ} 35'$ at an elevation of 18,510 feet above the level of the sea. It is much frequented by the Bhotiyas by the route up the Dhauli valley, though considered more difficult than the adjacent pass to the east, the Lunpiyalekh at the head of the valley of the Kuthi-Yáukti, as the glacier lies at the Hundes side of the pass. In 1846, a Bhotiya with a flock of 100 laden sheep were swept away in an avalanche at Dawa encamping-ground at the foot of the pass in the Dhauli valley. Kachh is the name given to a second pass a little to the west of the Niyo-dhúra and which leads into the glen of the Dárma-yáukti in Tibet. It is very little used, as being both dangerous and difficult.

Nyár, or more correctly **Nayár** or **Sáni**, a river formed by the confluence of its eastern and western branches at Bhátkulu in patti Manyársyún of parganah Báráhsyún of British Garhwál.

The eastern branch rises on the north-western slopes of the Dúdú-ke-toll range in latitude $30^{\circ}-7'-30''$ and longitude $79^{\circ}-10'$ at an elevation of between 7,000 and 9,000 feet. It follows a course at first south-westerly then south and then due west, to its confluence with the western Nyár or Chhipalghát river near Bhátkulu in patti Manyársyún. Thence the united streams under the same name flow north and west and fall into the Alaknanda at Byáns-Ghát in latitude $30^{\circ}-3'-40''$ and longitude $76^{\circ}-33'-30''$ at an elevation of 1,342 feet above the level of the sea. From their source to their junction both branches have a rapid fall, after which the united rivers show a succession of deep pools swarming with fish, and in the rains form a ready means of transport for the timber of the forests along their banks. The total length to its longest source according to Herbert is about fifty-miles. Where crossed by Webb in April, at about five miles above its mouth, the stream was forty yards wide, twenty-six inches deep and running at the rate of eight miles an hour. There is a bridge across the stream on the Srinagar and Kotdwára road at Sangúrásara also known as Belkhet. There is also a road which goes by Marwára separating from the Belkhet road at Banekh-khál three miles beyond Puriya-ke-manda. The bridge at Marwára consists of a *sanga* having a span of 97 feet. It is also crossed by an iron suspension bridge of 92 feet span at Byáns-ghát on the road between Srinagar and Hardwár. The eastern branch flows through pargauahs Chandpur, Chaundkot, Malla Salán and Báráhsyún and forms the boundary for a short distance between pargauahs Chaundkot and Talla Salán and from the junction it is the boundary between the Ganga Salán and Báráhsyún parganahs. It is crossed by a bridge on the Almora and Páori road at Kainúr; on the Páori and Dháron road by a good ford between Kalwára and Chaurául in patti Iriyakot of parganah Malla Salán and by the Kotdwára and Khátali road at Dhúra where there is a bridge of 62 feet span. The streams which unite to form its headwaters near Marwára in Patti Choprakot are the Syonsi, Khirganga, Ladholi, Dumodhyar and Pathargadh. The principal feeders on the right bank are the Mú-sstigadh and the Maohhlád which drains the eastern patti of parganah Chaundkot

and at its junction forms the boundary between Kolagár and Guráryún, the left side the Eastern Nyár receives the Khátigadh which rises near Lakhora in Kumaon and drains Patti Khátall. Next to it comes the Maidi which drains the entire valley of Kauriya Walla, and the upper portions of Malla Síla. There are some large villages close to the banks of the eastern Nyár amongst which may be mentioned Marwára and Hansári in Patti Choprakot, Gorpála and Kulwári in Iriyakot and Kandji, Babína and Toli in Malla Badalpur.

The northern branch of the Western Nyár takes its rise near Khand in Patti Kandáryún of pargana Dewalgarh and flowing in a south-westerly direction unites with the southern branch near Paithani in the same patti. The latter drains the high lands of Patti Dháijyúli and is the more considerable of the two, flowing for about ten or twelve miles north-west. Thence to their junction with the Eastern Nyár the combined stream forms the boundary between the syúns or pattis of Chaundkot and those of the Bárahsyún pargana. The Western Nyár is crossed by the Páori and Dháron road at Jwálpa by a bridge of 67 feet span. It receives numerous feeders draining the slopes on either side of the tract through which it flows among them—the Pasín, Kota and Ira streams flow into it on the right bank and the Pen, Kul and other minor torrents on the left bank.

Páchhu, or Pánchhu, a village in patti Mulla Juhár of Kumaon is situate in north latitude $30^{\circ}-24'-10''$ and east longitude $80^{\circ}-11'-30''$ at an elevation of 11,060 feet above the level of the sea on the right bank of the Gori and about three miles from Milam. The village possesses an assessable area of 42 *bis* and a population of 228 souls. It is situate on the left bank of a torrent proceeding from a glacier on the eastern slope of Nanda Devi of which there is a grand near view: on the right bank is Gánagarh. Páchhu is held free of revenue, on condition of supplying food and shelter to pilgrims proceeding to Mánasarowar in Tibet. Gánagarh on the opposite side has a population of 122 and some 25 acres of arable land: a fair is held here every year in the rains. The rock here where weathered becomes a reddish brown clay but grey in the fracture. Many of the fragments contain ore in some quantity and all have descended from the heights above.

Paidulsyun, a patti of pargana Bárahsyún in British Garhwál, is bounded on the north by Nádalsyún; on the south by Kap-holsyún; on the east by Khátsyún, and on the west by Patwálsyún and Gangawársyún of the same pargana. The patwari resides in Páori and collects the land-revenue of patti Patwálsyún; both aggregated Rs. 2,173 in 1864 with a population of 4,466 souls. There is a school at Kamera. This patti comprises the upper valley of the Ira stream along the right bank of which runs the road from

Jwálpa to Srínagar joining the Kotdwára road to the same place at Búba-khál near Páori.

Painun, a patti of parganah Talla Salán of British Garhwál, is bounded on the north by Badalpur Malla and Iriyakot; on the west by Badalpur Talla; on the south by the Pátli Dún and on the east by Búngi. The road from Páori to Dháron passes through this patti. There is a school at Badiyargaon on the Páori road where the patwári lives. The land-revenue for 1864 amounted to Rs. 1,841 and Rs. 55 for *gúnth* and resumed revenue-free grants. From Mr. Batten's remarks it is clear that this patti must have made considerable strides since 1840. Elephants do not now intrude on the cultivation and tigers are rare. The climate is hot and the soil is rich and except about Jhirt the valley is not unhealthy. The rock is limestone and slate. A small iron mine is worked at Agarwára. The forests comprise oak and dwarf *sal*.

Painkhanda, a parganah of Garhwál, occupies the extreme north-eastern portion of the district and is divided into two pattis or sub-divisions the Malla and Talla. Its fiscal history and general description will be found under the article **BHOTIYA MAHÁLS**. Mr. Traill describes it in 1816 as containing—

"Twenty two villages, of which ten are situated in the snowy mountains and are inhabited solely by Bhotiyas. In the year 1811 A.D., this sub-division was assessed at Rs. 4,051 *Gk.*, half to be paid in money and half in merchandize at a fixed and specified price. A lease for the year 1816 was granted in the first instance to the *saydnas* on the standard of the receipts of 1813 A.D. at Rs. 3,500 *Gk.* = Rs. 2,625 *Fd.*, with the usual agreement in regard to money and merchandize. On the payment by the *saydnas* of the first instalment at Srínagar, it was found that for many of the articles given in there was no sale in that town, while of the others the market price was far below the rates specified in the engagement rendered. Under these circumstances, the *saydnas* were directed to pay in lieu of the half in merchandize one-third of its amount in Government rupees the other two-thirds being granted as a deduction for probable loss in sale, this arrangement reduced the net assessment to Rs. 1,750 *Fd.*"

The present assessment amounts to Rs. 2,656. In 1841, the population numbered 4,603 souls, of whom 2,154 were females; in 1853, 6,358 souls (2,079 females); in 1858, 5,959 (2,909 females); in 1872, 6,383 (3,150 females) and in 1881, 7,513 (3,731 females).

Painkhanda Malla, a patti of parganah Painkhanda in British Garhwál is bounded on the north by Tibet on the west by Tihri, on the south by Parkandi, Malla Nágpur and Talla Painkhanda,

and on the east by the Kumaon parganah of Juhár. It occupies the upper valleys of the Sárhswati by which the route by the Mána pass crosses into Tibet and the valley of the Dhauri forming the route by the Níti pass. The principal places in the former are Pándukeswar, Kalyánkoti, Badrináth, Mána, and the pass itself. Along the Níti road are Rindi, Jhelum, Malári, Bampa, and Gamsáli. Near the latter is Níti village below which the route diverges one road passing by Húnkharak and Kála Juhár across the Chorhoti pass to Rúnkún and thence to Hoti, a second crossing direct by Malchak to Hoti and the third passing up the Dhauri valley by Bomprás, Damchen, Kharbasiya and Kyunlung to the Níti pass.

Painkhanda Talla, a patti of parganah Painkhanda in British Garhwál is bounded on the north by Painkhanda Malla; on the west by Malla Nágpur; on the south by Dasoli and on the east by Juhár. This patti lies along the lower course of the Dhauri river or farthest branch of the Ganges before its junction with the Bishnuganga at Joshimath and also for a few miles along the united river henceforth known as the Alaknanda. It also includes the tract lying along the western slopes of Nanda Devi and Trisúl and drained by the Ríniganga. It is more fully described under the article BHOTIYA MAHÁLS. The patwári resides in Urgam: one-third of the villages are held in *gúth*.

Paláin, a river rising on the southern slopes of the ranges in the eastern parts of Malla Síla and Badalpur Talla of British Garhwál in about latitude $29^{\circ}-1'$, and longitude $78^{\circ}-45'$ flows in a southerly direction. Its eastern branches known as the Khohban, Budh-ka-sot and the Haldgadi-sot flow south-west and join the western branch known as the Khansur river at Kákarbári. The Dhargaon rango (3,908 feet) forms the water-parting between the Paláin and the Mandhál while the Siddh-ka-danda range separates the Khansur valley from the Mandálti valley on the west. Further south on the left bank it receives the Bhitliyád stream and on the right bank near Chawalthúra the Mandálti draining the Chokum Dún hence the united streams are known as the Tainuriya which receives the Bahliád on the left bank. It eventually joins the Rám-ganga on the right bank near the middle of the Pátli Dún a few miles east of the Bogsárh bungalow in latitude $29^{\circ}-31'-35''$ and

longitude 79°-50'-30". A good road crosses the Taimuriya near its junction with the Rámanga and recrossing at the Sidhgár passes north again near the Bahliád. It again crosses to the right bank as far as the Bhagtuwa-chaur and then keeps to the left bank as far as Am-Sot beyond Chawalthúra, hence it keeps to the right bank to Kákarbári where it crosses the Khansúr and turning sharp to the east follows the course of the Haldgadi branch on to the Mandhál valley. During the dry season the Paláin hardly flows, but it has numerous deep pools or *kunds* throughout its course. It is a slow flowing river and is rarely more than 24 feet broad, but its bed is deep. Except near its source it is very little used for irrigation, as for the greater portion of its course it runs through uninhabited forests.

Pábelon Malla, a patti of parganah Káli Kumaon in Kumaon, is bounded on the north by Ohárál Talla; on the west by Sipti and Pábelon Talla; on the south by the latter patti and on the east by the same patti and Tallades. This patti was separated from Pábelon at the recent settlement. The statistics of the Malla and Talla pattis may be shown thus:—

Pábelon.	ASSESSABLE AREA IN <i>bísis</i> .				ASSESSMENT IN RUPRES.				POPULATION.	
	Total.	Cultivated.		Cul- tur- able.	1815.	1820.	1843.	Cur. rent.	Males.	Fe- males.
		Irri- gated.	Dry.							
Malla ...	611	51	388	172	144	216	279	467	325	273
Talla ...	3,754	159	2,460	1,134	1,100	1,432	1,700	2,881	2,105	1,788

The land-tax falls at Rs. 1-0-8 per cultivated acre in the Malla patti and at Rs. 1-1-7 in the Talla patti. Two villages were transferred to Sipti and three to Assi at the recent settlement. The pat-wári lives in Báyala and there is a school in Palsaun.

Pábelon Talla, a patti of parganah Káli Kumaon in Kumaon, is bounded on the north by Sipti and Pábelon Malla; on the west by Talli Rao of parganah Dhyánirau; on the south by Tallades Bhábar and on the east by Tallades. This patti was separated from Pábelon at the recent settlement. The statistics are given

under the Malla patti. The united patti lies west of Chárál and Tallades and extends to the Bhábar, much is high and hilly but not too much so for the growth of turmeric, whilst along the lower slopes and in the valleys all the best grain crops can be raised. One village was received from Talli Rao at the recent settlement. The patwári lives in Dyúri and there is a school in Dhúragaon.

Páli, a considerable pargana of Kumaon, comprises nineteen pattis each of which is separately noticed, *vis* :—

Chaukot Malla, Bichhla and Talla; Dora Malla, Bichhla and Talla; Giwár Palla, Talla and Walla; Kákalasaun Malla and Talla; Nayán Palla and Walla; Silaur Malla and Talla and Sult Malla, Palla, Talla, Walla. The land-tax at the various settlements has been assessed thus :—

1815.	1817.	1818.	1820.	1822.	1828.	1833.	1843.	Current.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
21,050	21,166	25,769	31,236	32,084	32,764	33,249	33,892	57,320

The revenue now falls on the whole assessable area at Rs. 0-14-8 per acre and on the cultivation at Rs. 1-1-7 per acre. The whole assessable area amounted to 62,641 *básis* of which 10,406 are culturable and 52,235 are cultivated (2,294 irrigated). Besides this, 1,304 *básis* are held as temple endowments and 97 are free of revenue. There are 773 maháls or estates comprising 1,048 villages¹ of which the population at settlement numbered 48,054 males and 44,304 females and in 1881 there were 52,062 males and 53,581 females.

Páli possesses no very lofty ranges and is chiefly remarkable for the broad valleys of the Western Rámanga and its tributary the Bino, which unite near Briddh Kedár, and the wide lateral glens of the Khatsári, Kotlár, Naurár and Degádh streams. To a traveller coming from Garhwál they would suggest that he is leaving the hills altogether. Not less surprising is the aspect of many of the smaller ridges of the hills themselves, especially in the sub-divisions known as Malla and Talla Dora covered from base to summit with villages and terraced fields, and separated from each other by a succession of highly cultivated tablelands and valleys, both small and large. Of these last the course of the Gagás river and its affluents presents favorable examples. Of the former Dwára Hát and its neighbourhood is a well-known illustration. The tributary Naihal from the west also reaches the Rámanga through a fertile and populous country, but less flat than the tracts abovenamed. Khatsári in Giwár owes its redemption from waste and a fatal climate in quite recent times to the zeal and industry of

¹ In 1815 there were 603 villages and in 1821 there were 942 villages. To Government 14th March, 1821.

the principal padhán and his cultivators, having been fostered and encouraged by Mr. Trall. It immediately borders on the Garhwál patti of Lohba, the fort of that name overhanging the frontier line, and its iron mines are the most extensive and productive in the province. The pilgrim road from the northern shrines here enters the parganah and leaves it again at the points where the narrow ridges of Buret and Kath-ki-nau form the only barrier which separates the waters of the Rámanga and Koi. The name of the parganah is derived from the village of Páli, which is situated on a low spur of the Naithána ridge above the Rámanga in Talla Dora, and which was formerly the residence of a Gorkhál officer, and, in the earlier part of our rule, of a British tahsildár.

Mr. Batten further remarks that though Páli more resembles a plain than a hill parganah, it has already sufficiently paid for the reputation of superiority, and perhaps has borne a burden which, if equalization had been possible of attainment, ought to have been more generally distributed. After all, in a mountain parganah, where nearly every village has been cultivated to the utmost, where the population is increasing without many outlets for its surplus numbers, where the most productive soil is most precariously situated, whence the markets for produce can only be reached by personal human labor without any artificial means of transport, and, finally, where the wages of labor at Naiul Tál and Bámikhet, or of service as sepoy and chaprasi is considered by the heads of villages as far more certain assets than the prices of produce, the present settlement may be thought a hard one. Our successors in the province will require no written English reports to make them rapidly acquainted with the people of Bárahmandal and Páli. Three-fourths of the litigation in the Court belong to these parganahs.

Panar, a river rising in Patti Malla Sálam of Parganah Chau-garkha in Kumaun in latitude $29^{\circ}-27'$ and longitude $79^{\circ}-47'$, drains the southern declivities of the mountain range running north-east from Julna on the Lohghát road to the Mathurapuri (6,897 feet) peak and thence south-east by Dúrga, Páli (5,010 feet) to Gaulikhán (4,591 feet) forming the water-parting between the Sinniáon and Panár. It flows circuitously but generally in an eastern direction forming the boundary between the eastern half of Malla Sálam and Talla Sálam and between Rangor on the north and the Chálsi, Gangol, Sui-Bisung and Regarabán pattis of parganah Káli Kumaon on the south to its junction with the Sarju on the right bank above Rámeswar in latitude $29^{\circ}-31'-22''$ and longitude $80^{\circ}-7'-25''$. The total length of its course is about twenty-five miles. Buchanan states that he heard that gold was found in its channel, but he alone mentions it.

Pandukeswar, in British Garhwál on the route from Srínagar to Húndes by the Mána pass, lies 54 miles north-east by east of the former in latitude $30^{\circ}-37'-59''$ longitude $79^{\circ}-35'-30''$, and nine miles north of Joshimath, being half way between that place

and Badrináth. The temple of Yog-badri, one of the Panch-badri, is here. The name of the village is said to have been given it on account of the Pándavas who, after making over Hastinapur to Parikshit, retired to this place to worship and die. The population at the census of 1872 numbered 267 souls. Some of the treasure belonging to the Badrináth temple is kept here. The villagers trade a little with the Bhotiyás and also open shops during the pilgrim season. Elevation above the sea 6,300 feet.

Panthe, a village and encamping-ground in patti Pindarwar of parganah Badhán in Garhwál on the route from Karnprayág to Bágéswar, is situate on the left bank of the Pindar river in latitude $30^{\circ}-7'-45''$ and longitude $79^{\circ}-25'-40''$: distant 10 miles, 4 furlongs and 35 poles from Bugoli and 13 miles 1 furlong 7 poles from Jolabugr.

The road hence to Jolabugr continues along the left bank of the Pindar river to the junction with the Kaub river (2,715 yards), to the Míng rivulet, tolerably level, 1 mile 6 furlongs 34 poles from Panthe. Thence by the Ira (Eera) and Kolsári rivulets to Lamgaunda, 4 miles 5 furlongs 20 poles. Hence across the Kímani and Baikholi rivulets to the Tharáli bridge leading by Dángari and Bánjbugr to Nandprayág, 2 miles 3 furlongs 37 poles. From Tharáli where there is a Baniyá's shop the Deorara and Tirwakot rivulets are crossed and the road, still tolerably level, passes by Kotaulbugr to Jolabugr, 3 miles 6 furlongs from Tharáli. The encamping-ground is close to the bank of the Pindar, but it would be better to march two miles further on close to the first tea-garden, whence there is an undisturbed view of Trisúl from base to summit.

Panuwa-Naula, a halting-place, village and traveller's bungalow on the route from Almora to Pithoragarh, situate in patti Talla Lakhanpur of parganah Chaugarkha in Kumaon, lies in latitude $29^{\circ}-38'-35''$ and longitude $79^{\circ}-51'-15''$ at an elevation of 6,489 feet above the level of the sea and a few hundred feet below the summit of the ridge: distant 13 miles from Almora, 40 miles from Pithoragarh and 8 miles from the next stage at Naini. The bungalow has a watchman but no cooking utensils or table attendant; supplies may be obtained at the grain shop here.

The road hence to Almora winds along the slopes of the valleys of the headwaters of the Likhदार-gadh, a tributary of the Suwái, crossing by an iron suspension bridge and then ascending again to the ridge above the valley of the Suwái itself. This river is here crossed by a bridge and a very steep ascent leads round by the Sintola and Híradúngari hills to Almora. The rock mica, schist, with one or two small patches of granite under Sintola. The road throughout is devoid of forest and shade and is exceedingly hot in the summer. This march

should be made in the early morning, if possible, as, owing to the open nature of the valley, the sun's rays are present the whole way.

Páori, or Páuri, a village in patti Nádalýúin and parganah Bárahsýúin of Garhwál, is situate in north latitude $30^{\circ}-8'-59''$ and east longitude $78^{\circ}-49'-8''$, at an elevation of 5,350 feet above the level of the sea, distant 7 miles 2 furlongs 4 poles from Srínagar ; 11 miles from Karsu ; 12 miles 1 furlong 28 poles from Toli ; 11 miles 6 furlongs 39 poles from Puriya-ke-manda on the road to Kotdwára ; 10 miles 14 poles from Simkhet on the old or middle line to Almora ; and 9 miles 6 furlongs 20 poles from Sirobugr on the line to Kedárnath. Páori is built on the ridge separating the head-waters of the Kandui-gadh from those of the Randi river. It is chiefly distinguished as the seat of the civil administration of Garhwál and the court of the Assistant Commissioner. There is a station of the American Episcopal Methodist Mission, established in 1864, in Chopra, one mile from Páori.¹ The mission has prospered fairly in the work it has set before itself, though not making many converts. There is a good school with branch schools at Srínagar and Dandamandi and small vernacular schools in some of the villages around Páori. The head-school at which a good English education is given has been a great boon to the people and improves every year. There is also an orphanage attached to the Mission. A large school-house, towards the erection of which Government gave a grant-in-aid, was completed in 1872, and there seems every prospect of this Mission becoming very prosperous and doing a much-needed work. Government had a large tea-garden at Gadoli about three miles from Páori on the same ridge to the south-east. It was purchased for a lakh of rupees by a planter, who has given up working a great portion of the tea-land, and now gets but a small yield from what used to be considered one of the best plantations in these hills.

Though not very high, from its aspect and situation Páori is cool, and in the winter very cold, as it loses the sun early in the afternoon. The country in the vicinity is thickly and highly cultivated and is connected with the plains and the interior generally

¹ It is in the middle of the district, taking it from north to south, and is most centrally situate for all except Badhán and Lohba. It would not be wise to leave Páori without an European officer, even should the head-quarters be removed to Lohba. The buildings at Páori could be utilised for the civil courts now at Srínagar.

by good roads. It has been proposed to remove the public-offices from here to Lohba, which has a better site and climate; but other considerations have hitherto prevented this being done. The station is built on the northern side of a high ridge culminating in the Kankwála peak (6,651 feet) and faces the snowy range looking up the Ganges valley. There is an excellent garden here containing English fruit-trees of all kinds which is used as a nursery for their distribution over the district.

Parkandi, a patti of parganah Nágpur in British Garhwál, is bounded on the north by Káliphát Malli; on the south by Káliphát Talli and Nágpur Bichhla; on the west by Bámsu, and on the east by Nágpur Malla. The road from Chamoli on the Alaknanda in Dasoli by Gopeswar and Tungnáth passes through the eastern part of this patti across the Agaskámini stream to the Kedárnáth road, which follows the left bank of the Mandákini river. The patwári of Malli Káliphát, resident in Guptkáshi, collects the land-revenue of this patti also, which is all alienated in *sudábart* for charitable purposes. The villages are of good quality, some of them growing sugarcane, but they deteriorate as they ascend the valley. The prevailing rocks are granite and slate.

Pátli Dún, or Bhábar, one of the largest of the valleys or Dúns formed by streams in British Garhwál flowing between the main ranges of the hills and a lower range of clay and sandstone immediately bordering on the plains, is bounded on the north by Ajmere, Síla Malla, Badalpur Talla and Painún; on the south and west by the Bijnor district, and on the east by the Kumaon Bhábar. To the west lie the Chokum and Kotri Dúns, which are included in the Pátli Dún or Garhwál. Bhábar for all purposes.

Along the plains boundary a fair road runs in the Bijnor district and, commencing on the west, a road runs to Kotdwára by the Kauriya Chauki along the foot of the hills. Another runs up the Siya Sot by the Sanai peak (1,008 feet), passing Kotri in the Kotri Dún and bifurcating at Lúnkatta, whence the western branch goes on to Dogadh and the eastern by Dimki to Kusumghát in the Chokum Dún, also in a westerly direction. From Dimki a light track passes down the Mandákti river eastwards and joins the Páori road at Chawalthúra. Parallel with this, a track passes down the Kotri Dún from near Kotri, crossing the watershed between the Siya Sot and the Sona Nadi by the off-shoots of the Satarkári range and joining the Rámna-gar road by Lakrighát, near the confluence of the Sona with the Rám-ganga. Midway this road is connected with the plains by a road from Moṭi-Sál to Kálu-Shahíd, about five miles. The plains are again connected with the Pátli Dún by three roads;

the most westerly follows the right bank of the Rám-ganga to its confluence with the Sona, thence crossing the Sona once and the Rám-ganga twice, it passes up the Tanriya and Mandáti to Chawalthúra, whence it proceeds up the bed of the Páin as far as the Khanár river; here it turns suddenly east and passing by Haldgadi and Jhri joins the Páori road at Kartiya. The Páori road enters from the plains by the Kanchangháti pass and crossing the Rám-ganga in the Dún runs directly north by Semalkhaliya, Kotri and Unait. Further east, the Kainár and Dháron road pierces the outer range by the Dánapáni pass and runs north through Tuliya and Konda, while the Rám-nagar road runs directly east along the left bank of the Rám-ganga from the Bogaárh bungalow through the middle of the Pátli Dún. This tract is therefore well off for means of communication; the stages and distances on the principal lines are given elsewhere.

The whole tract may be divided into three. The Chokum Dún immediately under the greater ranges of the Himálaya to the extreme west is separated from the Kotri Dún by a range of hills attaining an elevation of over 3,000 feet and known as the Ránikot, Hathithán, Káli Harpál and Deo-kánda range. This forms the watershed between the Mandáti, which drains the Chokum valley on the north, and the Sona, which drains the Kotri valley on the south. Both these rivers run eastwards and fall into the Rám-ganga in the Pátli Dún. At the western end of both the Kotri and Chokum valleys a ridge runs north and south which sends the western drainage into the Siya Sot, running south and debouching on the plains at Sanai, while the eastern declivities of this ridge form the sources of the head-waters of the Mandáti and Sona. To the south the Kotri Dún is separated from the plains by a low sandy range attaining a height at Giriwála of 2,723 feet. At the eastern end of these Dúns commences the broad expanse of the Pátli Dún, through which the Rám-ganga flows. This valley is also separated from the plains by a low range of hills and receives the drainage of these hills and on the north those from the watershed separating it from the Mandhál valley. In fact the whole tract is one mass of water courses, here called *sots*, pouring down to the main drainage arteries and all eventually swelling the waters of the western Rám-ganga, which join the Ganges in the Farukh-abad district. The hills descend to the river in broad steppes covered with *sál*, cotton-wood, and other trees, many of which are very valuable. It used to be cultivated, and was also used as grazing land for large herds of cattle; but when Government took up the direct management of the forests, cultivation and grazing were both stopped. A large saw mill, which was to have been worked by water power taken by a canal from the Rám-ganga, was erected under the superintendence of Captain Reid, but it was found that the expense of working it would be too great, and the *sál* forests had been so recklessly cut that no wood remained to be worked up. The place at which it was erected is called Bogaárh, where there is also a bungalow still used by forest officers. Cutting in this Dún has been prohibited for some years, and the *sál* forest is visibly increasing and ought to become the best block west of the Sárda river. This and other Dúns are the hiding places of elephants and other wild animals; tigers are especially numerous, being driven there by increasing cultivation in the plains and Bhábar. The patti was formed in 1864 from the Pátli Dún and the forest portions of Painún, Badalpur, Síla, Karaundu, Ajmere and Udaipur, comprising what is styled in the forest records, the Kotri and Pátli Dúns and Bhábar Rawásanyár and

wár. All the villages interfering with the *sal* reserves were removed and the people were compensated or given lands in exchange in Bijaur."

Patwálsyun, a very small patti of parganah Bárahsyún in British Garhwál, is bounded on the north by Gangwársyún and Paidúlsyún; on the east by the latter patti and Aswálsyún; on the south by the latter patti and Manyársyún, and on the west by the latter patti and Gangwársyún. The patwári of Kapholsyún, resident in Sakhyána, collects the land-revenue of this patti also. Patwálsyúu, so named after the clan that colonised it, contains the upper waters of the Khar-gadh. The road to Kotdwára by Mohripáni post-house passes through it and it possesses some oak and pine forest.

Phaldakot, a parganah of Kumaon, comprises six pattis, each of which is separately noticed, viz:—Chaugáon, Dhúraphát, Kosyáu Malla and Talla, Kandárkhuwa and Malli Doti. The assessment at each settlement has been as follows:—

1815.	1817.	1818.	1820.	1823.	1828.	1833.	1843.	Current.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
5,884	6,133	6,691	7,001	7,404	7,404	7,528	7,565	10,346

The incidence of the current land tax on the whole area assessable to revenue is Rs. 1-0-10 per acre and on the cultivation is Rs. 1-5-1 per acre. The assessable area comprises 9,832 *bísi*, of which 1,996 are culturable and 7,836 are cultivated (703 irrigated) and about 50 are held as temple endowments. There are 128 maháls or estates comprising 151 villages. The parganah reaches from Siyáhi Devi along the southern slopes of the ridge separating the drainage of the Kosi from that of the Rám-ganga as far as Bina. Westward of this, the mountain ranges are included in Páli, but in patti Kosyán the parganah stretches along the Kosi as far as Seti where it marches with the Kota parganah. With the exception of a few places in Kosyán there is little level and irrigated land, and some of this was injured much in the floods of 1880. All the upland pattis are similar in character to Dhaniyákot. It was formerly held by Káthi Rajpúts and named after the fort occupied by them. Batten writes:—

"The villages are for the most part large, well-inhabited and thriving, but the soil in the upper parts is not very favourable for the production of the best grains. The people of this parganah however are great traffickers, and with their neighbours of Dhaniyákot almost monopolize the trade in borax, &c., between Bágeswar and Rámnagar, as also the cloth and sugar trade between Almora and Káshipur. The

principal refining furnaces for borax at Rámnagar itself belong to hill-men of Phaldékot. The Pándes of Pándekota are a principal clan in Malli Doti, unaddicted to mercantile and carrying pursuits, while they afford village accountants, soldiers and messengers to Government."

The population at the current settlement numbered 8,582 males and 8,259 females, and in 1881, 9,406 males and 6,136 females.

Pharka, a very small patti of parganah Káli Kumaon, in Kumaon was formed from Sipti-Gangol at the recent settlement. It is bounded on the north by Asi and Gangol; on the west by Asi; on the south by Sipti, and on the east by Gangol. It contains the tract around the village of Pharka on the road between Lohughát and Almora and contains the villages of Batúla-báj and Mára-gaon. The patwári lives in Pharka. The assessable area comprises 145 *blais*, of which 63 are culturable and 82 are cultivated (10 irrigated). The land-revenue amounted to Rs. 37 in 1820, Rs. 75 in 1843, and now stands at Rs. 112, which falls at Rs. 1-5-9 per acre on the cultivation and at Re. 0-12-4 per acre on the total area. The population at settlement numbered 27 males and 35 females.

Pharka, a halting-place and former travellers' bungalow in the patti of the same name and parganah Káli Kumaon of Kumaon, is situate in north latitude 29°-22'-48" and east longitude 80°-1'-54", at an elevation of 5,854 feet above the level of the sea; distant nine miles from Lohughát and 13 miles from Devi-dhúra. The bungalow has neither cooking utensils nor attendants, but there is a grain-shop. There are several good groves of *deodár* in the vicinity: one at Dana near Dernáth, another at Lúliya, and a third near the Pharka bungalow. There are several villages scattered over the neighbouring valleys, most of which are alienated in *gánth* to the Badrináth temple at Almora. Much rice is grown in the swampy bottoms whose streams join the Ladhiya at Kela-ghát. The rocks consist for the most part of granite in a state of complete disintegration.

Pharkiya, or Phurkiya, a halting-place on the route to the Pindari glacier, 5 miles from Diwáli, 69 miles from Almora and 8 miles from the glacier: see DÚGLI and DIWÁLI. There is a bungalow without attendants or supplies here.

Pindar, or 'ganger' from Sansk '*pad*,' 'to go,' a river of Kúmaon, takes its rise in a glacier in a hollow bounded by snowy

peaks over 20,000 feet high at an elevation of 12,088 feet above the level of the sea. The glacier is situate in north latitude $30^{\circ}-15'-30''$ and east longitude $80^{\circ}-2'$ in patti Malla Dánpur. The Pindar springs up at once from the foot of the glacier and has a course generally south, passing by Martoli, Phurkiya and Dúgli to Diwáli, where it is joined on the left bank by the Kuphini. Thence it bends to the south-west by Kháti to Wáchham, near which it receives on the right bank the Sundardbúnga and further on at Kanwári on the Garhwál frontier the Bháiganga on the same side. The course is thence more due west to the confluence with the Kailganga on the right bank at Talor in patti Pindarwár, where it bends southwards before again resuming its western course at Tharáli; it receives on the right bank the Goptára-gádh, and at Paitháni the Toligár stream, whilst on the left bank it receives numerous small torrents all along its course and at Simli the Bharírigár. It joins the Alaknanda on the left bank in north latitude $30^{\circ}-15'-43''$ and east longitude $79^{\circ}-15'-29''$ at Karnprayág, at an elevation of 2,000 feet above the level of the sea. The Pindar is crossed by suspension bridges at Karnprayág and Naráyanbugr and by an iron wire-bridge at Tharáli. Some account of the Pindari glacier has already been given.¹ From Diwáli, at the confluence of the Pindar and Kuphini, the glacier of the former is distant a march and a half, and of the latter one march. 'Pindar' means an affluent or feeder, whilst '*Pindal*' is a bridge or causeway or passage over a river or ravine.

The following account of the journey from Dúgli to the glacier is from Major Madden² :—

"In the north-west Himálaya, contrary to the fact here, the passes are all gained by the north-west banks of the streams: here, in general, the eastern bank is most accessible. One circumstance remains constant, which is the comparatively level bed of the river below the glacier. From its source to the cave nearly, the Pindar flows along a wide channel, overspread with gravel and stones, the product doubtless of the glacier, which has no terminal moraine; its waters are exceedingly turbid, and though diminished above by the dozens of cascades, which of all sizes, and at all distances rush down from the snow, are quite impassable. The spot called Pindari is rather an open, undulating piece of ground, covered with grass, docks, and the ubiquitous shepherd's-purse, in an amphitheatre of crags, with many snow-beds along these bases: the ascent is rather steep, over rough, and occasionally pasture land, covered with *Sibbaldia*, *Salix Lindleyana*, a low shrubby *Astragalus*, the yellow aromatic *Tanacetum*, the

¹ Gaz. X, 182.

² J. A. S. Ben., XVI (1), 256.

dwarf white *Helichrysum*, a garlic-like *Allium*, and two most abundant and beautiful blue Gentians. The glacier lay to the west, and between us and it rose a lofty moraine, along the lower or east base of which flows a considerable stream, the source of which is much more remote than that of the Pindar, which it joins one or two hundred yards below its exit from the ice. Having ascended perhaps a thousand feet and striking to the left crossed the moraine, which is here about 150 feet high, descend to the glacier, a few hundred paces towards its head, where it commences in huge broken tiers of the purest snow.

The moraine is constituted of gravel, mud, and blocks of stone imbedded in ice; the stones are very small. There is a very steep descent to where the river issues from a cave in the face of the glacier, about 20 feet high, by perhaps 90 wide; the impending roof is riven into four or five successive thick ribs of ice. The recent heavy rains had thoroughly washed the Pindari glacier, and its surface exhibited a sheet of the purest ice, except on and near the terminal escarpment, which, being covered with rubble, resembles, at a short distance, a steep bank of mud, and such is said to be the appearance in May and June of the Milam glacier. But to make quite sure fragments have frequently been broken off which everywhere were perfect ice, the only difference perceptible, between this and the Alpine ice, being a coarser granular structure here. It is intersected by the same fissures, has the same rib and texture, and from its origin in the snow to its termination above the cave, falls in a series of the most beautiful curves. That the mass is moving downwards seems confirmed by the form of the snow at its head, *vis.*, a succession of terraces, with steep wales, just such as clay, &c., assumes on its support being removed. The glacier may be about two miles long, and from 300 to 400 yards broad, and probably occupies the interval between the levels 12,000 and 13,000 feet above the sea; owing its existence to the vast quantities of snow precipitated from Nanda Devi and the other lofty mountains above, which, melted by the noonday sun, is frozen at night. It must be observed, too, that, in spite of theory and observation elsewhere, the perpetual snow appears here to descend to the level of 13,000 feet: far from the head of the ice to the crest of "Traill's Pass—" the *col* which may be considered as the root of the glacier—there is an uninterrupted surface of snow, and that from its low angle, except for the lowest thousand feet, evidently *in situ*.

None of the culminating pinnacles of the Himálaya are visible from Pindari; though a great peak is immediately above on the east, but its northern shoulder, a massive snowy mountain, forms a grand object to the north-east, and this, passing the depression forming Traill's Pass, is continued in glorious domes and peaks to the left, where a beautiful pinnacle terminates the view, apparently the eastern most of the two lower peaks of Nanda-Devi. The adytum of the goddess herself is utterly concealed. Amongst some great rocks on the east of the moraine, numbers of the curious *Saussurea obvallata* are found, called the "kanwal" or lotus of Nanda-Devi; near it grows the *Oolomiæa macrocephala*, another sacred plant, bearing the strange name of 'kâla tagar,' or black Tabernœmontana; and the common rhubarb (*Rheum Emodi*) here called 'dolw.' The rocks *in situ* about the glacier are mica-slate and gneiss, but on the moraine, the fragments consist also of crystalline and slaty quartz, the latter often considerably colored with iron between the layers; hornblende rock is also common; and masses of the same granite which forms the great range at least

up to Gangotri. Though it exhibits quartz, felspar, and mica, the felspar is in such excess to the other minerals, and large crystals of black schorl are so abundant, that Captain Herbert probably did not recognise it to be granite, and hence his denial that this rock is found in the snowy range. It certainly differs much in appearance from the more authentic granite which is found north and south of the great chain, in Kunáor and Kumaon."

Pindarpár, a patti of parganah Badhán in British Garhwál is bounded on the north by Nandák; on the west by Karákot, on the south by the Pindar river, which separates it from Pindarwár and on the east by Kumaon. The patwári resides in Tharáli. The land-revenue and *sadábart* in 1864 amounted to Rs. 2,320 and the *gúnth* to Rs. 41 paid by 4,802 souls. The villages are good and bad, varying very much; they lie for the most part in the valleys of the tributary streams and there is much waste. There are iron mines at Kheta-Wudur worked and old mines of the same metal at Bulan, Mandauli and Súya, and lead mines at Jákh never yet worked.

Pindarwár, a patti of parganah Badhán in British Garhwál, is bounded on the north by the Pindar river, which separates it from Pindarpár of the same parganah; on the south by parganah Páli of Kumaon and patti Lohba of Garhwál; on the west by Sirgur and on the south-east and east by parganah Dánpur of Kumaon. It lies almost entirely among the high mountains bordering on the Pindar river and contains the source of the Gumti. The patwári resides in Kulsári. The land-revenue and *sadábart* in 1864 amounted to Rs. 2,240 and *gúnth* to Rs. 29 paid by 5,652 souls.

Pingala Pakha, a patti of parganah Chaundkot in British Garhwál is bounded on the east by Taláin of parganah Malla Salán and on all other sides by pattis of its own parganah. It is drained by a tributary of the Machhlád river. The patwári resident in Kánde collects the land-revenue of pattis Gurársyún and Kingadigár also, which in 1864 aggregated Rs. 2,351 plus Rs. 133 for revenue-free and *gúnth* lands assumed.

Pinnáth, a temple and village in patti Borárau Palla of parganah Bárahmandal in Kumaon, is situate in north latitude 29°-50'-45" and east longitude 79°-35' about 32 miles from Almora by Dwárahát and seven miles from the latter place. It is built on a spur from the Gopáلكot peak (9,050 feet) overlooking the upper portion of the Kosi valley. A colony of Gosáins reside here and

a number of their mahants lie buried close by, each with a small dome over his remains surmounted by a miniature ling. The Gosáins possess a grant engraved in metal conferring lands on Siva as Pinakeswar, 'Lord of the trident,' executed by Udyot Chand, Rája of Kumaon in 1613 *san.* (1891 A. D.) and another by Báz Bahádur Chand and his consort bearing date 1654 A. D.

"The temples are situated about half way up the hill above the village. The first is a small conical structure, eight to ten feet high, dedicated to Bhalron. The main temple is close to this on the north, a square, slated edifice, with the door facing the south, and figures of rásas, &c., sculptured on the walls. The roof of the portico is formed by the Indian arch, and on its sides are represented the five Pándavas; the adytum is small and contains nothing but one or two images of Mahádeo and Devi; about eighty years ago the original pile was nearly all overthrown by an earthquake. The place is only frequented in the rainy season and autumn, when in October there is a fair. The want of water is poorly supplied by a cistern and several wells, twelve to fifteen feet deep, excavated in the rock. So far the rock is quartz and slate, but onwards quartz only, disposed in vast beds, the outcrop of which faces west-south-west. The area of this summit is not above fifteen feet across, with precipitous glens all around, and an exceedingly narrow rocky ridge connecting it with Bhatkot (9,086 feet) bearing south-west. The Búrhapinnáth range is continued north-west in a very lofty and comparatively level spur, called Birchhwa (8,042 feet), excessively precipitous to the left or west-south-west. In this is the main source of the Kosi, which hence flows nearly due east for about five miles, its northern bank being formed by the slopes of Gopáلكot, on whose craggy summit the Katyúr Rásas had a stronghold in which their treasures were deposited" (*Madden*).

Pipalkoti, a village and halting-place with *dharmsálas* and grain-shops on the route from Almora to the Níti pass, is situate on the left bank of the Alaknanda river in latitude $30^{\circ}-25'-50''$ and longitude $79^{\circ}-28'-20''$ in patti Talli Dasoli of parganah Dasoli in British Garhwál. It is distant 7 miles 6 furlongs from Mathána ($1\frac{1}{2}$ miles beyond Nandprayág) and 11 miles 3 furlongs and 34 poles from Hilang, the next stage. The road from Mathána lies along the left bank of the Alaknanda to Chimoli, about four miles, where there are *dharmsálas*, a dispensary and grain-shops. Here the Alaknanda is crossed by an iron suspension bridge and the new road follows the right bank to Hát, where it re-crosses and continues on the left bank to Pipalkoti. A stream that carries off the surplus waters of the small Diúri lake is crossed on the right bank. On the left bank by the old road the Khanyúri-gádh is crossed at Bhotiya bazár, the Biri-ganga at Biri and the Gat-gadh

¹ J. A. S. Ben. 1848, 619: Gaz. XI, 315, 783, 848, 856, 869, 891.

near Hát. This was abandoned owing to the floods in the Biringanga in 1869, which swept away the bridge there and at Chimoli.

Pithoragarh, or Pithauragarh or Shor, a village in patti Mahar and parganah Shor of Kumaon, is situate in north latitude $29^{\circ}-35'-11''$ and east longitude $80^{\circ}-15'-9''$ at an elevation of 5,334 feet above the level of the sea, lies 16 miles west of the Káli river and 55 miles east from Almora. The station now occupied by one company of the 3rd Gorkhas from Almora lies nearly in the centre of the valley with a population in 1881 numbering 255 souls.

"The Shor¹ valley itself is about five miles in length by about three in breadth, dipping gently to the south-east and bisected into north and south by a tabular ridge of slate, limestone and greenstone originating in the mountains to the north-west and branching down to the south-east. On the south-western exposure stands fort London on a mound apparently artificially scarped, about fifteen feet high, crowned by a loop-holed wall, seven or eight feet high, with platforms for guns, a few houses for barracks and a reservoir for water that is now empty. On a commanding point to the north-west is a small square tower about fifteen feet square, also loop-holed for musketry and known as Wilkiegarh. These are now untenanted and the barracks of the Gorkhas lie to the east of the fort. There is a school and police-station here. In former times the site was considered unhealthy and gave rise to fevers and bowel complaints during the rains. In 1873, in common with the rest of eastern Kumaon, cholera visited the valley and took a virulent form while it lasted.

The whole valley is prettily dotted with small villages, generally placed on eminences and surrounded by the only trees visible, except the distant forests of Bishár and Thákil. The land is often nearly quite level for extensive tracts, and is carefully cultivated with wheat, &c. The soil is a stiff clay, which, after ploughing, requires to be broken up by wooden mallets. The people do not emigrate to the Bhábar, which, with the fertility of the soil, is the cause of the abundance and cheapness of provisions compared with Lohughát and Almora. Each section of the Shor valley has its stream : that to the south, named Chandrabhága, flows along the south end, and, joined by the branch from the north-west, escapes south to the Káli by the temple and glen of Chaupakhiya. The outline of the enclosing mountains is extremely bold and varied, their sides sloping and grassy in some parts, steep as walls in others. To the east is the Durga range about 7,000 feet high, connected on the north with the remarkable summit of Dhuj, 8,149 feet high, with a contour exactly similar to a section through a parapet. To the south-south west appears the long ridge of Thákil, with its three summits. To the north-north-west are the mountains over which goes the direct road to Almora, and north-north-east is a bold and lofty cone, the Koteswar peak, but better known to the English residents as the 'Drill' hill. It is reported to bear this last appellation from the tradition that, in days of yore, the colonel of the regiment stationed here was accustomed to punish delinquents by ordering them

¹ Some derive the name from 'Swarga-rohini,' but the process is not clear.

to trudge, in full panoply, to the top of this hill, their commanding officer, telescope in hand, superintending the distant penance, in his own verandah. In this direction runs the road to Byans; the Chipula mountain, 13,500 feet high, the last ramification of the Panch-Chúla, closes the horizon. About sixteen miles east of Pithoragarh, the Káli is passed by an iron suspension bridge, the boundary between the British and Nepálese territories, where each nation has a guard. The river is said to be there confined to a very narrow width between limestone cliffs. Dr. McClelland found precious serpentine at Gúrat village, on the way down from Pithora." (*Madden*).

The people of Shor have a general impression that the prevalence of goitre in their valley is owing to the presence of so much limestone, and one may occasionally hear a hill-man object to Naini Tál on the score of the water there being impregnated with lime. Dr. McClelland has adopted this opinion and endeavours to prove by an induction from particulars that where the springs are in limestone, the disease prevails: where in slate, that it is unknown. There is not a trace of lime at Almora, yet the malady has shown itself there in several sepoys, natives of the plains, as well as in European children, none of whom could have had any hereditary pre-disposition. Dr. Dollard found the case the same at Lohughát. For an account of Dr. McClelland's researches see "Some inquiries in the province of Kumaon," Calcutta, 1835, by Dr. J. McClelland, page 254. Pithoragarh is a station of the American Episcopal Methodist Mission, which supports a dispensary and school here. For the road to Almora, see BÁNS: to Lohughát, see GÚN: hence to Bágéswar, by Beninág 10 miles; to Sanudiyár 6 miles; to Bágéswar 7 miles. Thal is distant from Pithoragarh 19½ miles.

The following table supplied by Mr. Beckett gives the marches from Pithoragarh to the Dárma and Byáns passes:—

Piura, a traveller's rest-house, on the upper road between Almora and Naini Tál, is situate in north latitude $29^{\circ}-30'-23''$, and east longitude $79^{\circ}-39'-23''$, at an elevation of about 5,692 feet above the sea, distant $8\frac{1}{2}$ miles from Almora, 23 miles from Naini Tál, and 10 miles from Rámgúrh. It commands a particularly fine view of part of the Snowy Range. Being on the northern face of the mountain, it is very cold in winter. About five miles to the south-east is the Mukteswar peak covered with *Quercus di'áuta*, which shelters one or two shrines of Mahádeo, Sain and Goril. On the crags a little below are certain marks which the people believe to be the foot-prints of elephants, horses, and camels, the army of a certain deity who, wishing to pass this way, was opposed by the local demon. The latter obtained deliverance (*noksha*) by being sent to live amongst the Agaris and hence the name Mukteswar. From Piúra there is a very long descent to the junction of the Suwál and the Kumniya, which is crossed by an iron suspension bridge, and then a steep and tiresome ascent up a bare

rocky hill for 1,600 feet to Almora. Of a hot day this is one of the most trying ascents for its length in the hills. The rocks are quartz, mica-slate, gneiss, and finally granite, which forms an entire hill south-west of Almora, and has apparently lifted up and in some places contorted the others to a remarkable degree. To the south, indeed, the strata appear to dip under the granite; they also contain in this neighbourhood quartz dykes supposed to indicate the action of granite. The quarries of micaceous and quartzose rocks supply excellent materials for building and roofing.

Pungarson, a patti of parganah Gangoli in Kumaon, is bounded on the north by Dánpur Bichhla; on the east by Máli of Síra and Tallades of Juhár; on the south by Baráun, and on the west by Nákríri. This patti comprises the valley of the Birar-gár, an affluent of the eastern Rám-ganga on the right bank. To the north it is bounded by a range extending from Kálinág (7,317 feet) westwards, and on the south by a similar range extending from Chaukori (6,553 feet) by Khanlek (6,847 feet) eastwards to the Rám-ganga. Paths connect the villages with the road from Bágeswar to Tejam on the north and to Naya Thal on the Rám-ganga just outside the boundary of the patti on the east. The assessable area comprises 2,499 *bísis*, of which 1,252 are culturable and 1,247 are cultivated (932 irrigated). The land-tax yielded Rs. 414 in 1815: Rs. 546 in 1820: Rs. 689 in 1843, and is now assessed at Rs. 2,417, which falls on the total assessable area at Rs. 0-15-6 per acre and on the cultivated area at Rs. 1-15-0 per acre. 50 *bísis* are held free of revenue. The population at the time of settlement numbered 2,466 souls, of whom 1,314 were females. The patwári resides in Saugor, where there is a school.

Rájpur, a village in the western Dán, with a fixed population of less than 2,000 souls, is situate at the foot of the Himálayan range on the road from Dehra to Mussoorie, six miles from Dehra and seven miles from the Landaur post-office. The site has an area of 1,018 acres, the highest point being about 3,000 feet above the level of the sea. There is a perceptible difference between the climate here and that of Dehra, a difference also marked by the vegetation. Rájpur possesses two hotels, a police-station, post-office, and a dispensary. The last is largely made use of by the considerable floating population employed in the carrying trade

between the valley and Mussoorie. An old canal repaired and made available in 1840-41 runs from the head of the Rispana torrent to the east of the town, and supplies the people of Dehra with drinking water.

Rákas Tál, a lake of Tibet adjoining Mánasarowar, is situate in north latitude $30^{\circ}-44'$ and east longitude $81^{\circ}-16'$, at an elevation of 15,300 feet above the level of the sea. It is also known as Ráwan-hrad and Cho Lagan or Langa by the Tibetans. The journey by the Lunpiya-dhúra pass from Kuthi as far as the Laroha or northern foot of the pass is described elsewhere. The journey thence to Rákas Tál, also taken from Captain H. Strachey's journal is described as follows¹:—

Proceeded from the Larcha to Bháwitl (15,750 feet), a short distance beyond this on an eminence 250 feet higher than Bháwitl and 500 feet above the Dármá-yákti is a small flat covered over with religious structures called *Choktán* or *Mánpáni*, little towers of stones, stuck about with dirty ragged flags said to have been erected by some Láma, hence the name Choktán-Láma. Hence to the north is a low plain expanded to a considerable size, and to the east contracted to a mere valley, a mile wide, receding south-eastward behind the Choktán hill. Beyond this valley, north-eastward, the ground is occupied by lofty hills or low mountains not easily reducible to a regular plan, but the general tendency of them seem to be in parallel ranges running north-west and south-east, the most distant of them, the highest slightly tipped with snow in streaks here and there, and beyond these lines the lakes, entirely shut out from view.

In the low plain to the north-eastward, ten to twelve miles off, rises a small isolated hill, on the top of which was once a fort, called Nimakhar; Bhotiyas call it, Gyánima; there is no village or fixed habitation here, but it is a considerable resort in the summer for the salt and grain traffic of the Bhotiyas from Dárma and western Byáns. It lies on the road from Paráng to Gúgi, and one way to Gartoh, and on the road from Chirchun to Gángri. Immediately beyond Gyánima a long narrow sheet of water is visible; it is a sort of lake called Tára-ohu receiving the drainage of the low plain and the adjacent hills on the east, and giving off its surplus water occasionally into the Chugár westward. Beyond this again rises a range of hills concealing the bed of the Tirthapuri Satalaj. Gyánima belongs to Kyunglung. Wild geese and ducks breed upon the lakes during the summer, and the people of Kyunglung take the eggs. From Láma-Choktán the path descended into the plain by a long, but easy declivity and crossed the flat where it is about a mile and a half wide; reaching the middle of which, it extends many miles in a long valley confluent between the base of the Byáns Hímálaya, and the ranges of the lofty hill which is visible from Láma-

¹ This account is epitomised from H. Strachey's journey in 1846, he left the Laroha, October 1st: Therm. sunrise, 14° ; 9 A.M., 29° ; 2nd, 7 A.M. 20° ; 3rd, 9 A.M. 30° ; 4th, 6 A.M. 20° . See further KAILÁS; MÁNASAROWAR.

Choktán. The origin of the Karnáli is close by near Chujíya in the valley which it enters a few miles to the south-west. The end of the valley appeared from this place to turn southward, where it entered the head of the Puráng valley and the view in this direction was terminated by a huge snowy mountain, the last and greatest of a chain which comes from the south-eastward along the left bank of the Karnáli, the Huniya name of it is Momonangli or Nimo Namgil; the Bhotiyas call it Gurla and the Hindus name it Mandhatagiri, having an elevation of 25,360 feet above the level of the sea. Owing to its eminence and its height exceeding any other peak within a radius of forty miles, it is one of the most striking objects in this part of the Himálaya. Beyond Gurla we came on Chujíya Tol (15,250 feet), a favourite resort of herdsmen and shepherds from Puráng, consisting of a side ravine running from north-west to south-east into the main valley, then descending again a very considerable hill, part of which was very steep and stony, the path reaches a summit of which the elevation is 17,000 feet.

The most remarkable part of the prospect from this eminence was the Indian Himálaya, the view of which extended from Gurla on the extreme east, as far westwards perhaps as Laphkhel, including all the outer part at east of the snowy range of Byáns, Dárma, and Juhár, and from this elevated station the spectator seems almost to be looking down upon the top of the snowy range, which here loses much of its apparent height, but with an increase of visible breadth in the same proportions, so that the range assumed something

of the appearance of a wide field or sea of snow
tossed into a thousand heaps in the most gigantic
confusion. The northern face of the Himálaya thus seen from a commanding station, though still much broken into ravines, peaks and ridges, exhibits a much more gradual and flatter general declivity, with smoother and rounder slopes than the vast rocky walls of the southern face, and a much greater expanse of snow, which extends down to the limit of congelation in a regular line, scarcely broken here and there by a few more rocky prominences. The snow line here is perhaps between fifteen and sixteen thousand feet, much about the same as on the south side. A zone of one thousand feet or so must be allowed for the variation of the line according to the nature of the subordinate slopes, their individual exposures, and degree of proximity to the open country northward, in which direction the snow line appeared to Captain Strachey to be somewhat higher, as was noticed at Bháwiti. The termination of the Himálaya in the table-land is generally abrupt and well-defined, and the transition to a new climate seems to be similarly well-marked and sudden. The great bulk and height of the mountainous range appears to arrest the progress of the Indian rainy season, and to the northward, consequently, there is so little free moisture in the upper air, that snow does not fall in sufficient quantities to withstand the heat of the sun for many days together, at very considerable elevations: hence the line of snow on the mountains that rise from the northern table land is on an average perhaps two or three thousand feet higher than on the Indian Himálaya, though the atmospheric temperature on the former may possibly be colder at equal heights.

From this summit the path descends again as much as it came up from Chujíya Tol, but more gradually into a level valley with flat bottom, varying from one to three furlongs

Amlang.

in width, winding between steep rounded hills for many miles together along which it continued to where a small stream of water made its appearance. The name of this valley is Amlang : a little further on the stream turns northward, and drains into the Gyánima water, which is visible from Láma-Choktán. Elevation of Amlang 15,250 feet. Turning eastward Amlang is left over the low hills on the right side of the valley : a mile or two of undulating ground leads into another valley similar to Amlang ; a mile further on leads into a third valley or a second branch of the last like the others, but open at both ends, and a mile down, divided into two branches going eastward and south-eastward, the road following the former. Beyond this the path follows a course north of east and crossing the stream again which runs into Rákas Tál ascends rising ground at the foot of lofty hills on the other side.

Here is the first view of Rákas Tál, a mile or two to the south-east further on, at a point opposite the middle of the eastern shape a side, a full view of the lake is obtained.

Rákas Tál.

It is in long irregular crescent some seven miles wide east and west, and twenty miles long north and south. A lofty range of hills stretch north-westward, separating the lake from the head valley of the Karnáli. These hills rise abruptly out of the water in bold rocky banks with many deep inlets, promontories, and one or two small islands of the same character. This part of the lake is altogether so irregular in outline that it could hardly be defined without detailed survey and close inspection of every point. The eastern shore is bounded by shelving ground and low hills, the south end being a good deal recessed, eastward, into a deep bay, the middle part advancing, further westward in a rocky bank of moderate height, and the north end sweeping round to the westward, as far as could be seen, with a margin of green grassy plain from the back of which the Gángri mountains rose in dark steep slopes. The western shore of the lake was undulating ground or low hills at the foot of steep and lofty ones. The water of the lake was of the clearest, brightest blue, reflecting with double intensity the colour of the sky above, and the northern horn of the water, overshadowed by the wall of mountain rising above it, was darkened into a deeper hue, partaking of the fine purple colour that distinguishes the rocks of Gángri. The path now inclined northward, the hilly bank over which it came subsiding into level shore sloping down to the water's edge. The path lies over this for two or three miles, the water half a mile to the right, and as far to the left Tsabgya Gumba is passed, but is not visible under the steep hillside, this is the only *Gumba* on the banks of Rákas Tál. The shore of the lake here showed marks of variation in the water-level to the extent of a few feet, ground which appeared to have been lately inundated, now half dry and swampy, was covered with a very thick efflorescence of soda (or some such salt), which must arise from the soil, as the water was quite pure and sweet. The course now about northward passed under a small rocky headland, which advances close to the water's edge, and then entered on another low flat, bearing marks of occasional inundation in places ; here two promontories of low clear land appear stretching into the lake for a mile or two, one from the south and the other from the north, covered with green grass, high hills being still on the left. The northern horn of the lake now rapidly narrows to the extreme north-western point, where the lake ends in swampy ground interperred

with puddles of water. This is or ought to be, the exit as the ground evidently slopes down to Changchung where the river is visible.

At the south-eastern corner of Rákas Tál, which forms a large bay under the foot of Guria, there is or was a Dharmasála called Lagan-Tunkáng, and a rather marine-looking beach with concentric ridges and shingle showing variations in the water level to the extent of six feet perhaps above the present surface; the shingle and sand are mostly granitic and the former partially rolled; only the southern half of Lagan is visible from Tunkáng, the northern part being hidden by the projecting hilly banks which occupy the middle part of the lake's eastern shore. The extreme breadth of the lake at this its widest may be eleven miles or thereabouts, equal to the middle breadth of Mápán. There is no island in Rákas Tál with a monastery on it.

Rám-ganga (eastern), a river which has its source in patti Bichhla Dánpur in Kumaon, in a horseshoe-shaped depression of a very mountainous tract. To the north the ridge culminates in a peak 19,554 feet above the level of the sea: on the east, the ridge runs south with a series of peaks ranging from 16,321 to 9,814 feet (to the west of Ganagarh on the Milam route) and which form the water-parting between it and the Gori: on the west the ridge has also a southern direction and in the upper portion separates the Rám-ganga from the Kupbini and lower down in north latitude $30^{\circ}-4'$ from the Sarju. The Rám-ganga forms the boundary southwards between Bichhla Dánpur and Tallades, and is crossed by the road from Bágéswar to Milam by Ganagarh at Bhakúnda. Further south it forms the boundary between Pungaraun and Baráon of Gangoli and Máli of Síra, and a road proceeds along its left bank to Pithoragarh crossing at Naya Thal, the road from Almora to Askot. The whole course from Bhakúnda is nearly due south and further on it forms the boundary between Bárabisi, Seti Talla, Waldiya Malla, and Ráwal on the left bank and Pungaraun and Bel on the right bank. In this portion of its course it is crossed by a suspension bridge on the road from Gangoli Hát to Báns. It receives numerous torrents on either bank during its course, but none of any great importance. The name Rám-ganga is often given to the united stream of the Sarju and Rám-ganga from their confluence at Rámeswar to Pacheswar, where it joins the Káli.

Ram-ganga (western), a river which takes its rise in patti Lohba of parganah Chandpur in Garhwál, in north latitude $30^{\circ}-5'$ and east longitude $79^{\circ}-18'$ is also known as the Ruhut or Rupt.

The drainage area of its head-waters is very clearly marked by lofty ridges. To the north the ridge extends in a direction slightly north-east from the

northern peak of the Dudutoli ridge (10,166 feet) to the Diwali-khál (7,010 feet) on the Karnprayág road. To the west is the Dudutoli range and on the south its continuation almost due east by the Malkhori pass (8,042 feet) to the exit of the Rám-ganga near Mehalchauri. On the east the ridge extends from Diwali by Kandal (8,553 feet) and Ránpur (9,522 feet) then comes Byánsu above Kithiya and Thajkharak (7,636 feet) to Sungarkáli. The western ridge separates the drainage area of the Rám-ganga from that of the Nyár, a tributary of the Ganges; the northern ridge separates it from the Bharárigár, a tributary of the Pindar and the eastern ridge also from the Pindar valley. The streamlets converge on the south-eastern corner of the basin and at Gaonli below Kithiya form a considerable river in the rains, which escapes by a narrow chasm (now bridged) from the Lohba valley near Mehalchauri. The Lohba valley is about eight to eleven miles in breadth from the eastern to the western watershed and ten miles in length from north to south, so that the drainage waters as seen at Mehalchauri represents the surplus moisture of one hundred square miles of hill country from rainfall and springs. There is no other outlet for these waters than the Rám-ganga, and Mehalchauri would seem admirably adapted to form a station for registering the volume of water carried off from a given area of typical hill country while rain-gauge stations here and at Lohba and Silkot would sufficiently indicate the rainfall in its valley, upland, and mountain divisions. Mehalchauri bridge lies in latitude $29^{\circ}-58'-50''$ and longitude $79^{\circ}-22'-10''$ at an elevation above the sea of 4,280 feet.

From Mehalchauri the Rám-ganga has a course for a short distance due east through the eastern range by a deep and narrow gorge, emerging from which it bends to the south-east, receiving the Khansar-gadh on the left bank. Thence sweeping around the south-eastern continuation of the Lohbagarh range it receives the Turag 'Tal river and then takes a south-westerly course by Ganai, receiving the Kotlar-gadh rising on the western declivity of Dunagiri on the same bank and the Khanar-gadh from Panuwa-khal on the opposite bank. Numerous hill-torrents pour into it from either side further down. The story goes that the gods once intended to make Dwára their home, and they resolved to make there a *prayága* or confluence of the Rám-ganga and the Gagás. The order was issued to the streams to unite their waters and the Gagás passed on the message to the Rám-ganga to come up the Bairti valley from Ganai and break down the barrier that separates the Dwára flat from the Bairti valley. The messenger was a *semal* tree, and when it came to Chhani it said: "I am very tall and can see a long way off and there is no necessity for my giving myself the trouble of going any further; surely the Rám-ganga must come down by Panuwa-khal." In the meantime the Rám-ganga had turned north-east at Mehalchauri and came round and passed by Ganai without being stopped. The roar of the waters aroused the *semal*, and he called out to the Rám-ganga to come his way to Dwára. But he received the reply "too late" and the Gagás was obliged to proceed lower down to meet the Rám-ganga and abused his messenger, hence the phrase—

"tu *semal* ke *rebariya* hai."

"you are a messenger of the *semal* sort," applied to those who neglect their instructions.

The course from Ganai leads to Bhikiva-ke-Sain, in latitude $29^{\circ}-42'-8''$ and longitude $79^{\circ}-18'-20''$ where the Rám-ganga receives the Gagás on the left bank.

Further south-west the united streams of the Hingwa and Bino rivers fall into it on the right bank and in latitude $29^{\circ}-34'-40''$ and longitude $79^{\circ}-3'-25''$, the considerable stream of the Mandhal river on the same side. Hence the Rámgauga enters the Bhábar flowing nearly due west through the Pátlí Dún, where it receives among others the Paláin and Sona rivers on the right bank. Then turning south-eastwards, the Rámgauga bursts through the outer range corresponding to the Siwaliks of the Dehra Dún and enters the plains near the Kálagáih fort south of the Kálagárh peak (2,319 feet) in the Bijnor district, about ninety miles from its source.

Rámgarh or Rámgar, a parganah of Kumaon contains three pattis, viz., Rámgarh, Malla and Talla and Agar. The assessment at each settlement was as follows :—

1815.	1817.	1818.	1840.	1825.	1828.	1833.	1843.	Current.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1,944	1,944	2,317	1,969	1,869	1,901	1,912	1,914	2,304

The incidence of the land tax on the total area amounts to Re. 0-14-1 per acre, and on the cultivation to Re. 1-8-9 per acre. The assessable area comprises 2,610 *bhis*, of which 1,122 are cultivable and 1,488 are cultivated (18 irrigated). The population at settlement numbered 2,683 males and 2,474 females. This parganah lies between the Gágar and Lohukot ranges, both uniting eastwards in the Moteswar peak. The upper parts belong to Agar, and there is hardly any *talláon* or lowlands capable of irrigation.

The Sauns or Sons occupy the Agar villages whence they are called Agaris. Their special avocation is mining, in which they are engaged throughout the district. Of late years, however, this has given place to work on roads and at the new sanitaría and in the Bhábar. The climate is fairly salubrious, but the soil is poor. The Agaris remain at home from May until November and then disperse to their several occupations elsewhere. The people of Rámgarh pay revenue according to the capability of their villages. The inhabitants of the picturesque village of Náykána on the Almora road are Pátas and Náyaks—the former the dancing-girls of Kumaon, and the latter a class originally springing from that corrupt source, and afterwards, by intermarriage with other inferior tribes, becoming a separate clan, only occasionally recruited by births from Pátas. The daughters born to Náyaks, however, themselves recruit the members of the frail sisterhood. The Náyaks have, during the British rule, been the chief clearers of the Chhakháta Bhábar, and as elsewhere remarked their villages of Haldwáni, &c., are highly flourishing. The people of Borhakot and Jutia also possess tracts of land in the Bhábar. The parganah now contains 26 estates comprising 31 villages. The mines of the Agar patti were formerly leased for very large sums, they now yield less than Rs. 100 a year. The principal mines are found in Agar, Ghurkháni, Khúnf-kháya, Kumnai, Parbáha, and Páli.

Rámgar Malla, a patti of parganah Rámgar in Kumaon, is bounded on the north by Rámgar Talla ; on the west by Dhaniya-

kot; on the south by Mahsyúri Talli, and on the east by Agar. This patti was separated from Rámgar at the recent settlement. The statistics of the Malla and Talla pattis may be shown thus:—

Rámgar.	ASSESSABLE AREA IN <i>bits</i> .			ASSESSMENT IN RUPEES.				POPULATION.		
	Total.	Cultivated.		Cur. rent.	1815.	1820.	1843.	Cur. rent.	Males.	Females.
		Irrigated.	Dry.							
Malla ...	504	14	32	457	440	567	570	535	550	784
Talla ...	260	1	188	99	125	254	223	247	232	245

The incidence of the existing assessment on the whole area is Rs. 1-1-0 per acre in the Malla and Rs. 0-14 per acre in the Talla patti. The incidence on cultivation is Rs. 1-8-4 and Rs. 1-4-10 respectively. In 1872-73 the iron mines were leased with the Agar patti at Rs. 92 a year. The patwári resides in Sunkiya.

Rámgar Talla, a patti of parganah Rámgar in Kumaon, is bounded on the north by Kotauli Malli; on the south by Rámgar Malla; on the east by Agar, and on the west by Dhaniyakot. This patti was separated from Rámgar at the recent settlement. The statistics are given under the Malla patti.

Rámgar, a travellers' rest-house on the upper road from Naini Tál to Alnora, 12 miles from the former and 20 miles from the latter, is situated in latitude 29°-26'-8" and longitude 79°-35'-40", at an elevation of 5,872 feet above the level of the sea in parganah Rámgar in Kumaon. There is also a *dharmaśala* or rest-house for native travellers, to which water is conveyed by a series of wooden gutters from the Gágar pass above.

The population of the neighbourhood migrate to the Bhábar during the cold and hot seasons, and are on this account better off than the majority of hill-men. In the valley about two miles from the bungalow are the remains of the iron works erected by Government and now belonging to the Kumaon Iron Works Company constructed for smelting the rich iron ore of the valley which belongs to the hæmatite and magnetic varieties. Some account of this project has been already given.¹ The march from Naini Tál to Rámgar is one of the most beautiful and characteristic in the outer Himálaya. The road leaving the margin of the lake ascends a few hundred feet to avoid a formidable landslip caused by the rotten

¹ Gaz. X, 262.

shales of which the mountains along the north side of the lake are composed. It then passes under the peak of Lariya-kánta and above the barracks of Kála-khán winding amongst the great grassy spurs and deep wooded khuds which run down from the northern prolongation of Lariya-kánta. Passing by Bhawáll it reaches the Níngláth stream by a steep descent. From the baniya's shop there, a steady rise along an outlying spur of the Gágar range for four miles to the Gágar peak (7,855 feet) and pass, whence a descent of two miles leads to Rámgar bungalow. The botany of this march and indeed all the way to Almora has been investigated and recorded by Major Madden in one of his delightful papers.¹

From Rámgar to Piura bungalow, ten miles, the road first dips one thousand feet, to the level and comparatively open valley of the Rámgar stream; a mile or so further on, the road crosses to the right bank of the stream by a pretty iron suspension bridge, beyond which and some 200 feet above the road is the Náyakána village, very pretty and neat, the residence of that curious class who have been described amongst the castes in Kumaon. From the bridge there is a somewhat long ascent to the gallery, where the road keeps for two miles along the south-east face of the hot and bare Lohakoti or Pathargarhi mountain, which rises fully a thousand feet higher (7,855 feet). About Náyakána commences the mica-slate formation so general thence northwards; on the gallery it is blended with strata of blue crystalline limestone, the whole dipping north-east. At the east end of the gallery is the Deodara pass on the col which joins Pathargarhi to Mukteswar. Here Almora is first seen, backed by the snows, but the view is soon lost, for the road now makes a second dip into the glen of the Deodar stream; this rises in Mukteswar and joins the Kosi above Munrus. Its slopes exhibit a rich expanse of cultivation about Kilaur, Banjgaon, and Tikari in contrast with the gloomy forests of the Gágar. From the valley there is a long ascent to the Laldana Bináyak where there are the remains of a small fortlet belonging to olden days. About east and some 200 feet lower is the Piura (*q.v.*) travellers' rest-house.

Rámnagar, the chief market of the Kota Bhábar in Kumaon, is situate in north latitude $29^{\circ}-23'-35''$ and east longitude $79^{\circ}-10'-9''$ at an elevation of 1,204 feet above the level of the sea on the right bank of the Kosi, distant 12 miles from Kota; 6 miles from Dhikuli; 12 from Mohán; 20 miles from Seti; 36 miles from Khairna, and 56 miles from Almora. It is the great lowland mart of western Kumaon as Haldwáni is for midland and Barmdeo for eastern Kumaon. In 1881 the population numbered 3096 souls, chiefly Baniyas. Before 1850, Chilkiya was the principal mart for forest and hill produce, but it has since then quite given place to Rámnagar. There is a police-station, dispensary and forest bungalow here.

The routes to and from Rámnagar being the most important in the tract lying along the foot of the hills, we give them here. From Barmdeo to Chhíni

¹ J. A. S. Ben. 1848, page 414.

Chauki Dharmasála six miles, for the first five miles the road follows straight across the numerous streams flowing from the foot of the hills into the Sárda, and has many ascents and descents. The Duán or Chhini stream flowing from the ravines west of Bastiya is crossed close to the encamping-ground. From hence to Dogári, six miles, the road crosses the bed of the Kulauniya and numerous small *sots* or torrents with some difficult places for laden carts when there is rain. There is a Chauki and Dharmasálas here. Jaulasál is the next stage, nine miles; the road as usual and indeed all along crossing numerous beds of torrents, here and there where sandy very difficult and requiring some rough repairs. There are native rest-houses here. To Chorgaliya (1,048 feet) nine miles: here there is a small bazaar, reached after crossing the Nandhaur (Dewa) and its numerous offshoots. Next stage is Haldwáni (*q.v.*) twelve miles, then Chaunchala six miles, and Káladhúngi six miles. From Káladhúngi the stages are Bailparao nine miles, and Rám-nagar six miles. Proceeding westwards we have Dhela seven miles, the name of the village and river (unbridged) passing by Himmatpur and Sawal-deh. Next comes Láldhang (1,117 feet) with a Chauki three miles from Dhela crossing an unbridged stream. Next comes Jhirna, four miles, after crossing the Phika, the western boundary of the Kumaon Bhábar. Three miles further on is Dháron with a Chauki (*q.v.*) whence roads branch off to all parts of Garhwál. Five miles on the Rám-ganga is crossed at Kálagarh by Lakrighát, where there was once a fort. The next stage is Kála-Shahíd or Kálu-Sayyid (1,008 feet) seven miles; then Pákhraán nine miles; Saneha eight miles; Haldukháta nine miles; Láldhang, a bazaar and chauki, ten miles; Chhla thirteen miles, and Kankhal three miles. The entire road from Rám-nagar to Chila is unmetalled, but is passable for laden carts from November to the rains, crossing the *sots* by improvised log-bridges. This is the main road for the traffic from the east including Nepál to the Ganges, and is also largely used by pilgrims passing to the great assemblies at Hardwár. It is also used by the timber merchants for exporting the produce of the forests to the plains, and is continually crossed by the roads leading into the hills direct from the plains.

Rangor, a patti of parganah Changarkha in Kumaon, is bounded on the north by Dárún; on the west by Lakuanpur Malla and Sálam Malla; on the south by the latter patti and the Panár river separating it from the pattis of Káli Kumaon; and on the east by Bel of Gangoli. Portions of this patti were transferred to Dárún at the recent settlement. It is drained by the Panár river, a tributary of the Sarju falling into it on the left bank above Rámeswar. The assessable area comprises 4,156 *básis*, of which 1,660 are culturable and 2,496 are cultivated (139 irrigated). The assessment in 1815 amounted to Rs. 429: in 1820 to Rs. 1,005, in 1843 to Rs. 1,108, and is now Rs. 2,481, which falls at Rs. 0-9-7 per acre on the total assessable area and at Rs. 0-15-11 per acre on the cultivation. Upwards of 688 *básis* are outside the revenue-roll as *gúnth* and waste. The population at the time of settlement

numbered 4,283 souls, of whom 1,899 are females. The copper mines at Chimmakholi are unworked, but the iron mines at Ukhalgarha, Bhandoli, and Pálikúri are leased with the other mines of Chaugarkha in Dárún, Kharahi, and Lakhanpur, and yield a revenue of Rs. 625 a year. The patwári resides in Gauli, and there is a school in Chaukholi.

Ranigadh, a patti of parganah Chandpur in British Garhwál, is bounded on the north by Nágpur Bichhla; on the south by Taili Chandpur and Kandársyún; on the east by Taili Chandpur and Bichhla Nágpur; and on the west by Dhanpur, from which some villages were received at the recent settlement. The patwári of Dhanpur residing in Panái collects the land revenue. The patti lies along the left bank of the Alaknanda river, below its confluence with the Pindar. The hills are generally steep, and the tops are covered with oak and pine. There are copper mines at Dhanpur at the head of the valley just outside the patti, Pangur, Bameli, and Sibyadsb Andikholi, all at work, and an old mine of the same metal at Lawári. Dhanpur has also a lead mine. The iron mines of Kharsayi, Koti, and Sukund are also worked. These are all situate on the Dhanpur range crowned by the peaks of Dobri (9,862 feet), Gwánagarh (9,821 feet), and Pandobri (9,859 feet).

Rawal, a patti of pargana Shor in Kumaon, is bounded on the north by Waldiya Malla; on the west by the eastern Ráunganga river; on the south by the Sarju, and on the east by Waldiya Talla. The Lohughát and Pithoragarh road passes through Gún, in this patti, where there is a travellers' rest-house. Thákil, on the east, rises to 8,161 feet. The assessable area comprises 1,515 *bisis*, of which 902 are cultivated (253 irrigated) and 613 are culturable. The land tax yielded Rs. 166 in 1815, Rs. 343 in 1820, Rs. 455 in 1843. The present assessment amounts to Rs. 1,010 and falls on the total assessable area at Rs. 1-0-6 per acre, and on the cultivation at Rs. 1-7-6 per acre. The population at settlement numbered 1,955 souls, of whom 892 were females. The patwári resides in Bhatyúra, and there is a school in Tharkot.

Rawatsyún, a patti of pargana Búrahsyún in British Garhwál, is bounded on the north by the Alaknanda river, on the east by Katholsyún, on the south by Idwálsyún, and on the west by Bangarhsyún. The patwári of this patti, resident in Margana, collects the land

revenue of patti Bangarhsyún and Sitonsyún also ; the three aggregated in 1864 Rs. 2,811 for land revenue and *saddbart*, and Rs. 64 for *gúnth* paid by 5,348 souls. This patti contains a small strip of land along the left bank of the Alaknanda, mostly level or of easy slope, and is traversed by the road from Hardwar to Srinagar.

Regaruban, a patti of pargana Káli Kumaon in Kumaon, is bounded on the north-west by the Panár river, a tributary of the Sarju, which separates it from patti Rangor of pargana Chaugarkha ; on the north-east by the Sarju river, which separates it from Bel of Gangoli ; on the east by Gúmdes ; on the south by Chárál Malla ; and on the south-west by Sai-Bisung. The assessable area comprises 3,813 *bisis*, of which 1,380 are culturable and 2,433 are cultivated (63 irrigated). The land tax amounted to Rs. 910 in 1815, to Rs. 1,100 in 1820, and to Rs. 1,514 in 1843, and now stands at Rs. 2,467, which falls on the acre of cultivation in the assessable area at Rs. 1-0-2, and on the acre of the total area at Rs. 0-10-4. The population at settlement numbered 2,310 males and 1,851 females. The villages that lie between Chárál and the Sarju are for the most part situate on high ridges and slopes. The climate is good ; but from the poorness of the soil the coarser grains, like *manduwa*, predominate. The patwári resides in Báparu, and there is a school in Regaru.

Ringwársyún, a patti of parganah Chaundkot of British Garhwál, is bounded on the north by Mawálsyún ; on the south by Jaintolsyún ; on the east by Kimgarigár ; and on the west by the Bárah-syún parganah. The Páori and Dháron road passes through this patti, which is drained by a branch of the Machhlád river forming its northern boundary. The patwári of this patti resides in Gajera, and has also charge of the collection of the land-revenue in Mawálsyún and Jaintolsyún, which in 1864 aggregated Rs. 2,392 plus Rs. 71 for resumed *gúnth* and revenue-free lands.

Ríthagár, a patti of parganah Chaugarkha in Kumaon, is bounded on the north by Kharáhi ; on the west by Syúnara Malla ; on the south by Lakhanpur Talla and Dárún ; and on the east by the Sarju river which separates it from Athgaon of Gangoli. Portions of Dárún and Kharáhi were transferred to this patti at the recent settlement. The two eastern roads from Almora to Bágeswar pass through it on

either side of the Jarauli peak (6,200 feet). This patti occupies the valley of the Jillar-gadb, a tributary of the Sarju, which it joins on the right bank near Dúngari-lekho. The patwári resides in Khákar. The lower part near the Sarju is covered with a luxuriant tropical vegetation, and is hot and unhealthy. During the rains the people are much troubled by the *múra*, a small fly that leaves an irritating mark like a bruise wherever it bites, and if scratched the bite becomes a sore of a leprous appearance. The assessable area amounts to 1,634 *bísis*, of which 770 are culturable and 863 are cultivated (200 irrigated). The assessment in 1815 was Rs. 74 ; in 1820 was Rs. 405 ; in 1843 was Rs. 444; and at present is Rs. 1,124, which falls at Rs. 0-11-0 per acre on the total assessable area and at Rs. 1-4-10 per acre on the cultivation ; about 176 *bísis* are held as *gúnth* outside the revenue-paying area. The population at the time of settlement numbered 1,258 souls, of whom 548 were females. The upper part of the patti near Bilauri and Chbauna has a good climate and some fine cultivation, and here the Joshis of Jhijhár have a settlement. Both these villages belong to Ráotela Rájpúts connected with the Chands. The hamlets depending on Naugaon comprise a large portion of the patti, of which some fourteen villages belong to Jageswar temple. Portions are admirably adapted for the cultivation of tobacco, turmeric, and sugarcane.

Sabali, a patti of parganah Malla Salán in Garhwál, is bounded on the north by Bangársyún and Dhaundyálsyún ; on the south by Khátali ; on the west by Saindhúr and on the east by Chaukot of Kumaon. Khátali, Sábali and Saindhár occupy the valleys of the Eastern Nyár and Khátali river and have fairly good villages. The population of Sábali in 1858 numbered 2,330 males and 2,135 females. The patwári usually resides in Chandoli and has also charge of Bangársyún. A fairly elevated range runs down the western portion in a south-easterly direction culminating in the peaks of Motikhál (7,688 feet), Tilkani (6,421), under which there is an unworked iron mine at Chorkhanda, and Agargarh (6,102 feet). There is a school at Bangár.

Sahasradhará, or 'spring of a thousand sources,' lies in a glen to the south of the Dún water-parting ridge a little east of Rájpur on the route to Mussooree in Dehra Dún. The water here

has a fall of about thirty feet and leaves an incrustation of lime on all it touches. Particles thus accumulating for centuries have formed a projecting ledge, and thus a sort of cave, from the roof of which falls a perpetual shower that turns every leaf and blade of grass coming into contact with it into a sort of petrification. One of the lumps thus formed in a smaller cave adjoining resembles the linga emblem of Siva and is tended as such by Brahmans from Nágál. There is also a sulphur spring. Here, as in the glen of the Baliya and Nihál below the Ayárpátha cliffs at Naini Tál, the clay slate and limestone rest on beds of aluminous shale and white gypsum which becomes of an exceedingly hard texture. Gypsum appears under analogous circumstances at Jutog near Simla and under the Krol rocks near Subáthu. In the former place, as in the Lobakoti hill, the limestone becomes crystalline in contact with the micaceous rocks. Immediately opposite the stalactitic caves at Sahasradhára a passage into the hills up a torrent leads to the gypsum beds, which consist of two strata separated by a reddish argillaceous schist, the whole lying horizontally without apparent dip. The quality of the gypsum varies as much as the colour from a compact crystalline mass to a loose powdery and arenaceous soil: the colour varies from an almost translucent white to a dirty grey. About four miles north at Salkot is another bed of gypsum.

Saindhar, a small patti or sub-division in parganah Malla Salán of British Garhwál, lies in separate scattered patches between the Eastern Nyár river on the south and the Machhlád on the north.

Saknyána or Shaknyána or Saka country, a *jágir* or fief situate on the north-east frontier of Dehra Dún, is bounded on the north-west by the Bandal river and on the south by the Song.

The tracts known as Saknyána, Deori and Athur, with the villages of Kot-Padiyár and Sonár in the hills and Bájawáin in the Dún, were granted to Siva Rám by the Garhwál Rája for services rendered, subject to an annual *bhet* or offering of Rs. 500 *kachcha*. On the conquest of Garhwál by the Gorkhális the grant was resumed, but on the conquest by the British, the fiefs were restored¹ to Siva Rám by a *parwana* of Mr. Fraser confirming them as heretofore held, but this was interpreted as free of revenue for life. Siva Rám died in 1818, and the Garhwál Rája demanded that the *jágir* should be resumed or the revenue be paid as before. Hari Rám, the heir of Siva Rám, appealed to the British Government, and Mr. Traill recommended the grant in perpetuity of the portion in the hills should be confirmed to Káshi Rám and Hari

¹ Because of some alleged services: see Williams' Memoir, p. 178.

Rám at a revenue of Rs. 200 a year. The Government refused to interfere, and on Hari Rám declining to accept the terms offered by the Rájá of Garhwál the *jágr* was settled with other members of the same family.¹ At the same time their claim to independence as regards Tíhri was disallowed, as they had never been in the position of independent chieftains nor ever had separate civil or police jurisdiction. Subsequently it was resolved to restore them to their possessions as *jágrdárs*, subject to the payment of offerings on certain occasions to the Rájá of Garhwál. Káshi Rám dying without issue, his nephew Devi Datta claimed to succeed him as his adopted son and devisee by will.² On this quarrels arose and the Court was obliged to interfere, and eventually Hari Rám and Devi Datta succeeded. The internal administration was regulated by an order of the Governor-General in Council by which all persons accused of offences specified in Regulation X of 1817 section 2 should be committed by the Assistant in charge of the Dún to stand their trial before a Commissioner appointed under that law, while the police arrangements rested with the *jágrdár*. Since the repeal of the above Regulation it is difficult to say whether British Courts have cognizance of these offences or not.

Sálam Malla, a patti of parganah Chaugarkha in Kumaon, is bounded on the east by Rangor ; on the south by Talla Sálam ; on the west by Mahryúri-Dolphát and Lakhanpur Malla, and on the north by the latter patti. It was formed from Sálam at the recent settlement and lies on the right bank of the upper portion of the Panár river. The patwári usually resides in Kandára ; the statistics of the Malla and Talla pattis may be shown thus:—

Sálam.	ASSESSABLE AREA IN <i>bísis</i> .				ASSESSMENT IN RUPEES.				POPULATION.	
	Total.	Cultivated		Culturable.	1815.	1820.	1843.	Current.	Males.	Females.
		Irrigated.	Dry.							
Malla ...	2,565	2,086	53	426	Rs. 866	Rs. 1,245	Rs. 1,437	Rs. 2,326	2,207	1,952
Talla ...	3,408	2,700	56	651	1,219	1,770	2,017	2,958	2,407	2,157

In the Malla patti 126 *bísis* are held free of revenue and in the Talla patti 58 *bísis*. The assessment falls at Re. 1-1-5 per acre of cultivation in the former and at Re. 1-1-2 per acre in the latter. Six villages were received from Lakhanpur and one was transferred to Chálsī at the recent settlement.

¹ From Commissioner, 28th December, 1818 ; 31st January, 1824 ; to Commissioner, 30th January, 1819 ; 31st August, 1824 ; 19th November, 1824. ² Major Young's letters of 15th December, 1820 and 28th July, 1830, quoted by Mr. Williams.

Sálam Talla, a patti of parganah Chaugarkha in Kumann, is bounded on the north by the Panár river, which separates it from Sálam Malla; on the west by Mahryúri-Dolphát; on the south by Malli Rau and on the east by Rangor. This patti was formed from Sálam at the recent settlement. For statistics see *Sálam Malla*. The patwári lives in Jainti, where there is a school.

Salán Malla, or Malla Salán, a parganah in Garhwál, has ten pattis or sub-divisions, each of which is separately noticed, viz., Bangársyún, Dhaundyálsyún, Gujaru, Iriyakot, Khátali, Kolágár, Meldhár, Sábali, Saindár and Taláin. The assessments at each settlement may be shown as follows:—

1815.	1816.	1817.	1820.	1823.	1828.	1833.	1840.	1864.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
4,829	5,842	6,043	6,959	8,341	8,748	9,076	8,900	11,916

The statistics of the current settlement show that the parganah consists of 285 estates comprising 411 villages and containing a total assessable area of 15,096 acres, of which 14,212 are cultivated. The mill-rent amounted to Rs. 26, and the land-revenue to Rs. 11,916, of which Rs. 305 are alienated in *gánth* and *muáfi*. The land-revenue falls on the total assessable area at Rs. 0-12-7 per acre, and on the cultivation at Rs. 0-13-5 per acre. The population in 1841 amounted to 16,132, of whom 7,300 were females; in 1853 to 29,471 (14,626 females); in 1858 to 30,388 (14,730 females); in 1872 to 38,618 (19,353 females) and in 1881 to 41,125 (21,044 females). Malla Salán is bounded on the north by Chaundkot; on the east by Kumaon; on the south by Talla Salán and on the west by Ganga Salán. It lies to the north of the outer range of hills and is drained by the tributaries of the Eastern Nayár. There is a large and dense population for the hills and industrious, too, rearing large quantities of red pepper and cardamoms.

Salán Talla or Talla Salán, a parganah of the Garhwál district, is subdivided into eleven pattis each, of which is separately noticed, viz., Bhábar, Bijlot Walla and Talá, Búngi, Badalpur Malla and Talla, Kauriya Walla and Palla, Painún and Síla Malla and Talla. The assessments at the various settlements of the land-revenue have been as follows:—

1815.	1816.	1817.	1820.	1823.	1828.	1833.	1840.	1864.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
3,642	4,146	4,632	5,385	6,893	7,113	7,411	7,183	11,475

At the current settlement the parganah contained 435 separate maháls or estates, comprising 580 villages, having a total assessable area of 15,487 acres of which 14,334 were cultivated. The mill-rent amounted to Rs. 4 and the land-revenue to Rs. 11,475, of which Rs. 283 were alienated in *gúnth* and *muáfi*. The population in 1841 amounted to 13,343 souls, of whom 5,894 were females; in 1853 to 20,324 (12,862 females); in 1858 to 26,064 (12,720 females); in 1872 to 36,165 (17,426 females); and in 1881 to 37,924 (19,055 females). Talla Salán is bounded on the north by Malla Salán, on the west by Ganga Salán; on the south by the Bijnor district and on the east by Kumaon.

Kauriya and Badalpur lie chiefly to the north of the first range of hills. In Badalpur there are some fertile and populous villages resembling those near Almora. The climate of Painún in the Mandhál valley is very malarious and generally the pattis to the south are still covered with *sal* and bambu forest conserved by the forest department including the Kotri and Pátli Dúns. Still crops of ginger, turmeric, tobacco and capsicums are grown in the clearings and afford valuable resources to the cultivators. In his report on the settlement in 1840 Mr. Batten remarks that Bijlot, Búngi and Páinún and the Dúns below gave him considerable trouble and required much care. "A decrease of revenue and a total remodelling of the village leases were found necessary. Painún is situate in the valley of the Mandhál river, the climate of which is almost as bad as that of the Taráí. Wild elephants abound and commit great depredations on the crops in the rainy season. Tigers also are numerous and kill both men and cattle. Síla is situate on both sides of the Koh river. Large portions of it are waste, and some of the villages are unfavorably placed on the border of the *sal* forests, which here, as in Badalpur, begin to take the place of oaks and pines and other alpine vegetation. The Pátli Dún is traversed by the Rámghanga, as that river approaches the plains, from which the Dún is separated by a steep sandstone range, resembling in almost every respect, save in the fewness and difficulties of its passes, the Siwálik range between the Ganges and the Jumna. The quantity of flat land is very small indeed in comparison with the hills and ravines, and the forests of *sal* and bambu (the timber of which is floated down the Rámghanga in rafts) are plentiful and valuable." The first triennial settlement was made for one year only and up to 1822 was included in the form of forest produce. Permanent villages were then established and a regular settlement was made with the cultivators, but owing to the climate it was difficult to procure them. Accordingly in 1840 the settlement was made with Padam Singh Negi at Rs. 275 (a reduction of Rs. 100 having been allowed). He had an hereditary claim to the lease of this tract; and though his right to the zamindári had not been previously admitted, he was then granted all lands which he might redeem under a proprietary tenure. Four of the villages included in his lease are situated outside the lower range in the gorges of the passes. The Kotri Dún, properly so called, is merely a small uncultivated valley, with very rich pastures, situated in the midst of the lower hills near Kotdwára. With the exception of granite the rocks are of the

same description as in Chaundkot, but all are succeeded by sandstone in the Dás and lower ranges.

Salán Ganga or **Ganga Salán**, a parganah in Garhwál, has nine pattis or sub-divisions, each of which is separately noticed, viz., Dobryálsyún or Dhángu Malla, Dhángu Talla, Karaundu Walla and Palla, Langúr, Udepur Malla, Bichhla and Talla and Ajmer. The assessment of the land-revenue from the conquest to the present day was as follows:—

1815.	1816.	1817.	1820.	1823.	1828.	1833.	1840.	1864.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
5,099	5,699	6,177	7,835	8,957	9,508	9,649	9,618	14,031

The statistics of the current settlement show that there are 395 estates comprising 499 villages and containing a total assessable area amounting to 22,277 acres, of which 20,965 are cultivated. The mill-rent amounted to Rs. 60 and the land-revenue to Rs. 14,031, of which Rs. 218 are released in *gúnth* and *muúfi*. The entire land-revenue falls on the total assessable area at Rs. 0-10-0 per acre and on the cultivation at Rs. 0-10-8 per acre. The population in 1841 numbered 16,538 souls, of whom 7,324 were females; in 1853, 28,078 (13,853 females); in 1858, 30,265 (14,778 females); in 1872, 40,877 (20,329 females); and in 1881, 44,632 (21,955 females). Ganga Salán is bounded on the north and west by the Ganges; on the south by the Bijnor district. and on the east by parganahs Malla and Talla Salán.

Dhángu, as its name in the hill language implies, is rocky and rugged, especially in the neighbourhood of the Ganges, which here forces its way through steep precipices; some of the villages are small and poor, and a slight reduction of the revenue in 1840 was thought expedient. Karaundu and Langúr are chiefly in the vicinity of the Koh, both of which had their irregular boundaries rectified at the recent settlement. Langúr is remarkable for its two fortresses of that name on the crest of a high precipitous ridge, which separates the Koh from the Nyár river. Here the last Garhwál Raja, before retreating to Dehra Dún where he was killed, made the last vigorous defence of his country against the invading Gorkhális, who were before Langúr Garh for some years. Ajmer and Udepur, though in their lower parts very jungly, contain in the heart of the parganah some very fine villages, and the country is not unlike the fertile tract near Bhímtál in lower Kumaon. The Udepur hills, covered with *sal* forests stretch into the Chandi Dún and are separated from the Dehra Dún by only a strip of level ground and the Ganges: the produce includes turmeric, ginger, red pepper and cardamoms: in the winter the people are engaged as bambu-cutters and wood-sellers. The market of Bidasani is situated in Udepur and the landholders find also a near market for their grain, turmeric, &c., at Kotdwára and Hardwár. The geological formation is the same as in Talla Salán.

Sarju, or 'ganger,' from Sansk 'sri,' to go, a considerable affluent of the Káli river, to which it often gives its name. From the confluence at Pacheswar in Káli Kumaon, the united stream is known as the Sarju or Káli as far as Barmdeo, and as the Sárda or Ghágra to its confluence with the Ganges in the Ballia district at the extreme southern point of the North-Western Provinces.

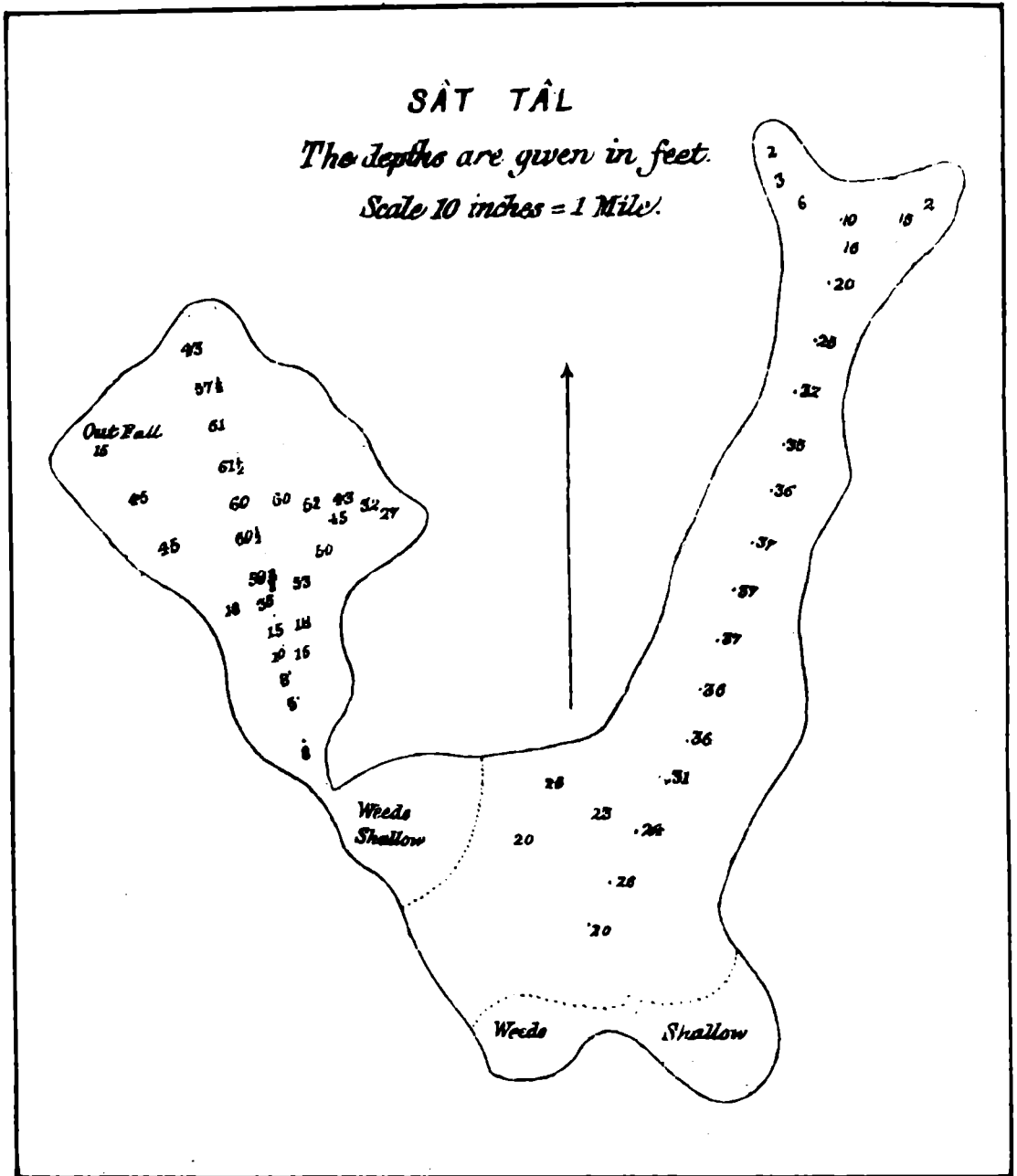
The Sarju rises on the southern slopes of a ridge in patti Malla Dánpur of Kumaon and is separated on the east from the sources of the eastern Rámanga and on the west from the sources of the Kuphini or eastern branch of the Pindar by spurs leading down from the mass culminating in the Nandakot peak. The sources are situate in north latitude $80^{\circ}-6'-50''$ and east longitude $30^{\circ}-1'-30''$, in the depression within which the village of Jhundi is situate, and are crossed by a ford at Waiohhám on the track between Supi and Námik. The breadth at Supi, eight miles from its source, is about fifteen yards, and in May there is only about two feet of water. On the west a lofty chain of mountains running south-west separates it from the Pindar river, and on the east a similar chain separates it from the eastern Rámanga. The height of the latter ridge is so elevated that even in May snow rests on the more lofty summits. About the source also snow rests until late in the year. At Súpi the bed of the river is 5,659 feet above the level of the sea. A few miles below Súpi the bed narrows to twelve yards with a depth of twenty-four inches, and a few miles still lower down or fifteen miles from its source it is forty-five yards wide and twenty-seven inches deep. The valley here is tolerably wide and gives space for numerous villages on either bank. Near its source it is crossed from Khati in the Pindar valley by a road leading to the Bhotiyá tract of Munayári.

It then holds a south-westerly course, receiving many minor streams, and enters the patti of Talla Dánpur in latitude $29^{\circ}-59'$ and longitude $77^{\circ}-59''$, where it receives on the right bank the Kanalgadh and a short distance lower down the Pungar gadh thirty-one miles from its source. About a mile lower down it receives the Lahor river on the right bank from Patti Malla Katyúr, and hence taking a south-easterly direction passes four miles lower down by Bágéswar at an elevation of 3 143 feet above the level of the sea, receiving on its right bank the Gumti or Gomatti river. Further on much of the drainage of the Gangoli pargana falls into it on the same side by the Bhadrapati-gar and that of Chaugarkha by the Gat-gadh, Jalair-gadh, Bhaug-gadh, Alaknandi and Saniaun-gadh. Thirty-five miles below the confluence of the Rámanga with the Gumti it receives the Panár river on the same side and about three miles further down on the left bank the Rámanga (eastern) at Rámeswar in latitude $29^{\circ}-31'-25''$ and longitude $80^{\circ}-9'-40''$, with an elevation of 1,500 feet above the level of the sea. About ten miles above its confluence with the Panár, sixty miles from its source, the average breadth is about fifty yards and the drift four and a half to five miles an hour, with a depth in May of eight feet and fordable in December (*Wesb*). Here it is a most impetuous and roaring torrent dashing over the rocks with the greatest force and noise and casting the spray about in all directions. A few miles below Rámeswar, whence it is indifferently called the Rámanga and Sarju, the river is crossed by an iron suspension bridge on the road between Lohughát and Pithora-

garh in a glen from which the hills on either side rise very steeply and are thickly clothed with pine forest. From Rámeswar it forms the boundary between the Shor and Káli Kumaon parganahs in a south-easterly direction, and after a course of twelve miles falls into the Káli on the right bank at Pachheswar in latitude $29^{\circ}-27'$ and longitude $80^{\circ}-18'$. About a mile above this confluence the river is fordable in the dry season and about eighty yards in breadth and four and a quarter feet deep with a drift of about four miles an hour. The length of the river from its source to its confluence with the Káli has been estimated at eighty-two miles. The confluences at Bágewar with the Gúnti; at Rámeswar with the Rámanga and at Pachheswar with the Káli are sacred *prayágas* or junctions which have periodical semi-religious assemblies in their honor. The local Brahmans say that the Sarju could not force its way through the mountains until the present channel was formed by a great devotee by virtue of the power acquired by his austerities. They also identify the form of Siva worshipped here with the Baba Adam of the Musalmáns and his Sákti with Mama Huwa. They also state that the most destructive tigers in the neighbourhood are men in the form of animals, a belief like the lycanthropy of the Greeks and the loup-garou of the French. A large fish called *gásch* or fresh-water shark (*Bagarius Yarrellii*) is found in the Sarju from Bágewar downwards. It is said to attain a length of six feet, scaleless and with teeth like a dog.

Sát Tál, a collection of lakes in parganah Chhakháta of the Kumaon district about nine miles from Naini Tál, turning off from the Rámgar road at Bhuwáli and three miles from Bhím Tál. These are the most picturesque if not the grandest of the lakes of this district. They are formed by landslips in the basin of the range in which they lie. The first lake met with is a deep black tarn wooded to the water's edge and connected by an underground passage with the fourth. Passing further into the basin a second very small pool is met with close to the third at the irrigation embankment; thence the path winds round the third to the fourth, which is the largest and is a very considerable sheet of water about 1,100 yards in length by 350 in breadth. All the three larger ones communicate with each other and the water-level has been raised considerably by the embankment, which makes these lakes a reservoir for the supply of water to the Bhábar during the dry season from February onwards. Below the embankment to the south is another small lake, the fifth, and beyond this in the bed of the stream two lakes now dried up: hence the name '*Sát Tál*,' or 'seven lakes.' The surplus drainage joins the Baliya flowing from Naini Tál and eventually the Gaula, an affluent of the Rámanga.

The following outline map is from soundings made by Mr. Yule of Bhm Tál :—



Baun, a patti of parganah Shor of Kumaon, is bounded on the north by Pattis Mahar and Nayades ; on the west by the Chandrabhága river, and on the south and east by the Káli river, which separates it from Nepál. The principal villages lie along the valley of the Chandrabhága river and in the table-land among the hills between it and the Káli, where the village of Mádh is

situate. The peak of Diwáli on the left bank of the Chandrabbága attains an elevation of 6,460 feet above the level of the sea and Dhian on the right bank of the Káli rises to 5,132 feet. The assessable area comprises 1,621 *bisís*, of which 612 are culturable and 1,008 are cultivated (226 irrigated). The land-tax yielded Rs. 501 in 1815, Rs. 752 in 1820 and Rs. 858 in 1843. The existing assessment amounts to Rs. 1,476 and falls on the total assessable area at Rs. 0-14-7 per acre and on the cultivation at Re. 1-7-5 per acre. The population at settlement numbered 2,619 souls, of whom 1,400 were males. The patwári resides in Chaupakbiya, where there is a school.

Seti Malla, a very small patti of parganah Shor in Kumaon, lies to the west of Pithoragarh in the same valley and separated from the remainder of Seti by the range (6,898 feet) crossed by the road to Báns. Bajeti and its hamlets and Pandegaon are the only villages of any importance in this miniature patti. The statistics and history are given under Seti Talla. The revenue is paid into the *peshkári* at Pithoragarh.

Seti Talla, a patti of parganah Shor in Kumaon, is bounded on the north by patti Bárabisi of Síra, from which it is separated by the Kálápáni river; on the west by the Rámgaᅅga river; on the south by patts Waldiya Malla and Bichhla and on the east by Kharáyat. The road from Pithoragarh to Almora passes through this patti from east to west, crossing the stream from Báns by a bridge and the Rámgaᅅga by an iron suspension bridge. There is a traveller's rest-house at Báns in latitude 29°-36'-44" and longitude 80°-11'-5". To the north as far as the water-shed of the Kálápáni the country is highly cultivated: Asurchali, with a temple here, attains a height of 6,990 feet above the level of the sea and Iriyárikot 6884 feet.

Seti.	ASSESSABLE AREA IN BISIS.				ASSESSMENT IN RUPEES.				POPULATION.	
	Total.	Cultivated.		Culturable.	1815.	1820.	1843.	Current.	Males.	Females.
		Irrigated.	Dry.							
Malla...	Rs. 265	Rs. 48	Rs. 138	Rs. 78	Rs. 117	Rs. 179	Rs. 176	Rs. 260	162	183
Talla ...	1,680	476	583	569	250	424	509	1,568	1,109	930

The incidence of the present land tax on the total assessable area is Rs. 0-15-8 per acre in the Malla patti and Re. 0-15-4 in the Talla patti: on the cultivation the rates are Re. 1-7-6 and Re. 1-7-5 per acre respectively. The patwári resides at Báns; there is a school in Dhárgaon.

Shor or Sor, a parganah in the Káli-Kumaon sub-division of the Kumaon district, is bounded on the north by parganahs Síra and Askot; on the east by the Káli river, which separates it from Nepál; on the south by parganah Káli-Kumaon, and on the west by parganah Gangoli. It at present contains eleven pattis, viz., Kharáyat, Kharakdes, Mahar, Nayádes, Ráwal, Seti-Malla, and Talla, Sáun, and Waldiya Malla, Bichhla, and Talla, each of which is separately noticed. The principal village is Pithoragarh, which lies near the centre of the parganah, just where a spur of the Chandák ridge, forming the water-parting between the Káli and Rám-ganga, enters the valley of Seni-Shor. The Kálapáni river divides patti Seti from parganah Síra on the north; south of this lies Waldiya Malla, while the Talla Patti of Waldiya runs across to Thákil. Ráwal trends towards Rámeswar and Saun runs between the Chandrabhága and Káli as far as Pacheswar. The central plateau between Thákil and Dhuj is occupied by the villages of Seti-Malla, Mahar, Kharakdes, and to the north-west Kharáyat.

The road from Almora passes through Báns in Seti, where there is a travellers' rest-house, and thence up the fertile valley of Chána to Pithoragarh. The Lohughát, road passes south under Thákil with a bungalow at Gún, whence there is a magnificent view down to the Sarju and Rám-ganga at Rámeswar. This road is in direct communication with Barmdeo and also by Debi Dhúra with Almora. The road to the Byáns and Dárma passes runs northwards by Dhuj through Askot. On the east there is a road to Jhúlaghát, where the Káli is spanned by an iron suspension bridge erected at the joint cost of the British and Nepálese Governments, but a guard on the Nepál bank forbids egress in that direction to the traveller. Shor contains some of the fairest scenery in eastern Kumaon and may justly be termed its garden. Thákil especially is thickly wooded and contains some remarkable trees and plants.

The assessment at each settlement was as follows:—

1815.	1817.	1818.	1820.	1822.	1826.	1833.	1842.	Current.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
3,536	4,002	4,593	5,495	6,141	6,628	6,667	6,667	14,118

The present assessment¹ falls on the whole assessable area at Re. -0-15-9 per acre and on the cultivation at Re. 1-7-11 per acre. The total revenue area comprises 14,287 *bhis*, of which 4,860 are culturable and 9,426 are cultivated (3,479 irrigated), 204 *bhis* are held free of revenue by temples. The population at settlement numbered 10,012 males and 8,938 females, and in 1881 there were 13,081 males and 12,435 females. There are 280 mahals or estates comprising 363 villages.

In Mahar, Waldiya and Saun sugarcane, tobacco and cotton are far from uncommon products, while cereals are abundant. Amongst jungle products Shor is famous for its honey and *phalal* or *phalua*, a kind of vegetable butter produced from the fruit of the *Bassia butyracea*, a handsome tree abounding in this parganah. The troops in Pithoragarh and the Bhotiyas when passing through during the cold weather consume most of the surplus grain. Sir H. Ramsay writes:— 'This parganah has improved very much, though not quite in the same way as Gangoli. It was pretty well cultivated at the last settlement. Prices have risen immensely; and in trying to ascertain the causes of the rise I was usually told that rupees had become cheap, which means that the people have become rich and are not compelled to sell at low rates. Since I came to the district I remember wheat selling at a maund and barley at 70 sers for the rupee at Pithoragarh. Of late years wheat has not been procurable there at 20 sers; not because there is no wheat but because the Bhotiya traders purchase it at a higher rate and 15 to 16 sers of flour per rupee is now the common price.' There is a small import trade with Doti in *ghi*, wax, honey and *phalal* and an export of cotton, metals, cloth and European goods by the Jhúla-ghát, also called Júaghát from its being so narrow that an ox with a yoke could not pass it. At the earlier settlements it was found that the lands in this parganah was measured with a *jhúla* containing six *bhis*. The latter varied with the quality of the soil, requiring on an average 40 *sáls* or two *bhis* of seed to the *bhis* in the most fertile and best watered lands. In lands of inferior quality the *bhis* required a proportionately greater quantity of seed, though the produce in both is the same.

In 1820 there were six *pattis* containing 351 villages. These were left untouched at the settlement in 1843, and in 1871 the present *pattis* were formed from the older ones. Shor, Síra and Aakot formed until a late period

History.

a portion of the Nepál state of Doti and are still known as Doti in the western parts of Kumaon. One of the arguments used by Ranjor Singh Thápa against peace at any price with the British in 1815 was that with eastern Kumaon Doti would fall to the conquerors. Some account of the Shor Rajas and the conquest of this tract has already been given.² "The inhabitants," writes Batten, are,

¹ On the earlier settlements see Trill to Board, 30th June, 1821. XI, 496, 527-530, 537, 541, 553, 568, 570.

² Gen.

though brave and active, a sly and factious race to whom the following couplet has been applied :—

' *Shor karām-khor, bēp bhurava cheli mai tor ;*

Shor ki nāli katyūr kau mano : joi jaithuli khasam jaināno.'

'Shor eats the bread of dishonour; the fathers are panders, the daughter remains in the father's house.

The peck of Shor is a quart in Katyūr: the wives are the great ones, the husbands of no account.'

Another verse runs :—

' *Shor ke nāli, katyūra mano ; jayaji tāli kasamji nano,*'

'An ell in Shor is an inch in Katyūr: but the wife is master in Shor.'

A *māna* is a quarter of a *nāli*, but the Shor *nāli* is smaller than the Katyūra *māna*, thus reversing the order of things. Seni Shor is the name given to the undulating valley within which Pithoragarh is situate. It was also called Nandhūrūr Shor from the nine principalities into which it was divided, each with its own fort:—Unchakot, Bhatkot, Bilorkot, Udeparkot, Dungarakot, Sahajkot, Bamuwaket, Deodārkot and Dúnikot. Until lately the *Dharabandi* or feud between the *Māris* and *Phartiyāls* was exceedingly bitter in this parganah."

Sīla Malla, a patti of parganah Talla Salān of British Garhwāl, is bounded on the north by Langūr and the Kauriya patts; on the east by the Badalpur patti, on the west by Sīla Talla and on the south by the Chokum Dún. There are several fine villages about Sīla, but south of Byānsi the country consists of a mass of ravines and torrents utterly unculturable. There are schools at Kota and Pira. The patwāri who resides in Muhara collects the land-revenue of Kauriya Palla and Badalpur Talla also, the aggregate of the three patts in 1864 was Rs. 2,463.

Sīla Talla, a patti of parganah Talla Salān of British Garhwāl, is bounded on the west by Ajmer; on the north by Langūr; on the east by Sīla Malla, and on the south by the Kotri Dún. The only large village is the mart of Kotdwāra separately noticed. The patwāri of Ajmer, who resides in Ghotā, collects the land-revenue of this patti also.

Silaur Malla, a patti of parganah Pāli Paohāon in Kumaon, is bounded on the north by Silaur Talla and Bichhla Dora; on the west by the former patti and Kakalasaun Walla; on the south by Malli Doti and on the east by the same patti and Athāgūli Walla. This patti was separated from Silaur at the recent settlement. The eastern boundary run up close to the station of Rānikhet; on the west the boundary is the lower waters of the Galna stream to the Gingāri (5,627 feet) and Upraikhet

(6,512 feet) peaks. The statistics of the Malla and Talla pattis may be shown thus :—

Silaur.	ASSESSABLE AREA IN <i>béis</i> .				ASSESSMENT IN RUPES.				POPULATION.	
	Total.	Cultivated.		Culturable.	1815.	1820.	1843.	Current.	Males.	Females.
		Irriga- ted.	Dry.							
Malla ...	2,699	34	2,134	581	1,152	1,627	1,869	2,584	2,094	1,984
Talla ...	2,754	35	2,380	339	965	1,577	1,843	2,606	2,179	2,063

The incidence of the land tax on the total assessable area in the Malla patti is Rs. 0-15-4 per acre and in the Talla patti is Rs. 0-15-2 per acre : on the cultivation it falls at Rs. 1-3-1 and Rs. 1-1-3 per acre respectively in each patti. The patwári resides in Malota, where there is a school.

Silaur Talla, a patti of parganah Páli Pachháon in Kumaon, is bounded on the north by the Gagás river, which separates it from Walla Nayán and Talla and Bichhla Dora ; on the west by Kakalasaun Walla ; on the east by the Malla patti, and on the south by the latter patti and Kakalasaun Walla. This patti was separated from Silaur at the recent settlement. The patwári resides in Pípkoti, where there is a school.

Simalkha, a patti of parganah Dhaniyakot in Kumaon, is bounded on the north by the Kosi river ; on the west by Uobakot ; on the east by Dhaniyakot, and on the south by Kota Talla and Malla. Simalkha, situate on the left bank of the Kosi, gives its name to the patti and is the only considerable village in it. The total assessable area is only 356 *béis*, of which 67 are culturable and 289 are cultivated. The land-revenue rose from Rs. 241 at the conquest to Rs. 346 in 1820 and Rs. 367 in 1843 ; it is now Rs. 360, which falls at Rs. 1-4-8 per acre on the total assessable area and at Rs. 1-9-5 per acre on the cultivation. The population numbered 678 souls, of whom 329 were females. The patwári resides in Mallagaon, where there is a school.

Sipti, a patti of parganah Káli-Kumaon in Kumaon, is bounded on the north by Pharka, Gangol, Sui-Bisung and Chárál-Malla ; on the east by the last-named patti, Chárál-Talla and Pálbelon-

Malla; on the west by Asi, and on the south by Pálbelon-Talla. The assessable area comprises 2,452 *bísis*, of which 917 are culturable and 1,534 are cultivated (124 irrigated). The land-tax yielded Rs. 545 in 1815; Rs. 754 in 1820; Rs. 984 in 1843; and now stands at Rs. 1,793, which falls on the whole area at Rs. 0-11-8 per acre, and on the cultivated acre at Rs. 1-2-8. The population at settlement numbered 1,551 males and 1,256 females. It was formerly united with Gangol as one parganah, and appears now to be fairly populated, though a good deal of culturable land exists. The coarser grains are the staple and rice and wheat are not much grown, but here the people mainly consume only the poorer grains, so that the price is almost as high as the better grains in other pattsis. The patwári resides in Búyal and there is a school at Dyártoli.

Síra, a parganah of the Kumaon district, is bounded on the east by Askot; on the south by Shor; on the west by Gangoli and on the north by the Bhotiya parganahs of Juhár. The Rám-ganga (western) forms the western boundary and the Kálápáni or Bichol river the southern. It contains five pattsis, *viz.*, Athbisi Malla and Talla, Bárabisi, Díndihát and Máli. Bárabisi lies to the south; then comes Athbisi; to the north-west Máli and to the north Dindihát, all of which are separately noticed.

The northern portion of Síra lying near the Gori is exceedingly wild and rugged and characterised by deep glens and high mountains with little or no cultivation. The route from Bágswar to Askot by Thal passes through this parganah and a road also connects Thal with Shor by Bichol and Sacning. Near the former road are the celebrated temples Dukal, Bhágaling and Sírakot. The fort at Sírakot was once the residence of the Malla branch of the Sahi dynasty of Doti, but on the conquest of Síra by Ratan Chand of Kumaon a portion of the reigning family removed to Askot, where they are at present represented by the Rájbar of that place. Dindihát was the great market-town of the old Síra state. Athbisi owes its name to its having been set apart for the separate maintenance of the Ráni, while Barabisi formed the portion of the State lands assigned for the military and other public charges. Under the Chand Rajas Sírakot became the State prison, and it was here that Dip Chand, the last of the legitimate Chands, was murdered by command of his base-born cousin, Mohan Singh. McLelland in his geology of Kumaon mentions the prevalence of cretinism and goitre in the upper valleys of this parganah.

The history of the assessment of the land-revenue may be shown thus:—

1815.	1817.	1818.	1820.	1823.	1828.	1833.	1843.	Current.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1,905	2,199	2,383	2,760	3,011	3,120	3,223	3,205	5,999

The present assessment falls at Rs. 1-6-1 per acre on the whole assessable area and at Rs. 1-13-0 per acre on the cultivation. The whole area liable to revenue amounts to 5960 *béis*, of which 2,336 are culturable and 3,623 are cultivated (1,758 irrigated): 251 *béis* are held free of revenue by temples. The population at the present settlement numbered 4,215 males and 3,629 females and in 1881 there were 5,869 males and 5,550 females. In the earlier settlements up to 1840 Síra and Askot were taken together. In 1821 there were 238 revenue-paying villages: there are now 166 *maháls* or estates containing 236 villages. The prevailing tenure is *bhai-bhant* or (*bháyáchara*).

The copper mines of Síra are mentioned in the mineralogical notice and would seem to require merely better methods of working and more workmen to yield a fair return of ore, but the distance from a market would still render the enterprise one of doubtful value commercially. In 1840 these mines were leased for Rs. 85 a year and in 1884 they yielded nothing. The Khasiyas of the ordinary agricultural class decline to labour in them, while the Agaris are slowly disappearing or taking to other occupations.

Sírgur, a small patti in parganah Chandpur of British Garhwál, is bounded on the west by Síli-Chandpur; on the south by Lobha; on the north by the Pindar river, separating it from Kapíri and Karákot of parganah Badhán; and on the east by Pindarwár, from which it is separated by the Agargár stream. It was formed from patti Chandpur in 1864, when two villages were added to it from Chandpur, and eight from patti Pindarwár. The patwári of Síli-Chandpur, resident at Kewar, collects the land-revenue. This patti runs from the right bank of the Pindar to the water-parting of the Rám-ganga. There is an iron mine at Swau-Gheliya.

Sitonsyún, a patti of parganah Bárahsyún in British Garhwál, is bounded on the north by Bangarsyún and Idwalsyún; on the south by Banelsyún; on the east by Gangawársyún and on the west by Kandwálsyún. Sitonsyún occupies the valley of the Siton, an affluent of the Randi.

Someswar, a village and temple and traveller's rest-house in patti Borárau Walla and parganah Bárahmandal of Kumaon is situate in north latitude 29°-46'-40" and east longitude 79°-38'-55", at an elevation of 4,572 feet above the level of the sea, 18 miles west of Almora by Hawalbág. There is a traveller's bungalow, here.

Srínagar or Sirínagar, a large village in patti Katholsyún of parganah Dewalgarh of the Garhwál district, is situate in latitude 30°-13" and longitude 78°-48'-15", seven miles from the headquarters station of Páori, at an elevation of 1,758 feet above the level of the sea.

The town is situated in a hollow or valley on the left bank of the Alaknanda river about three miles long and about half to three quarters of a mile broad, the hills sloping down close to the town on the southern side. Viewed from above the hollow or valley consists of two long flats, one some 50 to 80 feet broad, extending along the base of the inclosing mountain above the other, on which the town is built. This valley has apparently been excavated by the river and left dry by the stream flowing further to the northward, and leaving between its present margin and the original bank a space of land stretching three or four furlongs south of the town, and now laid out in small fields and enclosures, among which mango trees are thinly scattered. The aspect of the surrounding mountains is very barren, and in the dry season their scanty vegetation is soon parched up, except in a few places. On a mass of rock about 30 feet high in the middle of a bank of a single close to the town are the ruins of a fakir's hut formerly connected with it; and on the opposite side are several hamlets situate along the base of the mountain. The site has somewhat the shape of the segment of a circle, of which the river's bank is the chord. The principal street, which contains the bazar, is about half a mile long and tolerably broad, but the others are so narrow that two persons can scarcely pass abreast. The houses are built of small stones and are usually two stories high with shelving roofs covered with slates. The lower stories are allotted for storages or shops, the families occupying the upper. A great deal of wood-work is used in the houses themselves, part of the walls and the arched verandahs, called *tibari* and *dandyali*, are of wood; the houses of the better classes are little distinguished from those of others, except by a narrow balcony. A gloomy air is given to the town from this uniformity, which probably resulted in former times from the desire of the wealthier inhabitants to avoid attracting the notice of extortionate rulers. The residents are principally some of the older and more important families of the district, many of whose members are in the Government service, priests of the numerous temples which are scattered over the place, and Baniyas, the majority of whom have come from Najibabad, in the Bijnor district, and taken up their residence here.

Rája Ajai-pál of the Chand dynasty, who was also the founder of the present Garhwál line of Rájas, commenced the palace the ruins of which are still extant, but it was completed by his successors. The town is said at one time to have had a large population and to have been of much greater extent than at present. But many years before the British rule—the exact date is not known—a flood of the Alaknanda swept away at least one-third of it, and the place ceased to be the residence of the Rája since 1803, when Pradhman Sáh was expelled and subsequently fell at Dehra in fight with the Gorkhélis. In the same year an earthquake nearly destroyed the town; so that when Raper visited it in 1808 not above one house in five was inhabited, the rest being heaps of ruins. At the time of Moorcroft's visit in 1819 it had a few manufactures of coarse linens and woollens, and he notes that it had not even then recovered the effects of the earthquake and inundation of 1803, the only street being the bazar, about half a mile long.¹ The number of the houses in 1821 was 562, of which 438 were inhabited by Hindus, ninety-six by Doms and twenty-eight by Musalmáns. The census of 1858 gave a total of 1,835 inhabitants, of which 949 were males. During the season of pilgrimage the population receives a vast addition. In 1865 the permanent population was 1,951, in 1872 was 2,040, and in 1881, was 2,100.

¹ As Res. VI. 336 : I. 6.

The town, though the population has increased, is not a flourishing one, and its decay has been hastened by the removal of the Rájá's residence to Tihri and the damage done year by year by the river, which would appear to be in course of time able to destroy the whole site.

Trade.

Behind the principal street are some isolated buildings and temples, some of which extremely well built. The public buildings are the tahsili, the Sadr Amin or Subordinate Judge's court, the school and dispensary. None of these have the slightest architectural pretensions. Since these public offices have been placed here there has been some little improvement in the town; but the trade even now is very insignificant, consisting for the most part of cotton piece-goods, salt, tobacco, cooking utensils of copper and brass and grain for local wants.

Were it not, however, for the influx of pilgrims who come yearly in large numbers to the shrines of Kedarnáth and Badrináth and who generally rest a few days to visit the few small temples at the place itself, the trade of Srinagar would otherwise almost cease, as a new mart at Kotdwára at the foot of the hills has risen of late years, and the people prefer going direct there, as they can purchase all that they require at cheaper rates. Owing to the smallness of the place no municipality exists; but with the sanction of Government the people have assessed themselves in order to defray the expense of the police and conservancy establishments. The older buildings comprise numerous temples and the ruins of the residence of the former Rájás. Of the former the chief is that of Kamaleswar, which is supported by villages assigned both in Garhwál and Tihri for the purpose. Some of the temples are so massive stone beautifully fitted together, but they have very little architectural beauty.

The palace of Rája Ajaipal must have once displayed considerable architectural pretensions and extent, as its ruins even now cover some acres of land. It was built of large blocks of black stone laid in mortar and had three grand fronts each four stories high, with projecting porticoes profusely ornamented in the lower part with elaborate sculptures. The style employed is of no decided school. It is said that no woodwork whatever was used in its construction, and this is attested by the fact that the portions still remaining have none; the windows even to the latticing being of stone, while the only doorway left is of stone carved so as to exactly resemble wood. These doors are very massive and heavy and it must have taken immense labor to put them up, and this has given rise to a legend to the effect that after thousands of men had failed to place the stone door-posts, the Rája by prayer and fasting did so by himself in one night, but having been seen doing this by a female servant he slew her, so that no one might hear of it. Of the older residence only one, the western wing, is standing and it is almost in ruins. The building, especially over the doorway, is massive and quaintly ornamented. There is another wing also standing to the south, but this is of quite modern date and is, though well built, of very simple structure. There is also said to have been an underground passage to the river by which the females went to bathe, and there are the remains still of a bath or tank in the enclosure, the water for which was brought from a stream at least four miles off. The engineering difficulties to be overcome in doing this must have been very considerable as a ridge of the hill intervenes, but there is no doubt of its having been done, as the traces of the channel are still visible.

The dispensary is a large well built building under the charge of an Assistant Surgeon and is the chief of several erected along the pilgrim route and maintained

out of the *sadābāt* funds for the benefit of sick pilgrims, who are tended and helped on their way to their homes. As Srīnagar and its neighbourhood, owing to its low position, is not at all healthy, this dispensary is also of much local benefit. The river, owing to its numerous rapids, is not navigable. On the right bank of the river and opposite the town is the village of Rānihāt, containing a temple sacred to Rāja Iswara, at which the dancing-girls who form the majority of the population devote themselves to prostitution by abjuring their kindred and anointing their heads with oil from a lamp placed before the altar of that deity. At a short distance beyond it is the fane of the idol Rasi Devi, or the god of love. In the hot season the temperature at Srīnagar is high, as the elevation is not considerable. There are a great number of mango and other plains trees about the town which owing to the great heat flourish.

Sui Bisung, a patti of parganah Kāli Kumaon in Kumaon, is bounded on the north by Rangor of Chaugarkha; on the west by Gangol; on the east by Regarubān and Chārāl-Malla, and on the south by Sipti. The whole assessable area comprises 2,320 *bāsis*, of which 962 are culturable and 1,358 are cultivated (187 irrigated). The land revenue amounted to Rs. 660 in 1815, to Rs. 969 in 1820, and to Rs. 1,445 in 1843. The existing assessment stands at Rs. 1,942, which gives a rate on the whole assessable area of Rs. 0-13-4, and on the cultivation of Rs. 1-6-10 per acre. The patwāri resides in Karnkarāyat, where there is a school. The population at settlement numbered 1,684 males and 1,615 females.

Sult Malla, a patti of parganah Pāli-Pachhaon in Kumaon, is bounded on the north by Khātali of Garhwāl and Talla-Chaukot of Kumaon; on the west by Gujarū of Garhwāl; on the south by the Palla and Walla pattis, and on the east by Talla-Chaukot and Palla-Nayān. This patti was formed from Sult at the recent settlement. The patti is drained by the Mainkot-gadh, rising under Khamekgār (7,152 feet), and the upper waters of the Naihel river.

The statistics of the Sult pattis may be shown thus :—

Sult.	ASSESSABLE AREA IN <i>bāsis</i> .				ASSESSMENT IN RUPEES.				POPULATION.	
	Total.	Cultivated.		Culturable.	1815.	1820.	1843.	Current.	Males.	Females.
		Irrigated.	Dry.							
Malla ...	3,175	13	2,764	397	606	732	959	2,888	2,810	2,630
Palla ...	2,926	51	2,616	258	626	1,071	1,266	2,949	2,188	2,024
Talla ...	3,888	157	3,110	620	993	1,296	1,543	3,566	3,042	2,746
Walla ...	2,761	53	2,472	289	936	1,350	1,352	2,838	2,725	2,621

The assessment falls on the cultivated acre in each patti as follows:—Malla, Rs. 1-0-8; Palla, Rs. 1-1-8; Talla, Rs. 1-1-6; Walla, Rs. 1-2-4 per acre. One village was received from Chaukot-Talla at the recent settlement. The patwári resides in Munarb, where there is a school.

Syúnara, a subdivision of parganah Báráhmandal in Kumaon, divided at the last settlement into two parts, the Malla and Talla pattis, lies north and west of Almora between Binsar and Háwalbágh. The statistics of the two pattis may be shown thus:—

Syúnara.	ASSESSABLE AREA IN <i>béis</i> .				ASSESSMENT IN RUPEES				INCIDENCE PER ACRE ON		POPULATION.	
	Total.	Culti- vated.		Culturable.	1815.	1820.	1843.	Current.	Total.	Cultivation.	Males.	Females.
		Irrigated.	Dry.									
Malla ...	2,159	275	1,115	768	464	721	1,168	2,428	Rs. a. p. 1 2 0	Rs. a. p. 1 11 11	2,224	1,886
Talla ...	2,618	79	1,991	548	728	1,154	1,522	3,021	1 2 6	1 7 4	2,406	2,153

Both the Syúnaras were formerly under one Rája who resided in the Khagmara-kot and then in Syúnara-kot and was absorbed in the middle of the sixteenth century. The patwári of the Malla patti lives in Tákula and of the Talla patti in Háwalbágh. There are schools in Satráli, Sukár and Háwalbágh. In 1844 over 60 villages were transferred from Talla Syúnara to Khaspurja and one was received from the Malla patti and six from Boráran.

Taláin, a patti of parganah Malla Salán, is bounded on the north and west by parganah Chaundkot; on the south and east by other pattis of Malla Salán, including Kolagár and Saindbár. There is a school and a copper mine at Pokhara and an iron mine at Khandwára. This patti comprises numerous small valleys drained by the sources of the Machlád river. It was ruined by the Gorkhális, who drove most of the people away to sell as slaves, and the rest fled to the plains, but it has since recovered and, strange to say, the people have not benefited by their misfortunes, for they are even more litigious than the people of Chaundkot. The patwári resident in Kánde collects also the land-revenue

of Gorársyún, which in 1864 amounted to an aggregate of Rs. 2055.

Talla Des, a patti of parganah Káli Kumaon in Kumaon, is bounded on the north by Chárál Talla and Guundes; on the west by the former patti and Pábelon Malla and Talla; on the south by the Bhábar, and on the east by the Káli river, which separates it from Nipál. The assessable area comprises 4,639 *básis*, of which 1462 are culturable and 3,176 are cultivated (18 irrigated). The land-revenue yielded Rs. 1,331 in 1815, Rs. 1,408 in 1820, Rs. 1,716 in 1843, and now gives Rs. 3,191, which falls on the whole area at Rs. 0-11-0 and on the cultivated area at Rs. 1-0-1 per acre. The population at settlement numbered 2,811 males and 2,271 females. This patti is intersected by the Ladhiya river and is also drained by the Káli.

"Many of the villages near the latter river are inhabited by families related to the people of Doti on the opposite side. Hence, although the heat and excessive jungle of the valley prevent much extension of cultivation, the emigration of discontented persons from the border mountains keep up the requisite population, whose profits from the sale of their ginger and turmeric are considerable. One great inducement which brings over Dautiyáls to this patti is the acknowledgment by the British Government of hereditary shares in occupied land, whereas, on the other side, the State considers the property in the soil as entirely its own." The patwári resides in Tímali, where there is a school.

Talládes, a patti or sub-division of parganah Juhár in Kumaon, was created at the recent settlement. It comprises the western portion of the old patti of Talla Juhár on the upper course of the eastern Rámnganga river. It contains 37 estates separately assessed to land-revenue, comprising 92 villages with a population at the time of settlement numbering 2,877 souls, of whom 1,391 were females. The principal villages are Chámi, Dor, Hokura, Húpúli, Náchni, Urkhet, Sini and Tejam: see further article **ВНОТІУА МАHÁLS**. The patwári resides at Tejam and there is a school in Dor.

Talli Ráu, a patti of parganah Dhyáni Rau in Kumaon, is bounded on the north by Pattis Malli Rau and Asi: on the west by Chau-gadh; on the south by the same patti and the Tallades Bhábar, and on the east by Pábelon Talla. At the recent settlement Chau-gadh was separated from the patti. The statistics of this patti are given with those of **MALLI RAU**. There is a school at Chaunda and Ramak. The patwári lives in Majhera.

Tarái, a district of the Kumaun Division, is bounded on the north by the Kumaun Bhábar (*q. v.*); on the south by the Pílbhít, Barcilly and Morádabad districts and the Rámpur State; on the east by the Sárda river and on the west by the Bijnor district. It comprises a long and narrow strip of country running for about ninety miles along the foot of the hills with an average breadth of about twelve miles and having an area of 589,359 acres or 920·8 square miles. The Tarái district comprises seven parganahs¹:—Káshipur, Báspur, Gadarpur, Rudarpur, Kilpuri, Nánakmatta and Bilheri. The head-quarters of the district are at Naini Tál from May until November, during which months the extremely unhealthy character of the climate of the Tarái makes it impossible for any European and many natives to remain there. The Superintendent is the chief Civil Officer, and he is aided by an assistant and two honorary Magistrates, one for the Káshipur parganah and one for the three parganahs of Báspur, Gadarpur and Rudarpur. Regulation IV of 1876 provides that the Tarái district shall not be subject (*a*) to the jurisdiction of the courts of Civil judicature constituted by the Regulations of the Bengal Code and by the Acts passed by the Governor-General in Council; (*b*) to the jurisdiction or control of the courts or offices of revenue constituted by the said Regulations and Acts; (*c*) to the system of procedure prescribed by the said Regulations and Acts for the said courts of civil judicature and courts of revenue: or (*d*) to the civil jurisdiction of the High Court of Judicature for the North-Western Provinces. It further prescribes rules for the trial of civil suits; for the trial of revenue suits, regular and summary, and for the transfer by the Local Government of any civil or revenue suit or appeal from any of the local courts to the High Court of Judicature for the North-Western Provinces or to any other court in the North-Western Provinces. In civil and revenue cases an appeal lies to the Commissioner of Kumaun, and in criminal cases the courts are under the supervision of the High Court of Judicature for the North-Western Provinces.

¹The area of each parganah is estimated as follows in acres:—Káshipur, 119,599; Báspur, 71,205; Gadarpur, 44,819; Rudarpur, 97,349; Kilpuri, 83,813; Nánakmatta, 51,186, and Bilheri, 121,388 acres. I have to thank Messrs. Macdonald and Kilvert, of the Tarái district, for the greater part of this notice.

To the north, the boundary is defined for the most part by a series of springs which burst from the surface where the Bhábar (*q. v.*) or waterless tract ends ; elsewhere the boundaries have no marked natural features. The general surface of the tract presents the appearance of a plain with a slope towards the south-east. Towards the north, there are patches of forest which are thicker and larger towards the east, or savannahs of luxuriant grasses and reeds. Cultivation has, of late years, made rapid progress from the south towards the line of springs on the north, but there still remain considerable tracts suitable only for grazing purposes. The whole of the Tarái is intersected by numerous streams and water-courses, the former bringing down the drainage from the hills, the latter carrying off the water which rises to the surface in the Tarái itself. The general slope has an average fall of twelve feet in the mile. It undulates from east to west, rising and falling as it leaves and meets the beds of the streams and drainage channels. The undulations to the north are small and decided, whilst to the south the country is more level and the distance between the river-beds increases. The spring level varies with the undulations ; in the hollows, stiff clay land is met with, whilst the rising and upper land contain both sand and loam. The culturable area may be set down at 463 square miles, of which 280 are under cultivation. The soils are chiefly *dúmat* or loam, *mattiyár* or clay and *bhúr* or sand and clay : the *mattiyár* predominates.

The drainage-system of the Tarái comprises, first, those streams which flow direct from the Himálaya, and, secondly, those which are fed by springs rising in the Tarái itself. Some account of the phenomena has been given in a previous volume¹, and it will not be necessary to refer to the details of the system here again. On the extreme east is the Sárda (*q. v.*) and on the west the Peli. Neither of these rivers have broad beds like the Ganges nor do they present any peculiar features. Continuing from east to west we have the Saniya, Deoha, Sukhi, East Bahgul, Kichaha or Gaula, West Bahgul, Dubka, Gugi, Naiya, Kosi, Babilla, Dhela and Phíka. Most of these rivers have their sources in the hills and are subject

¹ *Gas. X.*

during the rains to heavy floods. The Deoha becomes navigable for boats and rafts from near Pílibhít, but none of the others, save perhaps the Kosi, carry sufficient water to allow of their being utilised for boat traffic. There are numerous small streams between each of these rivers which are used for irrigation. With the exception of the Sárda, they all are tributaries of the Rám-ganga, which falls into the Ganges in the Hardoi district. The drainage system as a whole resembles the reticulations of a leaf, the rills on the edge of the moist country unite to form a streamlet, these again form the streams which feed the arterial lines of drainage and all eventually join the great midrib stream, the Rám-ganga.

From the earliest times the Tarái streams have been used for irrigation. The simplest and most common procedure was to construct dams where required across the streams, but the results in the end were ruinous both to the land and the climate. The soil became water-logged and gave rise to a severe form of malarious fever which carried away the majority of the inhabitants. The streams being diverted formed immense swamps and swallowed up the arable land. Mr. Fleetwood Williams, C.S., endeavoured to combat the evil and was succeeded by Captain Jones in 1849-51. The Mutiny supervened, and although much had been done, it was not until 1861 that the present system of canals was taken in hand and attention was really given to the reclamation of the swamps in the district. Under existing arrangements, the Irrigation-branch of the Public Works Department has control over all waters between the Sárda on the east and the Baraur on the west, comprising the parganahs Bilheri, Nánakmatta, Kilpuri and a great part of Rudarpur. In the two first-named parganahs the irrigation is not carried on directly by the Department; there is plenty of water and the people are allowed to take whatever quantity they wish, provided they do not interfere with the natural drainage lines and thus create swamps.

The Eastern Bahgul system of canals provides for the irrigation of the Kilpuri parganah and the Maina-Jhúndi portion of Nánakmatta, and is then carried on into the Pílibhít and Bareilly districts. Next comes the Kichaha and Paha systems, with which

the control of the water by the Irrigation Department ceases. Continuing west, the Tarái runs with the Rámpur State and the various streams are under the immediate control of the Superintendent, subject however to agreements with the Nawáb of Rámpur where they pass from the Tarái to the Rámpur State. Across the border the system of earthen dams, which formerly obtained in the Tarái itself, still continues, and the portions of the parganahs running along this border suffer greatly from fever. Every endeavour has been made to induce His Highness the Nawáb to discontinue this, in every sense of the word, wasteful system of irrigation, but without avail. At a no very heavy expenditure, a proper system of canals with due regard to the features of the country might be introduced, resulting in a much larger supply of water and the improved health of the people. In the Káshipur parganah an admirable system of irrigation has been introduced by Mr. J. C. Macdonald, which protects nearly the whole of this parganah proper from the effects of drought and assists many villages in the Morádábád district as well. The Tarái is indebted to the unceasing efforts of this officer, spread over a period of 25 years, for the vast improvements effected in the irrigation of the country, as indeed also for improvements in every branch of the administration of this peculiar tract. Where the land is owned by Government as landlord, the rent and water rates are consolidated; the ordinary revenue officials supervise the arrangements for irrigation as a part of their ordinary duties, and thus no separate establishments are necessary. In parganahs Kilpuri, Rudarpur and Káshipur, the water rates are as follows:—

Class	Flow.			Lift.		
	Rs.	a.	p.	Rs.	a.	p.
I.—Garden and orchards per crop	2	0 0	1	0	0
II.—Sugarcane, tobacco, opium first watering (a)	0	8 0	(b) 0	4	0
III.—All cereals, pulses, oilseeds, first watering (c)	0	4 0	(d) 0	2	0
(a) Increasing 4 annas each subsequent watering.						
(b) and (c) Ditto 2 ditto ditto ditto.						
(d) Ditto 1 ditto ditto ditto.						

The principal roads in the district are (1) the road running due east and west from the Sárda river to the Bijnor boundary which connects all the parganahs and is in length about 90 miles; this is a second class unmetalled road, raised and bridged except over the larger rivers;

Communications.

(2) the Morádabad and Naini Tál line, which runs through the Bázipur parganah for a distance of 21 miles and is a second-class road ; (3) the Bareilly and Naini Tál line 18 miles in this district ; a first-class road, metalled and bridged throughout with a new girder bridge of 3 spans of 100 feet over the Kichaha river replacing the old masonry structure which was destroyed by the floods of 1880 ; nearly parallel to this road runs the Bareilly and Kumaon light railway, now open for traffic ; there is one station in this district, at Kichaha ; (4) the Morádabad and Ránikhet line, which leaving the Morádabad and Naini Tál road at Darhiyál passes through the Káshipur parganah and thence to the hill mart of Rámnagar ; it is a second-class road. There are numerous cross roads, of more or less importance, connected with the main lines above noted and the communications are ample for the convenience of the people.

The climate of the Tarái differs from that of the plains country adjoining, chiefly in variations of temperature between the day and night which are due to the nature of the soil, and are the proximate cause of the heavy sickness which attacks the inhabitants of the tract at the commencement of the hot and towards the end of the rainy seasons ; the average rainfall is about 50 inches. It is noticeable that the type of fever prevalent at the commencement of the hot weather is 'remittent,' whilst that of the later months is 'intermittent.'

The wild animals found in the district are those common to the whole Sub-Himálayan tract, such as elephants, tigers, leopards, hyænas, sloth-bears and pigs. Deer abound, the *jarau*, swamp, spotted-deer, hog-deer, *nilgai* and antelope ; the four-horned deer is also sometimes met with. Of game birds the peacocks, florican, black-partridge and jungle-fowl are numerous. Of domesticated animals, the cow, buffaloes and ponies are bred in numbers, but generally of an inferior quality and they consequently do not fetch high prices. The climate of the tract affects animals as well as human beings, so that the cultivators have to provide themselves with a cheap and hardy class of cattle which is more suited to their means and to the climate. Fish of various descriptions are

Products.
Animals.

plentiful and are much appreciated, as food, by the Thárús and Bhukasas, the so-called aborigines of the tract. Professional fishermen of the Dhímar caste are not numerous and generally follow some other occupations in addition to fishing. Most classes eat fish, though it is not a favourite or coveted article of food with any large class except Thárús and Bhukasas.

The mode of husbandry is ruder than in the lower plains country; the soil, being naturally fertile, yields a satisfactory outturn with very inferior cultivation, and this fact, combined with low rents, is the chief attraction to an immigrant. Formerly the Tarái was essentially a rice-producing country; the late dry seasons, however, have encouraged *rabi* cultivation, or other *kharíf* crops, than rice. The Thárús and Bhukasas still look to rice as their staple crop. There is still a large area of waste land, and no pressure of population on the land is felt. Applicants for land, in the northern portion of the district, are increasing, but cultivation of the waste pasture lands, of which there are about 150 square miles, is discouraged. Owing to the increase of cultivation in the Bhábar tract, large herds of hill cattle, which formerly grazed within its boundary, are now forced to come into the Tarái for grazing; numerous flocks of plains cattle have here also to find pasturage, so that a line at which cultivation must cease has had to be drawn.

The following crops are grown in the district:—Rice, wheat (red), barley, joár, bájra, maize, gram, peas, mustard, linseed, sugarcane, cotton, tobacco and melons. Ginger, red pepper, turmeric and hemp are also cultivated, but to no great extent. For the rice crop there are three times of sowing, which are known as the *gája*, *bijhuwa* and *rasauta* sowings. The first sowing commences in April or May, when the finer sorts only are sown, and the reaping takes place in September, with an average yield of about 640lb. to the acre from 40lb. of seed. The second or *bijhuwa* sowing commences in June, and the third or *rasauta* in July; the outturn being respectively about 1,120 and 880lb. per acre. The species known as *hansrdj*, *báns matti* and *sonkharcha* are only sown with the *rasauta* and reaping goes on from the end of October until the end of November.

Owing to natural capabilities of the soil, the outturn is so satisfactory that manure is hardly ever thought

Mode of cultivation.

of: in fact the soil seldom requires it. A

large holding for a peasant cultivator would here be considered fifty acres; a middle-sized one, twenty acres, and a small one, six acres. Taking the average stock of a peasant, he will possess two ploughs, employing four to six bullocks, and will cultivate, exclusive of two-crop land, twelve acres of *kharif* or rain crops and four acres of *rabi* or cold-weather crops. The gross value of the produce, based on an average of five years in the last decade, is estimated as follows:—*Kharif* crop, Rs. 163; *rabi* crop, Rs. 68; total Rs. 231, from which must be deducted the expenditure on seed, cattle, implements, and rent of Rs. 126, leaving a profit of Rs. 105 a year. The work of weeding, watering, cutting and threshing the crops will be done by the family, the value of whose labour cannot be usefully estimated

The Tarái forests do not contain any valuable timber or any worth preserving beyond the occasional

Forests.

patches of *khair* (*Acacia catechu*) and *sissu* (*Dalbergia sissoo*) found in Bilheri and the islands of the Sárda. The timber that is most common is *haldu* (*Adina cordifolia*) which though of fine appearance is useless as a building or cabinet wood. The *sál*-covered patches, some of which run several miles into the plains are worthless as timber-producing reserves, the young trees, in common with all *sál* (*Shorea robusta*) grown in the plains, becoming rotten at the core before they arrive at maturity. The only *sál* exported is cut either immediately at the foot of the hills or more generally on some small eminence. It was, doubtless, owing to these considerations that the Tarái forests were removed from the control of the Forest Department in 1865 and were placed under the Superintendent of the Tarái. A small tax is now levied on the export of forest produce and the proceeds are appropriated to the general improvement of the district. The levying of these dues has been recognised formally and has been declared, at successive settlements, to be vested in Government.

With the exception of bricks, all building materials have to be

Building materials.

carted from the foot of the Kumaon hills, and are therefore expensive. Bricks, made in the district cost, for the nine-inch brick, Rs. 900 per lakh, and

for the small native brick Rs. 125. Both native kilns (*pajáwas*) and flame kilns are used. The limestone from quarries at the foot of the hills is almost invariably used for lime; it yields a very strong and white lime which is peculiarly suited for fine plaster work and costs about 14 annas per 82lb. Kankar in any quantity is not procurable. For large works, or where there is exposure, *sál* timber is used; its cost, at the forest depôts, is from Rs. 2 to Rs. 2-12-0 per cubic foot, so that when worked up, including carriage, the rate comes to Rs. 2-8-0 to Rs. 3-4-0 per cubic foot. *Haldu* is much used for unexposed work as light rafters and planking, but does not answer for beams.

The population of the Tarái, excluding Káshipur, which was not annexed until 1870, numbered 67,187 souls in 1854. In 1865 there were 91,802 inhabitants, of whom 51,993 were males and 39,809 were females, and distributed according to religion, 57,918 were Hindús and 33,884 were Musalmáns, giving 125 inhabitants to the square mile. In 1872, there were 185,813, or nearly 202 to the square mile, and in 1881 there were 206,993, or 220·7 to the square mile, of whom 113,315 were males and 93,678 were females. Distributed according to religion there were, in 1881, 131,966 Hindús (59,395 females) and 74,979 Musalmáns (34,263 females) and 48 others not being of those religions. Of the total males, 55,328 are recorded as agriculturists. The increase in the population over the census of 1872 amounted to 10·4 per cent., notwithstanding the great death-rate from fever and bowel-complaints. Of the males, 51,634 were unmarried, 52,424 were married and 9,257 were widowers. Of the females, 28,659 were unmarried, 49,424 were married and 15,595 were widows. The Musalmáns are almost entirely Sunnis. There are 565 towns and villages, of which there are two having a population above 5,000; two between 2,000 and 3,000; 15 between 1,000 and 2,000; 87 between 500 and 1,000, 241 between 200 and 500 and 218 under 200.

The ordinary mud hut, generally common throughout Rohilkhánd, is found in the greater portion of the district. It is built at a cost of about seven rupees, for the walls three rupees and for the grass roof four rupees. The Tharús and Bhuksas, however, build their houses of mud and

Population.

Houses.

wattles, taking particular care in their construction, so that damp is much less felt in such structures. The whole construction is done by the owner and his family, the cost of whose labour cannot be accurately estimated. In the towns of Káshipur and Jaspur alone are there brick-built houses; the cost of construction depends entirely upon the means and taste of the owner. The average number of occupants to each house, among both urban and rural inhabitants, may be placed at four persons.

There are no customs peculiar to the district itself; pancháyats are resorted to by the Thárús and Bhuksas and the lower classes generally, but even amongst such distrust in this method of settling disputes is daily gaining ground. The schools in the district are tahsili and halka-

Education.

bandi or village schools, aided and indigenous. The arrangements are made by the local educational committee and are generally under the supervision of the Inspector and his Deputy. The language of the peasantry

Language and religion.

is Hindi, and although the Thárús have a patois and accent of their own, it is not sufficiently marked to be called a separate dialect, and people of other classes easily understand them. Musalmáns are increasing in numbers in the district, and consequently the religion of Islám is on the increase, but there is no sign of any conversion to that creed from amongst Hindu castes. There is evidence at the present time of a religious movement amongst the Thárús. They appear dissatisfied with the teaching of the Brahmans and are seeking information regarding other creeds. The Christian religion is not acceptable chiefly because it seems to bring with it expenses they are unable to incur; the creed of Islám, as authorizing the killing of kine, is altogether unacceptable; and were but a teacher of the tenets of Buddhism to appear, it is highly probable that the Thárús would become converts to that form of religion.

During the year 1883 the following offences against persons and property occurred:—dakaiti, 2; robberies, 32; burglaries and thefts, 149. The value of property stolen amounted to Rs. 8,739, and of this sum Rs. 4,173 were recovered. Of 327 cases cognizable by the police, 252 were enquired into, and in 105 cases conviction followed; and of 265

persons that were tried, 190 were convicted, so that it may be safely said crime is light in the Tarái. Cattle-thieving, which formerly was the scourge of the district, is now very much on the decrease. The old gangs of Abirs, Gújars, Mewátis and Kasáis have been broken up, and though raids from the Rámpur State do occur at times, they are not conducted with the same amount of skill. The facilities for eluding pursuit still remain : the border of the Native State is so soon crossed, that the chances are greatly in favour of the thieves as against the police ; the work of the latter, therefore, cannot compare favourably with that shown by other districts not similarly situated.

Malarious fever is the only endemic disease prevalent in the district. The natural dampness of the soil, combined with great variations of temperature between the day and night, is the apparent cause of this form of disease. During the rains malaria does not, as a rule, appear to be active, but at the commencement of the hot weather and after the rains have ceased well on into the colder months, it occurs in its most virulent forms. During the year 1883, 10,005 deaths were registered—

Fever.	Small-pox.	Bowel complaints.	Cholera.	Other causes.
8,614	414	788	3	186

making an average mortality of 45 per mille. There were 5,183 vaccine operations during that year, of which 4,339 were successful, 254 unknown and 590 unsuccessful. There is only one dispensary in the district, though at each tahsil medicines are distributed by compounders, and in the eastern parganahs much relief is afforded by the Bihári dispensary in the Bareilly district. At the Káshipur dispensary, which is under an assistant surgeon, 7,918 patients were treated during the same year, at a cost of Rs. 2,270 defrayed from local funds. Cattle epidemics are frequent and in some years, owing to the large herds which resort to the Tarái for grazing, the deaths are very numerous. The most common disease is known as *chira*, a kind of dysentery for which there is no certain remedy. It generally commences when the rains cease and continues until January. Foot-and-mouth disease also at times attacks the cattle. The epidemics are to be attributed to the climate and want of care in protecting their stock on the part of both cultivators and graziers.

The total land revenue as it stood in 1883 was Rs. 1,66,801.

Fiscal history.

The incidence on total area was Rs. 0-4-5, on cultivated area Rs. 0-14-1, and on the culturable area Rs. 0-7-2. Save in the parganahs of Káshipur, Nanakmatta and Mainajhundi, the proprietary right is held by Government alone. Parganah Káshipur has been settled for some years: Nanakmatta and Mainajhundi are under settlement at the present time, but the proceedings are not sufficiently advanced to admit of reliable data being given. The general history of the tract has already been given, and here it is only necessary to describe more fully the Káshipur parganah, which was annexed to the Tarái in 1870.

Káshipur, a parganah of the Tarái district, is bounded on the north, by the Kumaon Bhábar and Bijnor district; on the south by the Morádabad district and the Rámpur State; on the east by parganah Bázipur of the Tarái district and the Rámpur State, and on the west by the Bijnor district. Irregular in form, it affords very diverse physical features. The slope from the Kumaon-Bhábar in a south-easterly direction is marked, falling about six feet in a mile. The general appearance presents a succession of gentle dips and rises so widely spread as often to be scarcely perceptible to the observer except from the varying crops which meet the eye, rice in the dips, and cereals, sugarcane and cotton on the higher and drier plateaus.

The Kosi and Dhela are the principal streams, the former on the east the latter in the centre. Each

Streams.

imparts a special character to the surrounding country. On the extreme west are the Phika and Peli, smaller streams, but still of sufficient magnitude to distinctly influence the country through which they flow. The number of minor streams is legion; the chief, however, are the Bahilla between the Kosi and the Dhela; the Tumaria, Dándi, and Lapkana intersecting the country between the Dhela and Jaspur. With the exceptions of the Phika and Peli these streams are all perennial. There are no metalled roads in the parganah; the means

Communications.

for locomotion however are sufficient. All the roads radiate from Káshipur town. One runs west to Jaspur, where it bifurcates, one branch going by a

north-easterly route to the hill mart at Rámnagar, the other making for Bijnor, through the Afzalgarh parganah. Another proceeds to Thákurdwára; a third, north and south, going to Rámnagar and Morádabad respectively; a fourth due east to Bázpur; and a fifth south-east to Rámpur. These roads are passable for carts nearly all the year round, though during heavy rains and floods, traffic is for a short time suspended.

There is no well-irrigation in the parganah, and on the Jaspur side there is virtually no irrigation except in one or two villages, where it is obtained by damming up the Lapkana stream. The available irrigation is confined to the Káshipur side, east of the Tumaria. Formerly, as in the rest of the Tarái, water was obtained from the various streams by means of earthen dams, and the result was extensive swamps which intensified the malarial nature of the country. This has happily now been put a stop to almost entirely under the management of the present Superintendent of the Tarái. Most of the dams have been removed, and by a system of masonry head-works and falls, with proper levels, the streams are now running in their old beds and doing their proper drainage duties. The canals constructed are entirely self-supporting and have paid their own way from the day they were commenced, leaving a large sum for more extended lines. On the Káshipur side of the parganah, hardly any portion now remains unprotected from the effects of drought.

The average rainfall for a series of years is shown to be from 35 to 40 inches. The extreme southerly portion of the parganah is fairly healthy, the north-eastern corner is the most pestilential. Here the evil effects of the old irrigation system are still evident, though matters in this respect are rapidly mending, and the natural features of the country too are against a salubrious climate: the land lies low, the soil is a stiff clay, and during the rainy season becomes water-logged.

There are only two towns in the parganah, Káshipur and Jaspur, in these markets are held twice a week, they have respectively a population of 14,667 and 7,055. By the last census of 1881 the population of the entire parganah was 74,973, (40,347 males and 34,626 females), being

Irrigation.

Climate.

Population.

an increase of 3,194 since the previous census of 1872. The total area of the parganah is 187 square miles, so that the incidence of population is about 400 to the square mile. Of the entire populations 49,263 were Hindús and 25,710 Mussalmáns.

The prevailing tenure is zamíndári, *vis.*, undivided ownership.

Tenures.

There are 157 zamíndári villages, 14 perfect pattidáris and 12 imperfect. The latter are chiefly those of Chauháns, Ahírs and Játs, who invariably sub-divide wherever they own ancestral property and have a numerous family. There are 128 resumed muáfi plots, 69 subordinate properties and 28 revenue-free plots. No entire muáfi village is to be met with. Of the 250 maháls or estates in the parganah Hindús own 192, Musalmáns 48, and the Government 10.

The distributions of these properties amongst the various branches of the Hindu and Musalmán communities is thus shown :—

Caste or class.		No. of proprietors.	No. of maháls.	Area in acres.
Hindús	Thákur ...	110	37	22,336
	Chauhán ...	346	35	14,829
	Brahman ...	63	17	13,776
	Baniya ...	58	18	6,502
	Ját ...	76	32	6,060
	Ahír ...	66	13	4,866
	Khatrí ...	14	5	1,489
	Káyath ...	5	3	563
	Others ...	276	30	13,639
Total ...		1,014	190	84,060
Mussalmáns	Sbaikh ...	84	22	9,617
	Pathán ...	50	16	5,593
	Sayyid ...	3	3	1,898
	Kain ...	10	2	808
	Others ...	80	7	2,632
	Total ...		227	50	20,548
Government and other co-sharers.		13	10	16,125
GRAND TOTAL ...		1,254	250	120,733

This parganah is singularly sensitive to variations of seasons and the climate is varying and not uniform

Fiscal history.

even throughout the parganah. Each year brings a greater or less visitation of fever. Exceptional seasons, by the climatic changes induced and the altered amount and quality

of food, affect the people injuriously. With these drawbacks the peasantry are not so flourishing as could be wished, but the special care which is now given to removing causes of unhealthiness must in time improve their condition. Up to the year 1844, Káshipur and Jaspur were separate revenue divisions with distinct settlements, and formed parts of the Moradabad district. On the 1st May, 1844, the revenue divisions of the Morádabad district were re-arranged: Bazpur, Káshipur and Jaspur along with sundry villages from Thákurdwára, Sarkara, Morádabad and Afzalgarh were constituted into one parganah under the name of Káshipur. Shortly before the mutiny, Bázpur was transferred to the Tarái, then in the Kumaun Division. In 1860, a number of other villages were transferred to the Tarái and in the same year the tahsils of Káshipur and Thákurdwára were amalgamated; the headquarters being fixed at Thákurdwára. In October, 1870, the entire parganah of Káshipur proper was transferred to the Tarái and the Tarái district as then constituted became a district of the Kumaun Division.

Mr. D. M. Smeaton, who conducted the recent settlement of parganah Káshipur, sketches the fiscal history of the two tracts, Káshipur and Jaspur, as if they had been all along, as they now are, parts of the same parganah, because the previous settlements, though distinct, were made at the same time, for the same periods and under exactly similar circumstances. Mr. Smeaton in his rent-rate report gives the following account of the previous settlements. "Prior to Mr. Money's settlement under Regulation IX of 1833 there had been eight assessments of the revenue, which may be thus enumerated:—

(1) The first triennial	...	...	...	1210 to 1212 fasli.
(2) Second ditto	...	...	...	1213 to 1215 „
(3) The quartennial	...	...	...	1216 to 1219 „
(4) The quinquennial	...	...	...	1220 to 1224 „
(5) Four periods of partial extension and alteration up to...				1244 „

These were, however, merely summary assessments of revenue and were made upon no recognized principle. Mr. Money when making his settlement determined to have revenue rates only, and he fixed the revenue on the whole parganah at Rs. 1,02,367, the incidence being on the cultivated area Rs. 2 per acre, which made the incidence of his estimated rental approximately Rs. 3-6-0 an acre. During the period from 1245 to 1283 fasli, *i.e.*, 1838—1876,

eight maháls, parts of four villages, were sold for arrears of revenue and purchased by Government, certain other villages being held under direct management. During the currency of the last settlement the price fetched for land is thus shown :—

		Rs. a. p.	
In 1839—Private sale	...	2. 4	11 per acre.
Mortgage	...	0 12	10 "
Auction	...	0 3	2 "
In 1875—Private sale	...	9 2	0 "
Mortgage	...	8 14	4 "
Auction	...	8 1	0 "

Land may be said to have quadrupled in value since 1839, and this shows that the country has made substantial progress. The new settlement made by Mr. Smeaton runs from 1879 and has recently been finally sanctioned by the Government of India for a period of 25 years. The revenue fixed is Rs. 1,05,388.

The increase of cultivation is about 12 per cent. as compared with the area under cultivation at the time of the last settlement. The present and former state is shown in the following table :—

Settle- ment.	Total area in acres	Revenue-free.	Barren.	ASSESSABLE AREA.				Total.
				Culturable		Cultivated.		
				Old waste.	New fal- low.	Irrigated.	Unirriga- ted.	
Present...	120732.00	619.36	9691.97	48236.31	4983.23	5081.30	52120.82	57202.12
Former...	106395.00	2518.00	25329.00	24847.00	8142.00	9201.00	41958.00	51159.00

The distribution of the various kinds of crops is thus shown for the present settlement :—

Kharff.	Area in acres.	Rabi.	Area in acres.	Double crops.	Area in acres.
Rice	18,156	Wheat	11,908	Rice, wheat and barley. Vegetables, &c.,	2,723
Sugarcane	3,526	Gram	1,752		
Cotton	2,434	Barley	623		
Mung, маш	2,129	Other kinds,	1,931		
Other kinds	3,949				
Total	30,194	Total	16,214	Total	11,245

From 1841 to 1876 the rise in prices of grain amounted to nearly 60 per cent., as will be seen by the following table :—

	<i>Wheat.</i>	<i>Gram.</i>	<i>Barley.</i>	<i>Rice.</i>	<i>Moth, bajri.</i>	<i>Mung, masha.</i>
1841 ...	38	33½	48½	53	36	30
1876 ...	19	21½	31½	26½	22½	19½

In a country where grain rents prevail the profits to land-holders have naturally been greater than to the cultivator.

The population of the parganah is about 34 per cent. greater than it was in 1848. In 1848, 5,5596; 1852,¹ 84,999; 1865, 73,919; 1872, 71,412; 1881, 74,979.

The following table shows the way in which, at the present time, the lands are held by the agricultural community, including proprietors who cultivate and simple tenants of all classes:—

Sort of holder.	Number of persons.	Area in acres.	Money-paying area.	
			Area.	Rent.
			acres.	Rs.
Sir-holders	437	4,460·81	80·75	213
Cultivating proprietors	134	600·46	11·20	35
Padhāns (head tenants)	117	1,145·00	373·66	977
Occupancy tenants	7,519	30,075·70	5,189·12	17,972
Tenants-at-will... ..	5,454	21,175·28	2,230·31	8,551
Holders of service lands	285	195·95	...	...
Total	13,946	57,653·20	7,885·04	27,748

The home-farm area is comparatively small; occupancy tenants hold more than half the entire cultivation, while tenants-at-will are in possession of nearly 40 per cent. The money-paying area is not much more than one-eighth of the whole, and the total money rental falls at about Rs. 3-8-0 per acre, or nearly 9 annas per village bigha. The crop rates, which are current upon the grain-paying area, vary between one-half and one-eighth; but the chief rates are one-third (tibāra), two-fifths (pachkūri or pachdūa), and one-fourth (chauhāra). The occupancy tenant and the tenant-at-will hold, on an average, nearly the same area, *vis.*, about four acres.

¹ This census was very faulty and cannot be relied on.

Tikhún, a sub-division of parganah Bárahmandal, was divided into two pattis at the recent settlement, the Malla and Talla. The statistics of both may be shown thus:—

Tikhún.	ASSESSABLE AREA IN <i>btsis</i> .			ASSESSMENT IN RUPEES.				INCIDENCE PER ACRE ON		POPULATION.					
	Total.	Cultivated.		Culturable.	1815.	1820.	1843.	Current.	Total area.	Cultivation.	Males.	Females.			
		Irrigated.	Dry.												
Malla...	2,976	27	2,212	737	628	1,278	1,564	2,652	14	3	1	3	11	2,021	1,859
Talla ...	3,357	40	2,649	668	897	1,287	1,480	2,906	14	3	1	1	10	2,746	2,482

Tikhún stretches from Bhainskhet to Siyáhi Devi. In olden times, it formed the estate of a Khasiya Rája who had his fort in Tikhúnkot, but he with the others fell under the Chands in the sixteenth century. The patwári of the Malla patti resides in Bhainskhet and of the Talla Patti in Dhamus.

Tihri, in patti and parganah Bangarh of Tihri Native Garhwál, is situated on the left bank of the Bhágirathi in latitude 30°-22'-54" and longitude 78°-31'-3" at an elevation of 2,278 feet above the level of the sea. The Bhilang joins the Bhágirathi a little above the town on the left side. In 1808 it was a small village, and until 1815, when Rája Sudarsan Sáh took up his residence here, it was little better. In 1819 the only remarkable building was the Rája's residence, subsequently exchanged for a more extensive one, but still having no pretensions to architectural merit. The new town is built on a tolerably flat piece of ground formed by a bend in the Bhilang river just before it joins the Bhágirathi; near here both rivers for a short distance run almost parallel with each other. The population now amounts to about 2,000 souls. The Bhágirathi is crossed by an iron suspension bridge erected here in 1858 at the Rája's expense on the Mussoorie road and there is a small bungalow for travellers. It is a very hot place, devoid of trees and surrounded by bare high hills. A broad road has been constructed up the Bhágirathi valley and hence by Mussoorie to the Dún. The Bhilang contains a kind of trout which is snared in great numbers.

Tons (Northern) or **Tauns**, a river of Tihri which rises to the north of the Jamnotri peaks and but a few miles from the source of the Jumna flowing from the southern base of the same mountains in latitude $31^{\circ}-5'$, and longitude $78^{\circ}-40'$. The source of the Tons appears to have been first ascertained in October, 1819, when it was visited by Herbert, who found the stream to issue, thirty-one feet wide and knee-deep, from a snow-bed 12,784 feet above the sea and extending as far as the eye could reach. The course of the river is generally westerly for thirty miles, to the confluence of the Rúpín, on the right side, in latitude $31^{\circ}-3'$, longitude $78^{\circ}-10'$, and at an elevation of 5,300 feet. The declivity of the channel in that distance must be above 250 feet per mile; so that the stream is almost a cascade. It is from its source to this confluence with the Rúpín called the Súpín; but downwards the united stream is called the Tons. The Súpín is the larger of the confluent, though the Rúpín is described by Jacquemont as deep, nearly fifty feet wide, furiously rapid, and rushing along with a tremendous roaring. The Tons is about 120 feet wide and holds a south-westerly course of about nineteen miles to the confluence of the Pábar, on the right bank, in latitude $30^{\circ}-56'$, longitude $77^{\circ}-54'$: the Pábar is a large stream, though somewhat inferior in size to the Tons. From the confluence, the united stream, still called the Tons, leaves Garhwál and takes a generally southerly direction, forming for the rest of its course the line of division between the British parganah of Jaunsár and the Hill States of Jubbal and Náhan. Thirteen miles below the confluence of the Pábar, the Tons receives the Shalwi, a considerable stream, which flows into it on the right bank, in latitude $30^{\circ}-48'$, longitude $77^{\circ}-49'$. It thence flows about forty miles, in a course generally southerly, but very tortuous, through a succession of rugged ravines of limestone, to its junction with the Jumna, in latitude $30^{\circ}-30'$, longitude $77^{\circ}-53'$, and at an elevation of 1,686 feet above the sea. As its total course is about 100 miles, it has the enormous fall of above 110 feet in a mile. Though below the junction the united stream bears the name of the Jumna, the volume of the Tons is much the greater, as, when surveyed by Hodgson and Herbert, it discharged 2,827 cubic feet in a second of time, while the amount discharged by the other river was only 1,045 (*Thornton*).

Uchakot, a patti of parganah Dhaníyakot in Kumaon, is bounded on the north by the Kosi river separating it from Chauthán and Kosyán Malla; on the west by Kosyán Talla; on the east by Simalkha and on the south by Kota Malla and Talla. The portions near the Kosi are inhabited. The assessable area comprises 1,574 *bísis*, of which 280 are culturable and 1,293 are cultivated (516 irrigated). The assessment in 1815 amounted to Rs. 1,022; in 1820 to Rs. 1,380; in 1843 to Rs. 1,530 and is now Rs. 2,279, which falls at Rs. 1-7-2 per acre on the total area and Rs. 1-12-2 per acre on the cultivation. The population at the time of settlement numbered 2,280 souls, of whom 1,145 were males. The patwári resides in Malla-gaon, where there is a school.

Uchyúr, a patti of parganah Bárhmandal in Kumaon, lies to the east of Almora between the Sawál and Kumniya streams. Uchyúr in 1865 contained 3,161 *bísis*, of which 808 were culturable and 2,352 were cultivated (63 irrigated). The land-tax in 1815 yielded Rs. 508; in 1820, Rs. 746; in 1843, Rs. 944 and was fixed at Rs. 2,420 at the recent settlement, which falls at Rs. 0-12-3 per acre on the total area assessed to land-revenue and at Rs. 1-0-6 per acre on the then existing cultivation. The population numbered 4,542 souls, of whom 2,181 were females. The patwári resides in Nisune and there is a school in Dhaur.

Udepur Malla, a patti of parganah Ganga Salán of British Garhwal, consists of a long and narrow strip of land lying along the left bank of the Hiunwal river. The patwári of Dhángu Talla resident in Dhánsi collects the land-revenue. The southern portion of the patti is drained by the upper waters of the Rawásan Nadi flowing towards the plains, while the Hiunwal drains the northern portions and flows north-west into the Ganges. With the exception of the flats along the river the cultivated land is on steep slopes. The soil is rich and the rock (slate) decomposes rapidly, giving good soil on the steepest slopes. All three divisions of Udepur have improved much of late years.

Udepur Bichhla, a patti of parganah Ganga Salán, is bounded on the west and north by the Talla sub-division; on the east by the Malla portion, and on the south by Ajmer, Bijner, and Chandí. There is a school at Thanúr. The southern portion consists of a mass of ravines and low hills whence flow the Mitú and Luni

torrents and the Rawásan, Máli and Málin streams. The present patti was separated from Udepur in 1864 and its statistics are given in Udepur Malla. At the settlement in that year it was assessed at Rs. 2,247 from all sources with a population of 4,549 souls. There is a patwári resident in Ranchula who collects the land-revenue. The principal cultivation lies in the heads of the Málin and Rawásan valleys which resemble the beds of dried-up lakes. The lower parts of these valleys are mere rocky gorges of sandstone now included in the protected *sál* tract under the Forest Department. The principal peaks are Mábigarh on the borders of Ajmer, 5,654 feet; Jaspálgarh near Sáling on the left bank of the Rawásan Nádí, 3,650 feet, and a peak on the same bank opposite Amola, 4,108 feet. The Sidhwála peaks at the extreme south-east in whose ravines the Teli Sot takes its rise, consists of three peaks, the principal being 3,464 feet and those on the left and right 2,719 and 2,775 respectively.

Udepur Talla, a patti of parganah Ganga Salán, is bounded on the north and west by the Ganges and on the south and east by the Bichhla and Malla pattis of Udepur and Dhángu Talla. There are schools at Dharkot and Atta. The patwári lives in Khera. This patti was not separated until 1864, when it was assessed at Rs. 2441 from all sources and had a population of 5,297 souls. The Tál Bheng and Bidásani streams carry the drainage of the southern portions of the patti into the Ganges. To the west it is traversed by the Hardwár and Srínagar road. The valley of the Tál is comparatively flat, but the left bank of the Hiunwal rather steep with some flats, and the rest contains some unhealthy sites.

Unta-Dhura, or Uta-Dbúra, a pass into Hundes from Patti Malla Juhar of parganah Juhar in Kumaon, lies to the north-east of Milam in latitude 30°-35'-0" and longitude 80°-12'-20", with an elevation of 17,800 feet above the level of the sea, 156 miles north of Almora. It lies over a ridge which is to the north of the main chain of the Himálaya and at right angles west from the dividing range between Kumaon and Tibet. Though inferior in height to the main range, it is elevated enough to necessitate a considerable ascent from the deep gorges of Kumaon. The crest of the ridge forms the boundary between Patti Malla Painkhanda of Garhwál and Patti Malla Juhár of Kumaon, and also the water-

parting between the streams flowing westward by the Alaknanda into the Ganges and those flowing eastwards into the Káli, as the Sárda or Ghágra is called in the upper portion of its course. Weller made the height of the pass from boiling-water 18,540, but he adds, this must be greatly in excess. The Great Trigonometrical Survey makes the pass 17,590 feet, the Bamlás peak to the west 17,880 feet and that to the east of the pass, 18,250 feet.

There are five small ridges of stone on the crest which look like pillars from below, and it is believed that any one who sleeps near them dies. A bitter, piercing wind blows here with such violence, especially during the rains, as to cause fatal accidents. Weller writes:—"The south-face and crest of the pass consists of a black soil, apparently the detritus of a black slate which latter is visible here and there below the soil. I was much disappointed with the view from the crest of the pass. The view southwards is very limited, Nanda Devi not visible; to the north-east and north a few hills are visible; to the north-west is a sea of hills moderately covered with snow (end of May) and hardly any of them appearing of great elevation. To the north-east are three bare hills, the first called Genti with behind it but not visible two other hills which have to be passed on the direct route to Chirchun." North is the Balchha ridge into Tibet and east the conical peak above the Girthi mine.¹ For the march hence to Balchha see the account of that pass. At the end of May (1841) Batten found the pass closed by heavy snow and encountered imminent danger in attempting to cross it. Webber found it completely closed with snow in the beginning of summer. Garden mentions an encamping-ground on the bank of a stream at the northern *dakhna* or foot of the pass where a few stunted bushes form the only fuel supply. He adds that the snow lies on the pass for eleven months in the year.

The journey from the hamlet of Bhúi on the Gori to the pass is described by Manson, who crossed it in September.² He started from Bhúi on the left bank of the Gori in patti Goriphát on the first and passed up the Rálam torrent. Some six miles up it receives an affluent from the east-north-east and a little higher up was crossed by a snow-bridge close to the Sába-udiyár or great cave. Thence along the bed of the river to within two miles of Rálam, which is 17 miles from Bhui and is colonised by Dárma Bhotiyas. There is a bad cross-path from Rálam to Sipu in Dárma by the Hardol or Lipu-ke-thán pass at all times difficult and dangerous. From the encamping-ground the track leads by a steep ascent to the top of the Birchigang pass, on which the rocks are composed of grey-wacke, clay slate, talc-slate, and near the pass a few blocks of quartz. During the ascent vegetation gradually decreased and towards the summit entirely disappeared and nothing but broken fragments of clay and talc-slate and quartz remained. The pass must be about 15,000 feet, the Rálam peak to the south rising to 16,290 feet. The descent to the bed of the Gori occupies a weary two hours and a half and a torrent is crossed by a *sangu* at Sumdu before reaching Tola (10,780 feet), a village of over 300 inhabitants, temperature of water 46°; air 51; wet bulb, 48°. Dwarf birch

¹ For Weller's journey from the Uta-dhúra to the Balchha pass, see BHOTIYA MAHÁLS.

² J. A. S. Ben, XI, 1157: this route is chosen when that along the right bank of the Gori is closed by accident or by inclement weather.

and rhododendron are the characteristic trees, and about Tola there is some level ground and cultivation, *ua-jam* being ripe. Hence to Burphu, five miles, the track is partly level along the sides of the mountain with numerous slips, and in some parts precipitous and dangerous. The rocks are less slaty and continue metalliferous. Burphu is situate in an open part of the valley with numerous fields around and is divided into two hamlets containing together 484 inhabitants. A fair-sized torrent is crossed by a spar-bridge and its waters are utilized for corn-mills. Here the track crosses the Gori by a spar-bridge and about two miles on the village of Mápa (95 inhabitants) is reached, the rocks being greywacke and clay slate with masses of quartz, and towards Páchhu the rock became a reddish-brown clay on the weather surface, but grey in the fracture. Páchhu (*q. v.*) is situate on the left bank of a small stream proceeding from a glacier on the eastern slope of Nanda Devi about three miles from Milam and possesses one of the best views of Nanda Devi to be had.

The Gunka is crossed by a spar-bridge opposite Milam, whence the road ascends by the left bank, passable, but in some places very bad: no grass, nothing but loose earth and stones; clay slate and grey silicious sandstone in masses and fragments; the general appearance of the mountains extremely barren, precipitous and shattered. The river in several places on either side is bounded by masses of earth and stone, the *débris* of the hills above which rise in numerous places into sharp peaks. Lying in the bed and along the sides of the river are large masses of conglomerate. During a thaw or a fall of snow or rain, the descent of stones is almost continuous, rendering the Gunka glen at that time very dangerous. Some of the stones are suspended on the top of the ravine precipices on little pointed peaks and their appearance on an avalanche day is not re-assuring to the traveller below. The encamping-grounds on the road between Milam and Dúng-udiyár are Jímgang, Samgang (12,030 feet), Sullong Talla (12,910) and Dúng (13,720 feet). Hence the track runs north-west to the foot of the Unta-dhúra pass at Jim, crossing the river over a bridge of stones which are piled on nearly a natural bridge of rocks; then in about half a mile to the huge Bamlás glacier. Crossing this found the Uta stream entering the glacier by an opening similar to that at its exit. The track continued along the base of the mountain to the north-west for a mile and a half with very little ascent, then turned north and commenced rather a steep ascent over a mass of white silicious rock, the *débris* of the mountain above. On reaching the summit came to another rather level piece of ground, but covered with fragments of a darker rock and a blacker soil. Then another ascent over the same kind of rock and soil and on reaching the top came in sight of the pass. A little further on crossed two snow-beds; the first two to three hundred yards wide, the second sixty to seventy yards wide. After crossing these the last ascent to the pass appears. Long before this all signs of vegetation had disappeared, and here the mountain was covered with small fragments of rock, clay-slate, &c. The strata of the heights to the right and left of the ascent were very much contorted in all directions. Manson was one hour and twenty-five minutes in accomplishing this last ascent, which he afterwards descended in twenty-five minutes. The summit of the pass is very rounded, and in some places the strata of clay-slate crops in nearly a vertical position, but dipping a little to the west-south-west many, indeed

almost all the fragments of rock up to the ascent, were very much intersected with veins of felspar. To the westward were seen some very lofty snowy peaks, but clouds concealed the view and to the north the Balchha (*q. v.*) range formed the horizon.

Urgam, a patti of parganah Nágpur in British Garhwál, is bounded on the north and east by Painkhanda Malla and on the west and south by Malla Nágpur. It comprises the valley of the Urgam river, which joins the Alaknanda on the right bank near Salna, where there is a bridge. The name is derived from the Uragas, a sub-division of the Nágas, whose rule is commemorated in the name of the parganah Nágpur. This patti was separated from Nágpur Malla in 1864. The patwári of Malla Painkhanda collects the land-revenue of this patti also.

Vishnuganga, a torrent which joins the Dhauli at Vishnuprayág, has two principal sources; of these the chief is the Sáraswati, which rises nearly from the crest of the Mána pass in the glaciers of the ridge which forms the boundary with Tibet. After a course of about twenty miles it is joined by the Vishnuganga, a stream of nearly equal size which rises in an immense glacier to the north-east of the great peak of Badrináth in latitude $31^{\circ}-4'-0''$ and longitude $79^{\circ}-28'-0''$. The Vishnuganga being the more sacred of the two gives its name to the united stream and is itself made up of three tributaries fed by three separate glaciers: the Sátpati to the south-west, the Pábígár to the west and the Supau or principal glacier to the north-west. The last comes down from a range called Pankwadáru constituted as shown by the boulders and debris borne along by the glacier of normal gray granite. After a course of some forty-three miles the Vishnuganga joins the western Dhauli at Bishnuprayág and the united stream is thereafter known as the Alaknanda. Nothing can surpass the desolation of the Saraswati valley from a few miles above Mána to the pass. A little below Badrináth, at about 10,000 feet above the level of the sea, an elevation at which elsewhere we find the forest in its greatest magnificence, all arboreal vegetation ceases, and after we pass, in the valley of the Saraswati, a few miles further to the north of the lower limit of the belt of perpetual snow hardly a shrub or a blade of grass is to be seen. It is evident that nearly the whole of this valley was once filled with glaciers, and we now see

almost everywhere the remains of the ancient moraines in the accumulations of fragments of rock and débris which cover the bottom and the sides of the valley. It would be difficult to discover clearer evidence in any part of these mountains than this valley affords of the indisputable fact that an immense diminution has taken place in the snow and glaciers of the Himálaya. The Bhotiyas declare that the process is still going on before their eyes, the whole of the glaciers which come down from the lateral ravines into the valley of the Saraswati have receded far back from the points which they reached within the memory of man, and that parts of the road which were formerly almost impassable from accumulations of snow are now always open and easy during the summer months.¹ One of the more remarkable boulders forms a natural bridge over the Saraswati just a little above its junction with the Vishnuganga : see *MÁNA : BHOTIYA MAHÁLS*.

Vishnuprayág, or **Bishnuprayág**, a halting-place on the road from Srinagar to Badrináth, is situate on the Vishnuganga river in parganah Paikhandá of Garhwál. There is a temple here built on a tongue of rock between the Dhaulí and the Vishnuganga rivers, $1\frac{1}{2}$ mile from Joshimath on the Mána road. Vishnuprayág is one of the five sacred junctions and forms a station on the pilgrim route. The scenery around is wild and rugged in the extreme, the mountains are bare and rocky and at the junction the Dhaulí from its superior volume carries its stream unmixed for a considerable distance. There is a flight of steps cut in the rock to enable pilgrims to bathe in the Vishnuganga as the river is very deep and swift; bathers are obliged to hold on to iron chains and bars when bathing to prevent themselves being washed away; but even with this precaution a number of persons are yearly drowned at this spot. There used to be a wooden bridge over the Dhaulí just above the junction, but the huge rock on the left bank on which a pier rested was washed into the river and there is now a rope bridge (*jhála*). Badrináth is 16 miles distant from this place.

Waldiya Malla, a patti of parganah Shor in Kumaon, is bounded on the north by Seti Talla; on the west by the Rám-ganga (eastern); on the south by patti Rawal, and on the east by

¹ This is the fact, notwithstanding Traill's statement to the contrary in *As. Res.* XVII. 3.

Waldiya Bichla. It consists for the most part of precipitous hills with little cultivation. The statistics are given under the Talla Dúngara and Basti. The Patti. The patwári lives in Báns.

Waldiya Bichhla, a small patti of parganah Shor in Kumaon formed at the recent settlement from Patti Waldiya, is bounded on the north by Seti Talla ; on the south by Waldiya Talla ; on the west by Waldiya Malla and on the east by Seti Malla. The statistics are given under the Talla Patti. The patwári lives in Bajethi.

Waldiya Talla, a small patti of parganah Shor in Kumaon, is bounded on the north by pattis Waldiya Bichla and Mahar ; on the west by Rawal ; on the east by Saun and on the south by Gúmdes. A portion of the Pithoragarh and Lohughát, road passes through village Bhatyúra of this patti close to the Shor valley, but the greater part of it lies to the east of Thákil (8,161 feet), where a peak near Badbe rises to 7,039 feet and Bhamdona near Búnga in the north of the patti to 6,224 feet. The Chandra-bhága stream flows along the eastern boundary in a southerly direction to its confluence with the Káli. The following statement gives the statistics of the Malla, Bichla, and Talla Pattis of Waldiya :—

Waldiya.	ASSESSABLE AREA IN <i>bits.</i>				ASSESSMENT IN RUPEES.				POPULATION.	
	Total.	Culti- vated.		Culturable.	1815.	1820.	1848.	Current.	Males.	Females.
		Irrigated.	Dry.							
Malla ...	534	115	143	275	60	105	128	450	270	217
Bichla ...	529	117	239	172	160	271	356	563	416	399
Talla ...	2,154	555	745	854	608	961	1,115	2,090	1,640	1,440

The incidence of the land-tax on the cultivated acre in each patti is Rs. 1-11-9 in the Malla, Rs. 1-9-3 in the Bichla and Rs. 1-9-8 in the Talla patti : on the whole assessable area the figures are Rs. 0-13-6, Rs. 1-1-0 and Rs. 0-15-6 respectively. The patwári resides in Bhatyúra, and there is a school in Mahar-khola.