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THE  
GAZETTEER  
OF  
SIKHIM

Introduced by  
H H Risley

complete and unabridged  
A VENTURE OF LOW PRICE PUBLICATIONS

THE  
GAZETTEER OF SIKHIM.

WITH AN INTRODUCTION BY

*H. H. RISLEY,*

INDIAN CIVIL SERVICE, COMPANION OF THE INDIAN EMPIRE,  
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## INTRODUCTION.

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ON the northern border of the British district of Darjeeling, the main chain of the Himalayas throws out to the southward two enormous spurs—the Singilela and Chola ranges. These almost impassable barriers enclose three sides of a gigantic amphitheatre, hewn, as it were, out of the Himalaya, and sloping down on its southern or open side towards the plains of India. The tracts of mountainous country thus shut in consist of a tangled series of interlacing ridges, rising range above range to the foot of the wall of high peaks and passes which marks the “abode of snow” and its offshoots. The steps

**Physical features.** of this amphitheatre make up the territory known as Independent Sikhim (Sukhim or ‘new house’); the encircling wall of peaks and passes forms on the north and east the frontier of Tibet, while on the west and south-east it divides Sikhim and Darjeeling from Nepal, and the Dichu forms the boundary between Sikhim and Bhutan. Pursuing our simile a little further, we may add that the lower levels of the Sikhim amphitheatre, the valleys of the Tista and Balasan and Mahanadi rivers, are similar in character to, and virtually form part of, our frontier district of Darjeeling. The northern hills, on the other hand, whence the snow-fed torrents of the Lachen and Lachung struggle down through precipitous valleys to unite in the broader but hardly less turbulent Tista, are moulded on a grander and more markedly Himalayan scale. Geographically speaking, these heights are of closer kin to the snow-clad giants which dominate them than to the lower elevations and tamer scenery of Sikhim Proper. With the latter, indeed, all intercourse is cut off during five months of the year, and during this time the people of the highlands dwell apart except for occasional visits from traders, who find their way over the Kangralama pass in Tibet.

**Early history.** Of the early history of Sikhim a few doubtful glimpses reach us through the thick mist of Lepcha tradition. The Lepchas, or as they call themselves, the Rong-pa (ravine-folk), claim to be the autoch-thones of Sikhim Proper. Their physical characteristics stamp them as members of the Mongolian race, and certain peculiarities of language and religion render it probable that the tribe is a very ancient colony from Southern Tibet. They are above all things woodmen of the woods, knowing the ways of birds and beasts, and possessing an extensive zoological and botanical nomenclature of their own. Of late years, as the hills have been stripped of their timber by the European tea-planter and the pushing Nepalese agriculturist, while the Forest Department has set its face

against primitive methods of cultivation, the tribe is on the way to being pushed out. The cause of their decline is obscure. There is no lack of employment for them: labour is badly wanted and well paid; and the other races of the Darjeeling hills have flourished exceedingly since European enterprise and capital have made the cultivation of tea the leading industry of the district. The Lepchas alone seem to doubt whether life is worth living under the shadow of advancing civilisation, and there can, we fear, be little question that this interesting and attractive race will soon go the way of the forest which they believe to be their original home.

The legendary account of the founding of the Sikhim Raj connects the establishment of settled government in that country with the great ritualistic schism in the Tibetan Church. Tradition tells how three monks of the *dukpa* or red-hat sect, flying from the persecution set on foot by the reforming party in Tibet, met after many wanderings at the village of Yaksun, under Kinchinjunga. Here they sent for the ancestor of the Rajas of Sikhim, Pencho Namgay, an influential Tibetan then residing at Guntuk, and an alliance was formed, having for its object the conversion of the Lepchas to Buddhism, and the installation of Pencho Namgay as the Raja of the whole country. Both objects were attained. The easy-going Lepchas readily accepted the externals of Buddhism, monasteries and churches rose to preserve the memory of the missionary monks, and the descendants of the Tibetan settler are recognised to this day as the rightful rulers of Sikhim. The external policy of the petty principedom thus formed was determined by the manner of its creation. In the East religion is still a power, and all things take their colouring from the faith of the ruler. The chief of a barbarous tribe, raised to power by the ingenuity of Tibetan monks, must needs, in default of stronger influences, acknowledge the religious and political predominance of the rulers of Tibet. As the craving for ritual revived, and the hostility between the rival sects showed signs of abating, the religious and political bonds linking Sikhim with Tibet began to be drawn tighter. Doubtful questions of discipline and procedure were referred to Lhasa for the decision of the Dalai Lama, and his mandate was virtually, if not statedly, admitted to be the final appellate authority for Sikhim Buddhists. While this religious *rapprochement* was going on, the Rajas of Sikhim were brought within the attraction of a civilisation far higher than their own. Wool, silk, tea, all the comforts and ornaments of life, came to them from Tibet; while intercourse with other countries was difficult. Small wonder, then, that their continual effort was to show themselves to be thorough Tibetans; that the Tibetan language came into use at their court, and that their chief

advisers were drawn from Tibetan monasteries. In course of time this connection grew to be closer, and the last three Rajas have married Tibetan wives, and have held landed property and owned herds of cattle in Tibet. Such marriages introduced a new and important factor into Sikhim politics. Women brought up in the dry keen air of Tibet could not stand the moist warmth of the Sikhim hills, drenched by the immoderate rainfall which prevails on the southern slopes of the Eastern Himalayas. Their influence, coupled with the Tibetan proclivities of their husbands, promoted by the Nepalese invasion of the country, induced the Rajas to transfer the head-quarters of their Government to the valley of Chumbi, one march to the Tibetan side of the Jelap pass. The prolonged residence of the chief in Tibetan territory had the worst effect on the internal administration of the State. Abuses of all kinds sprung up, while redress was hard to obtain. Lepcha interests were neglected, and Chumbi became the Hanover of Sikhim.

Meanwhile a still greater Power was being compelled, in spite of itself, to enter the field of East Himalayan politics. Already for thirty years the bigoted and warlike Hindus of Nepal had been harrying their peaceful Buddhist neighbours with cattle-lifting and slave-taking incursions. Before the year 1814 they had conquered and annexed the Terai or lower hills, lying between the Mechi and Tista rivers, and now covered by the valuable tea-gardens of the Darjeeling Terai. But for our intervention they would probably have permanently turned the whole of Sikhim and the hills south and west of the Tista into a province of Nepal. Peace had to be kept on the frontier, and the Government of India was the only Power willing or able to keep it. At the close, therefore, of the Goorkha war in 1817 we restored the Terai to Sikhim, and took such guarantees as were possible against a renewal of hostilities on our border. By the treaty of Titalya we assumed the position of lords paramount of Sikhim, and our title to exercise a predominant influence in that State has remained undisputed for seventy years, until recently challenged by the monastic party in Tibet.

Following our traditional policy, we meddled as little as possible in the affairs of Sikhim, and no further negotiations took place until 1834, when certain Lepcha malcontents, who had sought refuge in Nepal, made a raid on the tract ceded in 1817. Under pressure from us the refugees returned to Nepal, and the opportunity was taken by the Government of India to procure from the Raja of Sikhim the cession of the hill-station of Darjeeling and a small tract immediately surrounding it. Fifteen years afterwards Dr. Campbell, the Superintendent of

British intervention,  
1817.

Cession of Darjee-  
ling, 1835.

Darjeeling, and Dr. (now Sir Joseph) Hooker, while travelling in Sikhim with the permission of the British Government and the Raja, were seized and imprisoned by the influential monopolist, Namguay, popularly known as the *Pagla Diwán*, or "mad Prime Minister" of Sikhim. This treachery was punished by the annexation of the entire Terai, and a large area of the middle hills bounded on the north by the Great Rungeet river. But Namguay, though ostensibly dismissed from office, continued to exercise great influence through his wife, an illegitimate daughter of the Raja. Criminals were harboured in Sikhim, and British subjects were kidnapped from our own territory for the purposes of the slave-trade between Sikhim and Bhutan. Having exhausted all ordinary forms of protest, the Government of India found it necessary in 1860-61 to order the occupation of Sikhim by force under Colonel Gawler, accompanied by the Honourable Ashley Eden as Envoy and Special Commissioner. Our troops advanced to the Tista, the Raja accepted the terms offered, and in March 1861 a treaty was concluded at Tumlong, the capital of Sikhim, which regulates our relations with the State up to the present day. Its chief provisions are the following: "Criminals, defaulters, or other delinquents" are to be seized and given up on demand, and may be followed by our police. The ex-Diwan Namguay and all his blood relations are for ever banished from Sikhim, and excluded from the Raja's council at Chumbi. Trade monopolies, restrictions on the movements of travellers, and duties on goods passing between Sikhim and British territory, are abolished. Power is given to the British Government to make a road through Sikhim, and the Sikhim Government covenants to protect the working parties, to maintain the road in repair, and to erect and maintain suitable rest-houses for travellers. The slave-trade is prohibited. Our suzerainty in questions of foreign policy is recognised, and Sikhim undertakes not to cede or lease any portion of its territory, or to permit the passage of troops, without our consent. Finally, the Raja "agrees to remove the seat of his Government from Tibet to Sikhim, and reside there for nine months in the year." No more complete recognition of our supremacy in matters of external policy, and of our right to prescribe certain essential conditions of internal administration, could well be demanded.

Up to this time, and indeed for some years afterwards, Tibet appears to have taken no active interest in the internal politics of Sikhim. The leading Tibetans, whether lamas or laymen, were unwilling to be mixed up in any way with Sikhim affairs, and looked with suspicion and dislike on the residence of the Raja at Chumbi, as likely to lead to dangerous political complications. Sikhim, again, though

Annexation  
Morang, 1850.

Sikhim mediatised,  
1861.

acknowledging the religious supremacy of the Dalai Lama, was as far as possible from posing as a vassal of her Eastern neighbour. Notwithstanding the close matrimonial and proprietary connections between the reigning family and Tibet, the Raja had at no time put forward his relations with that country as a reason for failing to comply with the demands of our Government, nor had we in our dealings with him made allowance for any possible claims to suzerainty on the part of Tibet. No difficulty, therefore, was experienced in carrying out the terms of the treaty of 1861. Europeans travelling in Sikhim were cordially received by the lamas and people; surveys were commenced without hindrance; criminals were surrendered by the Sikhimese, or captured with their consent by the police of Darjeeling; freer intercourse with Darjeeling brought about the extinction of slavery; and many British subjects acquired landed property in Sikhim and held office under the Government of that country. The actions of the Raja himself showed a tendency to look to us rather than to Tibet for guidance and support. In 1873 he was permitted to visit Darjeeling, where he had an interview with Sir George Campbell. The results of this were that the allowance he received from us was increased from Rs. 9,000 to Rs. 12,000; and in the cold season of 1873-74 the Deputy Commissioner of Darjeeling was deputed to visit Sikhim and the Tibet frontier to enquire into the condition and prospects of trade with Tibet, and the advisability of making a road through Sikhim to the Tibetan frontier. In the course of this tour the Deputy Commissioner (Mr., afterwards Sir, John Ware Edgar, K.C.I.E., C.S.I.) visited all the passes of the Chola range, the eastern wing of the Sikhim amphitheatre, meeting the Raja and his chief officials and some officers of the Tibetan district of Phari. He discovered that the Tibetans were very jealous of our attempts to use the Sikhim Government and country in our efforts to open up trade with Tibet, and that the Chinese *ampa*, or Resident of Lhasa, had written to the Raja in the name of the Emperor of China, reminding him that he was bound to prevent the "Peling Sahibs" (Europeans) from crossing the frontier of Tibet, and warning him that if he continued to make roads for the Sahibs through Sikhim, "it would not be well with him." In deference to this feeling, no attempt was made by the Deputy Commissioner to cross the Tibetan frontier; but the discussions on the subject left no doubt as to the fact that the frontier line was the water-parting of the Chola range, and it was assumed throughout as a matter of course that Tibet had no right of interference, direct or indirect, in the country to the west of the frontier. She desired, in fact, nothing more than that her ancient solitary reign should remain unmolested by the approach of the European trader.

Relations of Sikhim  
and Tibet.

The following year witnessed a still more striking assertion of our supremacy. The sudden death of the Sikhim Raja gave the signal for the revival of an old intrigue to substitute a half-brother for the Raja's brother and heir, who was disfigured by a hare-lip. At this juncture the Deputy Commissioner of Darjeeling, acting in anticipation of the orders of the Government of India, caused the brother, the present Raja, to be proclaimed, and thus finally made an end of the intrigue. Not a whisper was heard on the frontier of remonstrance against this vigorous piece of king-making, and Tibet acquiesced silently in an act which struck at the root of any claim on her part to exercise a paramount influence in the affairs of the Sikhim State.

The march of subsequent events was altogether in tune with our proclamation. In all our dealings with the Raja there never was a question raised as to the claim of Tibet to control him, while his absolute dependence on our Government was throughout acknowledged by him and his people. Sir Richard Temple, while Lieutenant-Governor of Bengal, made several excursions in Sikhim, and during his tenure of office a road was constructed through a portion of that country to the Tibetan frontier at the Jelap pass. In this work we received the active assistance of the Sikhim State, and met with no objections on the part of Tibet, though it was well known that the Government and people of that country looked on our proceedings with a certain amount of suspicion and uneasiness. We may even go so far as to credit with some political foresight an old Tibetan, who said to the Deputy Commissioner while some blasting operations were in progress on the road—"Sahib, the sound of that powder is heard at Lhasa!"

Seven years later, the question of promoting commercial intercourse with Tibet, which had dropped out of notice during the troubles in Afghanistan, was again pressed on the Government of Bengal in the general interests of British trade in the East. Mr. Colman Macaulay, Financial Secretary to that Government, was deputed to visit Sikhim and the Tibetan frontier in order to inquire into certain rumours of the stoppage of trade through Darjeeling by Tibetan officials; to ascertain whether a direct road could be opened through the Lachen valley between Darjeeling and the province of

Tsang, celebrated for the quality of its wool; and if possible to communicate, through the Tibetan officials at the head of the Lachen valley, a friendly message from the Government of India to the Minister at Tashelhunpo, the capital of Tsang. At Giagong in the north of Sikhim, Mr. Macaulay met the *Jongpen* or civil officer of the Tibetan district of Kamba, and collected much interesting information

Mr. Macaulay's  
proposed Mission.

regarding the possibilities of trade between Tibet and India. In the following year, under instructions from the English Foreign Office, he visited Peking, and obtained from the Chinese Government passports for a mixed political and scientific Mission to proceed to Lhasa for three or four months to confer with the Chinese Resident and the Lhasa Government on the free admission of native Indian traders to Tibet, and the removal of obstructions on the trade through Sikhim and Darjeeling, it being understood that no proposal for the general admission of Europeans would be brought forward.

Early in 1886 the Mission was organised, and assembled at Darjeeling with a small escort of native troops for the protection of the treasure and presents which it carried. While it was waiting to start, negotiations commenced with China concerning the north-eastern frontier of Upper Burma, then recently annexed, and in deference to Chinese susceptibilities the Government of India consented to forego their intention of despatching a Mission to Lhasa. This forbearance, though highly appreciated by China, seems to have been misunderstood by the monastic party in Tibet, whose desire to promote a policy of exclusion, and to maintain their own monopoly of trade with India, was connived at by the Chinese Resident. Arguing in true

Asiatic fashion, the monks concluded that we broke up our Mission because we were afraid of them. They assumed a highly aggressive attitude, and sent a small body of Tibetan militia to occupy Lingtu, a point about twelve miles to the Sikhim side of the frontier, on the top of a high peak crossed by our road to the Jelap, one of the passes of the Chola range. Here the invaders constructed, at an elevation of 12,617 feet above the sea, a stone fort blocking and commanding the road; they warned off one of our native engineers, and announced their intention of stopping all trade by that route between Tibet and India. This open violation of territory under our protection was at first looked upon by us as a temporary outburst of Tibetan Chauvinism, which we could well afford to disregard. It was confidently expected that the mob of archers, slingers, and matchlockmen collected on a barren, windswept ridge at a height which even Tibetans find trying, would speedily fall away under stress of cold and starvation; and that the Chinese Government, moved partly by our diplomatic remonstrances, and partly by fear lest we should treat the Lingtu demonstration as a pretext for entering Tibet in force, would compel the Lhasa authorities to adjust their relations with Sikhim on a basis involving the recognition of our predominance in that State.

Our expectations were signally disappointed. Not only did the Tibetans hold their ground at Lingtu with characteristic Mongolian

obstinacy, but their refusal to receive letters or to enter into negotiations with us soon began to produce an alarming effect in Sikhim. When called upon to visit Darjeeling for the purpose of conferring with the Lieutenant-Governor concerning the affairs of his State, the Raja of Sikhim, after exhausting the standard Oriental excuses, replied in so many words that he and his people had in 1886 signed a treaty declaring that *Sikhim was subject only to China and Tibet*. He was therefore unable to come to Darjeeling without the express permission of the Tibetan Government. The history of this treaty is curious. It is alleged that in 1880 one of the Tibetan Secretaries of State, accompanied by a Chinese military officer, went to Paro, in Bhutan, for the purpose of settling some local disturbance. On their return to Phari, in Tibet, an attempt, at that time unsuccessful, was made to extract a similar agreement from Sikhim. Six years later, when our influence in Sikhim had begun to wane, the subject was reopened, and a formal treaty was signed at Galing, in Tibet, by the Raja, on behalf of the "people of Sikhim, priests and laymen." The treaty, which is couched in the form of a petition to the two Chinese Residents at Lhassa, set forth that some Europeans, after petitioning the great officers of China, have, to the detriment of religion, got an order to enter Tibet for trade.

The Galing Treaty. "From the time of Chogel Penchoo Namguay (the first Raja of Sikhim), all our Rajas and other subjects have obeyed the orders of China. . . . You have ordered us by strategy or force to stop the passage of the Rishi river between Sikhim and British territory; but we are small and the *sarkar* (British Government) is great, and we may not succeed, and may then fall into the mouth of the tiger-lion. In such a crisis, if you, as our old friends, can make some arrangements, even then in good and evil we will not leave the shelter of the feet of China and Tibet. . . . We all, king and subjects, priests and laymen, honestly promise to prevent persons from crossing the boundary."

The ultimate aim of this singular document, in which we are referred to under the form of one of those composite animals familiar to students of Tibetan chronology, is illustrated and made clear by a very remarkable map found by a man of the Derbyshire Regiment in a house at Rinchongong, where a Tibetan General and Secretary of State were so nearly surprised by our troops that the tea they had been drinking was still hot in the cups when the house was entered. This map purports to show the tract of country extending from Phari to Darjeeling. At the latter place, temples, houses, trees, and a locomotive puffing smoke at the railway station, are depicted with much display of accuracy.

In one respect it is even more realistic than the medieval maps to which it bears a general resemblance; for the houses on either side of the Darjeeling spur are reversed in relation to each other, so that to bring them into their proper positions, the map, which is drawn on cloth, must be tilted up from below like the ridge of a tent. As a political manifesto, the map is of peculiar interest at the present time; and one is disposed to wonder that our barbarous neighbours should have been so ready to adopt one of the characteristic weapons of modern diplomacy. The Lingtu fort, with its block-house and wall, stands out in conspicuous disregard of proportion and perspective; while Tibetan territory (coloured yellow) is shown as extending to the Rishi river, about thirty miles in advance of the frontier hitherto recognised by all parties concerned. Although the borders of Tibet are to this extent enlarged, the assertion of her paramount authority over Sikhim is not indicated on the face of the map. So far at least as colouring goes, that State is not made out to be a part of Tibet. It is painted red, while the British district of Darjeeling is shown in a lighter shade of the same colour.

Had this been all—had an aggressive Tibet and a Tibetanising Raja of Sikhim been the only elements of danger that we were called upon to face—we might perhaps safely have indulged our national proclivities, and with some loss of prestige in Eastern Asia, have permitted the tangle to unwind itself. The Raja's announcement of his change of allegiance might have been looked upon as a meaningless flourish, to be punished by severe reproof and the stoppage of his subsidy; while the withdrawal of the Tibetans from Lingtu might ultimately have been brought about by the tardy action of China, which must sooner or later have called so unruly a vassal to order. But this door of escape from unwelcome action was absolutely closed by the state of feeling in Sikhim.

We may repeat here what has already been indicated above, that from the commencement of our relations with Sikhim there have been two parties in that State—one which may be called the Lepcha or national party, consistently friendly to our Government, and a foreign or Tibetan party, steadily hostile. The family of the chiefs has generally been by way of siding with the latter, partly in consequence of their habit of marrying Tibetan women, and partly through their fondness for Chumbi. Of late years a further complication has been introduced by the settlement of colonies of Nepalese in parts of Sikhim—a measure favoured by the Lepchas generally. These settlers look to us for protection in case of danger, and are naturally friendly to our Government; but their presence is regarded with disfavour by many

influential lamas, who allege that they waste the forests, allow their cattle to trespass, and make themselves unpleasant neighbours in other ways. In truth, however, the unwarlike Sikhimese have a wholesome dread of the fighting races of Nepal, and fear lest the industrious Newars who have settled along their southern border should be merely the forerunners of an invading army of Goorkhas. So long as these three parties maintained what may be called their natural relations, there was no fear of our influence declining, and the internal affairs of the country could be trusted to adjust themselves with the minimum of interference on our part. But when we came to inquire how things actually stood, and to look below the surface of the Lingtu demonstration, we were forced in spite of ourselves to admit that within the last three or four years some remarkable changes had taken place in the political situation. Tibet, as has already been pointed out, had assumed an attitude of unmistakable, though probably cautious, aggression; while the leaders of the Sikhim people, and Nepalese settlers with influence and property in that country, had begun to ask themselves seriously whether it might not be necessary for their ultimate safety to cast in their lot with the Tibetan party. These men, although as anxious as ever to keep up their former relations, and fully as hostile to Tibetan encroachment, had begun to doubt our desire or our ability to assist them, and openly expressed their fear of being "drowned," as they worded it, if they persisted in trying to swim against the current now running in favour of Tibet. The head of the Nepalese party, himself a resident of Darjeeling, explained in the clearest language that he would do anything we told him to do if assured of our support and ultimate protection; but that failing this guarantee, he must make his peace with the Tibetan party as the only hope of saving his property in Sikhim from confiscation, and his relatives there from imprisonment or death. The fact that this line was taken by a representative of the Nepalese settlers in Sikhim was of itself the clearest indication of the extent to which our influence had been undermined. Things must have gone very far before these settlers—people almost bigoted in their Hinduism, with just enough Mongolian blood in their veins to make them hate the Mongols—could bring themselves to contemplate the possibility of coming to terms with their ancient enemies. Things clearly had gone so far that unless we bestirred ourselves in a speedy and effective fashion, Sikhim would either become once for all a province of Tibet, or, if we were not prepared to acquiesce in that solution of the difficulty, would have to be regularly conquered by us with the people of the country either actively hostile, or, which is perhaps worse, sulkily and treacherously neutral. Some months before, representations had been made to China in the belief that her influence

would suffice to bring about a peaceful settlement. But it is a far cry from Peking to Lhasa; the wheels of State move slowly in China, and no effective action appears to have been taken. In default, therefore, of any means of introducing the Tibetans themselves to civilised methods of settling international disagreements, it was decided to send an ultimatum to the troops at Lingtu, warning them that if they did not abandon the post by the 14th of March they would be driven out by force of arms. Meanwhile, lest it should be supposed that even then we were not in earnest, the 32nd Pioneers, a very fine regiment of low-caste Sikhs, were sent forward to bridge the Rongli river, and His Excellency the Viceroy addressed a letter to the Dalai Lama, explaining the reasons which had induced him to take so decided a line of action.

Now this letter to the Dalai Lama raises, and in some degree answers, the very questions which the average English politician, with one eye on the fortunes of our Indian empire and the other on the prejudices of jealous or wavering constituencies, will naturally be forward to ask, What was there really to fight for? What is this Sikkim that it should become the Belgium of Asia? Why spend money and squander lives to maintain our influence in a petty sub-Himalayan principedom, merely because the chapter of accidents involved us in diplomatic relations with it seventy years ago? Are treaties so sacred in Europe that they must be deemed inviolable under the shadow of the Himalayas? If Tibet wants to have Sikkim, why should we not jump at the chance of cutting ourselves loose from uncomfortable obligations, and leave our barbarian neighbours to settle their differences within their own borders in their own way?

The answer to these questions, pertinent enough from certain points of view, involves the consideration of our general policy towards the East Himalayan States with which we come more or less into contact. Counting from the east, those States are—Tibet, Bhutan, Sikkim, and Nepal. In discussing our relations with them, the ground may be cleared by stating that under no circumstances now easily conceivable can we desire to annex any of the group. Concerning Tibet in particular, we may add, without much fear of contradiction, that the Government of India, as such, wishes to have as little to do with it as possible. It lies on the other side of a great wall, which we, as the rulers of India, have not the smallest ambition to climb over. But here supposed commercial interests come in, and it is urged, on the strength of somewhat conjectural data, that Tibet offers a great market for certain articles of English manufacture. The Tibetans will take from us, we are told,

any quantity of broadcloth, piece-goods, cutlery, hardware, and other odds and ends which are not worth mentioning. They may also, if their peculiar fancies are consulted, buy up a good deal of the Indian tea which fails to command a remunerative price in other markets. In return they will send us wool of admirable staple but dubious cleanliness, musk, ponies, yaks' tails, borax; and they may, if they can but get over their superstitious prejudices against mining, contribute to the solution of the currency problem by flooding the world with fresh supplies of gold. These possibilities, no less attractive than indefinite, have repeatedly been pressed upon the Government of India; and the purely commercial arguments proper to the question have been coloured by the halo of mystery which surrounds the great inaccessible tableland of Eastern Asia. There lies the modern Brynhilde, asleep on her mountain-top; men call on the Viceroy of India to play the part of Siegfried, and awaken her from the slumber of ages. The spirit of adventure and science makes common cause with the commercial spirit in urging the most prosaic of Governments, troubled rather for its finances than its soul, to open up one of the dark places of the earth, and to enable many Englishmen to go where few Englishmen have been before. Doubtless this view of the matter is at first sight highly enticing. A gap in the botanical record needs to be filled; our maps of Tibet are still imperfect; and numerous ethnological problems crave solution. Tibet, once free to European travellers, promises all these things, and many more, to the scientific world hungering for fresh facts to assimilate. But who can doubt that the Government of India is right in putting on the drag and ignoring the few enthusiasts who grumble at its inaction? Who will deny that it would be a piece of surpassing folly for us to alienate a possible ally in China by forcing our way into Tibet in the interests of scientific curiosity, doubtfully backed by mercantile speculation? To meddle with Tibet against her will is like touching the springs of some strange machine, or handling a freshly caught animal. There is no telling what effect such experiments may produce. To this moment we cannot say for certain what set on foot the feeling of aggressive hostility which led the Tibetans to invade territory under our protection. Its outward and visible signs were obvious enough, and appeared, so far as any one could tell, to be of comparatively recent origin. Since Sir Joseph Hooker led the way in his famous journey through Sikhim, a number of Europeans, officials and others, have visited the passes of the Chola range which the Tibetans claimed as their own territory. All were more or less inclined to enter the *terra incognita* spread out before them; and all were stopped at the crest of the passes by a Tibetan guard, who displayed a placard inscribed with Tibetan and Chinese characters, and intimidated by simple but significant gestures

that if the English persisted in crossing the frontier, the throats of its guardians would assuredly be cut. So clearly, indeed, was the definition of the frontier understood by the Tibetans in 1849, that when Dr. Campbell was seized by the Sikhim people just below the Chola, the Tibetan guard, though remonstrating, could not interfere, because their jurisdiction ended at the crest of the pass. It may be added that the Tibetan Namguay, the "mad Minister" who was banished from Sikhim by the treaty of 1861, never ventured, at any rate in his public journeys, to cross the water-parting of the range, but invariably stopped on the Tibetan side. Within a few years all this was changed. In theory, at least, the placards were advanced to the Rishi, and nice scruples as to the exact location of the frontier gave place to a daring attempt to remove a peaceful neighbour's landmark.

One asks, almost in vain, what spell thus transformed the scene? Did some strange wave of religious fanaticism sweep over Tibet, overwhelming on one side the Roman Catholic Missions of Bathang, and on the other stirring the monks of Gyantsi and Tashelhunpo to organise an attack on Sikhim? The pointed reference to religion in the Galing treaty reads as if something of the sort had been in the air; and indications are not wanting of a tendency to resist Chinese interference, and to struggle against the policy which seeks to make Lhassa a Chinese Avignon, and to utilise the spiritual authority of the Dalai Lama as a check on possible Tartar outbreaks in Central Asia. On the other hand, the missionaries themselves, who might be expected to be the first to recognise a religious revival, do not appear to have observed any such movement. They affirm, with admirable frankness, that it was the Tibet Mission of 1886, or possibly the abandonment of the Mission, that troubled the political waters, and encouraged the monastic party in Tibet to persecute the rival Church in Bathang, and to interfere in the affairs of Sikhim. No doubt Monseigneur Biel at Ta-t sien-lu and Father Desgodins at Pedong are entitled to speak with much authority as to the political springs of action in Tibet; but one is inclined to question whether things Tibetan move so quickly as their theory would require. A cycle of Cathay, whether better or worse than twenty years of Europe, is certainly less fruitful of results; and it may be doubted whether any cause that only began to operate in 1886 could possibly, in the region of Tibetan politics, have produced a tangible effect by 1887. It seems, indeed, more probable that we must look further back for the real cause of the present difficulties: that the making of the Jelap road roused a feeling of suspicion which went on quietly spreading, and needed only some slight stimulus from our side to translate itself into action. Such a stimulus may have been given by the Tibet Mission, or by exaggerated rumours of the strength of the

escort provided for it. Conjectures of this sort are, however, mostly vanity, and they are only mentioned here in order to show how little we know of what goes on in these regions of mystery, and to indicate the possible dangers of adopting a forward policy with the object of promoting freer commercial intercourse with British India. Such intercourse may, we believe, be trusted to grow up of itself in no very distant future. The Tibetan, whether monk or layman, has all the instincts of a born trader, and sooner or later he is bound to realise in what direction his advantage may be found. We, on the other hand, can well afford to wait an opportunity, and need not risk the substantial gain of our *entente cordiale* with China by clutching too eagerly at the problematic chances of Tibetan markets.

With regard to Bhutan we are in some respects more fortunately situated. No one wishes to explore that tangle of jungle-clad and fever-stricken hills, infested with leeches and the *pipisa* fly, and offering no compensating advantages to the most enterprising pioneer. Adventure looks beyond Bhutan; science passes it by as a region not sufficiently characteristic to merit special exploration. Our policy towards the Bhutanese, therefore, is determined solely by considerations of geographical position and diplomatic expediency, and has not to take account of pressure applied in the supposed interests of commerce or science. In point of fact, only one source of possible complications has to be borne in mind. Bhutan, as

Bhutan. is generally known, is afflicted with a curious dual system of government, under which the Dharin Raja, or spiritual chief, is supplied by a series of incarnations which occur in the families of the chief officers of the State; while the temporal ruler, or Deb Raja, is supposed to be elected by the council of permanent ministers called the Lenchen. In practice, however, the Deb is nominated by whichever of the two governors of East and West Bhutan happens at the time to be the more powerful. The equilibrium thus arrived at is eminently unstable; rival parties are constantly struggling for power, and the work of government is lost in a whirl of intrigues and counterintrigues. This concerns us little, so long as the turmoil does not boil over into our territory. But the ruling classes of the State are still sore at the loss of the Duars, or "gates" of Bhutan, a level strip of country running along the foot of the hills, which we annexed at the close of the Bhutan war in 1865. Excellent tea land is found in the Duars, which now form part of the Jalpaiguri district, and a fringe of tea-gardens, giving occupation to a large number of European planters, extends along a portion of the Bhutan frontier. Many of these are within easy reach of a raid from the hills, and any circumstance which for a time over-clouded our influence in this part of the country might create a risk of a massacre of our planters or

their coolies in the Duars, or force us to make an expedition into Bhutan to avert such a calamity.

Turning now to the western member of the East Himalayan group of States, we are struck by a remarkable contrast. Whatever else it may be, the Hindu kingdom of Nepal is certainly not a weak Government. Its methods are not exactly our methods, and its ways with political dissenters are exceedingly short. Nevertheless its

Nepal. officers hold regular trials, record evidence, and administer a rough sort of justice, which seems to

be on the road to discarding barbarous punishments in the case of offences which are not of a political character. Nepal at any rate is civilised enough for us to have concluded with it an extradition-treaty, which on the whole works fairly well; while in matters of revenue administration it is centuries ahead of Sikhim and Bhutan. Many of the leading men of the country have been educated in our schools; they take a just and intelligent view of Indian politics, and at the present day they are in no way inclined to underrate the length of the British arm. From the beginning of the Sikhim difficulty the Katmandu *darbar* has shown every disposition to make itself serviceable to us by communicating information and by warning us of certain manœuvres, such as poisoning springs, making attacks by night, and constructing booby traps, which are supposed to characterise the art of war as practised in Tibet. It has behaved, in short, in a manner befitting the governing body of a strong State, occupying country which we have no wish to annex, and recognising that its interests are in the main identical with ours. As a buffer between ourselves and the barbarous country beyond, Nepal leaves little to be desired.

The peculiar position of Sikhim renders it impossible for us to ignore it as we ignore Bhutan, or to treat it on

Sikhim.

terms of comparative equality as we treat Nepal.

Sikhim cannot stand by itself, and if we withdrew our support, it must ultimately fall either to Tibet or to Nepal. But for our treaty obligations the latter consummation would hardly be one to be deeply regretted, but it is difficult to see how it could be brought about peaceably. The Tibetan party would certainly try to hold the country for themselves; and although the stronger races of Nepal would probably win in the long run, the period of transition would be one of intolerable anarchy. Once let our hold be relaxed, and Sikhim would become the Alsatia of the Eastern Himalayas, and such a state of things would react most formidably on the security of life and property in the great European settlement of Darjeeling. Every rood of land in that district that is not expressly reserved by Government for the cultivation of food-crops has already been taken up for tea, and a very large capital has been sunk in its cultivation, which gives

employment to an enormous number of natives, mostly immigrants from Nepal. On all sides the hills are dotted with Europeans' bungalows; tea-gardens cover the slopes which face towards Sikhim; and the summer residence of the head of the Bengal Government is to all appearance within a stone's-throw of the stream which forms the boundary of British territory. The station of Darjeeling itself is no doubt adequately protected by the European troops stationed at the cantonment of Jellapahar; but a large number of outlying tea-gardens are absolutely at the mercy of possible raiders from Sikhim. Nor is it only the planters and their native labourers that have to be considered. Many of our subjects, Tibetans settled in Darjeeling, Lepchas, and Nepalese, have large transactions and interests in Sikhim, about which disputes constantly arise. For the last twenty-five years our relations with the Sikhim Government have been so close, and our hold over it so strong, that the Deputy Commissioner of Darjeeling has, as a rule, found little difficulty in settling such disputes when referred to him. Processes, both civil and criminal, issued by the Darjeeling courts, are virtually current in Sikhim, and the Darjeeling police have free access to the country. Sikhim, in fact, has been treated substantially as part of British India, subjected for political reasons to the nominal rule of a princelet of the Merovingian type. An instance of recent date will serve to illustrate what is meant. In July 1888 a murderous outbreak occurred in the Darjeeling jail; a warder was killed, and eight convicts escaped. Some fled to Nepal, others were believed to have taken refuge in Sikhim. In the case of Nepal no hot pursuit was possible; the frontier was close, and we could not follow our criminals over it. The utmost that could be done was to demand extradition through the Resident at Katmandu, sending a formal record of the evidence against the offenders, with proof of the nationality of each. In the case of Sikhim no such formalities were necessary. The Deputy Commissioner sent off a party of armed police with orders to arrest the runaways, wherever found, and bring them back at once. Now, if Sikhim were allowed to become a part of Tibet, cases of this kind would give rise to inconvenient negotiations, and might even become a cause of friction between our representative at Peking and the Chinese Government. It must further be remembered that a Tibetan Sikhim would lack the stability, the common sense, and the capacity for gradual advance towards civilisation, which characterise the Nepal Government. An extradition treaty would hardly be workable, and every absconding criminal would become the subject of an irritating diplomatic wrangle.

Enough has perhaps been said to show that the obligation of driving the Tibetans out of Sikhim was imposed on us by the essential conditions of our policy towards the East Himalayan States; that

this policy is a just and reasonable one; and that it involves the assumption on our part of no more authority than is necessary if we are to keep the peace in this particular corner of the Indian empire. To maintain this policy by the cheapest and most effective means was the sole object of the military operations commenced in March 1888, and terminated by the engagement of the 21st September of that year. For the better understanding of the principles on which this little war was conducted, a further glance at the conformation of the country will be needed. Lingtu, we have already explained, is a peak about twelve miles to the Sikhim side of the frontier, over the top of which our road runs to the Jelap pass. The sides of this peak are very precipitous, and the road could not have been taken along them except at great expense. A force holding Lingtu can therefore block the road, and can also command the steep downs below the Jelap, where Tibetan herdsmen pasture their sheep and cattle during the summer months. Both points probably counted for something with the Tibetans, who have a considerable, if not an excessive, sense of the value of position in warfare, and who seem also not to have overlooked the possible support which the habits of the herdsmen might give to the theory of a pastoral frontier extending to the Garnei. As a matter of fact, no such theory is at all tenable. The practice arises partly out of the necessities of the case—the pastures lie on both sides of the frontier, and cattle are bound to stray—and partly from the accident that a large part of the property owned in Tibet by the Rajas of Sikhim and their wives has consisted of cattle tended by Tibetan herdsmen, their servants. On the Singilela range, where it forms the border between Darjeeling and Nepal, Nepalese shepherds feed their flocks on either side of the frontier, paying grazing fees to our Forest officers—just as the Tibetans pay rent to the Raja of Sikhim for the period spent by them on the Sikhim side. But no Nepalese official would be so inconsequent as to make this a reason for asserting that the whole of the grazing tract belonged to Nepal.

At the beginning of hostilities, while our troops were being moved up from the plains, public opinion in India had hardly made up its mind to take the Lingtu garrison seriously. A turn for cheap swagger is a prominent trait in the Tibetan character, and it seemed not impossible that in invading Sikhim, the lamas were merely “trying it on,” and would withdraw their rabble directly the advance of our troops showed that we were in earnest. In order to leave open the door to an early reconciliation, and to make it clear that our only object was to restore the *status quo* in Sikhim, and to secure that country and Bhutan from future aggressive interference on the part of Tibet, General Graham was directed not to pursue the enemy across the frontier, unless it was absolutely necessary to do so for

military reasons. These instructions were carefully observed. In the storming of the stockade at Jeyluk, a short distance below Lingtu, only thirty-two Tibetans were killed; and no attempt was made to pursue the Lingtu garrison, who fled from their fort when Sir Benjamin Bromhead and some men of the Pioneers reached the gate. The methods of defence adopted at Jeyluk recall some of the incidents of medieval warfare. Walls and stockades had been built across the most precipitous part of the road; the road itself was cut away so as to leave an impassable chasm; rocks and tree-trunks were piled at favourable points, with levers to hurl them down on an ascending enemy; and slings and arrows were freely, but vainly, used as our men advanced. The issue, one would think, might have shown that the weapons of Morgarten avail little against modern infantry. But the lesson was lost on the fanatical monks of the great monasteries around Lhasa. Their only answer to our pacific messages was to hasten up to the frontier all the troops they could collect, and to occupy the Jelap and Pembiringo passes with a continually increasing force. Meanwhile we had fortified the more sheltered and defensible position of Gnatong, about eight miles to the south of the Jelap, and lay waiting there for events to develop themselves. The whole of April and the early part of May were spent by the Tibetans in massing their troops on their own side of the passes. On the 22nd May, encouraged by a promise of victory from the "shaking oracle"<sup>1</sup> at Naichang, they attacked Gnatong in force, were repulsed with heavy loss, and retired over the Jelap.

Tibetans attack  
Gnatong, 22nd May  
1888.

In order to avoid needless slaughter, our men were not encouraged to follow the flying enemy farther than was necessary to completely break up the attack and convince the Tibetans that they had been really defeated. This conviction, however, came slowly to those who had taken no part in the fight. Strange rumours of the prowess of "the Lama army" that was gathering at Lhasa found their way across the frontier; fresh troops were beaten up in all directions; terrible threats were conveyed to the leaders of the force on the frontier; and everything went to show that the counsels of the monastic party were still for open war. It is hardly surprising that this should have been so. The new *ampa*, despatched by China with instructions to bring about a peaceful settlement, had not yet arrived, and the lamas lacked the sagacity to perceive that we were only holding back in order to give him time to make his influence felt. To their eyes we appeared to forego without purpose our own advantage, and they

<sup>1</sup> This may refer to the use of an arrow as a sort of divining rod, described by Schlagintweit, "Buddhism in Tibet," or possibly to divination by the shivering of an animal, for which there are classical parallels.

drew from this the conclusions which most Asiatics would draw under similar circumstances.

Nevertheless, though the lamas knew it not, their obstinacy, wasting itself on our defensive tactics, was daily bringing us nearer to the real object of the campaign. At relatively small cost to ourselves, we were wearing out the resources of Tibet, and leading her on to strike the blow which should be our opportunity. The prisoners taken at Gnatong confirmed the reports received from our officers in Almora and Ladakh, that forced levies had been beaten up from the most distant provinces, and were fed and kept together with the utmost difficulty. The Tibetan commissariat is indeed somewhat less elaborate than our own. Forty pounds of barley-flour, half a brick of tea, half a pound of salt, half a small sheep's bladder of butter, and  $3\frac{1}{2}$  *l.* to buy meat, are said to represent a month's rations for a fighting man; and it may be surmised that he gets little or no pay beyond this. But the simplest supplies are hard to obtain in a barren region intersected by mountain-ranges, and wanting in all effective means of carriage; while a militia snatched on the spur of the moment from pastoral and agricultural pursuits is proverbially unsuited for prolonged hostilities.

As soon, then, as it was clear that Tibetan patience was coming to an end, and that our forbearance was still mistaken for timidity, fresh troops were ordered up and preparations made for bringing the campaign to a close directly the rains were over. By the middle of August, General Graham had under his command at Gnatong a wing of the Derbyshire, the 32nd Pioneers (Sikhs), one of the newly raised Goorkha regiments, and six mountain guns—in all, nearly 2,000 men. After a month of waiting for fine weather, the conclusive engagement was brought on by the action of the Tibetans themselves. Two ridges, the Tukola and the Nimla, intervene between our position at Gnatong and the Kaphu valley, into which, as has been mentioned above, the Jelap and Pembiringo passes open. On the night of the 23rd September our advanced pickets came in as usual, and reported no unusual activity on the part of the Tibetans. At daylight on the morning of the 24th, the Gnatong garrison became aware that the enemy had advanced during the night four miles from their camp; had occupied the Tukola ridge, 13,550 feet above the sea, and 1,500 feet higher than Gnatong; and had built a stone wall two miles in length all along the crest of the ridge. Notwithstanding this marvellous piece of impromptu engineering, the weakness of their new position was apparent at a glance. The whole of their large force, numbering more than 11,000 men, was distributed in line along the wall; no attempt had been made to take advantage of the ground or to

Final defeat of Tibetans, 24th September 1888.

concentrate troops at points of importance; while the entire position was enfiladed by the Tukola peak, on which their right flank rested. Once in possession of this peak, less than a mile and-a-half from Gnatong, we could roll up the enemy's line at leisure, and the conformation of the ground was such that a force retiring towards the Jelap must need suffer terribly during its retreat. This fact determined the scheme of our attack. Approaching the Tukola peak by a route which covered them from the fire of its defenders, the Goorkhas carried the position by a rush, and their attack, combined with the parallel advance of the Pioneers, swept the Tibetans from the ridge. In their flight down that fatal hill, and the ascent of the Nimla ridge which lay between them and the Jelap, the ill-armed, undrilled militia whom the monks had sent forth as the army of Tibet lost nearly a tenth of their number in killed and wounded. On our side, Colonel Sir Benjamin Bromhead, commanding the 32nd Pioneers, was severely wounded in the attempt to take prisoners two Tibetans, whom he believed to have surrendered; one of the Goorkhas was severely and two Pioneers slightly wounded. No effort was made by the Tibetans to rally their broken troops or to keep up a running fight; the rout was complete. We bivouacked that night in the enemy's camp on the Jelap, and no resistance was offered to our advance upon Rinchagong next day. Straggling parties of the enemy were seen emerging from the Tibetan side of the Pembiringo pass, but they broke off into Bhutan as soon as they realised that we were about to enter Rinchagong, and the village was empty when our troops reached it. The march to Chumbi through the beautiful valley of the Mochu was a mere promenade, and our troops returned to Gnatong without seeing any more of the enemy.

There seems to be reason to believe that this unavoidably severe lesson has been taken to heart by the Tibetans. The force which was dispersed at Gnatong had been drawn from all parts of the country, and the knowledge of our overwhelming military superiority must by this time be so widely diffused that even the arrogance of the lamas can no longer affect to ignore it. Indications, indeed, are not wanting that the Tibetan claim to suzerainty over Sikkim had already been practically abandoned, though the Tibetans tried hard to retrieve their defeat in the field by a diplomatic triumph of the Fabian type, and seem for a time to have had the support of China in their ingenious efforts to tire out our representatives.

The Anglo-Chinese convention of 1890 secures the formal acknowledgment of our rights which the Gnatong victory entitles us to demand. At the close of a costly and vexatious campaign, carried on at an elevation never before reached by regular troops, and involving transport difficulties of the most serious kind, it was

clearly essential to have something in the nature of a final settlement to show for our trouble.

But we can afford to be content with a distinct surrender of the indefinite claim to control the course of events in Sikhim which for the last three years has troubled the peace of our frontier and stopped all trade between Darjeeling and Tibet. Above all things, we have no call to irritate the Tibetans and possibly excite the jealous territorial susceptibilities of China by introducing stipulations granting to European traders or travellers the coveted right of exploiting the commercial and scientific treasures of the interior of Tibet. Traders would assuredly fall foul of the monopolies reserved to the monks of the great monasteries; while scientific research, however modest in its aims, could scarcely fail to come into collision with some form of religious or social prejudice. Here surely is one of the cases where "the half is more than the whole." Be the treaty never so meagre, we anyhow remain in possession of the disputed tract, while the roads and bridges made during the campaign ensure us the command of the passes against Tibetan inroads. Our influence is predominant in Sikhim; it has been vigorously asserted by the introduction of essential reforms in the government of the State, and we need not fear that it will hereafter be permitted to decline.

Most of all will our position be strengthened by the change which is insensibly but steadily taking place in the composition of the population of Sikhim. The Lepchas, as has been stated, are rapidly dying out; while from the west, the industrious Newars and Goorkhas of Nepal are pressing forward to clear and cultivate the large areas of unoccupied land on which the European tea-planters of Darjeeling have already cast longing eyes. The influx of these hereditary enemies of Tibet is our surest guarantee against a revival of Tibetan influence.

The future of Sikhim.

Here also religion will play a leading part. In Sikhim, as in India, Hinduism will assuredly cast out Buddhism, and the praying-wheel of the Lama will give place to the sacrificial implements of the Brahman. The land will follow the creed; the Tibetan proprietors will gradually be dispossessed, and will betake themselves to the petty trade for which they have an undeniable aptitude.

Thus race and religion, the prime movers of the Asiatic world, will settle the Sikhim difficulty for us, in their own way. We have only to look on and see that the operation of these causes is not artificially hindered by the interference of Tibet or Nepal. The trade with Tibet which the Macaulay Mission was intended to develop may well be left for the present to take its chance. Such scanty data as are available do not appear to warrant a very high estimate of its value. Whatever it may be worth, it is bound sooner

# SIK HIM.

## ITS GEOGRAPHICAL POSITION AND DESCRIPTION.

THE Native State, commonly called Sikhim, is situated in the Eastern Himalayan Mountains, and is bounded on the north and north-east by Tibet, on the south-east by Bhutan, on the south by the British district of Darjeeling, and on the west by Nepal: it lies between  $27^{\circ} 5'$  and  $28^{\circ} 10'$  N. Lat., and between  $88^{\circ} 4'$  and  $88^{\circ} 58'$  E. Long., and comprises an area of 2,818 square miles.

The country may be briefly described as the catchment area of the head waters of the river Tista, and the boundary with Tibet is thus laid down in the Anglo-Chinese Convention of the 17th March 1890:—

“The boundary of Sikhim and Tibet shall be the crest of the mountain range separating the waters flowing into the Sikhim Tista and its affluents from the waters flowing into the Tibetan Mochu, and northwards into other rivers of Tibet. The line commences at Mount Gipmochi on the Bhutan frontier, and follows the above-mentioned water parting to the point where it meets Nipal territory.”

The continuation of the above range southward as far as the source of the Rummam stream forms the western boundary.

The Rummam stream, until its junction with the Great Rungeet, and thence the latter river, separate Sikhim from British territory.

The boundary with Bhutan is ill-defined, but appears to be the Richi-Pangola range up to the plateau south-east of Lingtu, thence a line north-east to the trigonometrical station near Gnatong, and thence a straight line to Gipmochi. The natural boundary should be the river Dichu.

In the reigns of the earlier Sikhim Rajas their realms extended from the Arun river on the west to the Tegen La range on the east, and thus included the Tambur and Mochu valleys. In a Sikhim paper, which recites various old works, it is thus described:—“This sacred country (hBres-mo-kShong, which lies to the south-west of Lhasa) is bounded on the north by the ‘Mon-Thangla’ mountain,

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NOTE.—A uniform system of transliteration has not been followed throughout the Gazetteer: the style adopted by each contributor has been reproduced.

which is guarded by the spirit 'Kiting.' On the east lies the 'ITas-hGons' mountain. Its southern gate is 'Nagsharbhati,' which is guarded by 'Ma-mGor-lCham-Bral-Yab-lDud.' Its western gate, 'ITimar mChhod-rTen,' is guarded by the terrible female spirit 'Mamos.' The 'mDsod-lNga' mountains and the spirit 'Phra-Man-dGe-Man' of Zar guard it on the north."

Dr. Oldfield, writing in 1858, makes the country subject to the Sikhim Rajas even more extensive:—"The hill country constituting the basin of the Kosi river is divided into two provinces or districts by the Arun river. The district lying on the right bank of the Arun, and extending between it and the Dud Kosi, is the country of the Kirantis—a hill tribe of low-caste Hindus, who once possessed considerable power and territory in these eastern hills, but were speedily reduced to submission by Prithi Narayan after his conquest of Nipal. The district lying on the eastern or left bank of the Arun, and extending from it

*Sketches from Nipal,*  
vol. 1, pp. 53-54.

to Sikhim,\* is Limbuana or the country of the Limbus, another tribe of low-caste Hindus. It formerly belonged to Sikhim, but was conquered and permanently annexed to Nipal by Prithi Narayan. Previous to the Gorkha conquest of the valley of Nipal, the territories of the Niwar Kings of Bhatgaon extended eastward to the Dud Kosi river, which formed the boundary between the country of the Niwars and the country of the Kirantis."

The Hon'ble Mr. Ashley Eden in 1864 noticed that "Sikhim, though a very petty State then, was formerly a fair-sized country, reaching from the Arun river on the west to the Taigon Pass on the east, from Tibet on the north to Kissengunge in Purneah on the south."

*Political Mission to*  
*Bhutan, p. 112.*

In dealing with the reigns of the successive Sikhim Rajas it will be seen how, by degrees, Sikhim lost the bulk of its original territory.

The range of mountains that practically bound Sikhim on three sides form a kind of horse-shoe, which constitutes the watershed of the Rungeet and the Tista: while dependent spurs project from this horse-shoe and serve as lateral barriers to the basins of the Rungeet and the Tista's greater affluents, the Lachung, Lachen, Zemu, Talung, Rongui, and Rungpe-Chu. These basins have a southward slope, being broad at the top, where they leave the watershed, and gradually contracting like a fan from its rim to the handle, which is the Tista valley near Pashok.

On or near the outer range, commencing from the south-east, are the following peaks and passes:—

Richila, 10,370.—The trijunction point of Darjeeling, Sikhim, and Bhutan.

Pangola, 9,000.—The road from Sikhim *via* Memo-chen to Assom-Dok in Bhutan crosses the ridge here.

Lingtu, 12,617.—The erection of a fort by the Tibetans at this place in July 1886 led to the Sikhim expedition of 1888; the fort was captured on the 21st March of that year and destroyed.

Shalambi, 12,500.—A road to Bhutan starts from this place.

Gnatong, 12,606.—The British fort here is about 12,300 feet above sea level: was attacked by the Tibetans in force on the 22nd May 1888.

Gipmochi, 14,523.—The trijunction point of Sikhim, Bhutan, and Tibet.

Merugla, 15,271.

Pembingo-la, 14,400.—More properly Pemaringong-la.—The pass that leads to the villages of Pema and Rinchingong in the Mochu valley.

Jendorhi, 15,516.

Jelep-la, 14,390.—Meaning "the smooth beautiful pas.," the most frequented of all the passes opening out into the Mochu valley near Chumbi.

Chukurchi, 15,283.

Nathula, 14,400.—Pass leading to Pema.

Yak-la, 14,400.—Close to preceding.

Cho-la, 14,550.—Leads more directly to Chumbi than any of the above, and was formerly the main route from Sikhim to Phari.

Dopendikang, 17,325.

Gna-ri, 17,570.

Thanka-la, 16,000.—Leading out from the Lachung valley eastwards.

Ghora-la, 17,000.—Ditto ditto ditto.

Shu-Du-Tshenpa, 22,960.

Kangchinphu, 23,190, improperly styled Powhunri in the map.—This latter name really belongs to a mountain near Dubdi monastery.

Donkia-ri, 20,250.—Close to this peak is

Donkia-la, 18,100.—A pass once supposed to lead direct into Tibet, but in fact only joining the upper tracts of the Lachung and Lachen valleys of Sikhim.

Bhom-tsho, 18,000.—Leading from the Cholamoo-lake district into Tibet.

Kongra-lamu, 16,000.—The direct pass from Sikhim towards Kambagong: the actual boundary pass, called Sebu-la, is a little further north.

Chomiomo, 22,290.

Nakula, 17,000.

## POPULATION, TRIBES, AND CHIEF FAMILIES OF SIKHIM.

A census taken in Sikhim in February 1891 roughly divides the population as follows :—

Race or caste.	Males.	Females.	Children.	Total.
Lepcha ...	2,362	2,399	1,001	5,762
Bhutea ...	1,966	1,960	968	4,894
Limbu ...	1,255	1,159	942	3,356
Gurung ...	1,108	1,047	766	2,921
Murmi ...	801	778	1,288	2,867
Rai, Jimdar, &c. ...	742	691	587	2,020
Khambu ...	726	648	589	1,963
Kami ...	626	464	580	1,670
Brahman ...	521	372	521	1,414
Mangar ...	363	346	192	901
Chetri ...	303	253	273	829
Newar ...	240	183	304	727
Slaves ...	124	99	103	326
Dirzi ...	102	92	93	287
Miscellaneous, including troops ...	350	72	99	521
	<u>11,589</u>	<u>10,563</u>	<u>8,306</u>	<u>30,458</u>

Of the above, the Limbus, Gurungs, Murmis, Khambus, and Mangars are more or less allied, while the others, excepting the Lepcha and Bhutea, are later immigrants from beyond the Arun in Nepal: thus, roughly speaking, it may be said that there are three main stocks in Sikhim:—

the oldest and perhaps aboriginal inhabitants of Sikhim were the “Rong,” or, as we know them from their Nepalese title, “the Lepchas;”\*

the next in importance, if not in antiquity, come the Kham-pa or Kham-ba, the immigrants from the Tibetan province of Khams; commonly called Bhuteas;

while the Sikhim Limbus rank as last and least: these belong to what Mr. Risley styles the Lhása Gotra, as they are believed to have migrated to Sikhim from Shigatsi, Pénam, Norpu, Khyongtse, Samdubling, and Gyangtse, places in the Tibetan province of Tsang, south of the Tsanpo.

All the families in Sikhim belong to one or other of these strains, or to an admixture of them, as intermarriages are allowed.

\* Dr. Waddell in a separate article has shown that the Lepchas are probably Indo-Chinese cognate with the tribes of the Naga Hills, and entered the Sub-Himalayas *via* the Assam valley.

## SIKHIM LAWS.

The following is a short account of the Sikhim Laws as translated from a manuscript copy obtained from the Khangsar Dewan. The language used in this book is difficult, and thanks are due to the Phodong Lama and Lamas Shorab Gyatsho and Ugin Gyatsho for the help they have given.

## HISTORY.

The Sikhim laws are founded on those spoken by Raja Me-long-dong,<sup>1</sup> who lived in India before the time of Buddha (914 B.C.). This Raja is mentioned in the Ka-gyur<sup>2</sup> in the 31st chapter.

They were again written by Kun-ga-gyal-tsan\*<sup>3</sup> of Sa-kya-pa, who was born in 1182. He was King of 13 provinces in Tibet, and has called the laws† Tim-yik-shal-che-chu-sum or Chu-dug,<sup>4</sup> there being two sets, one containing 13 laws and the other 16.‡ These are practically the same. The laws were again written by De-si-sangye Gya-tsho,<sup>5</sup> who was born in 1653 and was a Viceroy of Tibet. They were called by him Tang-shel-me-long-nyer-chik-pa.§<sup>6</sup>

The first set of laws deal with offences in general; the second set forth the duties of Kings and Government servants, and are simply an amplification of some of the laws contained in the former.

## SUMMARY OF THE SIXTEEN LAWS.

## No. 1.—GENERAL RULES TO BE FOLLOWED IN TIME OF WAR.

(a) It is written in the Ka-gyur that before going to war the strength of the enemy should be carefully ascertained, and whether any profit will be derived from it or not. It should also be seen if the dispute cannot be settled by diplomacy before going to war. Care should also be taken that by going to war no loss be sustained by your Government. Whatever the cause of dispute, letters and

<sup>1</sup> Me-long-gdong.

<sup>2</sup> bkah-hgyur-mdo-sa-pa.

<sup>3</sup> Kun-dgah-rgyal-mtsan.

\* Full name Sa-skya-penti-ta-kun-dgah-rgyal-mtsan.

† The law of 13 cases.

‡ The book containing the 16 laws is supposed to have been amplified from the 13 laws

§ De-si-sangya Gya-tsho.

§ The 21 laws as clear as crystal.

<sup>4</sup> khrims-yig-zhal-lehe-bchu-gsum.

<sup>5</sup> sde-srid-sangs-rgyas-rgya-mtso.

<sup>6</sup> dang-shel-me-long-guyer-gchig-pa.

messengers between the contending parties should on no account be stopped, and messengers should be properly treated. Any one coming with overtures of peace should be well received.

(b) Should two or more enemies combine against you, no means should be left untried to separate them, and if possible to bring one over to your side, but false oaths should not be resorted to, nor the using of God's name.

(c) The lie of the ground should be well examined to see how the roads run, and whether your position is strong.

(d) If it is necessary, other methods having failed, to go to war, you should all combine, and being of one mind should attack. See that there are no sick, lazy, or timid in the ranks, but only those who fear not death. See that your own soldiers obey the law, and all should obey the orders of the General. Experienced men should only be sent, and not those who look after their own interest only.

The army should be divided into three divisions under the command of different officers. The General and his staff should be trusted men who can guide the army: they should do their work thoroughly. Your horses, tents, and arms should be kept in good order. A doctor, diviner, astrologer, and lama should be appointed.

The tents should be properly arranged the first day, and this arrangement adhered to so as to prevent confusion. On moving, the fires should first be put out, the wounded should be cared for, and in crossing rivers order should be kept, and those behind should not push forward. Things found should be returned without asking a reward, and should not be concealed or kept. Thieves are not to be flogged, but only to have their hands tied behind them, but they may be fined. Should any one kill another by mistake, he must pay the funeral expenses. Should any combine and kill another, they must pay twice the fine laid down by law. Any disputed loot must be drawn for by lots between the contending parties.

The General should appoint sentries, who must look to the water-supply and see they become not easily frightened. They should allow no stranger to enter the camp armed, but should be careful not to kill any messenger. If a sentry kills a messenger coming to make peace, he shall be sent to his home in disgrace on some old, useless horse with broken harness.

#### No. 2.—FOR THOSE WHO ARE BEING DEFEATED AND CANNOT FIGHT.

When a fort is surrounded, those in the fort should remain quiet and should show no fear. They should not fire off their arms uselessly and with no hope of hitting the enemy. The well within the fort should be most carefully preserved. Those within the fort

**No. 8.—FOR OFFENDERS WHO REFUSE TO COME IN AN ORDERLY HAS TO BE SENT EXPRESSLY TO ENQUIRE ABOUT THE CASE.**

A messenger who is sent off at a moment's notice should receive 3 patties\* of barley per diem for food and a small sum in money, according to the importance of the case in which he is employed, but the messenger's servants should not be fed. The messenger is allowed one-fourth of the fine for his expenses.

Should an agent not settle a case properly, he must return to the villagers what he took, otherwise the villagers will have much trouble given them.

The agent should report having received the fine on penalty of forfeiting one-fourth what he has taken. When a fine is imposed, it should be at once collected, no excuse being taken. If an agent is sent to collect rent, he should be fed twice by the headman.

Of stolen property recovered by an agent, the Government receive one-tenth value.

**No. 9.—MURDER.**

For killing a man the fine is heavy—even up to many thousands of gold pieces. In the Tsalpa law book it is written that if a child, a madman, or animal kills any one no fine is taken, but that money must be given by the relations of the first two for funeral expenses, and one-fourth of that amount must be given by the owner of the animal towards these expenses.

Should one man kill another and plead for mercy, he must, besides the fine, give compensation and food to the relative of the deceased.

Should a man kill his equal and the relatives come to demand compensation, he must give them 18oz. of gold in order to pacify them. The price of blood should never be too much reduced, or a man may say, "If this is all I have to give, I will kill another."

The arbitrator must take the seal of each party, saying they will abide by his decision, and they must each deposit 3oz. of gold as security.

Fines can be paid in cash, animals, and articles of different kinds.

The price for killing a gentleman who has 300 servants, or a superintendent of a district, or a Lama professor, is 300 to 400oz. gold srang. For full Lamas, Government officers, and gentlemen with 100 servants the fine is 200oz. of gold.

For killing gentlemen who possess a horse and 5 or 6 servants, working Lamas, the fine is 145 to 150oz. of gold.

For killing men with no rank, old Lamas, personal servants, the fine is 80oz. of gold.

For killing a man who has done good work for Government the fine is 50 to 70oz. of gold.

For killing common people and for villagers the price is 30 to 40oz. of gold.

For killing unmarried men, servants, and butchers the price is 30 gold srang.

And for killing blacksmiths and beggars 10 to 20oz. of gold.

These prices can also be paid in grain. The prices for funeral expenses must be paid within 49 days.

On the fines being paid, a letter must be written and a copy given to each party, saying that everything has been settled. If a case is re-opened, a fine must be paid by him who opens the case. The murderer must write to the effect he will not commit such a crime again. Part of the fines can be given towards the funeral expenses of the deceased.

#### No. 10.—BLOODSHED.

In the old law it is written that for any drop of blood shed the price varies from one to one-quarter zho.\* A man may even be beheaded for wounding a superior. For wounding his own servant a man is not fined, but he must tend the wounded man. Should two men fight and one wound the other, he who first drew his knife is fined, and he who is wounded must be tended by the other till his wounds be well. The fines are payable in money or kind. Should one man wound another without any fight, he is fined according to the law of murder.

If in a fight a limb or an eye is injured, the compensation to be given is fixed by Government.

#### No. 11.—FOR THOSE WHO ARE FALSE AND AVARICIOUS THE FOLLOWING OATHS ARE REQUIRED.

If it is thought a man is not telling the truth, an oath should be administered. At the time of taking an oath powerful gods should be invoked, and those who are to administer the oath must be present. It is written in ancient law that the bird of Paradise should not be

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\* The word 'zho' means a drachm, or as a coin two-thirds of a rupee.

## MARRIAGE CUSTOMS OF THE SIKHIMESE.\*

[These customs have been gathered from actual observation, and are the customs now observed amongst the Bhuteas.]

If the eldest brother takes a wife, she is common to all his brothers.

If the second brother takes a wife, she is common to all the brothers younger than himself.

The eldest brother is not allowed to cohabit with the wives of the younger brothers.

Should there be children in the first case, the children are named after the eldest brother, whom they call father.

In case 2, after the second brother, &c.

Three brothers can marry three sisters, and all the wives be in common, but this case is not very often seen. In such a case the children of the eldest girl belong to the eldest brother, &c., if they each bear children. Should one or more not bear children, then the children are apportioned by arrangement. Two men not related can have one wife in common, but this arrangement is unusual.

A man occasionally lends his wife to a friend, but the custom is not general and uncommon.

If a girl becomes pregnant before marriage and afterwards marries the father of the child, the child is considered legitimate, but the man is fined a bull or its equivalent, which go to her relatives. Should the man by whom the girl was made pregnant not marry her, and should she afterwards marry another, the child remains with the woman's brothers or relatives. A woman is not considered dishonoured by having a child before marriage.

The marriage ceremony consists almost entirely in feasting, which takes place after the usual presents have been given to the girl's relations. These presents constitute the woman's price, and vary in accordance with the circumstances of both parties.

The only religious ceremony is performed by the village headman, who offers up a bowl of marwa to the gods, and presenting a cup of the same marwa to the bride and bridegroom, blesses them, and hopes the union may be a fruitful one. Lamas take no part in the ceremony.

The marriage tie is very slight, and can be dissolved at any time by either the man or the woman.

A man may marry his mother's brother's daughter, but he can marry none of his other first cousins till the second generation. Their system of relationship is peculiar and interesting, and is given below.

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\* Sikhim, Tibetans and Bhutanese.

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## NOTES ON THE GEOLOGY AND MINERAL RESOURCES OF SIKHIM.

By P. N. BOSE, B.Sc. (LONDON), F.G.S., *Deputy Superintendent, Geological Survey of India.*

### (i) PHYSICAL GEOGRAPHY.

SIKHIM is essentially a mountainous country without a flat piece of land of any extent anywhere. The mountains rise in elevation northward. The high serrated, snowcapped spurs and peaks culminating in the Kanchanjinga, which form such a characteristic and attractive feature in the scenery of Sikhim, are found in this direction. The northern portion of the country is deeply cut into steep escarpments, and, except in the Lachen and the Lachung valleys, is not populated. Southern Sikhim is lower, more open, and fairly well cultivated.

This configuration of the country is partly due to the direction of the main drainage, which is southern. The Himalayas on the Indian side must have sloped to the south from the earliest geological times when the gneiss which constitutes their main body was elevated. For all the later rocks—the submetamorphic slate group, the coal-bearing Damudas and the tertiaries—which fringe the outer Himalaya are evidently formed of detritus carried from the north.

The physical configuration of Sikhim is also partly due to geological structure. The northern, eastern and western portions of the country are constituted of hard massive gneissose rocks capable of resisting denudation to a considerable extent. The central and southern portion, on the other hand, is chiefly formed of comparatively soft, thin, slaty and half-schistose rocks which are denuded with facility, and it is this area which is the least elevated and the best populated in Sikhim.

The trend of the mountain system, viewed as a whole and from a distance, is in a general east-west direction. The chief ridges in Sikhim, however, run in a more or less north-south direction, as, for instance, the Singalela and the Chola ridges. Another north-south ridge runs through the central portion of Sikhim separating the Rungeet from the Tista valley; Tendong (8,676 feet) and Moinam (10,637 feet) are two of its best known peaks. This north-south direction of the principal ridges is due, no doubt, to the original southern slope of the Himalaya. The Rungeet and the Tista which form the main channels of drainage, run nearly north-south. The valleys cut by these rivers and their chief feeders are very deep. The valleys of the

Valleys to which glaciers come down, or whence these have but recently retired, abound in small lakes or tarns which are dammed in at the outlet by moraines. The Bidangcho lake, 3 miles north-east of Gnatong, is the best instance I came across of a glacial lake in a valley whence the glacier has recently retired. It is  $1\frac{1}{3}$  mile in length, and its greatest breadth is  $\frac{1}{2}$  mile.

The following hot springs are known in Sikhim:—

1. *Phut Sachu*—On the east side of the Rungeet river, 2 miles north-east of Rinchingpong monastery, situated amongst dark coloured massive siliceous limestones. Hot fetid water bubbles up at several spots. Temperature at one spring  $100\cdot4^{\circ}\text{F}$ . The springs are situated in the bed of the river which at the time I visited them (March) was dry. These springs are referred to in Dr. Oldham's "Thermal Springs of India" (Vol. XIX, pt. 21, p. 32) as "Phugsachu."

2. *Ralong Sachu*—On the west bank of the Rungeet river, about 2 miles N.N.W. of Ralong monastery. Elevation about 3,100 feet. Situated amongst finely laminated phyllites with abundance of vein quartz, at a height of about 160 feet above the bed of the river. Hot water flows out through fissures at several places. The temperature of the hottest spring close to where it comes out is  $131^{\circ}\text{F}$ .; in a reservoir constructed for bathing purposes, it is  $118\cdot4^{\circ}\text{F}$ . The temperature of another spring close to where the water flows out is  $114\cdot8^{\circ}$ ; in the reservoir it is  $107\cdot6^{\circ}$ . [The temperature of a stream close by was found to be  $53\cdot6^{\circ}$ .] A whitish deposit, which effervesces strongly on the application of hydrochloric acid, is formed at the mouths of the springs. It is stained green in places with carbonate of copper, due, no doubt, to the springs passing through cuprififerous ores. It is very likely these springs that are referred to in Dr. Oldham's list as "Puklaz Sachu, about one day's journey from the monastery of Pemlong" (*op. cit.*, p. 32). Probably "Pemlong" is meant for Ralong.

I heard of a hot spring about half a mile north of Ralong Sachu, which I had no time to visit.

3. *Yeumtang*—On the east bank of the Lachung river, half a mile below Yeumtang. Though I passed the springs I could not get at them owing to the bridge over the Lachung not having been constructed at the time of my visit (May). They are described in Dr. Oldham's list (*op. cit.*, p. 32):—"The discharge amounts to a few gallons per minute; the temperature at the source is  $112\frac{1}{2}^{\circ}$ , and in the bath  $106^{\circ}$ . The water has a slightly saline taste; it is colourless, but emits bubbles of sulphuretted hydrogen gas, blackening silver."—(*Hooker, Him. Journ.*, 1855, Vol. II, p. 126.)

4. *Momay*.—"Hot springs burst from the ground near some granite rocks on its floor, about 16,000 feet above the sea, and only a

north-western; and on the north side, as near Ralong, the dip is mainly northern. The southern boundary between the Dalings and the gneissose rocks which passes a little north of Darjeeling was shown by Mr. Mallet to be faulted. The eastern boundary passes by Gantok, and the western by Pemiongchi. As in the case of the Damuda-Tertiary and the Daling-Damuda boundaries in the Sub-Himalayas, both of these boundaries may represent "lines of original contact, possibly modified by subsequent faulting."\* The Daling rocks would in this case have to be supposed as deposited in a lake of which steep gneiss escarpments formed the sides: the lower gorge of the Tista below its junction with the Rungeet which, except close to its debouchure, is composed of Daling rocks, forming the outlet of such a lake. The Dalings, it should be noted in this connection, unquestionably bear the impress of lacustrine, rather shallow water deposits, false bedding being noticeable at places. In fact, they recall to one's mind the micaceous clays and sandstones of Tertiary age in the outermost fringe of the Sub-Himalayas. By subsequent tangential pressure which caused their disturbance, the Dalings would be tilted up against the original gneiss escarpments in such a manner as to present an appearance of conformable underlie and of faulting. The greater metamorphism of the Dalings at the boundary between them and the gneissose rocks (a fact which has been noted before) may be accounted for by the greater pressure to which they would be subjected there owing to the resistance offered by the older gneissose rocks.

The Dalings have suffered considerable disturbance. The slates and phyllites frequently exhibit crumbling and contortion; and the dips are, as a rule, rather high, being seldom below 45°.

The following sequence of strata in ascending order is met with near Chakang:—

- (a) Massive, coarse quartzites or quartzite sandstones with a lenticular band of carbonaceous shales.
- (b) Dark slaty shales which are cupriferous at places.
- (c) Phyllites passing into micaceous schists at places.

### (iii) ECONOMIC GEOLOGY.

#### 1.—Copper.

*General remarks.*—Copper ores are very widespread in Sikhim, and constitute the main source of its prospective mineral wealth.

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\* "Memoirs, Geological Survey of India," Vol. III, pt. 2, p. 102; Vol. XI, pt. 1, p. 48; "Records, Geological Survey of India," Vol. XXIII, pt. 4, p. 244.

The following generalisations arrived at by Mr. Mallet with regard to the copper ores of the Darjeeling district *generally* hold true for Sikhim also:—

(1) "All the known copper-bearing localities are in the Daling beds. Some are, it is true, situated in the transition rocks between the Dalings and the gneiss, but none in the genuine gneiss itself.

(2) "The ore in all is copper pyrites, often accompanied by mundic. Sulphate, carbonate, and oxide of copper are frequent as results of alteration of the pyrites, but they occur merely in traces.

(3) "The ore occurs disseminated through the slates and schists themselves, and not in true lodes."\*

With regard to the first generalisation, it may be noted that copper ores have been found at several places noted below, in the gneiss itself, though usually within a short distance of its junction with the Dalings. The gneiss ores, however, do not appear to be so rich as those in the Dalings, and have never been worked. With regard to the third generalisation, the ore in one case at least, that of Pachikhani, appears to occur in true lodes.

Within the Dalings, the richest ores (those of Pachikhani and Rathokhani, for instance) occur amongst greenish, rather soft, slaty shales. The gangue in this case consists of the shale, much hardened by infiltrated quartz, or of quartz alone.

The method of copper-mining adopted in Sikhim is very similar to that generally pursued in India in most native operations, and has been fully described by Mr. Mallet in his geological account of Darjeeling. His description,† with some additions, is, however, repeated here for easy reference.

The Sikhim mines greatly resemble magnified rabbit-holes: meandering passages are excavated with little or no system beyond following, as far as possible, the direction of the richest lodes; and although some precaution is taken to support the roof in the more shaky places by timber props, the number of galleries fallen in or abandoned show how inefficiently this is done. The shafts are always driven vertically in from the face of a cliff or declivity, as no attempt at systematic pumping is ever made. Should the shaft become flooded or too damp to permit of the water being kept down by gravitation or simple bailing, it has to be abandoned. Poor shafts are immediately deserted if richer ore is found near, long before the former, under a better system, would be worked out.

The passages vary according to the height and thickness of the lode, and average about three to four feet in height and width; but

\* Memoirs, Vol. XI, pt. 1, p. 72.

† *Op. cit.*, p. 69.

## NOTE ON AGRICULTURE IN SIKHIM.

Rice, chum, unhusked rice, rad. There are 12 kinds of rice grown in Sikhim—

1, hbras-chung, grown in damp land, in which it will mature, but is better for being transplanted when about 12 inches high into irrigated ground. It is the earliest crop, being sown in December and harvested in March.

2 and 3, la-dmar and san-kha, are grown in the lower valleys, and seldom seen above 4,500 feet. The cultivation is similar to that in the plains: the plants are sown in nurseries, and transplanted when large enough into irrigated ground. These are sown in August and cut in December

4 to 12, rang-ldan, tso-hbras, dbang-hbras, khab-hbras, hdam-hbras, phag-hbras, kho-smad, kha-hzis and rtsong-hbras, are grown on dry land, that is, not irrigated. The best ground is that which has lain fallow for some years, and on which there is a heavy undergrowth of jungle. This is cut, burnt and carefully dressed, and excellent crops are obtained. These are sown in March and cut in August.

From one measure of seed in good ground the yield varies from twenty to fiftyfold.

La-dmar, san-kha and hbras-chung are considered the best varieties. Paddy husking is only done by each house as required, and is carried out in a most primitive fashion. The paddy unboiled is placed in a hollow piece of timber called htsom, and pounded with a long wooden mallet called htsom-phu.

The preparations made from rice are—1, marwa; 2, dbyon, a kind of rice-cake fried in butter; 3, a-rag, a spirit; 4, hbras-sgnos, parched rice; 5, hbo-dker, boiled and parched rice; 6, hbras-su, chura.

Other crops—

*Bhoota*, kin-rtson, of which there are four kinds, distinguished by their colour—viz., white, red, yellow, and black. Almost any soil will do and any elevation up to 6,200 feet. This is the staple food of the Paharias. In low-lying land it is sown in March, and according to elevation in the high grounds as late as May and June.

The quantity obtained varies from twenty to hundredfold.

*Marwa*, me-chag, a millet. There are 13 kinds—Bsam-shing, shags-chag, sga-ser, mang-dkar-ma, bze-hbogs, tsigs-nag-ma, phags-bgyugs, dung-dkar-ma, gong-tses-ma, dker-hjom-la, sla-gsum-ma, ser-rgyug-ma, ma-la-dkar-mo.

These are sown in March and cut in July and August. The yield varies from forty to one hundred and fiftyfold.

Me-chag is used almost entirely in the preparation of chang, marwa, but is occasionally ground and made into chupatties, and the flour is also used to eat with tea.

*Hvog-ma*, a millet, of which there are four kinds—dkar, dmar, khyimn-shig, spre-hjug.

These are used for making chang, a-rag, and are used, when boiled, for food.

*Bra-hu*, buckwheat, of which there are five kinds—dkar-hgor-ma, bra-nag, hgyas-ra, kha-hjug-ma, bra-chung—used for making chang, a-rag and chupatties.

*Sla-sum-ma*, a kind of me-chag, used in the same manner.

*Na*, wheat, five kinds—dkar, dmar, nag, spre-hjug-ma, mgo-rog-ma.

*Gyo*, barley, only one kind. Both wheat and barley are only grown in small quantities on account of the danger of the crops being destroyed by hailstorms, which are very prevalent in March and April just as the crops are ripening.

*Rdo-gson*, dhal, three kinds—dkar, nag, and one other, no name—only grown in small quantities; sown in September and cut in January.

*Mustard*, three kinds—yung-dkar, yung-nag and pad-sgang—grown for oil.

*Ko-ko-la*, cardamom, grown in irrigated ground with plenty of shade and good drainage; that is, the plants generally grow in running water. The crop is much prized and of considerable value, varying from Rs. 30 to Rs. 45 a maund. The cultivation of cardamom is increasing rapidly, many new plantations having been laid out this year.

*Marwa*, chang, is a kind of beer brewed by everyone in Sikhim, and might be called their staple food and drink. It is prepared from a great variety of seeds and plants. The following is a list of most of them, both cultivated and wild:—

Cultivated: me-chag, wheat, barley, bra-hu, rice, rkang-ring, shum-hbem, tsong, and Indian-corn.

Wild: elephant creeper, yams of all kinds, ra-ling, hbar-neg, spa-sko two kinds, spa-lo-hi, dun, and hbyam.

This drink is universal, very refreshing and sustaining, and very slightly intoxicating. It is drunk, warm generally, from a bamboo through a straw or thin hollow bamboo.

The preparation is as follows:—

The seed is soaked in water for two nights, then husked, washed and boiled; the water is then drained off and the seeds kept for half an hour in the vessel. The seed is then spread on a bamboo mat, and in winter the spice, &c., added before the seed is quite cold; in summer when cold. The "spice" is first well mixed, then spread on a bed of ferns covered with plantain leaves and in winter with a blanket.

*Cattle.*—There are three kinds of cattle in Sikhim—

1. *Ba-glang.*—These are the larger cattle, and are by far the best. They are owned chiefly by the Lepchas and Bhuteas. Many of this cattle are driven up to 13 and 14,000 feet for grazing.

A good cow fetches from Rs. 30 to Rs. 45.

An ox or bull from Rs. 20 to Rs. 25.

2. *Nam-thong (Paharia cattle).*—These are much smaller, and fetch from Rs. 15 to Rs. 25 only.

3. *Thang (plains cattle).*—These are considered the worst of all, and only fetch from Rs. 12 to Rs. 15 each.

*Yaks.*—There are three kinds—

1. *Lho-gyag.*—These are the large yaks found only in Sikhim and Chumbi. They are considered the best, and fetch from Rs. 25 to Rs. 30 each. Yak milk is of excellent quality, containing a very large proportion of butter fat.

The males are used for pack animals, but not to such an extent as in Tibet.

2. *Bod-gyag.*—These are similar to the above, but are very much smaller. The price varies from Rs. 20 to Rs. 25.

3. *A-yu.*—These are polled yaks, and some very fine specimens have been seen in the higher valleys of Sikhim. There are also half-breed cattle from bull yaks and cows. These are considered the best of all the cattle for giving milk.

*Sheep,* 5 kinds—

1. *Ha-lug.*—A black sheep comes from Bhutan, the wool of which is coarse.

2. *Bod-lug.*—The ordinary Tibetan sheep, small, but much prized for its wool, which is of excellent quality.

3. *Byang-lug.*—Also from Tibet.

4. *Sog-lug.*—The large-tailed sheep, very seldom seen in Sikhim.

5. *Phe-dar.*—The Paharia sheep, a much larger animal, which lives low down. The wool is coarse.

The price of sheep varies considerably, being from Rs. 3 to Rs. 9, according to size and kind. The Paharia fetches the highest price.

*Goats,* 2 kinds—

1. *Ra.*—The small goat, smaller than that in the plains.

2. *Bod-ra.*—The small long-haired Tibetan goat. It does not do well down in the hot valleys.

**Wages—**

Coolie, 2 annas to 8 annas a day.

Mason, 8 „ 1 rupee „

Carpenter, Rs. 30 to Rs. 50 a month, and are almost impossible to get.

**Prices—**

Rice, Rs. 4-8 to Rs. 5-8 per maund.

Marwa, 8 seers per rupee.

Bhoota, Re. 1 to Rs. 3-4 per maund.

Dhal, 8 seers per rupee.

## VEGETATION.

NOTE.—The works consulted for this paper are Hooker's "Himalayan Journals;" Hooker and Thomson's "Flora Indica;" "Hooker's Flora of India;" Clarke's "Ferns of Northern India;" King's "Annals of the Royal Botanic Garden, Calcutta;" Gamble's "Trees, Shrubs and Large Climbers found in the Darjeeling District," and Watt's "Dictionary of Economic Products."

J. GAMMIE—19-9-91.

SIR J. D. HOOKER, who is the greatest authority on the vegetation of Sikhim, in his Introductory Essay to the Flora Indica, divides the country into three zones. The lower, stretching from the lowest level up to 5,000 feet above the sea, he called the tropical zone; thence to 13,000 feet, the upper limit of tree vegetation, the temperate; and above, to the perpetual snow line at 16,000 feet, the Alpine. In describing the aspect of the country he says that up "to an elevation of 12,000 feet, Sikhim is covered with a dense forest, only interrupted where village clearances have bared the slopes for the purpose of cultivation." At the present time, however, this description does not apply below 6,000 feet, the upper limit at which Indian-corn ripens; for here, owing to increase of population, almost every suitable part has been cleared for cultivation, and trees remain only in the rocky ravines and on the steepest slopes where no crop can be grown; but above 6,000 feet the face of the country still remains comparatively unaltered. He continues—"The forest consists everywhere of tall umbrageous trees; with little underwood on the drier slopes, but often dense grass jungle; more commonly, however, it is accompanied by a luxuriant undergrowth of shrubs, which render it almost impenetrable. In the tropical zone large figs abound, with *Terminalia*, *Vatica*, *Myrtaceæ*, Laurels, *Euphorbiaceæ*, *Meliaceæ*, *Bauhinia*, *Bombax*, *Morus*, *Artocarpus*, and other *Urticaceæ* and many *Leguminosæ*; and the undergrowth consists of *Acanthaceæ*, Bamboo, several *Calami*, two dwarf *Areceæ*, *Wallichia*, and *Caryota urens*. Plantains and tree-ferns, as well as *Pandanus*, are common; and, as in all moist tropical countries, ferns, orchids, *Scitamineæ*, and *Pothos* are extremely abundant. Few oaks are found at the base of the mountains, and the only conifers are a species of *Podocarpus* and *Pinus longifolia*, which frequent the drier slopes of hot valleys as low as 1,000 feet above the level of the sea, and entirely avoid the temperate zone. The other tropical Gymnosperms are *Cycas pectinata* and *Gnetum scandens*, genera which find their north-western limits in Sikhim.

“Oaks, of which (including chestnuts) there are upwards of eleven species in Sikhim, become abundant at about 4,000 feet, and at 5,000 feet the temperate zone begins, the vegetation varying with the degree of humidity. On the outermost ranges, and on northern exposures, there is a dripping forest of cherry, laurels, oaks and chestnuts, *Magnolia*, *Andromeda*, *Styrax*, *Pyrus*, maple and birch, with an underwood of *Araliaceæ*, *Hollböllia*, *Limonia*, *Daphne*, *Ardisia*, *Myrsine*, *Symplocos*, *Rubi*, and a prodigious variety of ferns.

“*Plectocomia* and *Musa* ascend to 7,000 feet. On drier exposures bamboo and tall grasses form the underwood. Rhododendrons appear below 6,000 feet, at which elevation snow falls occasionally. From 6—12,000 feet there is no apparent diminution of the humidity, the air being near saturation during a great part of the year; but the decrease of temperature effects a marked change in the vegetation. Between 6,000 and 8,000 feet epiphytical orchids are extremely abundant, and they do not entirely disappear till a height of 10,000 feet has been attained. Rhododendrons become abundant at 8,000 feet, and from 10,000 to 14,000 feet they form in many places the mass of the shrubby vegetation. *Vaccinia*, of which there are ten species, almost all epiphytical, do not ascend so high, and are most abundant at elevations from 5,000 to 8,000 feet.

“The flora of the temperate zone presents a remarkable resemblance to that of Japan, in the mountains of which island we have a very similar climate, both being damp and cold. *Helwingia*, *Aucuba*, *Stachyurus*, and *Enkianthus* may be cited as instances of this similarity, which is the more interesting because Japan is the nearest cold damp climate to Sikhim with whose vegetation we are acquainted. At 10,000 feet (on the summit of Tongloo) yew makes its appearance, but no other conifer except those of the tropical belt is found nearer the plains than the mountain of Phalūt, on which *Picea Webbiana* is found, at levels above 10,000 feet. *Abies Brunoniana* and the larch are found everywhere in the valleys of the Lachen and Lachung rivers, above 8,000 feet.

“A subtropical vegetation penetrates far into the interior of the country along the banks of the great rivers; rattans, tree-ferns, plantains, screw-pines, and other tropical plants occurring in the Ratong valley, almost at the foot of Kanchinjunga, and 5,000 feet above the level of the sea. With the pines, however, in the temperate zone, a very different kind of vegetation presents itself. Here those great European families which are almost entirely wanting in the outer temperate zone become common, and the flora approximates in character to that of Europe. Shrubby *Leguminosæ*, such

*nutans* (Mablu, Lep.) also grows to a great size, and has a nearly solid stem which is much prized in hut building for its lasting qualities, and for prayer flagstaffs. *Arundinaria Hookeriana* (Prong, Lep.) of the upper forests has often stems of a beautiful bluish colour, and *A. racemosa*, the Maling of the Nepalese, yields the best pony fodder of all the bamboo tribe, and from its stems the best roofing mats are made. Of the smaller sorts several grow so thickly together, over considerable areas, that even a small dog cannot make its way through them; and the most of the species flower simultaneously at intervals of about a quarter of a century, and then die. The more noteworthy of the large grasses which are very conspicuous objects in the autumn are a few species of *Arundo* with large, loose, cottony panicles, and several of *Saccharum* and *Imperata* with smaller compact panicles of similar composition. They are rare in forests, but are apt to become troublesome pests in land that has been cleared for cultivation. Their leaves are extensively used for thatching houses. *Thysanotana acarifera* is a tall tufted grass with broad, bamboo-like leaves and spikes of minute flowers arranged in large spreading panicles, which are much used as brooms. *Anthistiria gigantea* and a reed (*Phragmitis*) abound in swampy places on sunny slopes up to 5,000 feet. Small herbaceous forms are few in species and in individuals in the tropical and lower part of the temperate zones, but are common in the interior at higher elevations. *Poa annua*, an English grass, following the tracks of men and quadrupeds in all temperate regions, grows from the perpetual snow line down to 4,000 feet, and is abundant on cleared camping grounds and by roadsides. The Dutch clover, another European introduction, is often associated with it.

The rhododendrons may be called the glory of Sikkim, so grandly beautiful are they, and also so abundant; so much so, in fact, that they abound in places to the exclusion of almost everything else. There are about thirty species, varying in size from the gigantic *R. grande*, a tree of 30 to 40 feet in height, and trunk girthing up to 5 feet, down to the prostrate *R. nivale*, barely rising two inches above the ground. A few species are sparingly found as low as 6,000 feet, but the majority of them grow between 9,000 feet and 14,000 feet, and four species (*lepidotum*, *nivale*, *scotsum*, and *anthopogon*) ascend so high as 15-16,000 feet. At about 6,000 feet the large flowered *Dalhousie* begins to appear. It is a small straggling shrub, and as it is usually epiphytic on the tops of tall trees, it is hardly noticed till the fallen flowers direct attention to it. *Falconeri* is a large gregarious shrub, growing between 9,000 and 13,000 feet, with big leathery leaves felted on the underside with rusty-coloured hairs. The widely distributed species, *arboreum*, is common up to 10,000 feet. Only one species, *R. cinnabarinum*, is said to be poisonous.

Hooker mentions that "many of his young goats and kids died after eating it, foaming at the mouth and grinding their teeth. When the wood is used as fuel it causes the face to swell and the eyes to inflame;" and he notes that the honey of the wild bee is much sought after, except in spring when it is said to be poisoned by rhododendron flowers. A small tree *Pieris ovalifolia*, is interesting on account of its wide altitudinal distribution, ranging from a little above sea level to 10,000 feet elevation.

Sikkim is almost as famous for its Primulas as for its rhododendrons, and they also affect high elevations. There are from 30 to 40 species; the majority of them growing at altitudes from 12—15,000 feet, two or three only being found below 10,000 feet, and about an equal number so high as 16-17,000 feet. *P. Sikkimensis* which is found from 11—15,000 feet, and resembles a gigantic cow-slip, is one of the very few Sikkim primroses which really thrive in England, where the majority of them merely survive long enough to flower once in a miserable sort of way and then die. This is to be regretted, as all are beautiful, and they are very varied in colour, some being white, and others yellow, blue, pink, or purple, which is the prevailing colour.

Among numerous notable herbaceous plants are several species of *Meconopsis*, fritillaries, deadly aconites, gentians, violets, geraniums, potentillas, saxifrages, balsams, many species of *Pedicularis*, *Crawfordia*, *Didymocarpus*, *Chirita*, *Smialacina*, jatamansi, and rhubarbs, one of which, *Rheum nobile*, was considered by Hooker the handsomest herbaceous plant in Sikkim, and he thus describes it:—"On the black rocks the gigantic rhubarb forms pale pyramidal towers a yard high, of inflated reflexed bracts, that conceal the flowers, and overlapping one another like tiles, protect them from the wind and rain; a whorl of broad green leaves edged with red spreads on the ground at the base of the plant, contrasting in colour with the transparent bracts, which are yellow, margined with pink. It is called 'Tchuka,' and the acid stems are eaten both raw and boiled; they are hollow and full of pure water: the root resembles that of the medicinal rhubarb, but is spongy and inert; it attains a length of four feet and grows as thick as the arm. The dried leaves afford a substitute for tobacco; a small kind of rhubarb is, however, more commonly used in Tibet for this purpose." It may be mentioned that in the late military expedition to the Tibetan frontier a batch of plants of this rhubarb growing in a sequestered valley were mistaken in the distance, one misty morning, for a surprise party of the Tibetan army.

Among the more remarkable of the climbing plants of the "tropical zone" are one or more species of each of the following genera, viz., *Thunbergia*, *Beaumontia*, *Bauhinia*, *Chonemorpha*, *Aristolochia*

## THE VEGETATION OF TEMPERATE AND ALPINE SIKHIM.

By GEORGE A. GAMMIE.

THE following account of the vegetation of a restricted area of Sikhim is based on observations made during journeys through the interior of the country and its frontier tracts in the summer of 1892. Some portions of this paper are verbatim extracts from a report submitted to the Government of Bengal after my return. I have not hesitated to avail myself of information from Sir J. D. Hooker's invaluable "Himalayan Journals" whenever I consider that the opinion of a botanist of world-wide experience, even in such an early period of his career, would throw a clearer light on many questions which one with infinitely less knowledge and grasp of details would, perhaps, attempt to answer by the use of vague conjectures.

All tracts above an elevation of 10,000 feet are treated of as Alpine. Under the term "Temperate Region" is included only the country contained in the Lachen and Lachung valleys with their ramifications up to 10,000 feet.

It is true that many parts of Sikhim, such as the higher levels of the spurs proceeding from the Singalelah and other ranges, are temperate in their thermometric conditions, but the region to which the designation is strictly confined is called so on botanical considerations. Its climate, drier and more sunny in summer, favours the existence of a vegetation in many ways radically different from that of the moist outer ranges. As the botany of these has already been dealt with in a former chapter, it will be only alluded to for the sake of comparison when such a course becomes necessary for the more perfect apprehension of any subject under discussion.

*The Temperate Region.*—The hamlet of Cheongtong (Choongtam), at the junction of the Lachen and Lachung rivers, marks the entrance to this exceedingly interesting botanical area. The two valleys through which these head waters of the Tista flow, run northwards to the stupendous masses of the Himalayan axis which divides Sikhim from Tibetan territory. They are separated by a lofty range extending southwards from Kinchinjhow, and even at its termination it is 10,000 feet in elevation. The floors of both valleys are nowhere broad, and their flanks rapidly attain high altitudes, so that the area in which temperate forms of plants flourish is circumscribed in extent.

*The Lachung Valley.*—The trade route up the Tista valley passes through tropical forests and cultivation as far as Cheongton, where

used trade route to Tibet over the Ghoru La, the second highest pass in Sikkim, being at an elevation of 17,000 feet. The northern side of this valley is enclosed by an almost continuous precipitous spur, broken in one place only by a deep forest-clad depression; the range on the other flank is more gently sloped, and is covered with forest and succeeding smaller vegetation, and is more diversified by ravines. From 13 to 15,000 feet there is an impenetrable growth of rhododendrons and willows, with numerous small trees of *Pyrus foliolosa* and *P. microphylla*; and intermingled with grass under these bushes is an equal luxuriance of herbs, such as aconites, *Senecio*, *Saxifraga*, *Prunella*, *Potentilla*, *Polygonum*, and thistles. *Cnicus eriophoroides*, which is moderately common in most valleys, is so abundant as to be a perfect pest. From 14 to 15,000 feet the vegetation is more sparse and scattered, being chiefly *Rhododendron campanulatum* and *R. anthopogon*.

From 15,000 feet to the pass the floor of the valley is broad and swampy. *Sedum* of many species are common amongst the stones, and *Rheum nobile*, descending at last from what would be its more congenial perches in other valleys, is found in numbers over the level surface. Dense stiff growths of *Ephedra vulgaris*, a plant of the order *Coniferae*, abound on steep banks. Its presence is always a certain witness of the proximity of the dry, arid regions of Tibet. Saxifrages, *Allardia*, *Meconopsis horridula*, *Cyananthus*, gentians, *Saussurea* of three species, *Rhododendron nivale*, some grasses and sedges almost complete the scanty details of the vegetation. *Saussurea trilactyla*, growing at the foot of the ascent to the pass, is the last flowering plant seen, and the rocks above, suffering continual denudation by the weather, do not bear either mosses or lichens.

Numbers of yaks are grazed in this valley up to 17,000 feet, cattle range up to 13,000 feet. These animals possess sufficient instinct to avoid eating the poisonous aconites, which at their highest attained levels grow only to the height of the accompanying low herbage. Goats and Tibetan ponies, from the information I gathered, share in the same knowledge; while sheep, strange to say, must be muzzled or driven quickly through areas infested with these plants. One of the rhododendrons, also, is equally poisonous to animals. The species known to possess this property is *Rhododendron cinnabarinum*. Honey, which is collected in spring, but at no other time of the year, is said to be rendered deleterious by the admixture of nectar from rhododendron flowers.

By travelling up the main Lachung valley one arrives at the flat of Yeumtong, standing at the entrance to the Alpine zone extending northwards to Tibet. A thick turf of grass covers the surface of the flat, and on it grows a yellow Anemone (*Anemone obtusiloba*) with

leaves appressed to the ground, a succulose saxifrage, the dandelion (*Taraxacum officinale*), the aromatic yellow *Elsholtzia eriostachya*, and groups of *Senecio diversifolius*. Other plants are *Pedicularis tubiflora*, a small floating *Ranunculus*, *Meconopsis simplicifolia* and *M. Nepalensis*, *Salvia glutinosa*, *Lychnis nutans*, *Cucubalus baccifer*, and *Asarum himalacium*. Aroids of the genus *Arisaema* are common. In early summer their tuberous roots are prepared and used for food according to the method described by Sir J. D. Hooker. As the people neglect agricultural pursuits, they depend almost entirely on the milk and its products from the yaks and cattle for their sustenance. When this source of nourishment is withheld in the early part of the year, they are driven to utilize the nauseous food obtained from Aroids, which causes disastrous results if continued for a time.

In this and all other valleys, every range facing a southerly direction, in even the least degree, is, in summer, exposed to the full force of the southerly winds, laden with mist and drizzling rain, which blow with increasing violence as the day advances, to die away only at night. These continuous currents rapidly denude the surface, wash down the superincumbent earth, and wear away rocks which become precipices or crags of fantastic shapes. Vegetation, therefore, cannot find permanent foothold under such adverse circumstances, and its abundance, of trees especially, is confined to the sheltered flanks on the opposite side where a copious rainfall is absorbed by the deep and fertile soil.

At the highest elevations where vegetation is naturally more scanty, the valleys are broader and their bounding spurs are comparatively lower in altitude. The currents, therefore, act equally in all directions, causing the whole area to assume an uniformly bleak and desolate appearance.

From Yeumtong to Momay Samdong an ascent of four thousand feet has to be effected. The distance is not great, but the steepness of the intervening tract rapidly discloses a radical change in the aspect of the country and of its vegetation. A forest of silver fir, maples, birch, *Pyrus*, rhododendrons, willows, and other trees and shrubs extends to 13,000 feet; for a few hundred feet farther some scattered black juniper trees occur; an equal distance upwards is occupied by smaller rhododendrons and willows; above, the valley is broad with enormous rocks on its surface and supports low-growing plants only.

Of this place Sir J. D. Hooker gives the following description:—  
 "It was a wild and most exposed spot; long stony mountains grassy on the base near the river; distant snowy peaks, stupendous precipices, moraines, glaciers, transported boulders and rocks rounded by glacial action, formed the dismal landscape which everywhere

Barfonchen is a quantity of *Scopolia lurida*, *Aconitum Napellus*, *Elsholtzia strobilifera* and many other plants. On rocks near the river are plants of *Cathcartia villosa*, a papaveraceous plant of localised distribution. The Chola Pass itself is a barren depression, overlooking a precipitous defile. Between Chamanako and Nathu La to the eastward, are two spurs covered with an almost uninterrupted scrub of rhododendrons. Immediately below the pass is a large extent of pasture land, marshy in many places. The most striking plants are *Chrysanthemum Atkinsoni*, with finely divided foliage and bright yellow flowers; *Saussurea* of many species, some with fern-like leaves resembling small Alpine *Asplenium*; a large *Senecio*; *Parnassia*, *Calathodes*, primroses and others. Beyond Nathu La is a long transverse trough-like valley terminating under Zeylap La. It contains several lakes with marshy banks; before reaching the small plain of Kapup, a deep ravine, which has to be crossed, discloses a view of a magnificent lake whose surface appears black from the reflection of extensive pine forests which grow down to it from every side. A great part of the area on this march is covered with *Polygonum campanulatum*; and the spikenard (*Nardostachys Jatamansi*) is extremely common. Kapup, immediately at the foot of the valley leading up to Zeylap La, is like an oasis in the desert, as the hills above are rocky and bare. The plants seen during the ascent are those characteristic of the elevation 13 to 14,500 feet.

The following is a table of the Dicotyledonous orders of Alpine Sikhim, with the numbers of their component species:—

Ranunculaceæ	... 38	Caprifoliaceæ	... 19	Scrophularineæ	... 43
Magnoliaceæ	... 1	Rubiaceæ	... 7	Lentibulariaceæ	... 2
Berberidæ	... 4	Valerianaceæ	... 3	Gesneraceæ	... 2
Papaveraceæ	... 5	Dipsaceæ	... 7	Acanthaceæ	... 4
Fumariaceæ	... 9	Compositæ	... 110	Selaginæ	... 2
Cruciferae	29	Campanulaceæ	... 14	Labiatae	... 22
Caryophyllaceæ	... 29	Vacciniaceæ	... 2	Chenopodiaceæ	... 3
Tamariscineæ	... 1	Ericaceæ	... 35	Polygonaceæ	... 24
Hypericineæ	... 5	Diapensiaceæ	... 1	Aristolochiaceæ	... 1
Geraniaceæ	... 11	Primulaceæ	... 40	Laurineæ	... 6
Leguminosæ	... 16	Styraceæ	... 1	Santalaceæ	... 1
Rosaceæ	... 40	Oleaceæ	... 2	Euphorbiaceæ	... 2
Saxifragaceæ	... 36	Asclepiadaceæ	... 4	Urticaceæ	... 10
Crassulaceæ	... 13	Loganiaceæ	... 1	Cupuliferæ	... 5
Onagraceæ	... 7	Gentianaceæ	... 26	Salicineæ	... 12
Umbelliferæ	... 29	Boraginæ	... 13	Coniferæ	... 8
Araliaceæ	... 6	Solanaceæ	... 2		

An analysis of the list proves that this region does not possess any Dicotyledonous order peculiar to itself. Twenty-four of the orders are represented more or less all over the world, generally in temperate

regions; nine are confined to the North Temperate zone, one—*Selaginæ*—is South African, with the exception of the *Globularia* of Europe and *Lagotis*, a Himalayan, Arctic, and Alpine genus.

A further examination brings to light the fact that every order in this region (likewise in all others where they prevail) abounds in plants having brightly-coloured flowers, excepting the *Apetulæ*, and, even in those, the high level Euphorbias are differentiated sufficiently by their showy involucral leaves; therefore, to apply the case shortly without putting forward an absolute assertion, of the 50 orders named above, only seven can be characterized by having inconspicuous flowers.

There are a few details in the phenomena of vegetation in the Alpine region of Sikhim which are deserving of a brief notice.

The first is the preponderance of shrubby and herbaceous plants with bright-coloured flowers. For these the only fertilizing agents are apparently bees, of which there are a great variety of species, belonging to the kind known as bumble bees in England. Other orders of insects are rare; and butterflies, flying as they do in countless multitudes at lower levels, are here too uncommon for their agency to be taken into serious consideration.

As the higher orders of plants require the aid of insects for their propagation, it naturally follows that, as bees are here the commonest group of insects, the flowers from which they extract nectar and pollen for honey, will enjoy most opportunities for the due perpetuation of their race, those which require specialized forms of insects, such as flowers with elongated and narrow corollas, will be entirely absent, dioecious forms with inconspicuous flowers will share the same fate; and the only species adapted to survive this restricted method of existence will be plants with bright shallow flowers, with coloured bracts surrounding a less apparent inflorescence, or with broad corolla tubes into which bees can enter with ease.

The structure of the prevalent orders shows that the plants most fitted by nature for the visitation of bees and similar insects are the commonest at high elevations. As plants with brightly-coloured flowers will naturally first attract the attention of insects, it would appear that they have become so for no other definite reason, although the greater intensity of light consequent on a more attenuated and clearer atmosphere has also been advanced as an explanation of the fact.

With the exception of the musk *Delphiniums*, many labiates, composites, and some primroses, all the plants are remarkably devoid of odour. No rhododendron has scented flowers, and the species of that genus abounding in aromatic glands over their whole surface are low-growing bushes, extensively gregarious, which may have acquired

## BUTTERFLIES.

NOTE.—The works consulted for this paper are "The Butterflies of India, Burmah and Ceylon," by L. de Nicéville, and "Catalogue of the Lepidoptera of Sikkim," by H. J. Elwes and Otto Möller.

J. GAMMIE—21-9-91.

BUTTERFLIES are extremely abundant in Sikkim. In the Catalogue of the Butterflies of Sikkim, published in 1888 by Elwes and Möller, 536 species are enumerated, besides 8 more they were doubtful about. But probably the species discovered since, and others still to be discovered, will bring the number up to about 600, and this in a small country of only 1,800 square miles. In the warmer valleys butterflies are to be found in every month of the year, but are comparatively scarce from the end of November till after the middle of March. Some of the species which are abundant at the lowest elevations are also found more or less sparingly over a wide range of altitude; as high as 8—9,000 feet, but the majority of the cool-forest loving species never by any chance go down to the hot valleys. In the lower valleys the collector should start soon after the middle of March and keep on till the end of November if he wishes to make a full collection. At these low elevations the warmth alone, without sunshine, is sufficient to keep the insects in movement; but in the cool forests of the higher altitudes few are to be seen unless the sun is shining; and the season begins a month or two later and ends as much earlier. The genus *Papilio* is strikingly represented in Sikkim by no fewer than 42 species. About one-half of the species remain always below 5,000 feet, at which height they are few in numbers, the majority keeping below 3,500 feet, and are most numerous thence to the bottoms of the valleys. They all frequent flowers, but several of them are oftener to be seen feeding on the roads and riversides, especially on damp spots. Of the well-known green species, with longish tails and blue or green spots on the hindwing, there are four species, of which *paris* and *ganesa* are the commonest, but they keep to the lower slopes, hardly ascending above 4,000 feet. *Krishna* and *arcturus* which resemble them, but have a distinguishing yellow bar across the forewing and lower part of the hindwing, have a much wider range, ascending to 9,000 feet, but rarely being found in the hot valleys. *Machaon*, a European species, is not found below 10,000 feet or so, and *gyas* keeps above 5,000. *Glycerion* and *paphus* have semi-transparent wings of a lace-like pattern, with long slender tails to the hindwings, and are of a very elegant shape. They are found from low elevations up to 4,000 and 9,000 feet respectively. *Teinopalpus imperialis* and

two *Ornithopteras*, which belong to the same order as the *Papilios*, are among the most splendid of the known butterflies. The former is never found below 5,500 feet and seldom lower than 7,000, and is commonest over 8,000 feet, where it frequents cleared grassy spots within heavy forest. On the upperside it is green with yellow spots on the hindwing, and the long tails are tipped yellow; on the underside the middle part of both wings is green and the outer part of the forewing brown barred with black; the outer part of the hindwing is spotted yellow as on the upperside. The *Ornithopteras* measure from 6 to 8 inches across, and their coloration is both bold and pleasing, the forewing being wholly of a velvety black, and the hindwing golden-yellow scalloped with black. They keep mostly to the warmer slopes under 4,000 feet, where they frequent flowering trees.

Of the family *Morphinæ*, two species of *Thaumantis* (*diöres* and *ramdeo*), believed to be seasonal forms of one and the same species, are most gorgeously coloured, being black with large spots which cover a great part of both fore and hind wings, of a brilliant metallic, changeable blue, and measure  $4\frac{3}{4}$  inches across the outspread wings. They avoid the direct sunlight and dodge about among the scrub growing under the deep shade of tall trees in the hottest and moistest valleys. Frequently associated with them is *Stichopthalma camadeva*, of similar habits and among the largest of the Sikhim butterflies, being from 5 to  $6\frac{1}{4}$  inches in expanse. It is more soberly coloured on the upperside than the *Thaumantis*, being chiefly white and brown, but the underside is showier, having a row of five red ocelli with black irides on each wing and other pretty markings. *Kallima inachus*, one of the oak-leaf butterflies, has a marvellous resemblance to a dead leaf when it is at rest with its wings folded over the back and showing the underside only, the leaf-stalk, veins, &c., being excellently mimicked. This mimicry is supposed to be protective to the insect, but this is doubtful as, when flying about, and protection most needed, it exhibits its upperside, which is a deep violet-blue with a conspicuous yellowish bar across the forewing, apparently quite as much designed to attract attention as the underside is for concealment. The Lepchas, with better discernment than the Europeans, call it the chestnut-leaf, to which it bears a closer resemblance than the oak-leaf. At times immense crowds of butterflies, composed of many species, may be seen feeding on certain spots by river-sides in the lower valleys, probably where large animals go nightly to drink; and many species may be caught on a single tree when covered with its scented flowers, but these are the common sorts; the rare ones have to be hunted for in more out-of-the-way places and prized when found. Among the smaller sorts there are about 100 of the *Hesperiidæ* or "skippers," chiefly dull

453. *NEPHERONIA HIPPIA*, Fabricius.  
A true butterfly of the plains, occurring rarely in the Terai and in the low outer valleys.

454. *NEPHERONIA AVATAR*, Moore.  
This very beautiful and distinct species occurs from 1,000 to 5,000 feet from April to November, and is not rare.

455. *HEBOMOIA GLAUCIPPE*, Linnæus.  
Common from March to November from the Terai up to 5,000 feet.

456. *IXIAS PYRENE*, Linnæus.  
Common throughout the warm months from 1,000 to 5,000 feet elevation. It is highly seasonally variable; the males of the dry-season forms flying early in the year are quite small and very lightly marked with black; the form flying in the rains is half as large again, and is very richly coloured, with a heavy black border to the hindwing.

#### Subfamily PAPILIONINÆ.

457. *TEINOPALPUS IMPERIALIS*, Hope.  
In Sikkim this fine butterfly is known to occur on the tops of Birch Hill, Tiger Hill (Senchal), Tonglo, Tendong, and Rikisum, flying from April to August. It is found also in the Khasi and Naga Hills, and at Chang-yang in Central China. The female is far rarer than the male.

458. *ORNITHOPTERA RHADAMANTHUS*, Boisduval.  
Common in the low valleys from May to October. It is found also in Western and Central China.

459. *ORNITHOPTERA POMPEUS*, Cramer.  
Still more common than the preceding, occurring with it and at the same time of the year. The North Indian form has been described as a distinct species by Felder as *O. cerberus*, but cannot, I think, be separated from the typical form, which was described from Batavia in Java.

460. *PAPILIO* (Pangerana) *ASTORION*, Westwood.  
Common from April to December and from the level of the Terai up to 7,000 feet.

461. *PAPILIO* (Pangerana) *AIDONEUS*, Doubleday.  
Far rarer than *P. astorion*, Westwood, and found up to 3,000 feet, from April to November.

462. *PAPILIO* (Byasa) *RAVANA*, Moore.  
A single pair of specimens of this species was recorded by Mr. Moore from Darjeeling in 1857. Mr. Wes also possesses two

specimens from old collections ticketed Sikhim. It is a species of the Western Himalayas, and it is very doubtful if it occurs in Sikhim at all.

463. PAPILO (? Byasa) PLUTONIUS, Oberthür.

Two female examples were obtained in 1884 by native collectors from the interior, perhaps from Bhutan. None have been found since. It is found also in Western China.

464. PAPILO (? Byasa) ALCINOUS, Klug.

Recorded by Moore from Bhutan. Mr. Leech gives its distribution as Western and Central China, Corea, Japan, and the Loochoo Islands.

465. PAPILO (Byasa) LATREILLII, Donovan.

Better known as *P. minereus*, Gray. It occurs in the thick, high forests from 7,000 to 9,000 feet, from March to August, and is not common in collections.

466. PAPILO (Byasa) DASARADA, Moore.

A common species, occurring from 1,000 to 8,000 feet from April till November. The butterfly has a very powerful and disagreeable odour, which is perceptible even years after the death of the insect.

467. PAPILO (Byasa) PHILOXENUS, Gray.

Common at the same elevations and times of year as *P. dasarada*, Moore. It occurs also in Siam, Western and Central China.

468. PAPILO (Panosmiopsis) RHETENOR, Westwood.

Occurs from April to October, and from the level of the Terai up to 6,000 feet. Both sexes are rare, the female, which is tailed, especially so. It is found in Western and Central China.

469. PAPILO (Panosmiopsis) JANAKA, Moore.

Rare, found from 3,000 to 5,000 feet in May and June. Mr. Wood-Mason described this species under the name of *P. sikkimensis*.

470. PAPILO (Menclaides) ARISTOLOCHLE, Fabricius.

An insect of the plains, but occurs commonly in the lower valleys throughout the warm months. It is widely distributed in China.

471. PAPILO (Achillides) PARIS, Linnæus.

Very common from the Terai up to 5,000 feet, and flies all through the year except during the three coldest months. It is common in Western China.

472. PAPILO (Achillides) KRISHNA, Moore.

Occurs from May to August, from 3,000 to 9,000 feet. It is not uncommon on Senchal, and occurs in Western China.

## REPTILES.

NOTE.—The books consulted for this paper are Günther's "Reptiles of British India" and the "Reptilia and Batrachia of British India," by Boulenger.

I do not think there are either tortoises or turtles found in Independent Sikhim, although at least one tortoise is found in the Terai. If any are found in Independent Sikhim, they should precede the lizards in the order as above.

J. GAMMIE—30-8-91.

TEN species of lizards are recorded from Sikhim, five of which are skinks; one is a gecko or wall-lizard; one ghosamp; the common bloodsucker; *Japalura variegata*, which is popularly known by the European visitors as the chameleon on account of its rather showy colours, but does not belong to that family; and a beautiful glass-snake (*Ophisaurus gracilis*) which, as it is limbless, is often mistaken for a true snake, but can be readily recognized as belonging not to the snake but to the lizard family by the presence of eyelids. The ghosamp is the only large member of the family in Sikhim. It grows to a length of 4 feet. Its flesh is eaten by the natives and considered a delicacy.

The common cobra (*Naia tripudians*) is not uncommon. It keeps chiefly to the warmer slopes under 4,000 feet, but has been taken as high as 8,000. The ordinary length of an adult is five feet, but individuals of over six feet are occasionally killed. The species is variable in colour, but the Sikhim variety is usually of a uniform brownish-olive above, with a large ocellus, edged and centred with black, on the dilatable neck: beneath, for a few inches from the chin it is whitish crossed by a broad black band, and the rest of the lower parts black. *Naia bungarus* (the giant cobra) is also found in the lower valleys, but seldom ascends above 4,000 feet. It feeds mostly on other snakes, and grows to a length of 12 or 13 feet, of which the tail is  $2\frac{1}{2}$  feet. In colour the adult is of a uniform brownish-black with indistinct darker cross bands, but the young is much more gaily coloured, being jet black, beautifully ringed, from the snout to the tip of the tail, with white bands of about a quarter of an inch or more in breadth, the intervening black spaces being three or four times as broad. One of the pit-vipers (*Ancistrodon himalayanus*) is rare in Sikhim, and occurs between 5,000 and 10,000 feet. It is brown, spotted or banded with black, and grows to nearly 3 feet in length. The other three pit-vipers belong to the genus *Trimeresurus*, and are of repulsive aspect, having short tails and triangular shaped heads which are covered with numerous small scales instead of a few large shields as in

most other snakes. *T. monticola* is thick bodied, and measures about 2 feet in length, of which the tail is only  $3\frac{1}{2}$  inches. It is reddish-brown with two rows of large, square, black spots along the upper parts of the back, and a row of smaller ones on each side. The under parts are marbled brown and white. *T. carinatus* is grass green with a yellowish tail and a white line running along the lower body scales. It is not so heavy as *T. monticola*, but is about a foot longer. *T. gramineus*, the third species, is also grass green, but the line along the outer scales is bright red, and the tail is reddish. Both of the green species keep to the hot valleys, ascending to about 4,000 feet, but *T. monticola* ascends to over 5,000. The Sikhim variety of the krait, *Bungarus caeruleus*, is of a uniform blackish-brown and is not common. *Bungarus bungaroides* is one of the rarest of snakes, and has been collected at 5,000 and 6,800 feet. It grows to over  $2\frac{1}{2}$  feet in length, and is not unlike the young of the giant cobra, being black, banded with white. *Callophis maclellandii*, the remaining venomous species, is red above and white below, with a very distinctly-defined black vertebral stripe running the whole length of the body, and irregularly-shaped broadish black bands crossing the sides and belly, but not meeting on the back by about half an inch, and between these black bands is a large ventral spot of the same colour. The head, which is small, is banded black and white. It is not uncommon between 5,000 and 7,000 feet. Considering the number of venomous species in Sikhim, the immunity of both man and beast in it from snake-bite is remarkable. Fatal cases are almost unknown, and even trivial cases are of rare occurrence.

Of the non-venomous species, three attain to considerable dimensions. The largest of them, by far, is *Python molurus*, whose usual length is 12 feet, but individuals of 16 to 20 feet are not very rare. It frequents low elevations, and feeds on small deer and other mammals which it kills by compression. The second in size is *Zaocys nigromarginatus*, a very beautiful snake of the cool forests between 4,000 and 6,000 feet. It is green (turning blue in spirits) with a broad black band on each side of the hinder half of the body and tail, and all the green scales are margined with black. It is rather thick bodied and grows to nine feet in length. It is peculiar among the Sikhim snakes in having an even number of rows of scales (14), all the others having odd numbers, viz., one vertebral row and an even number on each side. The third in size is *Zamenis mucosus*, the well-known rat-snake, which grows to seven feet in length. Of the other genera, *Tropidonotus* is the most numerous, being represented by five species. Several of them swim well, and one, *T. macrophthalmus*, has the misfortune to resemble the common

## BIRDS.

NOTE.—The books consulted for this paper are Jerdon's "Birds of India," Oates' "Birds of India," and Hume and Marshall's "Game Birds of India."

J. GAMMIE—22-8-91.

IN no part of the world of an equal area are birds more profusely represented in species than in Sikhim, where there are between 500 and 600. They vary in size from the gigantic lammergeyer, of about 4 feet in length and  $9\frac{1}{2}$  feet across the outstretched wings, down to a tiny flower-pecker, *Dicaeum ignipectus*, barely exceeding 3 inches from the end of its beak to the tip of its tail. There are four species of kingfishers, but none are numerous in individuals; no doubt owing to the scarcity of fish, their natural food. They chiefly frequent the streams of the lower valleys and rarely are found above 4,000 feet. The smallest, and at the same time prettiest of them all, is *Ceyx tridactyla*, a lovely little creature of about 5 inches in length, and coloured with rufous, white, and different shades of glistening blue and violet. *Halcyon coromandelianus*, another beautiful species, is of a nearly uniform rich rufous colour overlaid with shining peach. The largest of all is crested, and spotted black and white. *Alcedo bengalensis*, the fourth species, closely resembles the English kingfisher, but is smaller. The other more conspicuous birds frequenting stream-sides are fork-tails, redstarts, a dipper, and a whistling-thrush. The fork-tails, of which there are four species, are quite characteristic of the darkly wooded mountain torrents of Sikhim. There they are at home on the rocks amidst the roar and the spray, but dash up the streams, with a weird sort of screaming noise, when suddenly disturbed. They are coloured black and white. In the winter season the white-capped redstart, *Chimarrhornis leucocephala*, is a conspicuous and common object of the lower stream beds, but goes high up to breed. It is chastely clad in a black coat and vest and a snow-white cap, and is rufous below. The dipper is of a uniform brown colour, and has the remarkable power of walking under the water where it finds its principal food. The whistling-thrush is a large handsome yellow-billed bird, over a foot long and of a black colour overlaid with glistening cobalt-blue. It is, perhaps, the most frequently noticed of the birds frequenting the stream-sides between 3,000 and 8,000 feet elevation.

Of woodpeckers there are about a dozen species. These readily attract attention by their showy colours and the habit, which their race have, of climbing on trees and tapping the stems in search of the larvæ of beetles, their favourite food. The species found in Sikhim

foot in length and  $1\frac{1}{2}$  lbs. in weight. It is quite a fruit-eater, and keeps to the forest-clad parts. The bronze-winged dove is a lovely creature. It is of shy, solitary habits, but may often be seen feeding on the road under deep shade on suddenly rounding a turn. Most of the pigeons are good eating.

Sikhim is but a poor country for sport, although at least 14 species of game birds are to be found in it by the patient and persevering sportsman, between the Rungeet river and the perpetual snows, but none of them can be called very abundant, and many are difficult to find. There are 4 pheasants, 3 quails, 2 hill-partridges, a jungle fowl, woodcock, a snow-cock, a snow-partridge, and a crake. The moonal, *Lophophorus impeyanus*, the largest and handsomest of the Sikhim pheasants, rarely descends below 10,000 feet. An adult male weighs up to  $5\frac{1}{4}$  lbs. and is 28 inches long. It has a peacock-like crest, and its prevailing colour above is bronze-green glossed with gold; below is black, and the tail is cinnamon-red. The female is wholly brown, with a white chin and throat. The blood-pheasant, *Ithagenes cruentus*, frequents the same zone. It is a small bird, adult males of it usually weighing under  $1\frac{1}{4}$  lbs. and measuring 18 inches in length. They are greyish coloured on the back and greenish below, with blood-red streaks on the breast, and the under-tail-coverts are also blood-red. The cere, legs, and spurs are crimson. The female is reddish-brown finely mottled with black. *Cerionis satyra*, the Indian crimson tragopan, is usually found between 8,000 and 10,000 feet, but sometimes descends in winter to below 7,000 in search of the fruit of *Arisæma*, a large arum, its favourite food. The male is rich crimson below, with black-edged white ocelli on the breast and flanks. The most conspicuous marks about it when alive are the orbital regions, erectile horns, and dilatable skin about the throat, which are of a fine blue, but the colour fades after death. It weighs from  $3\frac{1}{2}$  to  $4\frac{1}{2}$  lbs. and measures 28 inches in length. The hen is brown, with a few of the feathers white-shafted. The kali of the Nepalese, *Euplocamus albonotatus*, is the commonest of the Sikhim pheasants, and has the greatest range, being found from the lowest valleys up to 6,000 feet. The male is about 2 feet in length, and from  $2\frac{1}{4}$  to  $2\frac{3}{4}$  lbs. in weight. It is bluish-black above, with a long slender crest of the same colour and whitish below. The hen is brownish. *Gallus ferrugineus*, the red jungle-fowl, is also found from the bottoms of the lowest valleys, but rarely ascends higher than 4,500 feet. The male closely resembles the ordinary gamecock, and measures up to 28 inches in length and weighs from  $1\frac{3}{4}$  to  $2\frac{1}{4}$  lbs. The woodcock is a cold-weather visitor only, and is then to be found from about 3,000 feet upwards. The snow-cock and snow-partridge, as their names imply, frequent the snowy regions, and the quails and crake the zone lying between 3,000 and 6,000 feet.

## A

## LIST OF SIKHIM BIRDS,

SHOWING THEIR

## GEOGRAPHICAL DISTRIBUTION.

ALTHOUGH the avifauna of Sikhim is one of the richest in the world, and the country itself is a well-defined geographical unit, it is remarkable that no general list of Sikhim birds has hitherto been published.

No local lists published.

The fauna has been very fully explored and collected by Hodgson,<sup>1</sup> Hooker,<sup>2</sup> Jerdon,<sup>3</sup> W. T. Blanford,<sup>4</sup> Elwes,<sup>4</sup> Mandelli,<sup>4</sup> Gammie,<sup>5</sup> Brooks,<sup>6</sup> and others; but the records, with the exception of those of Jerdon and Blanford, consist mainly of detached notes on isolated species. Jerdon's general and systematic observations, which were confined to Darjeeling and the adjoining parts of British Sikhim,<sup>7</sup> were largely complemented by Blanford's account of his three months' tour in Independent Sikhim, chiefly in the Alpine and Sub-alpine areas. And it is the writings of these two authorities, supplemented by the "Occasional Notes" from Sikhim, by Mr. Gammie in *Stray Feathers*, which afford most of the existing information on the extent and geographical distribution of Sikhim birds. Hodgson's British Museum Catalogue of his Sikhim skins gives practically no details of the habitats. And in regard to the necessity for further information Mr. Blanford has recently written,<sup>8</sup> "We require a large amount of additional information as to the range in height of Sikhim birds. Largely as they have been collected, there is, I think, less known about them on the whole than about the less numerous forms of the North-Western Himalayas."

<sup>1</sup> *Journal of the Asiatic Society of Bengal, The Bengal Sporting Magazine, Calcutta Journal of Natural Hist., &c.*

<sup>2</sup> *Himalayan Journals*, I and II, London, 1854.

<sup>3</sup> *The Birds of India*, Calc., 1862.

<sup>4</sup> *Journal Asiatic Society, Bengal*, XLI, part ii (1872), page 30, *et seq.*

<sup>5</sup> *Stray Feathers*, Calcutta, 1873, *et seq.*

<sup>6</sup> *Stray Feathers*, VIII, page 464.

<sup>7</sup> Dr. Jerdon spent a year at Darjeeling about 1857.

<sup>8</sup> *In epist.* 1892.

Having traversed the greater part of both Independent<sup>1</sup> and British Sikhim, and collected over 2,000 specimens of the birds of this area, I find that the analysis of my material affords a considerable contribution towards a geographical distribution list for Sikhim, and also some additional notes on several of the species which aid in supplying the want referred to by Mr. Blanford.

Sikhim owes its great variety of bird-life to its very varied natural features and its wide diversity of climate, ranging from the torrid heat of the *tarai*, skirting the base of its outer mountains, up to the arctic cold of its everlasting snows.

The richness of the Sikhim avifauna.

The climate of this country, in respect to its flora, has been roughly divided by Sir Joseph Hooker, as noted in a previous chapter, into the Tropical, Temperate, and Alpine zones. For our purposes, however, it is necessary to make a further subdivision of these zones, and also to recall briefly the geographical position and the leading physical features of Sikhim.

The climate.

Sikhim forms a narrow oblong tract in the South-Eastern Himalayas and Sub-Himalayas, with an area of over 4,000 square miles, wedged in between Nepal on the west, and Bhutan on the east, and bounded on the north by Tibet, and on the south by the plains of Bengal. Its position is peculiarly isolated, being separated from Nepal and Bhutan in great part by high wall-like ridges,<sup>2</sup> from Tibet by the snows and from Bengal by the dreaded *tarai*<sup>3</sup> jungle. The political division into "British Sikhim" or the Darjeeling district,<sup>4</sup> and "Independent Sikhim" cannot here be observed.

Sikhim thus may be viewed as a stupendous stairway leading from the western border of the Tibetan plateau down to the plains of Bengal, with a fall of about 17,000 feet in 150 miles. The surface of this vast incline<sup>5</sup> is roughly cut up into an innumerable number of rugged peaks and tortuous valleys with deep gorges, adown which dash the glacial streams and torrents

Physical aspects.

<sup>1</sup> As an instance of the extent to which Sikhim has been neglected by European travellers, I may note that when Dr. D. D. Cunningham, F.R.S., and myself visited the Tangkar La Pass (16,500) in 1889, it was the second time only that it had been visited by Europeans, the first visitor having been Dr. (Sir Joseph) Hooker in 1849.

<sup>2</sup> The boundary on the western (Nepal) side includes Kanchendzanga, 28,156 feet high—the second highest mountain in the world, and its southern spur the "Single La" range.

<sup>3</sup> Hindi *tarai* = a swamp or marshy tract.

<sup>4</sup> The trans-Tista portion of Darjeeling district lately ceded by Bhutan, was formerly a part of the Sikhim State.

<sup>5</sup> Gneiss and mica schist are the chief formations; in the lowest ranges lime, sandstone, and shells are met with, and occasionally copper and iron ores. The surface soil is largely of a lateritic nature.

## NOTES ON THE FOREGOING LIST OF SIKHIM BIRDS.

BY L. A. WADDELL, F.L.S.

**3 bis. *Gyps fulvescens* (Hume).**—This fine bird, a male, in October plumage, answers generally to the description of this species, but it differs in several details. The ruff is pale earthy-grey, more rufous on the mantle and interscapulars. Feathers of the back are not pale-centred. The rump is dark bronzy-brown, like the wings, only the lateral feathers being centred. No white patch on the back. Third primary is longest. Beneath, from the breast, darker, especially towards the vent and flanks, where the feathers have dark brown centres. The tail feathers have a subterminal broad whitish bar slightly mottled with brown. Length 36·5 inches, wings 24·7, tail 12·2, bill length (straight) from front of cere 2·05, breadth at gape 1·7, depth at cere 1·35, length of cere above 0·7, claw of midtoe (straight) 1·25.

**17. *Cerchneis tinnunculus*.**—Bill bluish-grey, greenish-yellow at base, and black at tip. Cere greenish-yellow. Feet ochrey. Claws blackish. Forehead greyish-rufous rather than yellowish.

**20. *Hierax cærulescens*.**—Bill horny-black with greenish-yellow base. Legs dark green. Claws black. Chin, vent, thigh, and under tail coverts dark ferruginous.

**23. *Astur badius*.**—The adults have the rufous demi-collar broad and well marked.

**27. *Aquila nepalensis*.**—A female in January. Length 31·3. Wing 23·2, and they reach to 2·6 from end of tail. The tail has no black subterminal band, nor have the shoulders, scapulars, wings, or under-surface any white spots or bars.

**33. *Nisætus fasciatus*.**—Young male in January. Length 24·4. It has the lower part of forehead almost pure white. Chin, throat, and breast are much darker than abdomen, owing to the feathers, which are white at their bases, having mesial dark brown streaks with fulvous centring which becomes larger and more rufous on the breast.

**36. *Limnætus nepalensis*.**—Male in January. Length 26·4. Crest 4·95. Claw of midtoe (straight) 1·1. Inner lining of wings light rufous-brown mostly with dark brown centres. The whitish spots on breast are in transverse series as interrupted bars. Rump uniform hair-brown except at flanks, which as well as the uppermost of the under tail coverts are barred whitish.

**37. *L. kienierii*.**—This extremely beautiful bird varies considerably from Jerdon's description. A male in April measures

## MAMMALS.

NOTE.—The works consulted for this paper are Jerdon's "Mammals of India" and the "Fauna of British India, Mammalia," Part I, by W. T. Blanford.

J. GAMMIE—6-10-91.

ACCORDING to Jerdon and Blanford, there are about 81 species of mammals in Sikhim. They may be roughly classified as follows, viz.:—3 monkeys, 8 of the true cat tribe, 2 civet-cats, 1 tree-cat, 2 mungoses, 2 of the dog tribe, 5 polecats and weasels, 1 ferret-badger, 3 otters, 1 cat-bear, 2 bears, 1 tree-shrew, 1 mole, 6 shrews, 2 water-shrews, 12 bats, 4 squirrels, 2 marmots, 8 rats and mice, 1 vole, 1 porcupine, 4 deer, 2 forest goats, 1 goat, 1 sheep, and 1 ant-eater; but the Lepchas consider there are more species of several of the larger animals than the above two European naturalists admit.

Blanford in the "Fauna of British India" series mentions 3 monkeys from Sikhim: the Bengal monkey (*Macacus rhesus*), which is found in large companies at low elevations, usually not exceeding 3,000 feet, has straight hair and is of a hair-brown colour, tinged greyish with rufescent hinder quarters; the Himalayan monkey (*Macacus ageamensis*) which is abundant from 3,000 up to 6,000 feet, is of similar habits and general appearance, but its hair is wavy and of a darker brown, and it wants the rufescent colour on the hinder quarters; and the Himalayan langūr (*Semnopithecus schistaceus*) which frequents the zone between 7,000 and 12,000 feet, and is said to differ in habits from the hanūmān only in inhabiting a much colder climate. The Lepchas say there are two species at those high altitudes: one of large size and going in pairs only; the other smaller and herding together in companies of 20 to 60 individuals, and often visiting the hot springs to lick the saline matter deposited round their edges.

The tiger is an occasional visitor only, but the leopard (*Felis pardus*) and the clouded-leopard (*Felis nebulosa*) are permanent residents and fairly common, the latter ascending to about 7,000 feet. The snow-leopard (*Felis uncia*), as its trivial name implies, inhabits high altitudes only. The marbled-cat (*Felis marmorata*) is an elegantly marked creature, attaining to a size of nearly 2 feet in length from nose to base of tail, which is 15 inches. It chiefly keeps to the warmer slopes, and is a miniature edition of the clouded-leopard, while the leopard-cat (*Felis bengalensis*), also of the warmer slopes, is the miniature of the common leopard. These two cats never become quite tame, however young they may be captured, and appear to be incapable of getting in the least attached to more than one person, but will stay about the

There is one mole (*Talpa micrura*) of much the same habits as the European one, but does not throw up mole-hills as that species does, although it makes its runs near the surface of the ground in the same way. It is commonest about 4,000 feet, but is found as high as 8,000. The European mole is of doubtful occurrence in Sikhim. There are at least half-a-dozen species of shrews, including the "musk-rat," and eight sorts of rats and mice, two water-shrews, and a vole.

Two marmots are found at elevations exceeding 10,000 feet. They burrow in the ground and live in small colonies. One, if not both of them, barks like a dog, for which it was often mistaken by the European sentries at Gnatong and considered a nuisance in consequence, as they naturally thought it might be a dog along with a hostile Tibetan party for whom they had to keep a sharp look out. One porcupine (*Hystrix longicauda*) is common about 5—6,000 feet, where it is very destructive to the potato crop. Its flesh is much prized as an article of food.

The black hill squirrel (*Sciurus macrouroides*) is a large handsome animal of the lower forests, occasionally, but rarely, ascending as high as 5,000 feet. It measures  $2\frac{1}{2}$  feet from the nose to end of the tail, and is of a uniform dark brown on the back and sides, and yellowish below. Two small brown squirrels are not uncommon among the trees and bamboos of the lower and middle forests, and a pretty, small-striped species (*S. McClellandi*) occurs in the upper forests over 5,000 feet. A very handsome flying squirrel (*Pteromeys magnificus*) inhabits the forest between 5,000 and 10,000 feet. The head and body measure about 15 inches in length, and the tail over 20 inches. It is dark chestnut above and orange-coloured below. Even adults take not unkindly to confinement.

The *shon* or Sikhim stag (*Cervus affinis*) does not, perhaps, occur anywhere in Sikhim Proper, but inhabits the Chumbi Valley and country beyond. The *serow* or samber stag (*Rusa aristotelis*) is frequent at all elevations up to 9—10,000 feet. The commonest of the deer tribe in Sikhim is the barking-deer (*Cervulus aureus*), which is found from the lowest valleys up to 9,000 feet, and is really excellent eating when in good condition. Hodgson says:—"It has no powers of sustained speed and extensive leap, but is unmatched for flexibility and power of creeping through tangled underwood. They have indeed a weasel-like flexibility of spine and limbs, enabling them to wend on without kneeling, even when there is little perpendicular passage room; thus escaping their great enemy the wild dog." The natives hunt it greatly with dogs and bows, and they put bells on their dogs for the double purpose of frightening the deer out of their hidden refuges and indicating the whereabouts of the dogs. The



## LAMAISM IN SIKHIM.

BY L. A. WADDELL, M.B.

## I.—HISTORIC SKETCH OF THE LAMAIC CHURCH IN SIKHIM.

Lāmaism or Tibetan Buddhism is the State religion of Sikhim, and professed by the majority of the people.<sup>1</sup> Indeed, the lāmas since entering the country about two and half centuries ago have retained the temporal power more or less directly in their hands; and the first of the present series of rulers was nominated by the pioneer lāmas.

Lāmaism the State religion of Sikhim.

No detailed account of Sikhim Lāmaism has hitherto been published.<sup>2</sup> In regard to the ritual also and general history of Lamaism, I have often differed from such authorities as Köppen<sup>3</sup> and Schlagintweit,<sup>4</sup> as I have enjoyed superior opportunities for studying the subject at first hand with living lāmas.

No detailed account previously published.

As Lāmaism is essentially a priestcraft, I have dealt with it mainly in its sacerdotal aspects, and touch little upon its higher ethics and metaphysics of which most of the lāmas are wholly ignorant. And throughout this paper I use the term "lāma" in its popular sense, as a general term for all the clergy of the Tibetan Buddhist Church, and not in its special sense of the superior monk of a monastery or sect.

Described as a priestcraft.

My special sources of information have been notes taken during several visits to Sikhim and a prolonged residence at Darjeeling in the society of lāmas. For many of the local details I am especially indebted to the learned Sikhim Lāma Ugyén Gyātshô and the Tibetan Lāma Padma Chhō Phél, with whom I have consulted most of the indigenous and Tibetan books which contain references to the early history of Sikhim and Tibet.<sup>5</sup> These vernacular books contain no very systematic account either of the introduction of Lāmaism into Sikhim or of its origin in Tibet, and their contents are largely mixed with myth and legend; but by careful sifting and comparative treatment it is possible

Sources of information.

<sup>1</sup> The Hinduized Nepalese lately settled in Eastern Sikhim are not natives of Sikhim.

<sup>2</sup> For general notes on Sikhim Lāma-ism after Schlagintweit, the chief writers are Sir John Edgar, Mr. A. W. Paul, C.I.E., who afforded me many facilities for acquiring information, Sir Joseph Hooker and Sir Richard Temple.

<sup>3</sup> KÖPPEN: *Die lamaische Hierarchie und Kirche*, Berlin, 1859

<sup>4</sup> E. SCHLAGINTWEIT: *Buddhism in Tibet*, London, 1863.

<sup>5</sup> I have also obtained valuable aid from the Mongol Lāma Sherap Gyātshô and Tungyik Wangdén of the Gelukpa monastery at Ghoom, and from Mr. Dorje Tshering of the Bhotiya school.

secular objects. Just as they assigned female "energies"—the Hindu  
 Its numerous deities: *Śaktis* or divine mothers—as companions to most  
 female energies. of the gods, wives were allotted to the several  
 Buddhas and Bodhisatvas.

At an early date Buddhists worshipped the tree under which the  
 Buddhahood was attained, and the monument  
 Growth of image- which contained Buddha's relics, and the images  
 worship by Buddhists. of these two objects together with the Wheel as  
 symbolic of the teaching.

Northern Buddhism had almost reached this impure stage when  
 it was introduced into Tibet about the middle of  
 State of Indian the 7th century A.D. Hiuen Tsiang states that  
 Buddhism at time of the Mahāyāna school then predominated in India,  
 introduction to Tibet. and tantrik and mystic doctrines were appearing.

Lāmaism dates from over a century later than the first entry of  
 Buddhism into Tibet, and in the meantime tantric-  
 The Kālachakra. ism had greatly increased. About the same time  
 the doctrine of the Kālachakra or supreme Deity, without beginning or  
 end, the source of all things, [*Adi Buddha Samantabhadra* (Tib. *Kun-tu  
 zang-po*)] was accepted by the Lāmas.

Lāmaism was founded by the wizard-priest *Padma Sambhava* (Tib.  
 The founder of *Pédma Jungné*),<sup>1</sup> i.e., "The lotus born," usually  
 Lāmaism. called by the Tibetans *Guru Rimbochhe*<sup>2</sup> or "The  
 Precious Guru;" or simply "*Guru*," the Sanskrit for "teacher."

Lāmaism arose in the time of King Thī-Srong De-tsan, who  
 reigned 740—786 A.D. The son of a Chinese  
 Lāmaism dates princess, he inherited from his mother a strong pre-  
 from a century later. judice in favour of Buddhism. He sent to India  
 for books and teachers, and commenced a systematic translation from  
 the Sanskrit and Chinese scriptures; and he built the first Buddhist  
 monastery in Tibet, viz. Samyé (Sam-yas).

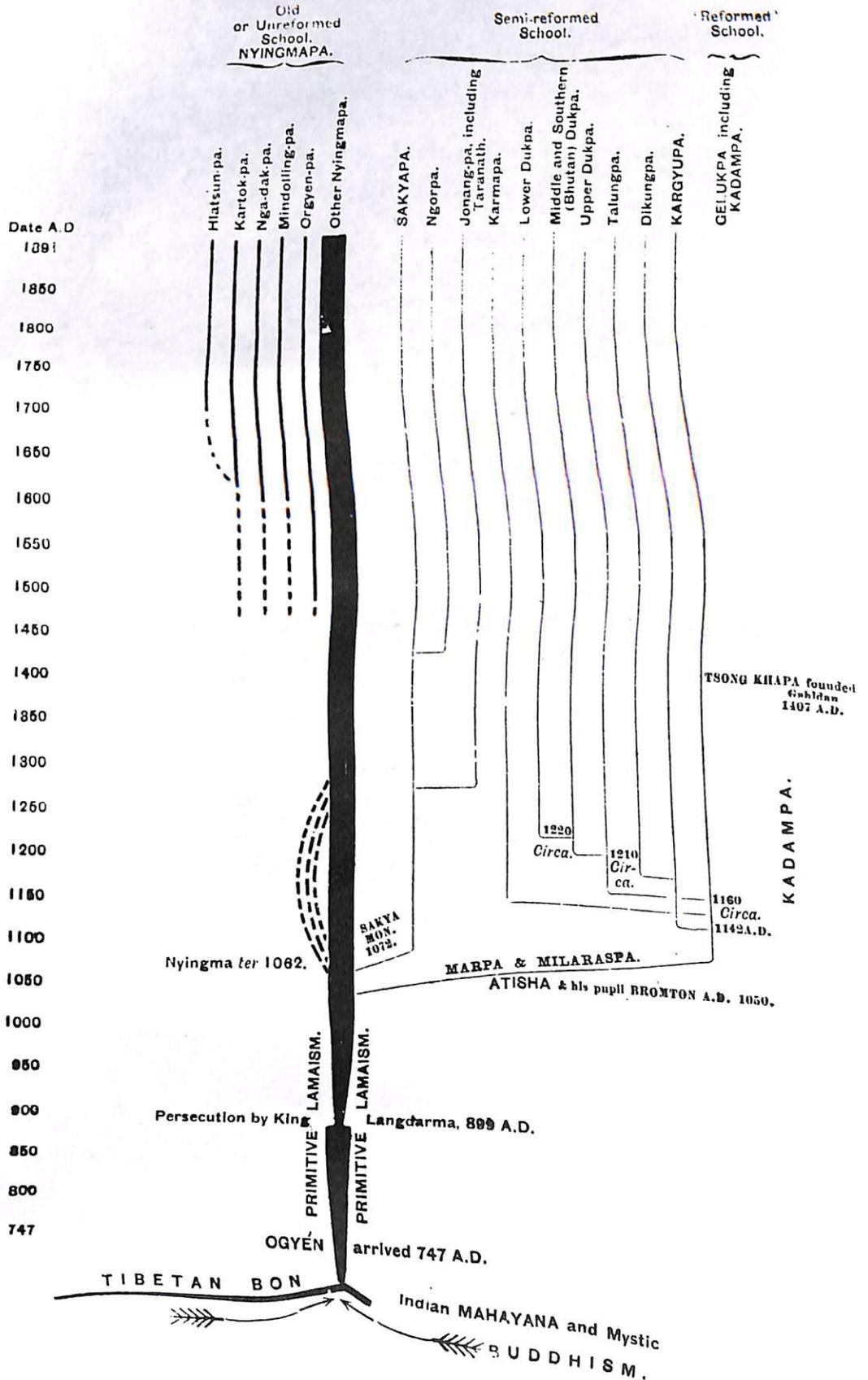
It was in connection with the building of this monastery that Padma  
 Sambhava first came to Tibet. King Thī-Srong  
 Story of the visit to De-tsan's endeavours to build were all frustrated by  
 Tibet of its founder, earthquakes which were attributed to demons. On  
 Guru Rimpoche. the advice of the Indian Buddhist monk Shantarakshita, the latter sent  
 to the great Indian monastery of Nalanda for the wizard-priest Padma  
 Sambhava of the Yogacharya School, who was a famous sorcerer.

Padma Sambhava, who was a native of Udyāna, or Ghazni, a  
 region famed for sorcery, promptly responded to the  
 His route to Tibet, Tibetan king's request and arrived at Samyé, by  
 and doings *en route*. way of Katmandu and Kyirong in Nepal, in the

<sup>1</sup> Padma lbyung gnaş.

<sup>2</sup> Gu-ru rin-po-chhe.

GENEALOGICAL TREE OF LAMAIC SECTS.



- VII.—*Guru Seng-ge-dā dok*,<sup>1</sup> The propagator of religion in the six worlds—with “the roaring lion’s voice.”
- VIII.—*Guru Lô-tén Chhog-Se*,<sup>2</sup> “The Conveyer of knowledge to all worlds.”

The chief monastery of the Pemiongchi sect and its associated lāmas is at Mindolling in Central Tibet. The chief Head monasteries of the Nyingma-pa sect. monastery of the Kartok-pa is at Der-ge in Kham (*Eastern Tibet*), celebrated for its excellent prints; and that of the Nga dak-pa at Dorje-tak, the greatest of the Nyingma-pa head-quarters, about two days’ journey south-east of Lhasa. Until recently, Pemiongchi was in the habit of sending batches of its young lāmas to Mindolling for instruction in strict discipline and rites; but since some years this practice has been allowed to lapse.

#### THE KARMAPA SUB-SECT.

The Karmapa, as we have already seen, was one of the earliest sub-sects of the Kargyupa. It differs from its parent Karmapa in Sik- Kargyupa in the adoption of the Nyingma “hidden him. revelation” found in Kongbo, and entitled Le-to Ling-pa or “the locally-revealed merit.” And from the Duk-pa, Tenets. another sub-sect of the Kargyupa, it differs in not having adopted the Nyingma tertön works Padma *ling-pa and Sangyé ling-pa. The Karmapa sect was founded by Milaraspa’s pupil Rangchug dorje. Their chief monastery is at Tö-lung tshur phu, founded in 1158 A.D. and about one day’s journey to the north-west of Lhasa. They are Kargyupas who have retrograded towards the Nyingma-pa practices. Marpa, the nominal founder of the Kargyupa sect, was married, and few of the Karma-pa lāmas are celibate.*

The first Karmapa monastery in Sikhim was built at Ralang about 1730 A.D. by the Sikhim ruler Gyur-med When established in Sikhim. Namgyal at the special request of the Ninth Karmapa Grand Lāma—dBang-chug-rdorje—in Tibet during a pilgrimage of the king in Tibet. Their other monasteries are at Ramtek and Phodang, and the “Phodang” monastery in the Bhotiya *basti* of Darjeeling which is a chapel of ease to Phodang.

The central image in a Karmapa temple is usually that of the founder of the sub-sect, viz., Karma “Bakshi,” Their temples. otherwise their temples do not differ from those of the Nyingma-pa sect.

<sup>1</sup> gu-ru Seng-ge sgra sgrags.

<sup>2</sup> gu-ru blo-ldan mebhlog Sred.

## II.—GENERAL DESCRIPTION OF SIKHIM MONASTERIES.

Monasteries in Sikhim are of three kinds, viz.—(a) *Tak-phu*,<sup>1</sup> literally a “rock-cave” or cave-hermitage; (b) *Gömpa*,<sup>2</sup> literally “a solitary place” or monastery proper; and (c) the so-called “*gompas*” founded in or near villages. These latter are, as a rule, merely temples (*hla-khāng*) with one or more priests engaged in ministering to the religious wants of the villagers.

The four great caves of Sikhim hallowed as the traditional abodes of Guru Rimbochhe and Lhatsün Chhembo, and now the objects of pilgrimage even to lāmas from Tibet, are distinguished according to the four cardinal points, viz.—

The NORTH *Lha-ri nying phu*, or “the old cave of God’s hill.” It is situated about three days’ journey to the north of Tashiding, along a most difficult path. This is the most holy of the series.

The SOUTH *Kah-do Sang phu*,<sup>3</sup> or “cave of the occult fairies.” Here it is said is a hot spring, and on the rock are many footprints ascribed to the fairies.

The EAST *Pé phu*,<sup>4</sup> or “secret cave.” It lies between the Tendong and Mainom mountains, about five miles from Yangang. It is a vast cavern, reputed to extend by a bifurcation to both Tendong and Mainom. People go in with torches about a quarter of a mile. Its height varies from five feet to one hundred or two hundred feet.

The WEST *De-chhen phu*,<sup>5</sup> or “cave of Great Happiness.” It is in the snow near Jongri, and only reachable in the autumn.

“Gömpa,” as has been noted, means “a solitary place,” and most of the gömpas still are found in solitary places. Isolation from the world has always been a desideratum of Buddhist monks; not as an act of self-punishment, but merely to escape mundane temptations.

The extreme isolation of some of the gömpas has its counterpart in Europe in the Alpine monasteries amid the everlasting snows. One of these gömpa is Tō-lung, which for the greater part of the year is quite cut off from the outer world, and at favourable times is only reachable from the south by a

<sup>1</sup> brag-phug. | <sup>2</sup> dyon-pa. | <sup>3</sup> mkhah hgro gsang. | <sup>4</sup> sbas. | <sup>5</sup> bde chhen.

path of flimsy rope and bamboo ladders leading across the face of precipices. Thus its solitude is seldom broken by visitors. The remote and almost inaccessible position of many of the Sikhim gömpas renders mendicancy impossible; but begging-with-bowl seems never to have been a feature of Lāmaism, even when the monastery adjoins a town or village.

The site occupied by the monastery is usually commanding and frequently picturesque. It should have a free outlook to the east to catch the first rays of the rising sun. The monastery buildings should be built in the long axis of the hill, and it is desirable to have a lake in front, even though it be several miles distant. These two conditions are expressed in the couplet:—

“Back to the hill-rock,  
And front to the tarn.”<sup>1</sup>

The door of the assembly room and temple is *cæteris paribus* built to face eastwards. The next best direction is south-east, and then south. If a stream directly drains the site or is visible a short way below, then the site is considered bad, as the virtue of the place escapes by the stream. In such a case the chief entrance is made in another direction. A waterfall, however, is of very good omen, and if one is visible in the neighbourhood, the entrance is made in that direction, should it not be too far removed from the east.

The monastic buildings cluster round the temple, which is also used as the Assembly Hall or *du-khang*, and corresponds to the *vihāra* of the earlier Buddhists. The temple building and its contents form the subject of the next chapter. Most of the outer detached buildings are dormitories for the monks, and have nothing to distinguish them from the ordinary houses of Sikhim, except, perhaps, that their surroundings are sometimes a trifle cleaner and more comfortable looking, and occasionally a few flowers are to be seen. One elderly monk and two or three novices usually occupy one house, and each house cooks its own meals independently, as there is no common refectory in the small monastic establishments of Sikhim. The menial lay servants are usually housed some distance off.

Lining the approaches to the monastery are rows of tall “prayer” flags, and several large lichen-clad chhortens and long mendong monuments.

Its surroundings.

<sup>1</sup> *rgyab ri brag dang, mdun ri mtsho.*

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Its surroundings.

<sup>1</sup> *rgyab ri brag dang, mdun ri mtsho.*

are admitted to a few monasteries, but their number is extremely small, and individually they are illiterate, old, and decrepit.

Nuns.

Only three monasteries belong to the Karmapa, viz., Ralang, Ramtek, and Phodang, and of these Phodang is now in reality the chief, although Ralang is the parent monastery.

At present the most flourishing monasteries in Sikhim are the Nyingmapa, Pemiongchi, and the Karmapa Phodang.

The names of the monasteries, as will be seen from the translations given in the second column of the table, are mostly Tibetan and of an ideal or mystic nature, but some are physically descriptive of the site, and a few are Lepcha place-names also of a descriptive character.

The lāmas number nearly one thousand, and are very numerous in proportion to the Buddhist population of the country. In 1840, Dr. Campbell estimated<sup>1</sup> the Lepchas and Bhotiyas of Sikhim at 3,000 and 2,000 respectively; but Mr. White in his census of Sikhim in March 1891 gives the population roughly as—

Proportion of lāmas to the Buddhist population.

Lepchas	...	...	...	5,800
Bhotiyas	...	...	...	4,700
Nepalese, &c.	...	...	...	19,500
				30,000

As the Nepalese are all professing Hindus, the lāmas are now dependent on the Bhotiyas and Lepchas for support, and we thus get a proportion of one lāmaic priest to every 10 or 11 of the indigenous population. But this does not represent the full priest-force of those two races, as it takes no count of the numerous devil-dancers and Lepcha priests patronized by both Bhotiyas and Lepchas.

### III.—THE TEMPLE AND ITS CONTENTS.

The temple had no place in primitive Buddhism. It is the outcome of the worship of relics and images, and dates from the later and impurer stage of Buddhism.

The Temple.

Its proper name is *Lhā-khāng* or "God's house," but as it serves the purpose of an assembly room and school, it is also called respectively *Du-khāng*<sup>2</sup> (a meeting-room)

Its names.

and *Tsug-lak-khāng*<sup>3</sup> (an academy), although the former name is strictly applicable only to the hall in the lower flat in which the monks assemble for worship.

<sup>1</sup> *The Oriental*, page 13

<sup>2</sup> *l*du-khang.

<sup>3</sup> *g*tsug-lag-khang.

it towers high above every other object in the country, and is the first to receive the rays of the rising sun and the last to part with the setting sun. *Kangchhendsönga* literally means "the five repositories or ledges of the great snows," and is physically descriptive of its five peaks—the name having been given by the adjoining Tsangpa Tibetans, who also worshipped the mountain. But Lhatsün Chhembo gave the name a mythological meaning, and the mountain was made to become merely the habitation of the god of that name, and the five "repositories" were real store-houses of the god's treasure. The peak, which is most conspicuously gilded by the rising sun, is the treasury of gold, the peak which remains in cold grey shade is the silver treasury, and the other peaks are the stores of gems and grain of sorts and holy books. This idea of treasure naturally led to the god being physically represented somewhat after the style of "the god of wealth." He is on the whole a good-natured god, but rather impassive, and is therefore less worshipped than the more actively malignant deities. For further particulars of his worship, see Chapter VI on "Demonolatry," page 355.

*Lhā-tsün Chhembo*, the pioneer lāma of Sikhim; or other lāma-saint of Sikhim, or of the special sect to which the temple belongs.

The alleged existence, by Sir Monier Williams<sup>1</sup> and others<sup>2</sup> of images of Gorakhnāth in Tashiding, Tumlong, and other Sikhim temples is quite a mistake. No such image is known. The name evidently intended was Guru Rimbochhe.

The large images are generally of gilded clay, and the most artistic of these come from Pá-to or "Paro" in Bhutan. A few are of gilded copper and mostly made by Newaris in Nepal. All are consecrated by the introduction of pellets of paper inscribed with sacred texts.

Amongst the frescoes on the walls are displayed the *Néden chu-tuk*, or the sixteen disciples of Buddha; and also numerous lāma-saints of Tibet.

There are also a few oil-paintings of divinities framed in silk of grotesque dragon pattern with a border, from within outwards, of "the primary" colours in their prismatic order of red, yellow, and blue. These pictures have mostly been brought from Tibet and Bhutan, and are sometimes creditable specimens of art.

The general plan of a temple interior is shown in the foregoing diagram. Along each side of the nave is a long low cushion about three inches high, the seat for the

<sup>1</sup> *Buddhism*, page 490.

<sup>2</sup> CAMPBELL, *J. A. S. R.*, 1849; HOOKER, SIR R. TEMPLE, *Jour.*, page 212; *Him. Journ.* I, 323; II, page 195.

monks and novices. At the further end of the right-hand cushion on a throne about  $2\frac{1}{2}$  feet high sits the *Dorje Lô-pön*,<sup>1</sup> the spiritual head of the monastery. Immediately below him, on a cushion about one foot high, is his assistant who plays the *si-nyen* cymbals. Facing the *Dorje Lô-pön*, and seated on a similar throne at the further end of the left-hand cushion, is the *Um-dsé*<sup>2</sup> or chief chorister and celebrant and the temporal head of the monastery; and below him, on a cushion about one foot high, is the *Üchhung-pa* or Deputy *Um-dsé*, who plays the large *tshö-rol* or assembly cymbals<sup>3</sup> at the command of the *Um-dsé*, and officiates in the absence of the latter. At the door-end of the cushion on the right-hand side is a seat about one foot high for the *Chhö tim pa*,<sup>4</sup> a sort of provost-marshal who enforces discipline, and on the pillar behind his seat hangs his bamboo rod for corporal chastisement. During the entry and exit of the congregation he stands by the right side of the door. Facing him at the end of the left-hand cushion, but merely seated on a mat, is the *Chhub-dupa* or water-giver, who offers water to the monks and novices, for washing their hands and lips after each round of soup. To the left of the door is a table on which is set the tea and soup served out by the unpassed boy-probationers during the intervals of worship.

At the spot marked "13" on plan is placed the lay figure of the corpse whose spirit is to be withdrawn by the *Dorje Lô-pön*. At the point marked "12" is set the throne of the king or of the Labrang incarnate lama—the *Kyab-gon* or protector of religion—when either of them chances to visit the temple.

On each pillar is hung a small silk banner with five flaps, usually in vertical series of threes called *phén*,<sup>5</sup> and on each side of the altar is a large one of circular form called *chephur*.<sup>6</sup>

In some of the larger temples are side-chapels for the special shrine of *Dorje-phagmo* or other favourite divinity. The shrines of the deities and demons to whom flesh is offered are usually located in a detached building. Upstairs are the images of secondary importance, and here among the frescoes covering the walls are usually found the *Gon-pos*, or demoniacal protectors of *Lāmaism*. These latter are of ferocious aspect, enveloped in flames and wielding various weapons. They are clothed in human and tiger skins, and adorned with snakes and human skulls and bones. Chief among

<sup>1</sup> rdo-rje slob-dpon.

<sup>2</sup> dbu-mdsad.

<sup>3</sup> tshogs-rol.

<sup>4</sup> chhos khrims-pa.

<sup>5</sup> hphan.

<sup>6</sup> phye-phur.

The formula used at any particular time varies according to the particular deity being worshipped. But the one most frequently used by the individual lāma is that of his own *yī-dam* or tutelary deity, which varies according to the sect to which the lāma belongs.

The formulas most frequently used are shown in the following table:—

Name of Deity.	The Spell.	Special kind of rosary used.
1. Dor-je jik-che. <sup>1</sup> Skt. <i>Yāma (antaka)</i> .	Om! Ya-mān-ta-taka hung phät!	Human skull or "stomach-stone."
2. Chā-na dorje. <sup>2</sup> Skt. <i>Vajrapāni</i> .	{ Om! Bājrapāni hung phät! Om! Bājra dsan-da maha ro-khana hung!	Raksha. Do.
3. Tam-din. <sup>3</sup> Skt. <i>Hayagrīva</i> .	Om! päḍ-ma ta krid hung phät!	Red sandal or coral.
4. Ché-ré-si or Thuk-je- chhenbo. <sup>4</sup> Skt. <i>Avalokita</i> .	Om! māni päḍ-me hung!	Conch shell or crystal.
5. Döl-ma jang-khu. <sup>5</sup> Skt. <i>Tāra</i> .	Om! Tā-re tut-tā-re ture swā- hā!	Bodhitse or tur- quoise.
6. Döl-kar. <sup>6</sup> Skt. <i>Sitatāra</i> .	Om! Tā-re tut-tā-re mama ā-yurpunye-dsanyana pusphpi- ṭa ku-ru swā-hā!	Bodhitse.
7. Dor-je phak-mo. <sup>7</sup> Skt. <i>Vajra varahi</i> .	Om! sar-ba Bud-ha ḍakkin-ni hung phät!	Ditto.
8. Ozer-chén-ma. <sup>8</sup> Skt. <i>Marici</i> .	Om! Ma-rī-tsye mam swā-hā!	Ditto.
9. Gön-po nag-po. <sup>9</sup> Skt. <i>Kālānātha</i> .	Om! Srī Ma. hā-kā-la hung phät swā-hā!	Raksha.
10. Nam-sé. <sup>10</sup> Skt. <i>Kuvera</i> .	Om! Bāi-śrū-ma-na ye swā-hā!	Nangapāni.
11. Dsam bha-la. <sup>11</sup> Skt. <i>Jambhala</i> .	Om! Dsam-bha-la dsalen-dra ye swā-hā!	Ditto.
12. Seng-ge-ḍa. <sup>12</sup> Skt. <i>Singhānāda</i> .	Om! ā-hrih Sing-ha-nāda hung phät!	Conch shell or crystal.
13. Jam-yang. <sup>13</sup> Skt. <i>Manjughosa</i> .	Om! a-ra-pa-tsa-na-dhi!	Yellow rosary.
14. Dem-chhok. <sup>14</sup> Skt. <i>Samvara</i> .	Om! bñih ha-ha hung hung phät	Bodhitse.
15. Päḍ-ma jung-né. <sup>15</sup> Skt. <i>Padma sambhara</i> .	Om! bājra gu-ru päḍma sid-dhi hung!	Coral or bodhitse.

<sup>1</sup> rdo-rje-kjigs-byed.<sup>2</sup> phyag-na rdo-rje.<sup>3</sup> rta-mgrin.<sup>4</sup> grugs-rje chhen-po.<sup>5</sup> sgrol-ma ljang-khu.<sup>6</sup> sgrol-dkar.<sup>7</sup> do-rje phag-mo.<sup>8</sup> hod-zer-chan-ma.<sup>9</sup> mgon-po nag-po.<sup>10</sup> rnam-sras.<sup>11</sup> dsam-bha-la.<sup>12</sup> seng-ge-sgra.<sup>13</sup> kjam-dbyangs.<sup>14</sup> bde-mchhog.<sup>15</sup> pad-ma kbyung-gnaṣ.

The concluding word *phüt* which follows the mystic *hung* in many of these spells is cognate with the current Hindustani word *phat*, and means "may the enemy be destroyed utterly."

The laity through want of knowledge seldom use with their rosaries other than the well-known lamaic formula "Om! *mā-nī pad-me Hung*," i.e., "Hail! to the Jewel in the lotus! *Hung*." This refers to the Bodhisatwa Chéresi (Skt. *Padmapāni*), the patron-god of Tibet, who, like Buddha, is usually represented as seated or standing within a lotus flower, and who is believed to have been born from such a flower. It has, however, many mystic meanings. And no wonder this formula is so popular and constantly being repeated by both laity and lāmas, for its mere enunciation is credited with stopping the cycle of re-birth, and reaching directly to Nirvana. Thus, it is stated in the *Māni-kah-bum* with extravagant rhapsody that this formula "is the essence of all happiness, prosperity, and knowledge, and the great means of deliverance," and that the *om* closes re-birth amongst the gods, *ma* among the Titans, *nī* as a man, *pad* as a beast, *me* as a "yidag," and *hung* as an inhabitant of hell. And in keeping with this view each of these six syllables is given the distinctive colour of these six states of re-birth, viz. *om*, the godly white; *ma*, the titanic blue; *nī*, the human yellow; *pad*, the animal green; *me*, the "yidag" red; *hung*, the hellish black. This formula is of comparatively modern origin; its first appearance seems to be in the legendary history (*bkah bum*) of King Srong-tsan-gam-bo, which was one of the so-called "hidden" treatises, and probably written about the 14th or 16th century A.D.<sup>1</sup> With this formula, which is peculiar to Tibet, may be compared the Chinese and Japanese spells "*Nāmo Butsu*" (= Skt. *Nāmo Buddhaya*, i.e., salutation to Buddha!) and "*Nāmo O-mi-to-Fu*" (= Skt. *Nāmo Amitābha*, i.e., salutation to the Boundless Light!—a fanciful form of Buddha). The Burmese, so far as I have seen, seem to use their rosary merely for repeating the names of the Buddhist Trinity, viz., "Phrā" or Buddha, "Tara" or Dharma, and Sangha. And the number of beads in their rosary is a multiple of  $3 \times 3$  as with the lāmas. On completing the cycle the central bead is fingered with the pessimistic formula "*Aniṣa, Dukha, Anātha*."—all is transitory, painful, and unreal.

<sup>1</sup> Since the above was in type, I find that ROCKHILL in *The Land of the Lamas*, London, 1891, page 326, notes that Wilhelm de Rubruk, writing in the second half of the 13th century, A.D. (Soc. de Geog. de Paris, IV, page 283) states regarding the Buddhist monks of Karakorum: "Habent etiam quocumque vadunt semper in manibus quandaun testem centum vel ducentorum nucleorum sicut nos portamus paternoster et dicunt semper hec verba *ou man baccam* hoc est *Deus, tu nosti*, secundum quod quidam eorum interpretatus est michi, et totiens expectat, remunerationem a Deo quotiens hoc dicendo memoratur." Mr. Rockhill also independently arrives at a similar conclusion to that noted by me above, as to the relatively modern composition of the *Mani bkah bum*.

He is usually re-appointed for one or more terms, as there is difficulty in finding suitable men for this appointment.

After filling the above office he is eligible for the two highest appointments in the monastery, viz.—

VI.—*Principal* and *Chief Celebrant* or *dbU-mdsad* (pronounced *Um-dsé*); and

VII.—*Patriarch* or *rDo-rje sLob-dpon* (pronounced Dorje Lô-pön).

These two offices are held for life, and the holders enjoy equal rank and receive the same stipend and perquisites, and, as we have seen, sit opposite each other in the assembly room. But the Um-dsé

The Um-dsé. is always the more learned of the two, and is necessarily something of a man of the world. He supervises the whole establishment and controls the discussions, and it is to him that the peasantry resort for advice and settlement of their disputes. The Dorje Lô-pön upholds the dignity of religion

The Dorje Lô-pön. by taking no part in secular matters and doing the mechanical work of meditation and some of the higher ritual, one of his chief duties being to abstract the soul of the dead and despatch it on the right path to heaven or for a new rebirth.

The Incarnate Lāma of *bLa-brang* monastery is supposed to exercise the functions of a Bishop of Sikhim; but he has only the title of Protector of Religion—the titles of *Do-dam-pa* or “bishop,” *Khénpo* (*mkhan-po*) or “abbot” are not used in Sikhim.

### III.—MONASTIC ROUTINE.

The daily routine of the Sikhim monk differs somewhat, according to whether (*a*) he be living apart from his monastery, say, as a village priest, or (*b*) as a resident in a monastery, or (*c*) as a solitary hermit. I will describe the practices in this order.

#### AS A VILLAGE PRIEST.

The monk immediately on waking must arise from his couch, even though it be midnight, and commence to chant the *mi-rtak-rgyud-bskul*, taking care to pronounce all the words fully and distinctly. This contains the instructions of his special Lāma-preceptor (*rtsa-wa-blama*), and in the recital the monk must call vividly to mind his spiritual guide. This is followed by a prayer for a number of requests by the monk himself.

Then he assumes the meditative posture of "the seven attitudes," in order to subjugate the five senses. These attitudes are—(1) sitting with legs flexed in the well-known attitude of Buddha; (2) the hands resting one above the other in the lap; (3) head slightly bent forwards; (4) eyes fixed on the tip of the nose; (5) shoulders "floating like the wings of a vulture;" (6) spine erect and "straight like an arrow;" (7) tongue arched upwards to palate like the curving petals of the eight-leaved lotus. While in this posture he must think that he is alone in a wilderness.

The three original sins of the body are then got rid of according to the humoural physiology of the ancients in the three series of *dbuma*, *roma*, and *rkyang-ma*. After taking a deep inspiration, the air of the *roma* veins is expelled three times, and thus "the white wind" is let out from the right nostril three times in short and forcible expiratory gusts. This expels all Anger. Then from the left nostril is thrice expelled in a similar way "the red air," which rids from Lust. The colourless central air is thrice expelled, which frees from Ignorance. On concluding these processes, the monk must mentally realize that all ignorance, lust, and anger—the three Original Sins—have disappeared like frost before a scorching sun.

He then says the "a-lia-ki," keeping his tongue curved like a lotus petal. This is followed by his chanting the *blamañ rnal-hbyor* or "the Yoga of the Lāma," during which he must mentally conceive his Lāma-guide as sitting overhead upon a lotus flower.

Then, assuming the spiritual guise of his *Yidam* or tutelary deity, he chants the Four Preliminary Services—the *sngon-gro bzi-hbyor*. These are the Refuge formula or *skyabs-hgro*—*vide* page 308—which cleanses the darkness of the Body, the Hundred Letters or *Yige-brgyapa*, which cleanses all obscurity in Speech; and the magic circle of rice—the *Mandala*, see page 324—which cleanses the Mind; and the prayer *gsol-hdebs*, classifying the lāmas up to the most perfect one, confers Perfection on the monk himself.

This is followed by the chanting of *bla-grub*, "the obtaining of the Lāma," and "the obtaining of the ornaments *snyen-grub*."

The mild deity in this worship is called "The Agreeable One" (*mthun*) and the demon (*drag-po*) is called "The Repulsive" (*bzle-pa*). The demoniacal form must be recited that full number of times which the lāma bound himself to do by vow before his spiritual tutor, viz., 100, 1,000, or 10,000 times daily. Those not bound in this way by vows repeat the charm as many times as they conveniently can.

"Meditative" postures.

Expulsion of the three Original Sins.

Mummery.

Ritual.

Repetition of mantras.

## V.—SOME MAGIC RITES AND CHARMS.

## TIBETAN SUPERSTITIONS.

Magic and mysticism enter largely into lāmaic ritual, and especially into the priestly ministrations for the laity. Under this head I describe a few of the more prominent magic rites, viz., the "*Manḍala*" offering in effigy of the Universe, &c., &c., which forms part of the daily worship of every lāma; the casting of lots for soothsaying purposes, charms against sickness and accidents of sorts, ill-luck, &c., and the printed charms for luck which form the "prayer-flags" and tufts of rags affixed to trees, bridges, &c.

Magic and mystic rites here described.

## THE "MANDALA" OR MAGIC CIRCLE-OFFERING OF THE UNIVERSE.

It is a matter of history how Aśoka, the greatest of Indian Emperors, thrice offered India to the Buddhist church and thrice redeemed it with his treasure and jewels. The lāmas, however, are much more magnificently generous than Aśoka, for every day each lāma offers to the Buddhas and other saints and demons not only the whole of India, but the entire universe, including the heavens and their inhabitants. This is done in effigy, but the offering is considered to be none the less effective than were it actually made in reality. To render this ceremony intelligible we must refer to the lāmaic ideas on the cosmogony of the universe.

The daily offering of the Universe.

*The UNIVERSE according to the LĀMAS.*

The universe according to the lāmas—and they closely follow to "The Universe" of the Lāmas. Hindu notions on the subject—is graphically depicted in the chart facing this page (PLATE X).

The system of worlds forming one universe (*sakwal*), of which there are many, consists of a series of fabulous continents circularly disposed around the great central mass *Ru-rab* (Mt. Meru) which supports the heavens, and which is separated from the circle of continents by seven concentric oceans alternating with seven concentric whorls of golden mountains, and the whole system

General description.



"Om! Bajra bhrummi ah Hum!

"On the entirely clear foundation of solid gold is Om! bajra-  
"rekhe-ah Hum.

"On the middle of the outer iron wall is Hum and Ri-rab (Meru),  
"the King of Mountains. (1)

"On the East is Lüs-hphags-po, (2)

"On the South hJam-bu-gling, (3)

"On the West Ba-lang-spyöd, (4) and

"On the North sGra-mi-snyan. (5)

"On either side of the Eastern continent Lüs-hphags are Lüs (6)  
"and Lüs-hphags. (7)

"On either side of the Southern continent are rNga-yab (8) and  
"rNga-yab-gzhan. (9)

"On either side of the Western continent are Yonten (10) and  
"Jam-mchhog-hgra. (11)

"And on either side of the Northern continent are sGra-mi-  
"snyan (12) and sGra-mi-snyan-gyi-mdah. (13)

"There are mountains of jewels (14), wish-granting trees (15),  
"wish-granting cows (16), unploughed crops (17), the precious  
"Wheel (18), the precious Norbu jewel (19), the precious Queen (20),  
"the precious Minister (21), the precious Elephant (22), the precious  
"Horse (23), the precious Battle-chief (24), the Bumpa of the great  
"treasure (25), the Goddesses sgeg-pa-ma (26), hPhreng-wa-ma (27),  
"gLu-ma (28), Gar-ma (29), Me-tog-ma (30), bDug-spös-ma (31),  
"sNang-gsal-ma (32), Dri-chhal-ma (33), the sun (34), moon (35),  
"jewelled umbrella (35), the ensign of victory (37), which is entirely  
"victorious from all directions, and in the middle are the gods (38),  
"the most accomplished and wealthy of the beings!

"I offer you all these constituent parts of the Universe all com-  
"plete! O! noble, kind, and holy Lāma! O! tutelary Yidam gods of  
"the magic circle, and all the Collections of Buddhas and Bodhisatwas!

"I beg you all to receive these offerings for the benefit of the  
"Animal beings!

"I offer you O! Buddhas! the four continents and Ri-rab (Meru)  
"adorned with the sun and moon on a foundation of incense and  
"flowers. Let all the Animal beings enjoy happiness!

"I offer you O! You whole assembly of accomplished Supreme  
"Beings of the outside, inside, and hidden regions, the entire wealth  
"and body of all these mythical regions. I beg you all to give us the  
"best of all real gifts, and also the real gift of rDsogs-pa-chhen-po  
"(the mystic insight sought by the Nyingmapa)!

"I offer up this fresh magic circle, through the virtue of which  
"let no injury beset the path of purity, but let us have the grace of

"I offer to the Three supreme Holy Ones glorious symbol *Sri-bi-u* which shines over the heart of the Buddhas. Let the Animal beings be possessed of unchangeable piety!

"I offer to the Three supreme Holy Ones the precious glory of the precious *wheel* which shines over the feet of the Buddhas. Let the Animal beings obtain the true path to good conduct!"

(Here follows the *Manḍala* service already detailed above.)

#### DIVINATION BY LOTS.

The elements of luck and chance are allowed to influence nearly every action of both lāmas and laity. Each hour and day of the week possesses a lucky or unlucky character, and the days of the month according to their order introduce another set of lucky and unlucky combinations. And omens are eagerly watched for and noted.

Lucky and unlucky days and times.

Omens.

And in addition to the consideration of the foregoing influences it is an almost universal practice to take a special Divination. Divination by lot for even ordinary and most trivial affairs. Divination is done by both lāmas and laity. Most laymen as well as lāmas possess small divining manuals called *mô* or "*mô-pe*," i.e., short for "*mô-pecha*," or "*The mô book*." These books show the portent attached to the particular number which is elicited and also the initiatory spells. Divination is commonly made by lāmaic cards, by the rosary, by seeds or pebble counters; less commonly by dice, and rarely by sheep's shoulder-blades.

The cards used for divination purposes are small oblong strips of card-board, each representing several degrees of lucky and unlucky portents suitably inscribed and pictorially illustrated, and to each of these is attached a small thread. In consulting this oracle, an invocation to a favourite deity is made, frequently the goddess *Dölma*, and the packet is held by the left hand on a level with the face, when, with eyes closed, one of the threads is grasped, and its attached card is drawn out, and in accordance with the average of three draws is considered the luck of the proposed undertaking, or the ultimate result of the sickness or the other question of fortune sought for.

Divination by the Rosary is especially practised by the more illiterate people, and by the Bon priests. The preliminary spell is:—"*gsol! ye-dhar-ma! Om-sha-sha mu-ne-ye-swa-hah! Kra-mu-ne-ye swa-hah! madah-shu-mu-ne ye-swa-hah!*" After having repeated this, breathe upon the Rosary

Divination by the Rosary. Preliminary spell.

and say "*Namo-Guru!* I bow down before the kind, merciful, and " noble Lāma, the three Holy Ones, the *yidam* (tutelary deity), and " before all the collections of Dakinis, Religion protectors and " Guardians of the Magic Circle, and I beg that you will cause the " truth to descend on this lot. I also beg you, O! Religious Protectors " and Guardians, Brahma, Indra, the ten religious protectors, Nanda " and Takshaka, the Nāga Kings, including the eight great Nāgas, " the sun, the eight planets, the twenty-eight constellations of stars, " the twelve great Chiefs of the Injurers, and the great owners of " the localities, let the true light descend on my lot and let the truth " and reality appear in it."

After having repeated the above, the rosary is taken in the palm and well mixed between the two revolving palms and the hands clapped thrice. Then, closing the eyes, a portion of the rosary is seized between the thumb and finger of each hand, and opening the eyes the intervening beads are counted from each end in threes. And according to the remainder being 1, 2, or 3 in successive countings depends the result. Thus:—

Manipulation of Rosary.

- (1) *If One as a remainder comes after One* as the previous remainder, everything is favourable in life, in friendship, in trade, &c.
- Results.
- (2) *If Two comes after Two* it is bad:—"The cloudless sky will be suddenly darkened and there will be loss of wealth. So *Rim-hgro* must be done repeatedly and the gods must be worshipped, which are the only preventions."
- (3) *If Three comes after Three* it is very good:—"Prosperity is at hand in trade and everything."
- (4) *If Three comes after One* it is good:—"Rice plants will grow on sandy hills, widows will obtain husbands, and poor men will obtain riches."
- (5) *If One comes after Two* it is good:—"Every wish will be fulfilled and riches will be found; if one travels to a dangerous place one will escape every danger."
- (6) *If One comes after Three* it is good:—"God's help will always be at hand, therefore worship the gods."
- (7) *If Two comes after Three* it is not very good, it is middling:—"Legal proceedings will come."
- (8) *If Three comes after Two* it is good:—"Turquoise fountains will spring out and fertilize the grounds, unexpected food will be obtained, and escape is at hand from any danger."
- (9) *If Two comes after One* it is bad:—"Contagious disease will come. But if the gods be worshipped and the devils be propitiated, then it will be prevented."

plague of locusts was down in the lāmaic forecast for that year. I examined the old printed books and found that in one of the more common versions of the twelve-year cycle a plague of *chhaga* was foretold for that year, and *chhaga* is a short form of the word for "locust." And it seemed that it could not come out in the forecast oftener than about once in six to twelve years.

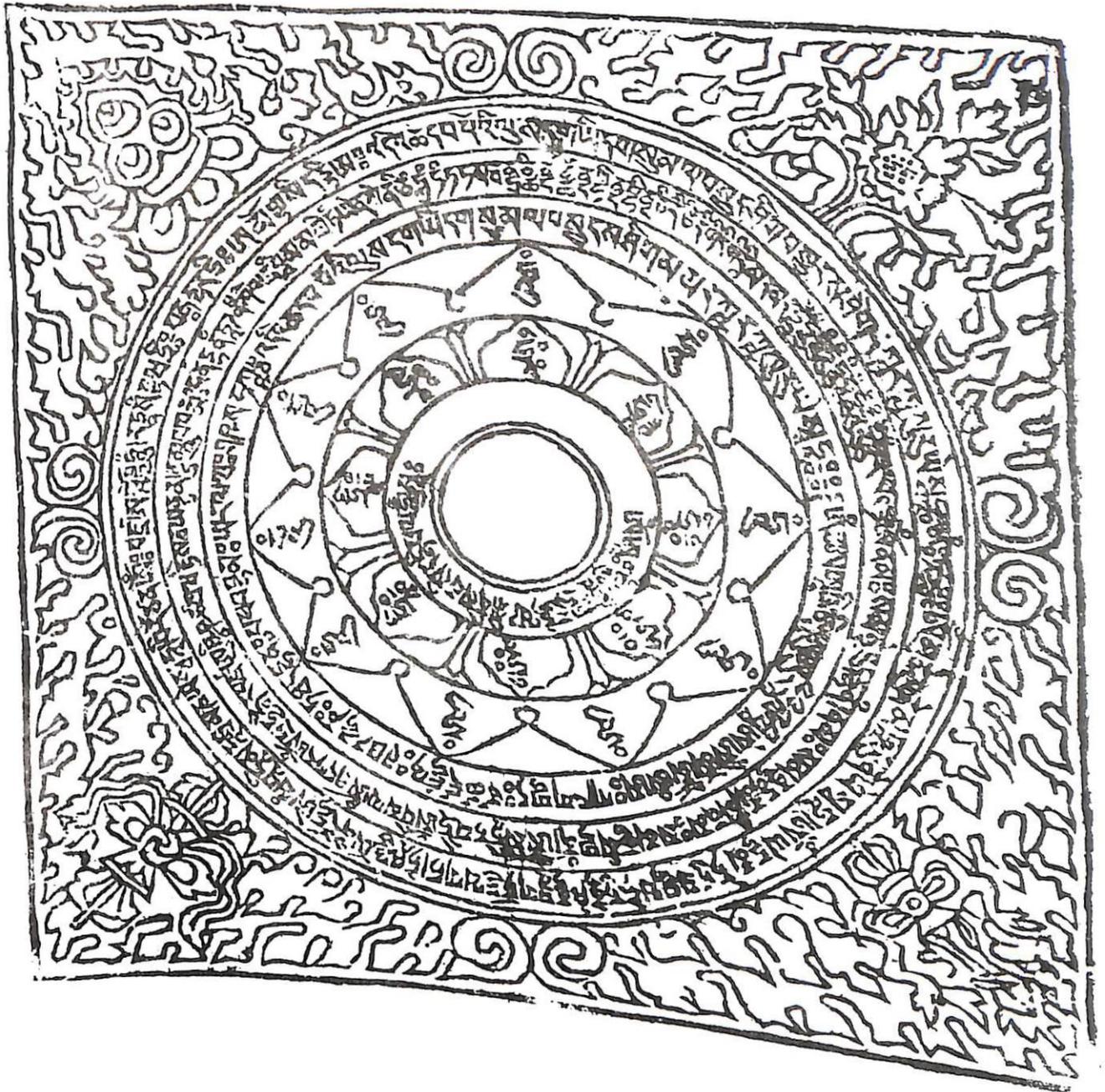
### TALISMANS AND AMULET-CHARMS.

Talismans, and especially amulet-charms, are innumerable. There are special sorts for nearly every kind of disease, accident, or misfortune, and the eating of the paper on which a charm has been written is an ordinary form of combatting disease. The letters used in such cases are called *za-zig* or "Eatable letters," and are magic sentences printed or written on paper in what is called the "Fairy" character—an old form of Devanagari. But in other cases merely the washings of the reflection of the writing in a mirror constitutes the physic. Thus to cure the evil eye as shown by symptoms of mind wandering and demented condition—called "*byad-hgrol*"—it is ordered as follows:—Write with Chinese ink on a piece of wood the particular letters, and smear the writing over with myrobalams and saffron as varnish, and every 29 days reflect this inscribed wood in a mirror, and during reflection wash the face of the mirror with beer and collect a cupful of such beer and drink it in nine sips.

Every individual has always one or more of these charms, usually folded up into little cloth-covered packets tied around with coloured threads in geometrical pattern and worn around the neck. Others are kept in small metallic cases called "*ka-o*," fastened to the girdle or sash, and others are affixed overhead in the house or tent to ward off lightning, hail, &c., and for cattle special charms are read and sometimes pasted on the walls of the stalls, &c.

Most of these charms against accident, disease, and ill-fortune are in the form shown in PLATE XIII, which is called the *bLa-ma dgongs-hdus*, or "The Assembly of the Hearts of the Lāmas," as it is believed to contain the essence of the most powerful religious aphorisms. It consists of a series of concentric circles of spells surrounded by flames, amid which in the four corners are the symbols of (*a*) a *dorje* or thunderbolt's sceptre; (*b*) the precious trifold-jewel; (*c*) a lotus flower, and (*d*) a flaming dagger with a *dorje* hilt. And in the interior is an eight-petalled lotus-flower, each petal bearing mystic syllables, and in its centre is a circular space of about an inch in diameter, in which is

THE GENERAL CHARM PRINT  
ENTITLED "THE ASSEMBLY OF LAMA'S HEARTS".



most of them being quite new, and some of the more elaborate ones, which contained in their centre figures of the weapons charmed against, viz., swords, muskets, &c., had cost their wearers as much as twenty-five rupees apiece.

And for torturing one's enemy short of death there is the same popular practice as obtains amongst occidentals, namely, of making a little clay image of the enemy and thrusting pins into it.

### THE "PRAYER-FLAGS."

The most extensively used of all the so-called "prayer-flags," or *Dā-cho*,<sup>1</sup> is that for Luck, and called *Lung-ta*,<sup>2</sup> The *Luck-flags*. literally "the airy horse," which, Pegasus-like, is supposed to carry the luck of the individual through the air in every direction wished for. This practice has something in common with the ancient Hindu rite of "The raising of Indra's Banner" (*Dhwaja*),<sup>3</sup> and it seems to be like "the prayer-wheel," a mystic perversion of one of the earlier symbols of Buddhist mythology. In the Buddhist scriptures there constantly occurs the metaphor of "turning the Wheel of the Law" with reference to Buddha's preaching, and this figure of speech seems to have suggested to the lāmas, who are ever ready to symbolise trifles realistically, their materialistic invention of the prayer-wheel, whereby every individual may "turn the Wheel of the Law" conveniently. In like manner the "Airy Horse of Luck" seems to me to have its origin in the Jewel-Horse of the Universal Monarch, such as Buddha was to have been had he cared for worldly grandeur. The Jewel-Horse carries its rider, Pegasus-like, through the air in whatever direction wished for, and thus it seems to have become associated with the idea of realization of material wishes, and especially wealth and jewels. This horse also forms the *Vahan* or throne-support of the mythical Dhyani Buddha named *Ratna Sambhava*, or "the Jewel-born One," who is often represented symbolically by a jewel. And as evidence of this identity we find in many of the *Lung-ta* flags that the picture of a jewel takes the place of the horse which is not figured. It is also notable that the mythic people of the northern continent, over whom presides Kuvera, or Vaisravana, the God of *Wealth*, are "horse-faced." The flags are printed on the unglazed tough country paper, and are obtainable on purchase from the lāmas, but no lāma is necessarily needed for the actual planting of the flag and its attendant rites. When the *Lung-ta*-flag is expended it is said to be *dar-ba*.

<sup>1</sup> *Dar-ichog*.

<sup>2</sup> *rLung-rta*.

<sup>3</sup> And the votive pillars of the earlier Buddhists offered for railings to stupas were called *Dhwāja*.

These flags are of four sorts, viz.—

I. The *Lung-ta* proper (*vide* PLATE XVIII<sup>1</sup>), which is of almost square form, about 4 to 6 inches long, and contains in the centre the figure of a horse with the mystic jewel *Norbu* on its back. It is hung upon the ridges of the houses and in the vicinity of dwellings. The printed contents of this sort of flag vary somewhat in the order in which the deified lāmas are addressed, some giving the first place to Guru-Rinpochhe, while others give it to Manjusri, but all have the same general form, with the horse bearing the *Norbu* jewel in the centre and in the four corners the names of the tiger, lion, garuda, and dragon. A translation of one of these is here given:—

	“ Hail! <i>Wagishucari mum!</i> ( <i>i.e.</i> , yellow Manjusri’s spell). ”	
TIGER.	Hail! to the jewel in the lotus! Hung!	LION.
	( <i>i.e.</i> , Avalokita’s spell).	
	Hail! to the holder of the Dorje (or thunderbolt)! Hung!	( <i>i.e.</i> , Vajrapani’s spell).
	Hail! to Vajra-satwa (The Diamond Souled one!)	
	Hail! <i>Amarahnihdsiwantiye swahāh.</i>	
	(The above is in Sanskrit. Here follows in Tibetan.)	
	Here! Let the above entire collection (of deities whose spells have been given) prosper . . . . . (here is inserted the year of birth of the individual), and also prosper—	
	the <i>Body</i> ( <i>i.e.</i> , to save from sickness), the <i>Speech</i> ( <i>i.e.</i> , to give victory in disputations), and the <i>Mind</i> ( <i>i.e.</i> , to obtain all desires);	
GARUDA.	of this year holder (above specified)	DRAGON.
	and may Buddha’s doctrine prosper ! ”	

It is to be noted that herein are invoked through their spells the *Rigs-gsum mgönpo* or the three great spiritual protectors (*defensores fidei*) of lāmaism, viz.—

1. *Manjusri*, who conveys wisdom.
  2. *Avalokita*, who saves from hell and all fears.
  3. *Vajrapani*, who saves from accident and all bodily injuries,
- and in addition to the above are given the spells of—
4. *Vajra Satwa*, who purifies the soul from sin; and
  5. *Amitayus*, who confers long life.

<sup>1</sup> SCHLAGINTWEIT’s figure, in addition to being printed in reversed fashion, is so mutilated and indistinct that I give another illustration.

The magic of lāmaist Astrology is detailed in the following chapter on Demonolatry, as it is always associated with the prescription of demon worship.

#### VI.—DEMONOLATRY.

Like most mountaineers, the Sikhimites and Tibetans are thorough-going demon-worshippers. In every nook, path, big tree, rock, spring, waterfall, and lake there lurks a devil; hence there are few persons who will venture out alone after dark. The sky, the ground, the house, the field, the country, have each their special demons, and sickness is always due to malign demoniacal influence.

The body also of each individual is beset by a burden of spirits named the "lgo-wa-lha," or "the personal chief gods," who are in a sense the guardians of his body. Personal demons. These are not only worshipped by the laity, but the lāmas regularly invoke them in their oblations in the "Ser-khyem" and "Né-sal" worship. These personal gods, some of which are of an ancestral nature, are five in number, viz.—

1. *The Male Ancestral god* (Phô-lha). This god sits under the armpits. Worship of him procures long life and preservation from harm.
2. *The Mother-god* (mo-lha) or maternal uncle god (*zhung-lha*). It is said to obtain the latter synonym on account of the custom by which a child, shortly after birth, is taken to the mother's house, which usually is "the uncle's house." I doubt, however, this being the true maternal interpretation.<sup>1</sup> The worship of this god secures strength.
3. *The Life god* (Srog-lha), which resides over the heart. Instead of this god is frequently enumerated the *Nor-lha*, who sits in the left armpit and whose worship brings wealth.

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<sup>1</sup> Zhang-lha is usually interpreted "maternal uncle god," but it may also mean "uterine god."

First of all prepare offerings of blood, milk, curdled milk, tea, beer, and clean water, which must be arranged properly, and the *māntras* or spells of "The Vast Sky-like Treasury" or *Om-ā hung-bajra-sparnakham* must be repeated. Then chant:—

The Prayer. "I beg you O! all guardians and evil spirits (of the under-noted places) to attend to this invitation, *viz.*, the dwellers of the vast extending ocean of the Upper-Ngari khorsum (*stöd-mngah-ri-skor-gsum*), the Intermediate, Central West-ern—the four divisions of Tibet (*bar-ābus gtsang-ru-bzhi*), Amdo Kham and Gango of Eastern Tibet and Bhotan (*smad-mdo-kham-s-gsang-drug*),<sup>1</sup> India (the white plain), China (the black plain), Li-bal<sup>2</sup> Mongolia (the yellow plain), Upper and Lower Turkistan, and all the kingdom of this continent (*hjsambu-gling*), the other three great continents and the eight islands (*vide* Chart of Lāmaic Universe, page 320), and also the spirits of all retired nooks, deserts, rocky places, caves, cemetery, fire-hearths, fortresses, streams, oceans, ponds, fountains, forests, roads, empty and uninhabited places, farms and other important places; and also those who always attend the congregation of priests, parties of women, festivals of births, singing parties and the learners of arts, and also all the dwellers from the highest to the lowest regions of hell.

"I beg you, O! ye guardians of the different kinds of *rgyüd*, to attend this invitation.

"I beg you, O! Pho-hla, mo-lha, zhang-lha, srog-lha, and yul-lha, to attend this invitation.

"I beg you, O! *dgra-lha* of noble and ancient generations, to attend this invitation.

"I beg you, O! all ye gods of the white party who give refuge, to attend this invitation.

"I beg you, O! all ye demons of the black party who are averse to the true path, to attend this invitation.

"I beg you, O! all ye goblins and demons from the highest order to the lowest, counting from *btsan* down to *shin-hdre* (life-taking demon), *gsön-hdre* (the demon-eater of living animals), and all the inferior classes of divinities, to attend this invitation; *viz.*, *lha* (gods), *nāga*, *bdüd*, *btsan*, *yamantaka* (*gshin-rje*), *mamo*, *gzah* (plants), *rgyal-po dMu*, the-u-rang, *sa-bdag*, *gnyan*, *srin-po* and the injurers of all the regions.

<sup>1</sup> *i. e.*, the Lower Dö (or Amdö), Kham, and "The Six Ridges"—provinces of Eastern Tibet.

<sup>2</sup> *Li-yul* or Khoten, and *Pal-yul* or Nepal.

“O! I give to you all these offerings of red blood, of sweet tea, of clean water, of intoxicating drink, and of white butter. I make these offerings to you all. Pray accept them:

Those who prefer beer, please take beer!

”	”	tea	”	”	tea!
”	”	blood	”	”	blood!
”	”	water	”	”	water!
”	”	milk	”	”	milk!

Pray accept these food offerings and do us no further injury!

Pray do not injure the human beings of the upper regions!

”	”	lower animals of the lower regions!
”	”	crops of the fields!
”	”	moisture of the plants!
”	”	essence of wealth!
”	”	good qualities of the kingdom!
”	”	wealth and riches!
”	”	good repute and influence!
”	”	life and soul!
”	”	breath and prosperity!

O! may we all be possessed of perfect minds!

O! may we all be happy and useful to each other!

O! may we all obtain the highest power of Tathagatas!

O! may we all obtain the sphere of piety, and having obtained it, may all our wishes be fulfilled and reach the supreme end!

*Bajra mu!* Now I beg you all to depart to your respective dwellings!

“Let Glory come!” “*Tashi shok!*”

“Virtue!” “*dGe-o!*”

#### EXORCISING THE DISEASE-PRODUCING DEMONS—THE “SHE.”

The demons who produce disease, short of actual death, are called *gshed* (pronounced *she*). These are exorcised by an elaborate ceremony in which a variety of images and offerings are made. And the officiating lama invoking his tutelary demon thereby assumes spiritually the dread guise of his favourite demon, and orders out the disease-demon under threat of being himself eaten up by the awful tutelary demon which now possesses the lama.

The directions for this exorcism are the following:—

On the five terraces of the magic circle of Rirab (*vide* Mandala or Magic Circle, page 320) make the image of a yellow frog with a nam-kha, having its belly and face yellow, and on the east, a two-headed figure with

The offerings, and effigies.

This paper, on the conclusion of the full series of services, is ceremoniously burned in the flame of a butter-lamp, and the spirit is thus given its final *congé*. And according to the colour and quality of the flame and mode of burning is determined the fate of the spirit of deceased. This process usually discovers the necessity for further courses of worship.

The directions for noting and interpreting the signs of this burning paper are contained in a small pamphlet which I here translate, entitled :—

*“The mode of DIVINING the signs of THE FLAMES during the Burning of the ‘Chang’ paper.”*

“Salutation to ‘Chhe-mchhog, Heruka,’ or ‘The most Supreme Heruka!’ The marking of the five colours of the flames is as follows:—

“If the flames be white and shining, then he has become perfect and is born in the highest region of Ok-min (*i.e.*, Divination by the fire. The Supreme).

“If the flames be white and burn actively with round tops, then he has become pious and is born in the Eastern ‘mngön-dgah,’ or ‘The Paradise of Real Happiness.’

“If they burn in an expanded form, resembling a lotus (*padma*), then he has finished his highest deeds and has become religious.

“If they be yellow in colour and burn in the shape of ‘rgyal-mtshan,’ or ‘Banner of Victory,’ then he has become religious nobly.

“If they be red in colour and in form like a lotus, then he has become religious and is born in *bde-wa-chan*, or ‘The Paradise of Happiness.’

“If they be yellow in colour and burn actively with great masses of smoke, then he is born in the region of the lower animals, for counteracting which a *gtsug-lag-khang*, or ‘An Academy,’ and an image of the powerful and able Dhyāni Buddha (*snang-par-snang-ndsad*) should be made; then he will be born as a chief in the middle country (*i.e.*, The Buddhist Holy Land in India).

“If the fire burns with masses of dense smoke, then he has gone to hell, for counteracting which, images of Vajra . . . (Dorje-rnam-hjoms) and Vajra-pani should be made; then he will be born as a second daughter of a wealthy parent near his own country, and after his death in that existence he will be born in the fairy land.

“If the fire burns fiercely, with great noise and crackling, then he will be born in hell, for preventing which, images of Mi-khug-pa and Vajra-Satwa and Avālokita should be made, and ‘the hell

The main objective of reprinting "The Gazetteer of Sikkim" is to familiarise the people of the world with the ancient History of the tiny mountain 'Kingdom' of Sikkim during the British period. Mr. H H Risley in the introduction has ventured to trace the development of the Ancient History of the country. In addition to this, he has also provided a valuable and interesting information about the geographical position of the country along with the History of its rulers.

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