CHAPTER I.

ZOOLOGY (Vertebrata).

CONTENTS.


The fauna of Kumaun is as varied as its flora, but up to the present, with the exception of the mammalia, birds, fishes, and butterflies, it has not received the attention to which its interesting character and position entitle it. The materials for the two following chapters were collected with a view to give an account of the fauna of the North-Western Provinces, and the portion comprising the mammals and birds of the plains has already appeared in the third volume of the Gazetteer. We shall here confine ourselves to the mammals, birds, reptiles, and fishes of the hills. For the remaining orders it has not been possible (except in the case of butterflies) to separate the species common to the hills and plains from those only found in the hills and those only found in the plains, or indeed to distinguish clearly between the species proper to upper India and those found in other parts of India. This difficulty arises chiefly from the careless notation of locality adopted by the older writers on natural history, who were the first to describe many species, and whose names therefore stand to the present day and cannot be ignored. The word 'India' or 'India-orientales' attached as the locality to the descriptions of species, up to very recent
times, comprises widely different places. From indications it would appear to include in some instances the Phillipine islands, the islands of the Malay archipelago and other countries which the writer placed without specification in his ideal Indian region. In the same manner the words 'North-India' and 'North-Bengal' sometimes mean Assam and sometimes the North-Western Provinces and the Panjab, so that to rediscover these species and assign them to their proper localities remains one of the objects which the present generation of observers should place before themselves. In the words of Wallace¹:—"It is admitted that a knowledge of the exact area occupied by a species or a group is a real portion of its natural history, of as much importance as its habits, its structure or its affinities; and that we can never arrive at any trustworthy conclusions as to how the present state of the organic world was brought about, until we have ascertained with some accuracy the general laws of the distribution of living things over the earth's surface." Mr. W. Blanford has divided India into a series of provinces which would suit our purpose with the addition of the precise locality. They are (1) the Panjab province or sub-region, including the Panjab, Sind, Kachh and western Bajputána: (2) the Indian province, including the rest of the Peninsula and northern Ceylon, except the Malabar and Eastern-Bengal province: (3) the Malabar province, comprising the low country on the west coast of India from Cape Comorin to a little north of Bombay and the range of hills along the same coast as far north possibly as the Tápti river and also the hill tracts of southern Ceylon: (4) the Assam (Eastern-Bengal) province, limited by a line drawn northwards from the head of the bay of Bengal. The Indian province is further divided into sub-provinces:—(1) the Gangetic sub-province or Hindustán extending south as far as the Narmada, and in its eastern portion comprising only the valley of the Son and that of the Ganges as far as Benares: (2) the Deccan sub-province stretching from the Narmada to the Krishna; bounded on the east by a line drawn north and south a little east of Nagpur, and on the west by a line drawn a little east of the crest of the Western Gháts or Sahyádri range: (3) the Bengal sub-province, bounded on the west by the preceding and extending as far south as the Godávari: (4) the Madras sub-

¹ Island life, p. 12.
province includes the remainder of southern India and the plains of northern Ceylon. An insect caught at Allahabad should be labelled "Hind. (All'd.)," by which the province and precise locality is at once distinguished. We need hardly remark that the geographical distribution of animals is one of the most interesting branches of natural history and one that leads indirectly to results bearing on the most important biological questions of the day.

In the following pages, with the exception of the birds and butterflies, the lists do not pretend to be exhaustive or to be in all cases quite up to the most recent and approved systematic arrangement. With the small leisure and the smaller materials for reference at my command it would be hopeless to attempt completeness. The lists of the Arachnida and Insecta are compiled from my note-books and include the jottings-down of many years. Where the word 'India' has been given as the locality from which a recorded species was received, no mention of the locality is given in the lists; but where any part of India is distinctly indicated, it is noted in brackets. Many of these localities may have been given in error, but for this the list is not responsible. The references at the foot of each section include the authorities from which many of the names of Indian species have been taken, and a short notice under each order will give a very general idea of the animals belonging to it and the sources of my information. It is with much reluctance that these imperfect notes are submitted in their present form, but the knowledge that opportunity for revision and completion will probably never occur and that they are the only ones of their kind yet available has wrung an unwilling consent to their publication, in the hope that

1 The following abbreviations have been used:

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Meaning</th>
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<tbody>
<tr>
<td>As.</td>
<td>Assam, including Silhat, Kachar, Sikkim, Naga hills.</td>
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<tr>
<td>Bga.</td>
<td>Bengal: evidently used in a broad sense.</td>
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<td>Bmb.</td>
<td>Bombay: includes the presidency.</td>
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<td>Cal.</td>
<td>Calcutta.</td>
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<td>Cen. In</td>
<td>Central India: used loosely.</td>
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<tr>
<td>Dec.</td>
<td>Deccan, especially Puna.</td>
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<tr>
<td>Him.</td>
<td>Himalaya.</td>
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<tr>
<td>Ind.</td>
<td>All India: used where the insect is recorded from Mad., Bga., B</td>
</tr>
<tr>
<td>Mad.</td>
<td>Madras: includes Carnatic, Coromandel coast.</td>
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<tr>
<td>Mal.</td>
<td>Malabar.</td>
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<td>Mus.</td>
<td>Muscoor.</td>
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<tr>
<td>N. I.</td>
<td>North India: either Hindustan or Asam.</td>
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<tr>
<td>N. B.</td>
<td>North Bengal: chiefly N.-W. Provinces and Oudh.</td>
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<tr>
<td>N. G.</td>
<td>Nigiris, in Madras.</td>
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<tr>
<td>Panj.</td>
<td>Panjab.</td>
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they may induce others with more time and better materials to give us a complete history of the lesser forms of animal life in India.

Mammalia.

So much has been written about the mammals of India that in the present list of the principal species that are found in Kumaun, a reference to Jerdon or some other authority is alone made, which with the notes on the papers of Hodgson and others at the end of the section will sufficiently indicate the sources of more precise information. For the local notes on the Mammalia I am indebted to Mr. G. Greig, Conservator of Forests, who has kindly placed the results of some fifteen years' observation of the wild animals of these hills in my hands.

Simiæ—Monkeys.


Large herds of this handsome monkey are commonly to be met with throughout the wooded portions of the hills, from the dense jungles of the submontane tract up to the oak and fir forests at 12,000 feet above the level of the sea. The langur feeds on wild-fruits and flowers and on the buds and young leaves of many trees and plants, but acorns form its chief food from August to February, and during those months it is found in all the great oak forests. Potatoes, when procurable, are greedily eaten, but it seldom attacks other cultivated crops. It may, however, occasionally be seen stealing into a garden to feed on the buds and tender leaves of the rose. The langur is very common about Naini Tal and Mussooree and in the mixed forests of the Bhábar, where it often falls a prey to the stealthy leopard that lies in wait for it at the foot of a tree. It is probable that the species which frequents the forests of the sub-montane tract in the cold season migrates to the outer range in summer, but it does not go far into the interior, and the species that is found to the north of the outer range of hills appears to be permanently resident there and is found there at all seasons of the year. It is a curious fact that the deer known as simbar, chital, and gurul are frequently seen near a herd of langur. The two former may keep near the monkeys for the sake of the fruit that is shaken from the trees, but the gurul cannot have such an object in view as
it does not eat fruit. He may, however, desire the society of the langur for protection, since there is no animal more quick of hearing. The langur is frequently the first to give notice of the approach of a leopard or tiger. In evidence of the friendly feeling that exists between these monkeys and the deer tribe it may be worth recording that a herd of chital has been seen feeding under a tree, whilst the langur, hanging from the branches, playfully touched the backs of the deer with their fore-hands. Langurs are easily tamed and differ from the Bengal monkey in not being mischievous or vicious. One had the run of a vegetable garden and used to feed on the peas without doing any further damage, finishing one pod before taking another. He was very amiable and indolent, resting on a branch all day after his meals until he got hungry again. He was never angry with anyone or anything and never appeared to imagine that dogs or men could attempt to do him any harm. The Himalayan langur is easily distinguished from the Bengal langur (P. entellus) by its hands being concolorous with its body and by its loud grunting note of alarm, whilst the hands of the latter are jet black and its voice is more of a deep bass mournful bellow.


This is the common red-faced and red-callosited monkey found all over these provinces and extending in the Himalaya up to 7,000 feet. It feeds on many sorts of grain, fruits, flowers, buds and leaves and even insects, such as locusts and grasshoppers. The herds generally establish themselves on a steep bank in a mango-grove near a village or in forest or precipitous ground near outlying cultivation, whence they emerge when unobserved and do immense damage to cultivated crops. They are mischievous, treacherous and dirty in their habits and do not form desirable pets.

Inuous Pelops, Forsfield—Hill monkey. Jerdon, 11.

Major Hutton obtained this monkey from the interior of the Mussooree hills, where it replaces I. Rhesus at high elevations, but the difference between the two species is not well established.
HIIMÁLAYAN DISTRICTS

CHIROPTERA.


This species is common throughout the Tarái and feeds on fruits, wild and cultivated.


Common throughout all India, feeding on fruits, wild and cultivated.


Procured from Mussooree, Nepál, Darjiling.


Procured from Mussooree.


Procured from Mussooree and Central Nepál.


Common about Mussooree, procured at Darjiling.


Procured at Mussooree.


Procured at Mussooree.


Procured from Nepál and Mussooree, but rare.


Procured from Mussooree, Nepál, Darjiling.
Procured from Dehra Dún.

Procured in Dehra Dún and near Púna.

Phyllorhina bicolor, Tem. Dobson, 70.
Procured in Dehra Dún.

Phyllorhina fulva, Gray. Dobson, 72.
Procured at Hardwár.


Not uncommon in the submontane tract. Blyth has shown that this species sucks the blood from other bats. Attaching itself firmly behind the ear it sucks the blood during flight and when its victim falls exhausted, devours it.

Plecotus auritus, Linn.; P. homochrous and darjilingensis, Hodgs.—Long-eared bat. Jerdon, 47; Hodgson, l.c., XVI., 894; Dobson, 84.

Same as the European species; found throughout the hills, Simla, Mussoorie.

Vesperugo noctula, Schreb.; Vespertilio labiata, Hodgson. Jerdon, 86; Hodgson, l.c., IV., 700; Dobson, 89.

Procured from the central region of Nepál.


Procured beyond Mussoorie, rare.


Common in the valleys beyond Mussoorie.


Found all over India and reported from Dehra Dún and the Taráí.
Vespertilio mystacinus, Leis. Dobson, 133.
Found throughout the Himalaya.

Vespertilio murinus, Schreb. Dobson, 137.
Found throughout the north-west Himalaya.

Found in Chamba and Mussoorie.

Vespertilio nipalensis, Dobson. Mon., 141.
Procured from Nepal.

Found in Mussoorie.

Found in the north-west Himalaya and Tibet.


This beautiful yellow bat has been procured from Sikkim, Nepal, and the Himalaya, also from Central India.

Talpidae.

Procured from Darjiling, Nepal, and Kumaun.

Talpa macrura, Hodg.—Long-tailed mole. Jerdon, 51 ; Hodgson, J. A. S., Ben., XXVII., 176.
Procured from Sikkim, doubtful in Kumaun.

Soricidae.

Common throughout the hills and plains, procured at Naini Tal, Almora and Mussoorie, possibly imported in baggage.

Sorex Tytleri, Blyth—Dehra shrew. Jerdon, 56.
Procured from Dehra Dun.

Procured from Sikkim, Darjiling, Nepal, and Mussoorie.
Crocidura pygmaea, And.; Sorex microrynix, Blyth—Small-clawed pigmy shrew. Jerdon, 58; Blyth, J. A. S., Ben., XXIV., 33; Anderson, Ibid., XLVI., ii., 279.

Procured from Kumaun and Mussoorie.


Doubtfully in Dehra Dūn: for synonymy of the Indian hedge-hogs see Anderson in J. A. S., Ben., XLVII., ii., 195.

URSIDÆ.


This is the red, gray, or silver or snow bear of sportsmen. It is found in Dārma and Byāns, but, strange to say, it has not been distinctly noticed between the Pindar and Trijogi-Nārāyān on the ridge separating the Mandākini from the Bhilang. To the west it occurs throughout native Garhwāl and Bisahr to Kashmir and across the passes in Tibet. As a rule it seeks the upper ranges, living along or above the upper limit of forest far away from the haunts of man and feeds on roots, weeds, grasses and even insects, lizards and snakes. It trusts almost entirely to its sense of smell to detect the presence of an enemy, and with a favourable wind will distinguish a man fully a quarter of a mile off. Its powers of sight are, however, so weak that it is one of the easiest of the larger animals to stalk and shoot. In one case, the wind being favourable, a sportsman was able to creep up to within fifteen feet of a brown bear that was feeding on a slope without alarming it. In some places this bear visits the maize plantations and the orchards, and in many places solitary males take to sheep-stealing and commit great havoc amongst the mountain flocks. Owing to the formation of its claws, it is a bad climber and seldom mounts a tree. As a rule, the brown bear is a timid animal and disinclined to fight, but instances are not wanting in which it has shown considerable determination and courage. It hibernates from December to March, retiring to a hollow in the rocks or under the roots of a large tree. The fat that has accumulated in the summer is all absorbed during the long sleep, and in April the bear awakes thin and ragged, the stomach quite empty and the fur full of scurf. The brown bear
pairs about August, and the young ones, generally two, are produced in April or May. It is very partial to raw flesh and readily eats one of its own kind when the skin has been removed, as well as the carrion of cows that have died from disease or accident. See note on Horsfield's description in Cal. J. N. H., III., 268.

Ursus tibetanus, Cuv.: torquatus, Schinz.—Himalayan black bear—Richh. thēlu. Jerdon, 70.

This bear is very commonly met with all through the hills from the Tons to the Sárda and from the upper limits of vegetation down to as low as 3,000 feet. It has been procured at Gorighát on the Ganges about eight miles above Hardwár, but is, however, seldom seen in the lower hills except during winter. It climbs trees far better than the brown bear and frequently mounts them to plunder the combs of the honey-bee. The black bear is very destructive to such crops as maize, mandua, buckwheat and gourds. It is also exceedingly fond of fruit, such as apricots, peaches, apples and walnuts, and occasionally grazes on green wheat and barley when they are young and succulent and before the ear has formed. At times, when cultivated fodder is not procurable, it feeds on acorns, the young shoots of the singál (hill bambu) and other jungle fruits, roots and grasses. Both the black and the brown bear devour beetles, grasshoppers and locusts and eat flesh both fresh and putrid. Occasionally one takes to killing and eating sheep, but an old resident well acquainted with these hills declares that in his experience he has only known of one case in which a black bear had become a confirmed sheep-stealer. This was a very large old male covered with scars and bearing the marks of three bullet wounds. He injured neither for men nor dogs and died fighting bravely to the last. The black bears of the upper ranges hibernate, but those of the lower hills do not. They show more fight than the brown bear and many villagers are mauled by them every year. As a rule, the black bear will never touch a man if the man shows a bold front, but if he is come upon suddenly and at close quarters and the man turns to run, the courage of the bear rises to the occasion and he follows the man and claws him on the head and face.

The bear usually charges on all fours at a gallop like a great dog, with its mouth open and emitting a loud angry grunt at almost
every stride. Those that live in the upper ranges produce their cubs, usually two at a time, in April-May, but those frequenting the lower ranges are not so regular in their habits. All make their dens in naturally-formed caves, and to these the female retires during the period of gestation and old and young seek a refuge in them when pursued. The black bear has almost if not quite as inferior a sense of sight as the brown bear and an equally keen sense of smell. It is more intelligent and can easily be tamed, but, strange to say, if noosed by the foot in a trap and unable to break away by force, it never attempts to sever the rope or sapling to which the gin is attached and remains a prisoner until it dies or is killed. This fact is vouched for by a well-known sportsman. Black bears are sometimes killed by tigers, and specimens have been procured which bore unmistakeably the marks of a tiger's claws and teeth. It is doubtful whether *Ailurus fulgens*, Cuv., the red cat bear, the swick of Nepal and *bhsuna rich* of the west, occurs in these provinces. It has been procured in Nepal and may be easily recognised from the deep ochreous red colour of the head, and its face, chin and ears within being white. It is reported as having been found to the west and east of our limits and may possibly occur within them. See Jerdon, 74: Hodgson in J. A. S., Ben., VI., 560.


This bear hardly bears out its English appellation, for it can run fairly fast and is not of slothful habits. It is found all through the sal forests of the lower hills and in the Taráí, where it is frequently met with in swampy ground and marshes and is much feared by elephants. Its principal food is ants, beetles, grasshoppers, fruits, roots, and honey, and it probably also consumes frogs, fish and flesh when it can lay hold of them. Its powers of suction and propelling wind from its mouth are remarkable. With its powerful claws it scrapes a large hole at the base of a white-ant's nest, then blows away the dust and sucks out the larva. It is especially fond of the fruit of the mahua, jáman, and *D. Melanoxylon*. The young are produced at various times, but usually about December to January, and in March they are able to accompany their mother in her travels. They are easily tamed and become quite tractable. See Tickell's paper, Cal. J. N. H., I., 199.
MELLIDÆ.


This species is not uncommon in the submontane tract and lower outer hills. Specimens have been procured at Ránnagar and in the Páti Dún. It feeds on rats, mice, birds, frogs and insects, and is often very destructive to poultry. It probably also feeds on honey when procurable.

MUSTELIDÆ.

*Martes flavigula*, Bodd.; *Hardwickei*, Horsf.—Black-capped marten—*Chitrola, titarola*. Jerdon, 82.

This very common animal is very destructive to game in Kumaun and occurs almost from the southern boundary up to the limits of vegetation. It is on the move all hours of the day and generally hunts in pairs, though as many as ten have been seen hunting together at the same time. It is a very fair runner on the ground and as active as a squirrel in trees and is perhaps the boldest of all the minor carnivora. Some dogs chased a pair and caught one whilst the other took refuge in a tree; although the owner of the dog was standing by encouraging them to kill the one that had been caught, the other came down from the tree and vigorously attacking the dogs perished in defence of its companion. Natives say that martens kill small deer and they are certainly very destructive to poultry. They travel great distances and are constantly changing their ground, so that it is difficult to meet with them.


This small animal frequents the walls of terraces and houses that have been built of dry masonry, but is nowhere common.


Said to occur in eastern Kumaun.

*Mustela Erminra*—Stoat, ermine.

Specimens have been procured from Jaunsár and Bisahr and it is common in Lahtál, Spiti, and Tibet. Jerdon, 84.

This otter is found throughout the Tarāi and in all the larger streams along the foot of the hills, ascending the rivers to thirty miles and perhaps more. It is difficult to determine where it gives place to the hill otter. It usually hunts in parties of five or six, though as many as twelve have been seen together in the Rāmganga in the Pātli Dūn and twenty in the Sūswa in Dehra Dūn. The skin must be ‘plucked’ before becoming the beautiful otter fur so popular for the trimming of ladies’ dresses. It is better to pluck the skin before it is taken off, an operation which can usually be done by relays of men in about six hours, as the long hairs come out very easily, leaving the under fur exposed. The fur of the Indian otter is very good, though somewhat inferior in texture to that of the European species. It is in great request with the Tibetans and Bhotiyas, who use it as ear lappets for their caps.


It is not clear whether this otter occurs in the Kumaun Himalayas. It is the common otter of Europe, and, so far as is known, is restricted to the interior of the Himalayas.


This small otter is of an earthy brown or chestnut-brown above and has been procured in the Sārda at Barmdeo, above the junction of the Alaknanda and Pindar near Karnprayāg, in the Nandākini above Nandprayāg and in the Bhilang. The claws are very minute, and hence its English name. Otters are easily tamed and become very much attached to their owners.

Felidae.

Felis Tigris, Linn.—Tiger—Sher, shu, bāgh. Jerdon, 92.

The tiger is found from the Tarāi up to 10-11,000 feet and is believed occasionally to cross the passes into Tibet. Those which are found on the outer ranges doubtless migrate to the Bhabar and Tarāi, but those found in the interior never leave the hills. They are quite different in appearance, being more bulky, with longer and
more furry hair and shorter and thicker tails. Twenty years ago tigers were very numerous in the Bhábar, the Taráí and the hills, but owing to the extension of cultivation, the increase of population and the greater use of arms of precision, their numbers have considerably diminished. The hill tiger is a quarrelsome animal and often attacks one of its own species that trespasses on its domain. In 1870 a dead tiger was brought into camp that had apparently been killed by another tiger, and about three years ago an officer found a very old male tiger in the Jaunsár hills that had been killed and partially eaten by another tiger. The tiger does not confine itself to animals killed by it in the chase. It has been known to eat the putrid carcase of a buffalo that had died by accident, and in the hills the common bait for the dead-fall trap is a dead sheep or goat. The pairing time is from December to January, when the males may be heard making their peculiar sighing-bellowing noise to attract the females. The females appear to breed every second or third year, producing, generally in the cold weather, from two to five and sometimes six cubs at a birth. It is very rarely, however, that more than three survive, and generally there are only two and often only one. The largest skins have been procured from the Bháginirathí valley and one over 9'9" from the nose to the tip of the tail in Jaunsár. Several over ten feet have been obtained in the Taráí. Tigers always kill large animals, such as a full-grown buffalo or bullock, by seizing the throat from below; but with smaller animals, such as sheep, deer and man, they usually grip from above and break the neck. It will be useful here to summarise the information that we possess regarding the statistics of deaths from the attacks of wild animals. These, though now some sixty per cent. less than they were thirty years ago, are still sufficiently numerous to place the hill-districts of these provinces at the head of the list both for deaths of human beings from tigers, leopards and bears and for the numbers of these animals destroyed in order to claim the rewards. In the earlier years of British rule Katýúr and Gangoli were almost deserted on account of the presence of numerous "man-eating" tigers. As late as 1848, Mr. Batten, writing of Gangoli, describes Pattis Bel, Athagaon and Kamsyár as excessively jungly and harassed by tigers:— "In some of the tracts near the rivers notorious ‘man-eaters’ are hardly ever absent and at times the
loss of human life is considerable.' In the Bhábar, as at present, tigers were numerous. Pargana Chandpur and the Páthli Dún in Garhwal\(^1\) as well as the whole of the Tarái district long held an unenviable notoriety as well for the insalubrity of their climate as for the number of tigers that they harboured. In the twenty years between January, 1860, and January, 1880, the records of the Kumaun district show that 692 persons were killed by wild-beasts or snakes, without reckoning those where the cause of death was not ascertained or not reported, which may safely be estimated at one-fourth more. Fifty human lives are thus lost every year in the Kumaun district alone. During the same period, in the same district, 624 tigers, 2,718 leopards, 4,666 bears and 27 wild-dogs were destroyed and rewards were paid for their capture amounting to Rs. 30,812. This return does not give the entire number of these wild animals killed, as in many cases the reward is not claimed or the skin gets spoiled before it can be taken in or the animal perishes in some place where it is not possible to follow it and obtain evidence of its death. From a return of inquests held in Garhwal between 1850 and 1863, the number of deaths from the attacks of wild animals was recorded at 276 during that period, and Rs. 13,784 were paid as rewards for the destruction of 91 tigers, 1,300 leopards and 2,602 bears. Taking the decade 1870-79, the returns show that 211 persons (123 males) were killed by wild animals and Rs. 9,317 were paid as rewards for destroying 62 tigers, 905 leopards and 1,740 bears. A similar series of returns for the Tarái district show that between 1867 and 1869 the mortality from the attacks of wild animals amounted to 54. Between 1871 and 1879, the deaths of 289 persons (157 males) were recorded and Rs. 357 were disbursed in rewards for the destruction of 43 tigers, 43 leopards and 4 bears. In many cases, however, the reward was not claimed, and the returns must be considered as only approximate. The statistics of the Dehra Dún district for the years 1875-79 show the deaths from the attacks of wild animals to be 34, the majority of which were caused by wild elephants. During the same

\(^{1}\) Mr. Traill writes thus of Nágpur in Garhwal (30th June, 1815):—"While the rest of Kumaun everywhere exhibits an astonishing increase of cultivation, this pargana remains a solitary instance of non-improvement; the causes of this are to be found in the ravages annually committed thereon by tigers, a circumstance which, while it prompts the desertion of existing villages, prevents the occupation of new. The tigers in this province are formidable rather from the nature of the country than from their numbers."
five years Rs. 647 were disbursed on account of the destruction of 30 tigers, 53 leopards, 25 bears and 4 wolves. In the appendix will be found a detailed account of the number of persons killed and animals destroyed in each district for five years. This return is avowedly imperfect, as it only includes the deaths reported to the authorities and the animals killed for which rewards have been claimed.


It is still a matter of discussion whether there are two distinct species of leopards, for it is difficult to believe that the insignificant cat-like, round-headed little animal of from 5'-6' in length is the same as the powerful, handsome panther measuring 7½'-8' and almost as bulky as a small tigress. A specimen 7'9" long took the united efforts of three strong men to place it on an elephant. In the hills, at least, the larger variety does not appear to be slighter in build than the smaller, still there is some ground for the statement that the larger variety is the more slender even there. A specimen procured in the Pátli Dún appeared to be a very different form from that observed in the western Himálaya. It was taller than the ordinary leopard, very slightly built, had a rather long head and was very savage. It is, however, very uncommon. The ordinary leopard, both the large and the small variety, is very common all over the hills and in parts very destructive. The natives kill a great number in dead-fall traps baited with a dead sheep, goat or dog. In western Garh 4l they use a trap that catches the leopard alive and which is much better in every way, as there is no fear of killing dogs in it, and a live bait is used which is quite safe from the leopard. This trap consists of a narrow passage built with big stones with a rough frame-work of wood at the entrance, in which is fitted a sliding bar to serve as a door. At the other end of the trap is a small space for the kid or puppy; and this is partitioned off by a stone slab with holes bored in it. The sliding bar is raised and then the trap is set in exactly the same manner as the dead-fall trap. The leopard creeps in to attack the bait, the door falls down behind him, and he is at once secured in such a cramped position that he is unable to exert his strength in trying to get free and remains there until the trapper kills him. The leopard is particularly fond of dogs and has been known to carry
them off in broad daylight from houses in Naini Táí and Almora and in the evening from the public roads in presence of the owners.


The snow-leopard is nowhere common to the south of the snowy range, but there are generally one or two on all hills where the blue sheep (*Ovis Nahruru*) are found. As a rule they do not frequent the wooded parts of the hills, though a female and two cubs were procured in the forest near Jhála in the Bhágirathi valley. The ounce feeds on the blue-sheep, musk-deer and other animals found near its haunts, and it will kill domestic sheep and goats if it finds the opportunity for catching a stray one. It is a very timid animal and in these hills does not appear to carry off dogs. The fur is of a pale-yellowish ground with dark gray marks all over the body except on the stomach which is pure white. The skin is rare and valuable.


A fine specimen of this powerful cat was procured at the foot of the hills in western Garhwlá, but it is very rare.

**Félias bengalensis**, Desm.; *nipalensis* and *pardichrous*, Hodg.—Leopard cat—*Baghera-billi*. Jerdon, 105.

This very handsome cat is found all over these hills at elevations 6-11,000 feet up to the limits of forest. It does not appear to frequent the lower ranges or the jungles of the submontane tract. Its principal food is rats and mice, but it is also very destructive to young birds of all kinds, particularly to young pheasants. It is a good climber and always seeks a tree when pursued by dogs. The markings seem to vary with the locality and its altitude and differ much in specimens from the same district. It is doubtful whether *F. aurata*, Tem. (*F. moormensis*, Hodg.), the bay cat (Jerdon, 107), occurs west of the Káli.

**Félias Chaus**, Guld.; *affinis*, Gray; *Lynchus erythrotis*, Hodg.; *Chaus lybicus*, Gray—Common jungle-cat—*Ban-billi*—Jerdon, 111,
and Blyth’s note on wild types of the domestic cat. J. A. S., Ben., XXV., 489.

This cat is very common in the forests of the submontane tract and in the hills of the lower range up to 6,000 feet. It lives in grass or high crops, such as sugarcane, maize, and the millets, and feeds on rats, mice, birds, and leverets. It produces its young above ground in thick cover and does not frequent caves or holes. It breeds twice a year, producing two or three young at a birth. A kitten of this species grew up to be a very tame and affectionate pet. When first secured it was kept alive by forcing goat’s milk down its throat with a spoon and afterwards a few bits of cooked meat were placed on a saucer with the milk, and it would then take a bit of the meat in its mouth and suck the milk through the meat. It never attempted to lap like the young of the domestic cat. There is a black species unnoticed by Jerdon, not uncommon in the forests of the submontane tract below Garhwál. At a distance of 15-20 paces it looks quite black, but on closer inspection its colour is blackish brown with indistinct dark spots, the tips of the hairs being black. It is about the size of the common jungle cat and a true Felis in regard to its rounded head, short and strong jaws, cutting teeth, powerful limbs, and retracted claws. Mr. Greig has seen four specimens and is in possession of the skins of two.


The red lynx has been found in the Dehra Dún and probably exists in the forests below the Garhwál and Kumaun hills, which are of a character similar to those of the Dehra Dún and are only separated from them by the Ganges.

_Viverridae._

_Hyaena striata_, Zim.—Hyaena—Bhagiár, laka-r-bágh. Jerdon, 118.

The hyæna is common in the submontane tract, but it seldom enters these hills. Below the hills it frequents broken, raviny ground where there is plenty of cover, sometimes in forest and sometimes in thorny jungle, and sandy watercourses where there is plenty of long grass. It is a skulking cowardly animal and never shows fight, even when wounded, if it has strength left to crawl away. It is said to be very partial to donkeys and dogs and
will kill domestic sheep and goats if it comes across stray ones, but its principal food is carrion and old bones. It is almost quite nocturnal in its habits, leaving its lair at dusk and returning before break of day. In the Panjáb, it is found in the hills at Sabáthu, Dageštái, and Kasauli.

**Viverra Zibetha**, Linn.; *V. orientalis, melanurus* and *civettoides*, Hodg.—Large civet-cat.

This civet yields the drug of that name and is said to occur in the Tarái and hills. See Hodgson’s description, Cal. J. N. H., II., 47, 61; Jerdon, 120.


This civet-cat is very common in the scrub jungle all along the submontane tract, but it seldom enters the hills. It is generally found in the thorny thickets of the jujube (*ber*) or in grass jungle or sandy ground where rats are numerous. It has an exceedingly strong scent, and dogs are very fond of hunting it. The civet, though occasionally extracted, is of little value.

**Prionodon pardicolor**, Hodgson (Cal. J. N. H., II., 57, and Jerdon, 124), the tiger spotted civet, does not appear to occur in Kumaun, though found in Nepál, where it is said to be common.


This tree or bear-cat is said to be found throughout the Tarái below the hills extending into Bengal and Behar. There are two other allied species, apparently undescribed, which have been procured by Mr. Greig. Of one he has seen five specimens and describes it as about 40 inches long, the tail being about half that length and very broad at the base: colour, a fine, bright dark grey throughout, with the exception of the feet and ears, which are black. This species is generally found in pairs. It climbs trees well and seems extremely fond of apples and other fruit. It has been procured at Binsar and in Naini Tál and as far west as Kulu. In shape it resembles an otter: hence its vernacular name *bán-tál* (forest-otter) in Kulu and *khar-tál* (grass-otter) in Kumaun. Of the second species Mr. Greig procured a single specimen of a female at Naini Tál which was of a much duller gray; its tail was shorter and at
the base not more than half the breadth of the tail of the former, and it had altogether a different appearance.

*Paguma laniger*, Gray, the *Martes laniger* of Hodgson, found in Tibet and the adjoining snowy region of the Himalaya and procured in Nepal; may occur in Kumaun. Jerdon, 129.

*Herpestes malaccensis*, Cuv.; *H. Nyula*, Hodg.—Bengal mungoose—*Nyula*. Jerdon, 134

This little animal is found in the submontane tract and Dehra Dun and is replaced in the hills by the next.


This species is found all over the lower Himalaya from Sikkim to Kashmir and also in the submontane tract.

**Canidae.**

*Canis pallipes*, Sykes—Wolf—*Bheriya*. Jerdon, 139.

The wolf is found throughout the submontane tract and in the Dehra Dun, where a reward is given for its destruction. It does not seem to enter the hills.

*Canis aureus*, Linn.—Jackal—*Gidhar, shiyál*. Jerdon, 142.

Jackals are nowhere more common than in the Tarai and the scrub jungle along the foot of the hills. They ascend the valleys communicating with the plains, but are seldom found above 6-7,000 feet. Their ordinary food is carrion, but they kill a great many young deer and often catch peafowl and are very fond of maize. They are very persistent in following a wounded deer, but they rarely venture near it until it is so exhausted as to be obliged to lie down. One seen pursuing a wounded doe antelope was observed to bring her to bay several times, but it never dared to touch her until she fell exhausted by the loss of blood from her wounds. On another occasion two jackals were pursuing a ravine deer, but they never attempted to fix it until it had fallen. Two hounds were, on another occasion, worrying a jackal when suddenly another came up and joined them in tearing the animal to pieces. The dogs did not seem to notice the stranger and he did not appear to be afraid of them. It was not until the master of the dogs showed himself that the jackal left off his task and slunk away, whilst the dogs showed
no desire to follow him. Jackals frequently go mad and are then more dangerous than mad dogs, as they attack all living beings that they meet. Their fur if taken in December-February and properly cured makes excellent carriage rugs. It is very difficult to capture them as they will not enter any description of box trap no matter how skilfully baited, and they are not often caught in dead-fall traps. The gin-trap when skilfully used is alone successful.


The wild-dog is found in all parts of the hills between the Tons and the Sārda, and, whether they have increased in numbers or not of late, are now included in the list of animals for whose destruction the State pays a reward. They live chiefly on deer and their favourite prey is the sāmbhar, which is more easily run down than other deer. They kill a good number of cattle where deer are scarce and appear to hunt by scent just like a pack of hounds. They have very powerful jaws, and when they bring an animal to bay, they continue to spring at its hind quarters and stomach, taking out a mouthful at each bite, until the beast drops from exhaustion, when they go in and soon leave nothing but the bones. A dozen of them have been known to eat up a full-grown sāmbhar in little more than five minutes. In the valley of the Bhágirathi they are sometimes found close to the snows, hunting the blue-sheep (*barkal*). The wild-dog is of a bright rusty-red colour with black tips to his ears and tail, height about 19 inches, length of body 35 inches and of tail 16 inches. Mr. Greig notes the existence of another wild dog in Kashmir which has apparently not been noticed by Jerdon. He describes it as not so large as the bhaunsa and of exactly the same colour as a jackal. As many as twenty hunt together in a pack, uttering a snarling, cackling noise when disturbed. They prey on the ibex and musk-deer and do not disdain to eat carrion, having been seen to feed on the carcass of a bear from which the skin had been taken the previous day. Mr. Wilson has noticed that during the breeding season the wild-dog will drive its prey towards its lair before closing in and killing it, evidently in order to save itself the trouble of conveying the carcass to its young. See Hodson’s paper in Cal. J. N. H., II., 205, and Campbell’s note on the osteology of

*Vulpes bengalensis*, Shaw; *Cuonchrurus, xanthurus, and rufescens*, Gray; *C. Kokreek*, Sykes—Indian fox—*Lomri*. Jerdon, 149; Blyth's note, J. A. S., Ben., XXIII., 279.

This pretty little animal is only found occasionally in the Tarai and low country at the foot of the hills. It does not appear to enter the hills, where it is replaced by the following. It is easily tamed if taken young and makes a faithful, affectionate pet.

*Vulpes montanus*, Pearson; *V. himalaicus*, Ogilvy—Hill fox—*Kuniya shiyal* (Kumaun); *wamu* (Nepál); *loh* (Kashmír). Jerdon, 152.

This handsome fox is found all over the hills from the Tons to the Sárda, 4-12,000 feet. Its principal food is rats and offal, but it will take poultry when it has the opportunity, and doubtless constantly kills young pheasants and partridges. It is a very poor runner on level ground, and even on open hill sides an ordinary half-bred greyhound can easily catch it. It carries a very fine fur and its skin is in great demand for making rugs.

**Delphinidae.**

*Platanista gangetica*, Lebeck—Gangetic porpoise—*Sías*. Jerdon, 158.

This porpoise is said to have been captured at Hardwár.

**Sciuridae.**

*Soricus palmarum*, Gmelin; *S. penicillatus*, Leach—Common striped squirrel—*Gåthari*. Jerdon, 170.

This little squirrel is found throughout the submontane tract and Dúns, ascending the lower valleys to a short distance.


This curious squirrel is common in all large forests in the hills above 5,000 feet. It feeds on walnuts, hazel-nuts, acorns, and the bark and tender shoots of many trees. It is quite nocturnal in its habits, living in hollow trees during the day and coming out to feed
at dusk. A bonfire in the forest will bring numbers to the neighbouring trees at dusk. Its fur is very good, but the skin is so very fine that it is difficult to cure it without tearing it. It travels about the forest by climbing to a top of a tree and then sailing off downwards in a diagonal direction to another some thirty or forty yards off. It rarely descends to the ground. It is very timid and can easily be tamed.

Pteromys inornatus, Geoff.—White-bellied flying squirrel. Jerdon, 176.

This squirrel occurs in situations similar to the preceding, 6-10,000 feet, and has frequently been procured near Landour and in Kumaun.


This marmot is found all along the perpetual snow line in places which are suitable for its burrows. Mr. Greig notes that he has seen marmots in such places that would answer to the description of either Jerdon’s Tibetan marmot or his red marmot, sitting side by side and sometimes a black one along with them, so that it is probable Blandford has been right in uniting them. They live at an elevation 12-16,000 feet and emerge from their burrows in May, when the snow melts. Their food consists of roots and vegetables, but it is not known for certain whether they hibernate during the winter or store up a sufficient supply of food to last them for the six months during which they are snowed up. For synonymy see J. A. S. Ben., XII., 410, and XLIV., ii., 122, containing Blandford’s review of the genus.

Muridae.


This burrowing rodent has been procured in Dehra Dún, where it does considerable damage in the plantations.

Mus Hardwickii, Gray—Short-tailed mole-rat. Jerdon, 190; Anderson, J. A. S., Ben., XLVII., ii., 221.

Occurs doubtfully in the Dún, ascending the lower hills.


Common everywhere in the hills and plains.

This species occurs in the Tarái and adjacent plains.


This rat occurs commonly in houses and near cultivation.

Mus niviventer, Hodg.—White-bellied house rat. Jerdon, 200; Hodgson, l. c.

Specimens of this rat have been procured from Mussooree and Naini Tál.

Mus olivaceus, Sykes; M. dumetica and povensis, Hodgs.—Long-tailed tree-mouse. Jerdon, 202.

This pretty small mouse is commonly found in the thatch and amongst the beams of houses from the hill southwards.

Mus hemourus, Hodg.—Hill mouse. Jerdon, 204.

This is the common mouse of hill stations from the Panjáb to Darjiling.

Mus crassipes, Blyth—Large-footed mouse. Jerdon, 204.

Procured from Mussooree.

Mus Tytleri, Blyth—Long-haired mouse. Jerdon, 205.

Specimens of this mouse have been procured from Dehra Dún.


This species occurs at high elevations throughout the hills. Procured from Darjiling and Kunáor.


This rat is said to have been procured in the upper Pattis of Kumaon. See Hodgson's description, Cal. J. N. H., II., 60.


This vole has been procured at high elevations in Western Garh-wal and from Chini in Kunáor.
HYSTRICIDÆ.

_Hystrix Leucura_, Sykes; _H. cristata indica_, Gray; _H. zeylanensis_, Blyth—Indian porcupine—_Saki_. Jerdon, 218.

The porcupine commonly occurs throughout the submontane tract and in the hills up to 8,000 feet. In the level country at the foot of the hills it makes its own burrows, and when beating with elephants through long grass, the presence of these burrows is felt when the elephant sinks into one up to his chest and gives itself and its rider a troublesome shake. In the hills the porcupine makes its home in natural caves and crevices in the rocks. It is nocturnal in its habits and a great pest to potato-growers, gardeners, and cultivators generally. The best way to kill it is to find its cave and suffocate it by burning wetted straw in the entrance. It may also be taken in the ordinary dead-fall trap (_jimtala_) baited with mango-stones, potatoes or beet-root and the like. If caught in the gin trap, it generally bites off the trapped leg and escapes. It has the power of throwing its quills with great force, but is not able to direct them. In one case a porcupine pursued by terriers raised his quills and expelled a dozen or more with such force that two of them were picked out of a tree close by at more than three feet from the ground. These had pierced through the bark and were tightly fixed in the wood. They frequently injure dogs severely, but the wounds usually heal without festering. Natives are very fond of porcupine's flesh and young ones make excellent curries, and baked in a paste of flour they are very delicately flavoured. For European tastes, however, the adult animal is somewhat rank and coarsely flavoured.

LEPORIDÆ.

_Lepus ruficaudatus_, Geoff; _L. indicus_ and _macrotus_, Hodg.—Common Indian hare—_Khargosh_. Jerdon, 224 : Hodgson, J. A. S., Ben., IX., 1,183 ; XVI., 572.

The hare occurs throughout the submontane tract and outer ranges up to 7,000 feet and has been procured on Badkot above 8,000 feet. It is doubtful whether _L. hirpidus_, Pearson, the hispid hare of the _sal_ forests of the Gorakpur submontane tract, extends as far westwards as Kumaon : see Hodgson, _l. c._

An ordinary observer would not take this tailless rat-like animal for a hare. In appearance it is like a guinea-pig, but much smaller and is very common on all the upper hills at the edge of the forest at 9-16,000 feet.

Elephantidae.

Elephas indicus, Cuv.—Indian elephant—Háthi. Jerdon, 229.

At the present time there are about 150 wild elephants in the tract between the Sárda and the Ganges, and about 50 in the Dún and Siwálík tract between the Ganges and the Jumna. They do much damage to the cultivation on the border of the forest, and the number of young trees and bamboos destroyed by them is very great. In former years, elephants were caught in pits (ogi), but these caused such loss of cattle that the practice was prohibited in 1817. Subsequently it was ordered that all pits should be destroyed and that any elephants found in them should be confiscated and sold on behalf of Government, and any person, in future, digging pits for the purpose of catching elephants should not only be fined, but also be held liable for any loss that ensued.¹ The annual cess levied on the capture of elephants never exceeded one thousand rupees in any year, whilst the grazing dues in the tract between the Rámganga and the Sárda exceeded thirty thousand rupees. The relative value of the two sources of revenue, therefore, offered no inducement to continue permission for the establishment of elephant pits, and the difficulty found in procuring redress for losses caused by cattle falling into the pits led to the strict enforcement of the rule forbidding their excavation. Looked on in another point of view, the pit system of catching elephants was highly uneconomical, as fully three-fourths of the animals captured were either fatally or seriously injured. Accordingly, in 1824, several elephants found in pits were seized and sold, and the proceeds were credited to Government. In 1827, the restriction was removed, and rules were framed for the digging of pits and the collection of dues on

¹ To Board, dated 7-12-18. From Mr. Shore, dated 14-3-27.
" ditto, 21-3-27. " ditto, " 21-6-27.
" ditto, 22-5-27.
the capture of elephants, which subsequently received the sanction of Government. But little advantage, however, accrued from this permission to either the persons engaged in catching the elephants or to Government. After the mutiny, for some time, a regular *kheddah* was established at the foot of the hills for the purpose of catching elephants for the public service, but was soon abandoned. By a recent Act of the Legislative Council no one is allowed to kill or capture an elephant without special permission of the local authorities. In 1873, the Maharaja of Bulrampur captured thirty head, and in 1879 he secured twenty-eight head. The plan of driving the herds into fenced enclosures is not practised here, where the system is either to run the wild elephants down in the open and lasso them, or to surround them in a gorge by placing fifty or sixty tame elephants in a narrow place where the hills on either side are precipitous and then drive down towards them the wild herd. The men engaged in driving are armed with guns or they beat drums and cymbals and blow horns and keep up a perpetual din. So soon as the wild herd approaches near enough, the tame elephants are rushed at them, and if the ground be favourable and the kheddah be well managed very few, except the large males, escape. The tame elephants have a rope securely fastened around their necks, to which is attached a second rope ending in a running noose. Five or six of them surround and hustle the wild animal until the *phaneta* (noose-men) are able to attach at least two of the nooses, when the remainder retire whilst the wild elephant commences the series of struggles that ends in its complete submission. The running noose is then loosened and so tied that it cannot slip and strangle the captive. It is only where there is not much scrub or jungle that the attempt to run down wild elephants in the open ever succeeds. In favourable places the wild animal is captured after a fair chase of about a mile.¹

Solitary old males are sometimes met with, and are very dangerous to those who have to frequent the haunts affected by them.

¹ An account of elephant shooting and elephant catching in Dehra Dun will be found in Dunlop's *Hunting in the Himalayas*, London, 1860. From the work the following vocabulary of the mahouts or elephant-drivers is taken:—*Mail* (pronounced, 'mile,' 'get up,' or 'go on': 'batti,' 'sit down': 'dust,' 'stop': 'dust-dust,' 'go backwards': 'dug,' 'step over': 'lamb's dug,' 'take a long step': 'tereseh': 'break': 'beri': 'let go' or 'stop feeding': 'chau,' 'turn' and *chaur-dur,* 'turn round.' These phrases are in common use by elephant-drivers all over the North-Western Provinces.
In the Dún, where they appear to be more numerous, the pathways
made by them may be easily recognized, being on plain land about
four feet wide and on hilly ground about half that width, well-
marked, and bearing the signs of having been formed by some
animal of great weight.

**Suidæ.**

*Sus indicus*, Sch.—*S. Scropha*, Linn.; *S. vittatus*, Schl.—

The wild pig occurs in numbers throughout the tract between
the Tons and the Sárda from the plains up to 10,000 feet. In the
lower hills they are to be found in every place where there is good
cover, and in the upper hills in the oak forests especially. They
feed on acorns, wild fruits, and roots, but also do much damage to
sugarcane, maize, and rice, when opportunity occurs. Occasionally
they eat carrion. An old wild boar is the most fearless of all wild
animals. No leopard dare attack him, and he has been known to
beat off a tiger; whilst men, and elephants even, are often attacked
by him without having given any provocation. As a rule, the largest
boars are found far up in the oak forests. See Hodgson in J. A. S.,
Ben., XVI., 423.

*Porculia salvania*, Hodgs.—Pigmy hog. Jerdon, 244; Hodgson, J. A. S., Ben., XVI., 573.

This miniature pig is of a blackish brown colour and seldom
weighs more than ten pounds. It occurs in the Tarái and is
greatly prized by the Bhukias and Thárus, but is nowhere very
common.

**Cervinæ.**

*Rucervus Duvaucelli*, Cuv.: *elaphoiotes* and *Bahraiya*, Hodgs.;

The swamp deer was formerly very plentiful all through the
Tarái, but the clearances of the last quarter of a century have re-
duced its numbers considerably. It is now seldom found west of
the Dhabka river except in the eastern Dún of Dehra, and even be-
tween that river and the Sárda is nowhere common. It chiefly
affects swampy ground well covered with reeds and tall grass,
hence the ordinary name; but it is also found at certain seasons in
dry tracts where there are patches of long grass along the edge of the sal forests. The stags shed their horns in March, and few are seen with them after the 1st of April. The horns are particularly handsome, carrying from ten to fifteen or more points. See Hodgson's note, J. A. S. Ben. V., 240.


The sāmbhar still exists in nearly all the great forests from the plains up to 10,000 feet, but in very small numbers compared with twenty years ago. It is the finest of the deer tribe, and is much prized by sportsmen for its magnificent horns and the difficulty in obtaining them. Those that permanently frequent the upper hills possess more massive horns and thicker and longer hair, and are more robust in build than those found in the lower hills and the Tarāi. In the rains they descend from the lower hills and return when the grass dries up in April. Very few remain permanently in the Tarāi. Natives run down a large number every year with dogs, and when snow is on the ground the deer are soon caught, but at other times they generally run a mile or two before being brought to bay. When hard pressed, the sāmbhar always runs down the hill and makes for water: the dogs then surround it and keep it at bay until the hunters arrive. The sāmbhar affords good sport to a hunter on foot, as it has very keen powers of sight, scent, and smell; but to the hunter mounted on an elephant it falls an easy prey, being so accustomed to wild elephants as to feel no alarm on the approach of a tame one. Each horn has three tines including the brow antler and two at the top of the beam. The horns are shed during May and the rutting season occurs in October-November.


Hodgson has distinguished two varieties of this species under the names *A. major* and *A. medius*, but this difference requires confirmation. The spotted deer is the most common of all its tribe found in the forest along the foot of the hills. When the jungle is dense it occurs in herds of from ten to twenty, but when the grass
has been burned down it crowds together for mutual protection, and herds numbering several hundreds may be seen. These are very difficult to approach and easily alarmed. The spotted deer is nowhere to be found north of the second range of low hills. The stags shed their horns at irregular times from October until March, chiefly, however, in October-November. The rutting season is equally irregular, since the stags commence to rut so soon as their new horns are perfect. Each horn has three tines, the brow antler and two at the extremity of the beam, like the sámbhar, and frequently ‘sports’ occur at the base of the brow antler.


The hog-deer is found within the same limits as the spotted deer, from the jungles along the foot of the Himálaya to the second range of low hills. It affects grassy swamps or grass jungle along the banks of streams, and only retires into forest when much disturbed. It affords excellent sport for elephant beating, for none but a skilful shot could secure a hog-deer as it dashes across a small opening in the forest when running away. The rutting season occurs October-February, and the horns are shed in March and early April. The horns are like those of a sámbhar in miniature, except that they generally curve in more towards the tip.


The rib-faced or barking-deer is common throughout the tract between the Tons and the Sárda up to 10,000 feet, wherever there are extensive forests. Its hard bark is constantly heard at all times of the day and night, but being a very poor runner on level ground, it seldom ventures out into the open. It is generally a solitary animal, except during the rutting season, when two or three may be seen feeding together. The upper jaw of the male is armed with two formidable tusks, with which it can inflict very severe wounds. Cases are known in which dogs have been killed or severely wounded by the male kákar. Colonel Markham says that “as it runs a curious rattling noise may often be heard like that
from two pieces of loose bone knocked together sharply;" but it would appear that this phenomenon is confined to the female. The males shed their horns in May and rut during October-November. The barking deer is quite helpless in the snow, and consequently great numbers are killed every year. The venison is seldom fat, but is very good if hung up for a few days before being cooked.


The musk-deer is found in the upper ranges from 8,000 feet to the limits of forest, but it is so much sought after for its valuable perfume-bearing pods that it is now becoming rare all through these hills. The pods and even the dung of this deer smell strongly of musk, though its flesh is not in the least tainted and makes very good venison. The female has no musk. An ordinary pod weighs about two tolas, but sometimes they are twice that weight, and are worth from ten to fifteen rupees per tola. The more common variety of the musk deer is of a brownish grey colour varying in shades on the back where it is darkest. The hair is coarse and very brittle so that it is difficult to obtain a good skin. Musk-deer are nearly always solitary and are only found in the forest, where they prefer rocky, precipitous ground. They are very active and sure-footed, and bound from ledge to ledge with the most graceful facility. Both sexes are destitute of horns, but the males have long slender tusks in the upper jaw (about 3 inches long) that grow downwards and then slightly backwards. The musk-deer is one of the smallest of its family being seldom more than twenty inches high at the shoulder. It is frequently taken in a simple snare by the hill-men, who, for this purpose, make a low hedge along the ridge of a spur sometimes a mile in length or more and just sufficiently high and thick to tempt the game to save themselves the trouble of jumping or flying over. Openings are left in the hedge at intervals of thirty feet in which the snares are set. These are laid flat on the ground, the upper end being attached to a stout sapling bent over so as to form a strong spring. When the musk-deer approaches the hedge, he turns aside until he discovers an opening, through which he walks and puts his foot in the snare. The end of the sapling is thus released and instantly springs up,
suspending the deer by the leg. Many pheasants are captured in
these snares in the same manner. See Hodgson’s notes, J. A. S.,
Ben., VIII, 202: X., 795: Kinloch gives a photograph of a head,
41.

Antilopinae.

Portax pictus, Pallas; Damalis Risia, Smith; Tragelaphus

The nīl-gāi is only found in certain patches of forest along the
foot of the hills, and usually close to cultivation. It does much
damage to young wheat, and no ordinary fence will keep it out.
The female has no horns, and gives excellent venison or rather
beef.

Tetraceros quadricornis, Blain. : iodes and paccerois, Hodggs. :
striaticornis, Leach : Antelope Chickara, Hard. : sub-quadricornatus,
Elliott—Four-horned Antelope—Chausingha. Jordan, 127: Hodg-

This graceful little animal is found throughout the low plateaux
and hills covered with sūl forest and the dry jungle between them
and the Tarāi. It is generally seen alone or in pairs. It does not
seem to suffer from the heat, for except during May-June it never
seeks a shady place to lie in, and is usually found in a patch of
grass or a ber (Z. Jujuba) bush, and in the hills it frequents grassy
glades in the forest. It is a rather difficult animal to hit as it bounds
away. The two pairs of horns are quite separate from each other;
the posterior pair are 4”-5” long and the anterior pair 1”-2.” The
female has no horns. It rarely carries any fat, and the venison is
poor and dry.

Antilope cervicapra, Pallas ; A. bezoartica, Ald.—Indian Ante-

The Indian antelope commonly known as the black-buck occurs
only in the tract along the southern boundary bordering on the
plains. It is found in open plains or in low grass or light scrub
jungle and rarely enters the forest. The horns of those found in
this division are small, eighteen inches being rather above than
under the average. See on the synonymy, Blanford in J. A. S.,
Ben., XLIV., ii., 18.
Nemorhaedus bubalina, Hodgson; Antilope Thar and N. proelius, Hodg.—Forest goat—Tuhr, sarau, aimu. Jerdon, 284.

The sarau is found in most of the rough, rocky hill forests 3,000-9,000 feet. It affects precipitous, densely-wooded places, is solitary in its habits, and is rarely seen in the open except at dusk and daydawn. It is a very fierce animal when brought to bay by wild or tame dogs, and generally succeeds in killing one or two with its short, sharp horns. Its flesh is very coarse, strong, and unpalatable. The horns of both males and females are 9”-10” long, tapering to a point and curved backwards. The skin is very tough and strong and makes good leather. Although it has an awkward gait, it can cross precipitous ground with great ease and descend slopes with marvellous rapidity. The female produces one kid, generally in March-April. For Hodgson’s description see J. A. S., Ben., IV., 489.


This pretty animal is found throughout the outer ranges 3,000-9,000 feet. Both sexes have horns; those of the male are 6”-9” long and those of the female are 4”-6” long and considerably thinner. They generally occur in parties of three and four, but where they are abundant herds of ten and twelve are met with. The largest males are usually solitary. They feed up to 9-10 a.m. and again from 2-3 p.m. during the hot weather, but in the cold weather they wander about all day. Chamois shooting is the best possible practice for the young sportsman, enabling him to learn stalking, to walk across steep ground, and to use his rifle satisfactorily. The female produces her young, generally one, though sometimes two, during April-May. A kid, if caught when young, makes a very tame and amusing pet. For Hodgson’s description see J. A. S., Ben., IV., 488.

Hemitragus jemlaicus, Smith; Capra Jhral and C. quadrirrannis, Hodgson—Himalayan wild goat—Tehr, jula (male), jhral. Jerdon, 286.

This true wild goat is found in the most precipitous parts of the upper Himalaya, 7,000-12,000 feet, though it also occurs at 6,000 feet in suitable places. Those found at low elevations are called
'khar-tehr' by the hill men: they are exactly the same as the others, but do not possess such fine coats nor such long horns. Both sexes have horns, but those of the female are neither so massive nor so long as those of the male. The horns touch at the base and are sub-compressed, sub-triangular and curve backwards considerably. Those of the male measure 10"-15" along the curve and are 9"-12" in circumference at the base. The rutting season commences about the second week in October and the young are produced in April-May. The oldest males will be found close up to the snow-line in August-September and the females are often seen above the forest limit. As the snow falls they descend to the valleys, but never leave the precipices except to graze on grassy slopes close by. To enjoy tehr shooting a man must be an expert cragsman and must have a very good head. The ground affected by them is always very dangerous, and no one should venture on it without a good guide. For Hodgson's description see J. A. S., Ben., IV., 491.


This wild sheep is very plentiful about Niti and Laphkhel, and there are a few at the head of the Pindar river and some are said to occur in the Darma and other valleys to the eastward. They frequent the grassy slopes and rocky ground between the upper limit of forest and the snow-line 10,000-16,000 feet. The old males leave the females from June until September and live by themselves in parties of three to twelve or more. In October they begin to join the females and in November their rutting season commences. The lambing season occurs in May-June. The old males are very fat in September-October and then yield excellent venison. Barhal shooting gives fine sport, but entails hard walking and often very difficult climbing. Both sexes possess horns; those of the male measure 20"-30" along the curve and 10"-13" around the base. The female is a smaller animal than the male, and has small, depressed horns only slightly recurved. The bluish-brown coat of the old males, with its band of jet black on the lower part of the neck and chest and along the flanks and its pure white stomach, makes a very handsome rug. Mr. Wilson notes that the males are seldom seen far from some rocky ground, to which they retire when
OF THE NORTH-WESTERN PROVINCES.

alarmed, and that all are accustomed to place sentries on some commanding positions whilst the rest of the flock is feeding. For Hodgson's description see J. A. S., Ben., IV., 492: Lydkeker, *Ibid*, XLIIX., ii., 131: Kinloch gives a photograph of the head of a male, 25.

The wild buffalo and the rhinoceros are no longer found west of the Sárda, and must be definitively excluded from the list of Kumaon mammals. It is now only necessary very briefly to indicate the principal animals of that portion of Tibet adjoining Kumaon and Garhwal. There we have the *chús* or Tibetan antelope (*Kinas Hodgsoni*) on the slopes near lake Mánasarowar and along the head-waters of the Satlaj, and the pretty Tibetan gazelle (*Piocapra picticaudata*), the *gawa* of the Húniyas. But the most conspicuous and most common amongst the larger mammalia is the *Kyang* or wild-ass (*A. Kyang*). It roams all over the country in troops of ten to twenty. Solitary males are, however, met with and frequently bear the marks of the conflict that has led to their expulsion from the drove. Their summer coat is close and shining, above clear antelopine-red; below with the entire limbs and muzzle flavescent-white: mane, tuft of tail and a dorsal line connecting them brown-black. The winter coat is rough like that of a camel and the rufous hue is more pronounced. Almost all writers notice the occurrence in numbers of this animal beyond the passes from British territory into Tibet.

The *chánko* or *chángu*, Tibetan wolf (*Canis laniger*) is not uncommon, though from its habits it is seldom seen. It is very fierce and bold, and does considerable damage to the flocks of the Húniyas. Hodgson states that *F. Diardi*, Desm. (Jerdon, 102), the clouded leopard, occurs in Tibet, but it is doubtful. The more common lynx is the *ee* of the Húniyas, the *Felis isabellina* of Blyth, but there is a second smaller cat-like animal, *F. Manul*, Pallas (*F. nigripectus*, Hodg.). There are several species of badger, a pole-cat, martens, weasels, numerous marmots and leporine animals, a description of which will be found in the works noticed in the 'References' attached to this chapter. The *ban-chaur* or wild yak (*Bos grunniens*, Lin.) is found in the valleys around the head-waters of the Satlaj and in similar localities the *nyán* or *nán* (*Ovis Ammon*, Lin.) is met with, though in no great numbers. Dunlop procured a specimen to the
yak on the Tibetan side of the snows, in the tract between the Niti and the Una-dhúra pass and a specimen of the nyán near the same locality. Both these animals are of great size. The tame yak exceeds in bulk the ordinary bullock of the plains, and in the expressive language of the hill-men, "the liver of a wild yak is a load for a tame one." Dunlop shot one measuring nine feet around the chest, while his horns were sixteen inches in circumference at the base and eleven inches half way up. A specimen of the nyán is said to have stood thirteen hands high, but the usual height is 36". One measuring 42" high was 74" in length: tail with the hair 8"; ear 6": horns along the curve 40" and circumference at the base 17." A head with horns attached will weigh 40lb., a fair load for a porter in the hills. The märkhor (*Capra m. aceros*, Hü.), the ibex (*Capra sibirica*, Meyer) and the urid (*Ovis cycloceros*, Hü.) are not found in the Kumaon Himalaya nor in the portion of Tibet between the sources of the Satlaj and those of the Karnáli.

The domestic cattle indigenous to the province are small in size and usually red or black in colour, resembling much the Kerry cow in appearance. Early every morning the village herds are driven to the ridges of the neighbouring hills for pasture, and are again collected before sunset and housed either in the lower story of the dwelling-house or in a temporary shed erected close to the village site. As a rule, the milch cattle are not fed on grain or chaff, but are only pastured, and after the harvest are allowed to eat down the stalks remaining in the fields. During the early winter and summer, when the grass is dry and worthless, the cattle from the lower hills of Kumaon are driven to the Bhábar for pasturage where they remain from October until May. Whilst there, the inhabitants of neighbouring villages in the hills usually canton together and construct for themselves temporary sheds of boughs of trees with roofs of thatch or leaves. The cattle of the upper hills and of the greater part of Garhwal and westward to the Tons find pasturage all the year round in the upper hills. Neither bullocks nor buffaloes are used for commercial transport, but they share with ponies and women the duty of carrying their owners' baggage in the annual migration to and from the Bhábar. No
census of domestic cattle has been taken of late years, but in 1822 a rough estimate gave 241,314 head distributed as follows:

<table>
<thead>
<tr>
<th>District</th>
<th>Cows.</th>
<th>Bullocks</th>
<th>Buffaloes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kumaun</td>
<td>58,380</td>
<td>36,938</td>
<td>42,959</td>
<td>138,277</td>
</tr>
<tr>
<td>Garhwal</td>
<td>66,355</td>
<td>28,546</td>
<td>8,235</td>
<td>103,136</td>
</tr>
</tbody>
</table>

Since then it would be safe to say that the cattle have increased by one-third, giving in round numbers an estimate of 321,000 head for Kumaon and Garhwal, or half a million for the tract between the Tons and Sarda, excluding the Tarai. The cattle in the Tarai temporarily increase in numbers every year by the droves brought up from the plains for pasturage. The average of the returns for the three years 1876-77 to 1878-79 shows that 35,000 head of cows and bullocks and 4,000 head of buffaloes paid the grazing tax each year, to which must be added those which escaped the tax owing to local privileges. The number of the latter may be gathered from the plough statements, allowing two bullocks for each plough and also an average of two cows for each plough, and taking the ploughs at 18,000 we have 72,000 head of cattle belonging to the permanent inhabitants of the Tarai, and adding these to the cattle sent for grazing a total of 111,000 for the whole Tarai or say 600,000 head of cattle for the entire tract with which we are concerned. This is merely an estimate, but it is the nearest that under the circumstances we can arrive at.

The greater part of the supply of bullocks for agricultural purposes is met from the Bhábar, where they are bred in large numbers or are imported from the Oudh districts notably from Nanpára. A pair of light bullocks will cost from Rs. 20 to Rs. 50 and a large pair up to Rs. 80. Several attempts have been made to improve the local breed of agricultural cattle, but all have failed. Bulls imported from Hissár were found to be unable to endure the steamy heat and the troublesome insect torments of the Bhábar and Tarai. The cultivators objected to them that they were too heavy for common purposes, and that it required more care than could be bestowed to bring up the young calves. The foot-and-mouth disease is common and in some years runs through whole tracts of country, destroying great numbers of cattle: during the year 1881 it has
been particularly severe in Kumaun. It is said to be a variety of rinderpest for which no effectual remedy has yet been discovered, though, according to some, the leaves of the common Potentilla dried and powdered and administered internally are said to possess prophylactic properties in these cases. Buffaloes are kept in considerable numbers for milking purposes and manure, and those bred in the Bhābar often attain to an enormous size. There are several local breeds varying in value from 20 to 60 rupees each.

In the Bhotiya mahāls or villages north of the culminating range of the Himālaya the chaura-gūi or yak (Bos grunniens, Lin.) imported from Tibet and the hybrids between that animal and the kine of the country are used for carrying purposes. When the sire is a yak and the dam a hill cow, the hybrid is called jubū; when the parentage is reversed, the produce is called garjo. The jubū is found more valuable than the other hybrid or than either of the pure stocks. It will carry from two to three maunds and is also used for riding in the snows. It is very sure-footed, hardy and docile and capable of enduring great fatigue. Its price is from 30 to 60 rupees. Both varieties breed freely together and with the pure stock; in the former case the race degenerates, but in the latter the offspring gradually resumes the characteristics of the pure breed. The yak is seldom brought down lower than the summer residence of the Bhotiyas, though the jubū goes as far as Rāmnagar without appreciable injury. Those used in the local traffic are bred for the most part in Bisahr.

The sheep and goats used by the Bhotiyas for carrying purposes are not bred by them, but are purchased in the villages of the Dānpur and Badhāngarh parganas or are imported from the Chamba district of the Panjāb Himālaya. The latter is the usual course, and in order to keep the trade in their own hands, the importers bring only ewes. Traill's description still holds good:—"The pasture on the upper ranges of the Himālaya are found to yield a grass in a peculiar degree nutritive to sheep. On the melting of the winter snows, towards the end of March, these mountains which, though lofty, are by no means precipitous, become covered with verdure, and are then

1 In Tibetan dzhoba.
resorted to by the flocks of the neighbourhood. A few days are said to suffice to restore the animals to condition, though ever so much reduced by the fasts and rigors of the preceding winter. The grass of these pastures is distinguished by the shepherds under a particular name, and has the universal reputation of being inexhaustible, the growth during the night being said to compensate fully for the consumption of the day. The flocks continue here till the commencement of the rains, when they are driven to less rich pastures on the more southern ridges; with the setting in of winter, they return to the villages. During this season, the sheep are compelled to browse with the goats; branches, chiefly of the oak, being cut down for them, and hay, though stored in small quantities for cattle, is never given to sheep. In some parts of Garhwal the leaves of trees, particularly of the mulberry, are dried and stocked in autumn, to serve as fodder for the winter. The jims or mulberry is there, consequently, much valued, and the property in its foliage forms an object of sale and purchase distinct from the land. While on the mountains, the flocks are secured during the night in folds; these are situated along the ridges, and being intended for annual resort, are substantially built with layers of dry stone: the wall is raised to nine or ten feet, so as to exclude beasts of prey: only a single door of entrance is left, and that of the smallest dimensions, with the same view, as the leopards, when the door is high, break it down without difficulty by leaping against it. In the interior, sloping chhappars are erected along one or more sides, according to the number of animals to be sheltered. Every village has commonly its separate fold at each of the periodical pastures; the ridges in question, consequently, exhibit the appearance of a chain of fortified posts, the resemblance being increased by the individual sites of these erections, which, with a view to facility of draining, are placed on the summits of rising grounds."

The hill sheep are small with wiry brownish-grey wool, short tails and large horns. They are not good for the table and are kept for the sake of the wool, out of which coarse blankets are made. Attempts have been made to improve the breed by the importation of Tibetan, English and Australian rams, but hitherto the results are imperceptible. The common diseases of sheep, such as rot, mange, smallpox, &c. are all here prevalent and, in some years, extremely
destructive; the goats are further liable, in wet weather, to a disease called _khari_, which frequently terminates in the loss of the hoofs. The casualties are further augmented by exposure and fatigue, by accidents, and by wild beasts; and as the females—even those with young at their feet—are not exempted from labor, it can be a matter of no surprise that the Bhotiya annually finds himself called on to make a fresh outlay for keeping up his stock. The common description of sheep carries from ten to sixteen pounds and is worth about three rupees. The Tibetan sheep are also employed by the Bhotiyas in their carrying trade and are taller, stronger and more active than the Kumaon breed. They carry from thirty to forty pounds, but being unable to bear the heat of the Cis-Himalayan tract are usually kept by their owners at some adjoining village in Tibet and are brought into use when the passes open. The regular day's journey is about five miles in consequence of the great time required for pasture which is their only subsistence.

Goats both those bred in Kumaon and those imported from Tibet are also used in the carrying trade. They bear burdens of from twelve to twenty-four pounds and are worth four to five rupees. They are usually chosen from their superior boldness and activity as leaders of the flock and are furnished with bells. It is chiefly by means of these goats and sheep that the salt and borax of Tibet are brought to the lowland markets and there exchanged for the commodities of the plains. The salt and borax are carried in a sort of pack made of worsted with a pair of pockets called _karbaj_ (phancha in Garhwal) slung across the animal's back. These pockets are partly covered with leather to protect the contents from moisture when travelling or when piled on the ground in camp. The pack is girded underneath the body and a band around the chest and another crupper-wise under the tail render it perfectly safe when moving up or down hill. It is marvellous to observe the business-like way in which these little beasts of burden carry their loads. Coming upon them on the very narrowest, steepest and most slippy ascent or on the brink of a precipice, they seem intent only on pursuing their way, not turning aside for anything or any one, their obstinacy often causing the traveller uneasiness and always teaching him patience. And not the less curious is to observe
flocks of them numbering many hundreds meeting in a narrow path, each going the contrary way and yet none make a mistake, but persist in following their own leader and patiently overcome all obstacles in doing so. Goats are sometimes imported from Tibet for food or sacrifice, but their flesh is very strong and ill-flavoured. The indigenous breed is raised in the same places and by the same people who keep the indigenous sheep. Goats are, as a rule, low sized and stoutly made, although those bred in the more northern parts often attain fair proportions. They are subject to the same diseases as sheep and are frequently poisoned by eating the rank herbage that springs up in the rains. The leaves of the aydr (Andro-medea ovalifolia) so common about Naini Tál are also said to be fatal to goats. The hill-goat is useless for milk-giving purposes and is bred chiefly for the carrying trade or for food and sacrifice. Large flocks of sheep and goats arrive in the Taráí from the plains about the end of October for pasture. They consist for the most part of ewes, and as soon as the lambs are sufficiently strong, they are again taken to the plains. The sheep brought for the supply of the Mussooriee and Naini Tál markets usually come from the Kangra and Kulu districts of the Panjáb Himálaya, though the districts of the middle Duáb also supply a large number, smaller in size, but, when fed on gram for some time, yielding excellent mutton.

From the earliest years of British rule much attention has been paid to collecting information regarding the pushm or shawl-wool trade with Tibet, but with little practical result. The papers by Raper and Moorcroft in the earlier records and that drawn up by Captain E. Smyth in 1853 are now obsolete, but still present some features of interest. Pushm is procurable at all the Tibetan marts at from ten to twelve annas per pound, to which has to be added the cost of carriage. There are two sorts, the black and white; the latter being more valuable and more common than the former. The pushm of the yak is also produced in large quantities, but is much coarser than goat pushm. It is not much sought after for export and is consumed on the spot for making ropes, cloth for tents and coarse blankets for wear. Rúdák and Gartok are the principal marts for the sale of shawl-wool, which is procurable also at Taklakhár, Chapráng, Gángri and from Haurba, Chhyúlithol Banbuwáthol,
Dábáling and Magana. The export trade is principally confined to Ladák and Káshmír. The goat-shearing season commences about the beginning of June and the hair is not separated from the pushm or under-wool by the Huniys, but is sold as sheared and is subsequently sorted by the purchasers. For some years all the wool produced to the north of Gartok and also that from the districts to the east and south has, by order of the Chinese authorities, been concentrated there and sold only to Ladáki and Káshmír merchants or their agents. Still the Kumaoni traders have always been able to smuggle some shawl-wool into Kumaon, but the demand is so restricted and the market for this class of wool having been already well established at Bámpur in Bisahr, the quantity has never been considerable. The Kumaoni traders are also put to some disadvantage by the lateness of the season at which the passes are open. The road from Kunáoir to Tibet along the valley of the Satláj by which much of the pushm is imported opens very early and the traders have time to push up to Taklakhár to the east of the Byáns pass before our Bhotiyas have begun to cross their passes. Of late years a trade in wool, both raw and manufactured, has sprung up, but is subject to many vicissitudes. The imports through the passes into British territory have been as follows:—

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<tbody>
<tr>
<td></td>
<td>Maunds.</td>
<td>Maunda.</td>
<td>Rs.</td>
</tr>
<tr>
<td>1877-78</td>
<td>6,225</td>
<td>1,073</td>
<td>1,09,845</td>
</tr>
<tr>
<td>1878-79</td>
<td>2,049</td>
<td>255</td>
<td>54,142</td>
</tr>
<tr>
<td>1879-80</td>
<td>2,373</td>
<td>311</td>
<td>51,275</td>
</tr>
</tbody>
</table>

This trade is almost entirely in sheep's wool and can hardly be considered well-established. The Huniys bring their earliest ventures to Milam and have their sheep sheared there, selling the produce to our Bhotiyas. A certain small amount is also brought by the Bhotiyas from Gartok, but only, so it appears, sufficient to give them and their women employment in the manufacture of the thick woollen blankets known as thalmas and chaptus and the coarse gowns known as chugas or bakuṣ. These are distinguished from the local woollen manufactures by their having the wool on one side combed up so as to resemble a fleece. A Bhotiya is hardly ever to be seen without a string of this wool spinning by the simple means of a leaden weight and the torsion given by his fingers. The women

1 Fuller in Rep., 1878-79.
weave the thread into blankets, which sell at Băgeswar fair at from five to eight rupees each. The Tibetan wool can be delivered at Băgeswar at about twenty rupees for 82 lb. The coarser wool of the Bhotiya sheep is known as bagidli and is entirely consumed locally for local wants. There does not seem to be much prospect of any important trade arising in wool with Tibet. The pushm is limited in supply and fetches uncleaned from Rs. 60 to Rs. 70 per 82 lb. at Băgeswar, and the trade is still practically a monopoly in the hands of the agents of the Kāshmir and Lūdhiāna manufacturers. The supply of sheep's wool from all this portion of Tibet can hardly exceed 15,000 maunds or 550 tons, quite insufficient to establish a special industry and the supply from the carrying sheep is consumed locally. Those who are interested in the question of the wool-trade with Tibet will find some accurate information on the subject in the annual reports of the Department of Commerce.

The Tibetan or hill pony is imported from Tibet by the Bhotiyas and is generally known under the name gûnt. Those brought from the Chāhāmurti district are held in high repute and fetch very high prices. The price of the ordinary gûnt ranges from Rs. 150 to Rs. 300. They are clumsy, rough and small, but sagacious, strong, active, very sure-footed and docile. The pony in more common use amongst the hill people is the bānjāra variety, bred in large numbers along the foot of the hills. It is a very hardy, useful small sized animal and does most of the carrying work between the plains and the hill sanitaria. It is worth from twenty to forty rupees. Grass, gram, barley-meal, urd and bhat are used as fodder for ponies, and the last is the only grain procurable for them in the upper pāttis.

There are two varieties of the domestic dog—the Tibetan măstiff, which is large, strong with a shaggy coat, very fierce and well adapted to defend the flocks of its owner from beasts of prey and robbers; and the hill variety of the common pariah dog of the plains. The former will not stand well the heat of the plains and owing to its fierce disposition is an undesirable pet; the latter is a finer and more handsome animal than his brother of the plains and becomes an attached and faithful companion. Both are much subject to hydrophobia, and few years pass without its occurrence being brought to notice unpleasantly. I have heard of Tibetan terriers, but have never seen them.
REFERENCES.

The following references are chiefly to the reports and works of local observers which contain much local information that has never been made use of in the systematic works. Hodgson and Blyth among the older and Blanford, Stoliczka and Dobson amongst later writers have done much for the Indian mammalia:—

Jerdon.—Indian Mammals. Calcutta, 1867.
Gray.—Illustrations of Indian Zoology. London, 1833-34.
Royal.—Illustrations of the Botany and other branches of the Natural History of the Himalayan mountains (the mammalogy by W. Ogilby). London, 1839.


To the sportsman I commend the following works:—
Rice, W.—Tiger-shooting in India. London, 1867
Kislock, A.—Large game shooting in Tibet and North-West. London, 1869.
Baldwin, J. H.—Large and small game of Bengal and the North-Western Provinces. London, 1876.

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Note on Zoological nomenclature. J. A. S. Ben., V., 751.
Classical terminology of Natural History. Ibid., X., 26.
Three new species of monkey. Ibid., IX., 1211 (P. schistacea, &c.)
A new species of Plecotus. Ibid., XVI., 894 (P. auritus).
On Megaderma schistacea. Ibid., XVI., 889: XI., 225 (M. Lyra).
Synopsis of the Vespertilionidae of Nepal. Ibid., VI., 699.
Description of the Kathiah nydia. Ibid., IV., 702 (Mustela Kathiah).
Two new species of flying squirrel. J. A. S. Ben. XIII., 67 (Jerdon, 177 178).
A Rhinolophus from central Nepal. Ibid., XII., 409. (Jerdon, 28).
Four new species of otter. Ibid., VIII., 819 (Jerdon, 88).
A new species of porcupine. Ibid., XVI., 771 (Jerdon, 221).
A new mole, Talpa macrura. Ibid., XXVII., 176 (Jerdon, 51).