

NOTES ON THE RACES OF SEROW, OR GOAT-ANTELOPE, FOUND IN SIAM.

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At the Meeting in June last the skin of a very fine specimen of the Serow or Goat-Antelope was exhibited, which had been shot at Koh Hlak by Mr. Butler, and I noticed then that the colouration differed somewhat from that of other specimens I had seen. I had previously been of the opinion that more species or sub-species than one of this animal are to be found in Siam, and I am now sure that this is so. As the matter is of considerable interest, I have prepared the following notes in the hope that they may be of use in identifying these species or sub-species.

Briefly, it may be stated that the Serows belong to a group of ruminants including the Serows, Gorals and Takins, which inhabit the hilly and mountainous districts of northern and eastern Asia, and are popularly known as the Goat-Antelopes. The two latter genera do not concern this paper, but it may be mentioned that the Serows differ from the Gorals, their nearest relations, in their larger size, their greater length of limb but shorter tail, and in the presence of a special gland on the face, in front of the eye. This gland, although not very noticeable on the outside, is sufficiently large to form a deep impression on the bone beneath, and can be readily distinguished in the skull of any Serow, just in front of the orbit. The ears are long, the body covered with sparse, coarse hairs, almost amounting to bristles, and there may or may not be a wild bristly-looking mane.

In colouration the Serow is very variable and it is owing to this fact, and to the lack of a sufficient number of specimens for examination, that confusion has arisen between the various authorities who have attempted to describe the animal. The latest authority to write upon this subject is Mr. R. I. Pocock, Superintendent of the Zoological Gardens in London, who has described* no less than 8

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races, ranging from Sumatra to China and the Himalayas. He declines to recognise them as different species and remarks, "I have a strong suspicion that when the Serows are better known, that is to say when more material has been collected, gradations will be traced and thus justify the view I now hold that all the Serows ranging from Kashmir to Burma belong to one locally variable species. But," he continues, "I am not sure that future discoveries will not show that the Serows of the Straits Settlements should rank together with the Sumatran animal, as specifically distinct."

I propose, in this article, to confine myself to those races of Serows which have been already described from this region, that is to say from the countries adjacent to Siam, and to show afterwards how they differ from the ones I have met with myself.

It may be as well to remark at this point that Mr. Pocock has re-introduced the generic title of *Capricornis* for the Serows in the place of *Nemorhaedus*, which has been used by Blanford, Lydekker and other authorities for many years, and gives his reasons for so doing on the grounds of priority. It remains to be seen whether or not his new term will be finally accepted.

In the following descriptions I have not hesitated to quote freely from all the authorities at my disposal. The last variety to be described, although stated to be found in countries far removed from Siam, has been included here as, in colouration, it approximates very closely to specimens that have been found in this country.

1. *Capricornis sumatrensis robinsoni*. Pocock.

Prevailing colour black, with a thick grey crest-like mane on the neck and withers, composed of a mixture of black and white hairs. Areas of the leg below the knees and hocks black, turning to brown only on the fetlocks.

Distribution. Selangor and (?) Perak.

2. *Nemorhaedus sumatrensis swettenhami*. Lydekker.

Capricornis sumatrensis swettenhami. Pocock.

General colour black, the back strongly and the sides slightly grizzled with grey, the bases of the hairs being whitish. Along the lips whitish grey: the posterior portion of the upper lips, a part on each side of the lower jaw and one on the throat rusty red. Ears black, grizzled with rusty at the base, and lined and edged with greyish

white hairs. Mane black, mixed with whitish hairs on the fore part of the neck and with reddish hairs towards the withers. Insides of the thighs rusty red. Remainder of head, neck, chest, belly, and legs black. Tail black.

Distribution. Perak.

3. *Nemorhaedus sumatrensis*. Blanford.

Nemorhaedus sumatrensis rubidus. Lydekker.

Capricornis rubidus. Blyth and Pocock.

Prevailing colour red all over, paler beneath, a blackish spinal stripe, extending to the tip of the tail. Chin, lower jaw and upper end of throat white. Whitish on the fetlocks and sometimes on the knees.

Distribution. Assam to Salween.

4. *Nemorhaedus sumatrensis*. Blanford.

Capricornis milne-edwardsi. David and Pocock.

Brownish black or blackish, sometimes hoary, some reddish hairs intermixed on the outer side of the thighs, the legs below the knees rusty red throughout.

Distribution. Eastern Thibet, Burma (Moulmein, Pegu).

5. *Nemorhaedus bubalinus*. Blanford.

Nemorhaedus sumatrensis bubalinus. Lydekker.

Capricornis thar. Ogilby.

Capricornis sumatrensis thar. Pocock.

Prevailing colour coal-black with the hairs basally white, legs whitish or grey-white below the knees and hocks, the belly dirty greyish brown or not clear white.

Distribution. Nepal, Sikhim and Chumbi.

This species is very far removed from Siam, but is introduced here for the reason already mentioned.

The description of the animal shot at Koh Hlak by Mr. Butler, which appears to be an unusually large specimen, is as follows:—

Prevailing colour above black, much grizzled on the dorsum owing to the basal half of the hairs being white, less grizzled on the flanks. Belly and upper part of the limbs and buttocks brownish black, the legs from the knees and hocks downwards rusty brown. The mane is grey, being composed of black and white hairs, the white

markedly predominating, and with the longer hairs tipped with light brown. It is mat-like and of great length, some of the hairs being as much as 12 inches long. There is a jet-black, dorsal crest reaching to the tail. Sides of neck and face black, upper surface of head the same, but with some reddish hairs intermixed. Throat reddish grey, lower lips, chin and inside of ears whitish.

I have hunted Serow at various places in Siam from Lat. 15° N. above Lopburi to Lat. $11^{\circ} 48'$ N. below Koh Hlak in the Peninsula. Except in the case of one Serow, which I shot near Koh Hlak, the colouration of all the specimens seen by me was black on the upper parts of the body, interspersed with white hairs on the back—these becoming more numerous on the breast between the forelegs, along the belly and under the edges of the tail, which is thus sometimes fringed with white; from the knees and hocks downwards very light grey, or dirty white shading into grey on the front of the forelegs; the muzzle not noticeably grey; no fawn or red hairs at all anywhere on the body or legs. The animal shot by me near Koh Hlak was coloured as above described, with the exception that the legs from midway between the elbow and knee joints, and midway between the stifle and hock joints downwards, were a reddish grey owing to the mixture of a preponderating number of red hairs with the white.

From the descriptions I have given above I submit that there can be no doubt whatever that at least two distinct races of Serow inhabit Siam, the distinguishing marks being that one race has no rufous colouration at all, while the other has a considerable amount of such colouration. I have never heard of the rufous variety occurring in Siam north of Latitude $12^{\circ} 40'$ N.; all the specimens I have seen or heard of from the north of that line have had only black and white hairs in their pelts. The information at my disposal leads me to think that the Serow without any rufous colouration at all, being simply black and grey or white, with dirty white or grey legs, may be a sub-species which has not yet been described by anyone as a distinct race. From the description already given of *thar*, it appears to be most closely allied to that animal, although the known habitat of *thar* is very far removed from Siam.

The measurements of a fullgrown female Serow which I shot near Na Yang, about Lat. $12^{\circ} 45'$ N., Long. $99^{\circ} 55'$ E., in Petchaburi district in 1910, were, from tip of nose—not much stretched

out—to end of tail 60 inches, and height at shoulder 36 inches. I should say the weight would have been about 140 lbs. The horns of a male and of a female shot by me measured $8\frac{1}{2}$ inches and $8\frac{3}{4}$ inches, respectively, in length along the outer front curve. The depth of the curve, which is but slight, would be only about an inch between the inner side of the curve and a straight line drawn from tip to base. I should say that any horns over 9 inches in length would be quite exceptional in Siam.

I can see no great difference in the size, weight of body and length of horns of the male and the female Serow. In both sexes the tail is very short, not longer than 6 inches as a rule, while the ears are large, about two-thirds as long as the horns. The neck is short, and carries a short dark grey mane of coarse, straight hair, as a rule erect and about 6 inches long, which extends to between the shoulder blades, where it shortens in length to a ridge of longish hairs along the backbone. The hair of the body generally is coarse, and does not form a very thick coat in this climate, but probably it is longer and thicker in a colder one. On Mr. Butler's specimen the hair seems to me to be longer than is usual. Possibly this is because the other pelts I have seen were those of animals shot in the hot season, and his specimen was shot in November towards the end of the rains. The hair may grow longer in the wet and cold season, and may be moulted in the dry season. The young Serow are darker than the old ones, which become somewhat grey owing to the increase of white hairs among the black. I have never seen a Serow with a beard like a goat, an animal which, on a large scale, it resembles. The legs are remarkable for the thickness and strength of their bones compared with the size of the animal, appearing to measure more below the knees than those of a Sambur deer. The feet are not big in proportion, but are small and compact, not splayed. The bones of the legs gave me the impression of being extra hard and close-grained in texture. The iris of the eye is a very dark blue.

In Siam the Serow inhabits steep and, in many cases, precipitous hills and low mountains, not, in my experience, exceeding 1500 feet, and generally much lower. Personally I have never seen or heard of it on any except those of limestone formation. It is not very markedly nocturnal in its habits, though said to be as much so as the Sambur deer, but moves about, to some small extent at all events, in

the day time. According to the general account of the natives, it hardly ever goes off the hills except when moving from a hill to a neighbouring one. I am inclined to doubt this as I have found its tracks in a clearing near the Prasak river a few miles north of Saraburi about half way between the hills and the river, which are there some two miles apart. I have also found its tracks in the paddi fields about half a mile from the hills near Na Yang in Petchaburi, and I have always been of the opinion that it only makes such expeditions at night, and then probably in search of water. I have been informed by Dr. Smith, however, that the Serow at Koh Hlak, when he was there in November 1912, regularly came off the hill in the early morning, and again in the afternoon as early as 4 p. m., and fed in a clearing at its base, with a couple of Chinamen often at work within 200 yards of them. One was shot feeding in a plantation by the sea-shore, at least 400 yards from the hill and within 100 yards of Mr. Butler's bungalow. The particular hill referred to is fairly thickly covered with vegetation at its base, much less so near the summit.

In every place where I have heard of Serow, except in the neighbourhood of Koh Hlak, there was at all events some possibility of their finding water in order to get an occasional drink. They certainly cannot need much water, however, and must be able to do without it for considerable periods. At Koh Hlak, for instance, I must say I do not understand how they can get anything to drink in the dry season, but the natives there have settled the question to their own satisfaction; they say the animals drink seawater.

I consider the flesh of the Serow very palatable; it is dark coloured and tastes not unlike good tender beef.

The Serow moves fairly fast on hills, but carefully as a rule, and going down hill often appears to be getting along slower than it really is, owing to its habit of looking before it leaps. The article in the Badminton Library on this animal says that "the Serow's chief accomplishment is the way he can gallop down a steep hill, and as he "invariably takes that course when disturbed, he can be easily driven, "provided the ground is well known." My experience is almost entirely the opposite of this, as I have found that it always seeks the high tops of the hills when driven. Going up hill it does not seem to bound or jump or gallop, but goes rapidly upwards in a sort of even running scramble, dodging obstacles and giving one the impression

that it is being rolled rapidly on wheels. It is said to have the habit of depositing its dung in some particular spot, like the Rhinoceros. I think this is true, in the neighbourhood of their lairs at all events. I have found the lair of a Serow with a very large accumulation of droppings heaped up about 10 yards away from it, with a well beaten track from the lair to the heap.

The most remarkable thing I have noticed in connection with these animals is the quite extraordinary roar which they can emit when wounded, or possibly when angry. When hunting near Khao Kiou, west of Potaram, in Muang Ratburi, one of my beaters shot a nearly fullgrown male Serow. It was so badly wounded as to be unable to move, and died in a few minutes. After being hit it emitted two or three long roars which conveyed a great volume of sound and quite an appalling idea of ferocity and rage; so much so that until I actually saw the animal I could not believe such a noise could be made by a Serow, and thought that the shot must have wounded a tiger. I was less than two hundred yards from it at the time and went at once in the direction of the sound; it was dead when I reached it. A native of the district who was standing near me when it roared assured me, without hesitation, that the noise was made by a Serow, so presumably he had heard it on previous occasions. The author of the article on Serow in the Badminton Library mentions "the discordant scream of the Serow heard after dark." Colonel Kinloch quoted by Blanford says, "when disturbed the Serow utters a singular sound between a snort and a screaming whistle, and I have heard them screaming loudly when they had apparently not been alarmed."

The Serow is accounted by natives, and I believe generally, a somewhat difficult animal to bag. In some places that I know of the natives have given up hunting it as they find it so hard to kill. It is a common tale that when wounded it licks the wound which at once heals, even if it is a broken leg!

I should say from what I know of hunting them near Koh Hlak that they were not difficult to bag in that neighbourhood, the hills they frequent there being small so that the animals can easily be driven from one to another, and shots thus obtained at short range. From the experiences of Mr. Butler and Dr. Smith, it also seems to be fairly easy to stalk them there when they are feeding at the base of the hill. On larger hills it needs a certain amount of knowledge

of the game, and well arranged driving, to get a shot at one at all. If seen moving on a hill they can be stalked; the difficulty is to see them.

In districts where they have not been much hunted I believe they are quite capable of charging persons blocking their line of retreat from danger. The Badminton Library states that "all writers agree that a wounded one will charge." Kinloch says "the Serow is a fierce and dangerous brute when wounded and brought to bay." I have known of one breaking back through a line of beaters placed close together.

In Muangs Petchaburi and Pran the natives commonly refer to the Serow as "Khoram" (โครัม) which reminds one of the name "Gooral" given in India to the *Nemorhaedus gooral*, a smaller animal of the Serow tribe. There may be some connection between the names. The ordinary Siamese name for the Serow is "Liang Pa" (เลี้ยงป่า). The Laos near Kok Katiem, north of Lopburi, whose ancestors came from Chiengrai, call it in their language "Yuang."
