



# THE ZOOLOGIST

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## INDIAN WILD CATTLE: THE TSINE AND THE GAUR (MISCALLED BISON).

BY COLONEL POLLOK.

I WAS very glad to see the article in 'The Zoologist' (1897, p. 489), by Surgeon-Captain Henry S. Wood, on the Tsine (*Bos sondaicus*). Very little is known of that animal, and any detailed account of it must be interesting to all zoologists. The account given by naturalists of the Indian wild cattle is very meagre, for very few of them have been personally acquainted with these beasts in their wild state. I have no pretensions to be considered a scientific naturalist, for I know nothing of anatomy, and very little on the subject of species, genera, &c. But I have observed to the best of my opportunities, and having been a fairly successful sportsman, I trust I may be excused for offering the following observations. Tsine are certainly kittle cattle. During thirteen years' wanderings in Burma I only succeeded in killing three bulls and two cows, and four of them only just before I left India. I agree with Dr. Wood's description and remarks, with the exception that I never saw the warts he mentions, and that those killed by me had the whitish rings round the eyes. Can there be two varieties? Mine were shot at the foot of the Yomahs, on the Sittang side. The bulls also were of a deep red, but I have seen them in the distance almost as dark as a middle-aged Gaur (*Bos gaurus*), that is, coffee-coloured, but never could get at them; nor did I notice the "thickened portion of skin devoid of hair,



and of a greyish black colour, the general surface smooth, but in patches very warty, like the skin of a Rhinoceros." Could this have been caused by the animal rubbing his forehead to get rid of parasites? as all Sambur have in May a bare spot about the size of a shilling on the neck, caused, the Burmese said, by their rubbing it on fallen trunks to rid themselves of parasitic pests. There is a dorsal ridge, of course, like in the other wild cattle, but not nearly so pronounced as in the Gaur or Gayal, and not more than in the Wild Buffalo. Mr. Carter, a well-known naturalist and sportsman ("Smoothbore," of 'The Field'), wrote as follows:—

"Colonel Pollok, when referring to the Tsine, says that it has a slight dewlap, which is not always apparent," whilst Jerdon, writing of the same animal, says it resembles the Gaur more than the Gayal, and it wants the dewlap."

I do not think Jerdon had ever seen a Tsine. I can see no resemblance between a Tsine and a Gaur, but a very great one, especially at a distance, between the Gaur and the Gayal. I am glad to see that the doctor says the bull he shot had a slight dewlap, about three inches in its greatest breadth. But whilst his bulls were wanting in the white patches on the buttocks, mine had them very distinctly. The bulls are certainly savage, and attack most pluckily after being wounded,—at least mine did. The first and only one I shot for years was in company with Capt. Hill (now Governor of H. M.'s Jail, Manchester), and he came at us with a will, but had no chance, as Hill used a breech-loading rifle of mine, and I had two heavy two-grooved No. 10-bore rifles by Joseph Lang.

#### THE GAUR (*Bos gaurus*).

This Wild Bull is found, not only in Southern India and the Trans-Gangetic provinces, but it has been shot at the foot of the Himalaya Mountains, usually called the Terai. I have seen splendid heads brought down from the Mishmee Hills. There are thirteen pairs of ribs. The chest is broad, the shoulder deep and muscular and the fore legs short, with the joints very short and strong, the arm exceedingly large and muscular. The skin on the neck, shoulders, and thighs is very thick—about two inches—and is very valuable for the soles of shooting-boots.

Many old bulls have so little hair that they appear as if they had been shaved. When the bull arrives at maturity, which is at



about six or seven years, rings begin to form at the base of the horns, and it is said one is added each year; if so, I must have shot bulls thirty-five or forty years of age. They prefer hilly ranges with flat table-land at top, at an altitude of about 2500 ft.; but they have been killed up to 5000 ft., and traced up even higher. It is a wonderfully active animal for its size and bulk. They browse on young bamboo shoots, and are also fond of grazing on the young grass which springs up after the annual fires. They retire during the heat of the day, either to forests, or force their way into heavy patches of long elephant-grass, and lie there to escape the gadflies, which otherwise torment them dreadfully. As a rule they are inoffensive, but a solitary bull has been known to charge without provocation; if closely followed, all Gaur are apt to prove pugnacious. They are not difficult to kill; a bullet well placed behind the shoulder, in the middle of the shoulder, or behind the ear, or a raking shot forward, will account for one—I have known one paralyzed by a shot through the dorsal ridge. When alarmed their enormous strength and weight enable them to crash through tree and bamboo jungle as if they were but reeds. I have known them when alarmed to snort, and stamp with their feet before retiring. The tongue and marrow-bones are unexceptionable; the only portion of the beast fit to eat by Europeans is the middle layer on either side of the dorsal side, just below the hump; the tail makes very good ox-tail soup.

Mr. Sanderson shot a Gaur in Assam, and as its name and that of the Gayal is "Mithûn," he came to the conclusion that there were no wild Gayal; but although "Mithûn" is usually applied to both the Gaur and Gayal, yet, if pressed, the people will own to an "Asseel Mithûn" or true Gaur, and a "Mithûn" (or bastard Gaur) the Gayal. In a Natural History lately published\* it has been asserted that the Gaur has been tamed, and that they are kept in captivity by natives on our North-Eastern Frontier, but this is altogether erroneous. The very old bulls are either driven away from the herds, or retire and become solitaires, and are the best worth shooting, but they are wary, and difficult to

\* 'The Royal Natural History,' evidently misled by Mr. Sanderson. Although a Gayal at a distance looks very like a Gaur, the heads are totally dissimilar; the Gaur's has a semi-cylindrical crest and a concave forehead; the Gayal possesses neither.



get at. Other conditions being favourable, wherever there are salt-licks, that is, depressions where a whitish clay impregnated with natron is found, these wild cattle, Deer, and even the Felidæ, will abound. It is the Gayal that are in captivity, and not the Gaur. When I first went to Burma I wrote to Mr. Blyth, the curator of the museum in Calcutta, that the Burmese Gaur appeared to me to be larger, and to differ somewhat from the Indian, but he wrote back I must be mistaken, as the Gayal took its place in that country, the true Gaur being absent. However, I was soon able to correct him by sending him heads, and as he shortly after visited the province, he convinced himself that I was right, and wrote that not only were there the true Gaur in the country, but that the skulls and horns were superior to those from Southern India. I pointed out to "Smoothbore," many years ago, that there were two distinct varieties of this Wild Bull, but he was incredulous until he visited Calcutta and spoke to Dr. Anderson, who said, "Pollok is quite right; here are skulls of both." The discrepancies may be due to climatic influences and abundance of food; undoubtedly the Gaur of Burma and of our North-Eastern Frontier are larger than the Indian. I have shot a bull within an ace of 21 hands at the shoulder, and General Blake, an old sportsman, shot a cow 19 hands, whereas the largest bull killed by him in India was of the same size, and the largest he ever saw killed in the Wynand but two inches higher. Even in India Gaur vary; those of the Western Ghâts being larger, and with a profile like a Ram, in that respect resembling their Burmese brethren. Not only does the Burmese Gaur stand higher, but the dorsal ridge extends further back, to within a span of the croup, the dent in the forehead is deeper, the cylindric crest higher, the horns larger, heavier and more truncated, and but seldom worn at the tips as in the Indian. I fancy food is so plentiful they have no need to grub up roots. The heads of the females are, if anything, longer than those of the males, and the nose is more arched.

Those in the Northern Circars of the Madras Presidency, where I shot a great many, have, comparatively speaking, shorter heads, and less of the Ram look; the dorsal ridge terminating about the middle of the back. Then, too, there is the dewlap—has the Gaur one or not? Up to a few years ago the opinion was—not. But



the question cropped up about two years ago. Mr. Bartlett, the late superintendent of the "Zoo," wrote that the one that lived in the Gardens had a well-developed one. Elliot, Jerdon, Campbell, Sterndale, all said he had none, and I too was of that opinion; but "Smoothbore" writes: "A planter of many years' experience in Travancore, and a keen observant sportsman, states that in some examples the Gaur have scarcely any dewlap, and that in others it is strongly developed. So marked is this difference, that the natives divide them into two castes, calling one 'Katu Madoo' or Jungle Cow, and the other 'Kat-erimy' or Jungle Buffalo. He has shot old bulls with at least six inches of skin hanging clear of the chest and throat. This seems extraordinary, when naturalists have mostly described the Gaur as having little or no dewlap. Dewlap originally meant the loose fold descending from the chest, which when the animal was grazing swept the dew: thus, in 'Midsummer Night's Dream,' hounds are described as 'dew-lapped, like Thessalian bulls'; but in the humped Indian cattle the fold extends from the throat downwards, and in the Mysore draught bullocks and in the Brahmini bulls is enormous, whilst in the ordinary village cattle the development is small."

The following notes on the Gaur will be interesting to most readers. Mr. A. F. Martin, of Travancore, writes:—

"When the Kaunan Devan Hills in North Travancore were opened out for tea and cinchona, some years ago, the felling of the forest restricted the wild beasts, particularly the Elephants and Bison, when passing across the estate, to one or two pathways. One particular track was, however, left to them for about ten years, when further cultivation led at last to the blocking up of even this right of way. The animals were at first much puzzled, and both Elephants and Gaur took to wandering about the cultivation. The Elephants accommodated themselves to the altered conditions and used the estate paths. The Gaur, more suspicious, took a straight line for their grazing grounds over the rotten felled timber and through the older cinchona plantations, but were often brought up by the sight of white-washed walls surmounted by a corrugated iron roof.

"At last they settled down to a pathway between the old cinchona and a natural belt left between it and the new clearing.



A pit 10 ft. long, 8 ft. wide, and 8 ft. deep, was dug on the boundary, covered with a mat made of reeds and bamboos, over which earth and dry leaves were scattered. The smell of the fresh earth, however, turned them off. Once a Gaur got his fore feet down the side of the pit, but made a bold jump and cleared it.

“After some months the tracks of a large herd were found making for the pit, and it turned out that a Gaur had fallen in, but managed to jump clean out again. It was evident that 8 ft. was not deep enough, and rock in the bottom prevented its being sunk deeper. Another pit was therefore dug some distance away on the same boundary. The ground was on the side of a steep hill, so that whilst the lower wall was 10 ft., the upper was 14 ft. deep.”

After a while a cow Gaur fell in, but whilst Mr. Martin was watching her, and waiting for coolies to help in putting logs across the pit, she managed to scramble out; and although she followed the path to the old pit, she avoided it and escaped. Two days afterwards a bull fell in and was secured. Mr. Martin describes the trouble they had with this huge animal:—Getting logs across the top of the pit, with the Gaur charging madly about, was exciting work, and the feat was successfully accomplished only after the utmost difficulty and danger.

“The appearance of any one near the pit always caused a furious demonstration on the part of the Gaur, who dug big caves in the side of the pit with his horns, and thus an approach to the edge was rendered dangerous. In ten days' time he had become somewhat tame. He tossed about the grass thrown in to him, and trampled it into the mud, eating but a small quantity. His only drink was water poured into the pit, and which collected in the holes he had made in the mud with his feet. Matters were very little improved by having bundles of grass lowered by a long piece of cane fastened round, for he charged them furiously, and got a lot of the grass on the ground only to trample it into the mud.

“By degrees he began to eat more and to throw less about. Water was a great difficulty, any attempt, too, at lowering a bucket to him was futile, and only ended in the bucket being flattened out.

“It became imperative, therefore, to get him out of the pit.



To attain this end, a stockade about thirty feet square was made round the pit, consisting of stout poles, fifteen feet high at the lower, and ten feet high on the higher part of the ground. They were each sunk about three feet in the ground, eighteen inches apart, and lashed together with cross sticks and fibre, and formed an almost solid wall. A sheet-iron trough was fixed in one corner. When complete, large quantities of brushwood, ferns, and grass were thrown into the pit, until by degrees it became half full and the Gaur was enabled to jump out. His first act was to charge the corner whence he was being watched, but the only harm done was to himself, his frontal ridge being slightly cut. His attention was then attracted by the water-trough, which he knocked about considerably, but finding the water, he took one good long drink before finally knocking it to pieces. During his examination of his new quarters he once more fell into the pit, and this enabled us to repair damages; but before they were quite completed he jumped out again and caused a general stampede. Having twice hurt his head against the stockade, he never again made any attempt to test its strength. The sheet-iron trough seemed to annoy him more than anything else, and was soon rendered useless. A three-cornered wooden trough was then inserted in a corner and protected by stout poles across the corner of the stockade, and this having been satisfactorily arranged, the Gaur soon became comparatively tame. He allowed the measurements of his horns to be accurately taken, through a window left in the stockade, and very fine horns they were, too, measuring  $34\frac{1}{2}$  in. across, from outside to outside of sweep. Although the pit was filled up level with the ground, his previous experience led him to conclude that it was dangerous, and he never crossed it. The result was that the narrow space between the pit and the stockade became ploughed up, and he was up to his hocks in mud. It therefore became necessary to enlarge the enclosure for about a hundred yards in length, taking a bit of jungle in for shelter, and a small ravine which would hold water. A small shed was erected, with sliding bars on the outside and inside, with a view of introducing a domestic Cow as a companion, and so if he approved of her she might be let into the stockade.

“He took to his new quarters very kindly, and soon got to



know that grass was left for him at the inner gate of the shed. In a short time it was found that he liked having his nose and head rubbed, and licked the clothes of the person who rubbed him. He took salt from the hand, but did not at first seem to care about it, probably because it was not mixed with earth as in salt licks, which he was accustomed to, spitting it out if he got too much in his mouth at one time. After two months he became quite tame, and permitted his captor to come into the enclosure, not even moving if he happened to be lying down. After the third month he began to shed his hair, and liked it rubbed off with a wisp of grass, allowing the operator to sit on him whilst cleaning him, but he did not like his hind legs or tail to be touched, kicking out as if he were tickled when this was done.

“After four months a domestic Cow was put into the shed, and the two ate from the same bundle of grass, one on the outside, and the other from the inside of the shed. When the Cow was let into the stockade neither of the animals took any notice of the other, so the Cow was taken out. Although so tame with a European, the Gaur would never allow a native to come near him; and it was unsafe to be in the enclosure if a native came anywhere near, as the bull would jump up, snort, and rush about the place in a very excited manner. The cost of bringing grass for him (of which he ate 2 cwt. per diem) was so considerable that it was thought advisable to put a ring through his nose and have him led out to graze with the domestic cattle. A rope was tied round his horns and his head securely fastened between two bars of the stockade; it would then have been easy to ring his nose from the outside, and it is a thousand pities that this was not done. His terror was, however, so great, that the attempt was given up for that day, and it was settled to postpone the operation until he had become accustomed to have his head tied up. Alas! as will be seen, the glorious golden opportunity was lost in this wise:—

“It will be remembered that there was a shed in one corner of the stockade, built with a view of introducing a domestic Cow to bear the Gaur company. In this shed was kept Guinea-grass, to be given to him in the mornings. One night, however, he thought he would prefer having this grass, of which he was inordinately fond, without waiting for daybreak. He managed to



push aside one of the sliding bars of the gate, break a lower one down, and raise the top bar sufficiently for himself to get through, he ate the bundle of Guinea-grass, and when this was finished he repeated the performance with the outer bars of the shed and walked out to freedom. We are all wise after the event, but it was great carelessness in not pinning the bars, as is done in all well-managed stables in India. If this plan had been adopted, this magnificent animal, 16 hands  $1\frac{1}{2}$  in. fair vertical height, might by this time be enriching the 'Zoo,' where nothing but a miserable two-year-old calf has ever been exhibited."

From one cause or other, no two observers agree as to the colour of a Gaur. Mr. Martin's notes on this adult bull are therefore interesting and instructive:—

"Slaty grey on the dorsal ridge, deepening to intense black on the sides and shoulders; coffee-brown on the hind quarters, turning to black on the flanks; hoofs white; legs white to two inches above the knees and hocks on the outside, and to one inch above the knee and hocks on the inside; hair, inside the thighs and armpits, bright chestnut; neck black, with a large dewlap covered with coarse black hair, hanging down to a little below the level of the knees; head, frontal ridge, slaty grey, black down the front and sides of the face; the muzzle bare and dark slate. Colour of the iris of the eye mottled light brown; pupil slaty blue. But these differ in colour in accordance with age, the very old being black, with the exception of the stockings and forehead, which are dirty white."

In another instance a large bull Gaur was caught in an elephant-pit on the Annemullie Hills, and this animal took water freely from a bamboo spout. The gentleman who caught it, not being in a position to keep and tame the bull, released it; but it was ungrateful, and resented its capture by charging down on its captor whilst the latter was taking its photograph as it emerged from the pit, and he had to fly ignominiously, but not before he succeeded in photographing the animal.

Whether the Gaur would interbreed with tame cows like the Gayal remains to be proved, but I see no reason why it should not. I believe that there are hybrids on the continent between the Java variety of Tsine and tame cattle, but I do not think a Tsine has ever been on show in our Zoological Gardens.



MEASUREMENTS OF AN INDIAN BULL AND A BURMESE BULL AND  
COW GAUR.

	INDIAN.	BURMESE.	
	1 BULL.	2 BULL.	3 COW.
	Hnd. in.	Hnd. in.	Hnd. in.
Height at shoulder.....	19 0 $\frac{1}{2}$	20 3 $\frac{1}{2}$	19 0
Height at croup .....	18 0	19 1	18 0 $\frac{1}{2}$
	Ft. in.	Ft. in.	Ft. in.
Girth behind shoulder .....	7 10	8 6	7 6
Tail and tuft .....	3 3 $\frac{1}{2}$	3 4 $\frac{1}{2}$	3 3
Snout to crown of forehead .....	2 0 $\frac{1}{2}$	2 3 $\frac{1}{4}$	2 4
Length of ears .....	0 9	1 1	1 0 $\frac{1}{2}$
„ fore hoof .....	0 8 $\frac{1}{4}$	0 8 $\frac{1}{2}$	0 7 $\frac{3}{4}$
Horns (outside curve) each .....	2 0 $\frac{1}{2}$	3 1	2 1
Terminal between the tips.....	2 7	3 4	1 9
Girth of horn at base.....	1 6	1 11	1 5
Nape to root of tail, straight.....	7 5 $\frac{1}{2}$	7 10	6 10 $\frac{1}{2}$
Girth of fore leg near chest .....	2 8 $\frac{1}{2}$	3 0 $\frac{1}{4}$	2 4
Total length from upper lip over fore- head to tip of tail, following curve of hump and dorsal ridge .....	14 0	14 0	13 3

The ears of No. 1 were much torn and split, and the tips of the horns had disappeared altogether. Those of Nos. 2 and 3 were perfect, as were their horns also.



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