

Game Animals of India, etc.

THE GREAT INDIAN RHINOCEROS

(*Rhinoceros unicornis*)

NATIVE NAMES.—*Gainda* AND *Gargadan*, HINDUSTANI ;
Karkadan, PUNJABI ; *Gonda*, BENGALI

(PLATE i, fig. 2)

No one is likely to confound a "rhino" with a giraffe, and yet these are the only two groups of living land animals furnished with a horn situated in the middle line of the skull. The horn of a giraffe is, however, very unlike the horn (or horns) of a rhinoceros, being composed of a boss of bone, covered with skin, and situated on the forehead of the skull, to which in adult age it is immovably attached. In all living rhinoceroses, on the other hand, the horn (or horns) is composed of agglutinated hairs, and has no firm attachment to the bones of the skull, which are merely roughened and somewhat elevated so as to fit into the concave base of the solid horn. As Sir Samuel Baker has well remarked, the attachment of the horn of a rhinoceros to the skull is very like that of the leaves of an artichoke to the "choke." In those species of living rhinoceros in which there is a single horn, this is placed immediately above the nose, and it is only in the two-horned species that there is a horn on the forehead, comparable in position with the giraffe's median horn. There is, however, an extinct Siberian rhinoceros with a single horn having the same situation as the latter. An equally marked structural difference obtains between the solid hair-like horn of a rhinoceros and the hollow horn of an ox, sheep, or antelope on the one hand, and the entirely bony antler of a deer, so that these appendages are absolutely distinctive of the former animals. It happens, however, that the female of the Javan rhinoceros is frequently more or

The Great Indian Rhinoceros

less completely hornless, and since the same condition obtained in both sexes of certain extinct species (some of which are found in India), it is obvious that other characters must be sought in order to properly define these animals.

Rhinoceroses are huge, clumsily-built animals, with long bodies, large heads surmounted by the aforesaid horn or horns, short and thick legs, and sparsely-haired or naked skins of great thickness. In all the living species there are three toes to each foot, each encased in a small hoof-like nail at its termination; the middle one being larger than either of the others, and symmetrical in itself. The long and low head presents a markedly concave profile, rising posteriorly into an abrupt ridge or crest, on which are situated the medium-sized and more or less tube-like ears, whose margins are fringed with bristly hairs. Although there is no trunk, the upper lip is frequently produced into a pointed and semi-prehensile tip; and the eyes, which are situated on the sides of the head, are small and pig-like. The cylindrical tail does not reach within some distance of the hocks; and the cows have a pair of teats, situated in the groin.

Very characteristic of rhinoceroses are their teeth, although the number of these varies considerably in the different species, the African members of the group having none in the front of the jaws. In spite of showing minor specific modifications, the cheek-teeth are characterised by a distinct pattern of grinding surface; the essential elements in those of the upper jaw being a continuous vertical outer wall, from which proceed two transverse crests, separated by a deep open cleft, towards the inner margin of the crown. In some cases the plane of the grinding surface is nearly horizontal, while in others it is ridged; and the transverse crests and inner surface of the outer wall may be complicated by projections jutting into the intervening channel.

Game Animals of India, etc.

Although now confined to Africa and the warmer parts of Asia, rhinoceroses were formerly distributed over the whole of the Old World (with the exception of Australasia), where they ranged as far north as Siberia, and were likewise represented by hornless species in North America. The living species may therefore be regarded as survivors of an ancient type. The three species found in Asia are broadly distinguished from their African allies by the possession of teeth in the front of the jaws, and by their skins being thrown into a number of loose folds, instead of forming a tight-fitting jacket. Their extinct relatives appear to have been of the same general type.

The great Indian rhinoceros is the largest of the three named Asiatic species, and specially characterised by the possession of a single horn, coupled with the fact that the fold of skin in front of the shoulder is not continued across the back of the neck, and likewise by the skin of the sides of the body being thickly studded with large rounded tubercles, which have been aptly compared to the heads of the rivets in an iron boiler. Very characteristic, too, are the great folds of skin which surround the back of the head like a coif; the head itself being larger and more elevated at the ears than in either of the other Asiatic species.

With the exception of a fringe on the margins of the ears, and some bristly hairs on the tail, the coarse and massive skin is completely nude; the tubercles attaining their maximum development on the shoulders, thighs, and hind-quarters, where they not unfrequently measure an inch in diameter. On the limbs the place of these tubercles is taken by a number of small many-sided scales. The main folds in the skin of the body are three, namely, one in front of the shoulder, a second behind the same, and a third in front of the thighs and hind-quarters; the second and third are alone continued across the back, the first inclining backwards towards the second and dying out on the

The Great Indian Rhinoceros

shoulder. In addition to the coif-like folds around the head, a deep horizontal pleat separates the shoulder-shield from the fore-leg, while a similar fold divides the rump-shield from the hind-limb. Folds also occur on the hind border of the rump-shield, so that the tail is enclosed in a deep groove, in such a manner that only its terminal portion is visible in a side view. The horn, although never attaining dimensions approaching those of the front horn of the African species, is well developed in both sexes; and the colour of the skin is blackish grey, showing more or less of pink on the margins of the folds.

A male measured by General A. A. Kinloch stood 5 feet 9 inches at the shoulder, and was $10\frac{1}{2}$ feet in length from the tip of the nose to the root of the tail; the tail itself being 2 feet 5 inches in length. Larger dimensions are, however, recorded in Rowland Ward's *Records of Big Game*, in the case of specimens shot by the Maharaja of Cooch-Bihar; the height in three of these being respectively 6 feet 4 inches, 6 feet 1 inch, and 6 feet $\frac{1}{2}$ inch; the length of the head and body, 11 feet 11 inches, 11 feet 2 inches, and 11 feet 8 inches; and the total length, 14 feet 1 inch, 13 feet 2 inches, and 13 feet 10 inches.

As a rule, the length of the horn does not exceed about a foot. A length of 24 inches is, however, recorded in a specimen in the possession of the British Museum, and assigned to the present species; and $19\frac{1}{8}$ inches is the length of the horn of a mounted specimen in the Ipswich Museum. Two specimens of 18 inches, or over, are recorded from Assam; and the Maharaja of Cooch-Bihar has obtained the horn of a female measuring $16\frac{1}{4}$ inches in length.

The Indian rhinoceros usually has one pair of upper and two of lower incisors; the outermost pair of the latter being large and tusk-like, and projecting from the angles of the lower jaw, so as to make formidable weapons of offence. The cheek-teeth are characterised

Game Animals of India, etc.

by their flat plane of wear and complex pattern, the former feature being indicative of grass-eating habits. Teeth of this type have been discovered in Madras and at Bunda, in the North-West Provinces, as well as in the river-gravels of the Narbada valley, and may be taken to indicate that the range of the species included these parts of India. There is historical evidence to prove that during the early part of the sixteenth century the great Indian rhinoceros was common in the Punjab, where it extended across the Indus as far as Peshawur. Not improbably the rhinoceroses found till about the year 1850 in the grass-jungles of the Rajmahal Hills, in Bengal, belonged to the present species. Now, however, this animal is restricted to the Assam plain and the Terai land of Nepal and some of the adjacent territories. From information given by Colonel Manners Smith¹ it is evident that this rhinoceros was still plentiful in the year 1909 in parts of the Nepal Terai, where it seems to be more abundant than in its supposed last strongholds in Cooch-Bihar and Assam. During a Nepal Government hunt in 1907 a large number of adult animals were killed.

In the jungles of Assam the Indian rhinoceros is as completely concealed as is a rabbit in a corn-field. To those who have never seen Indian grass-jungles, it may seem incredible that such a huge animal should be hidden by such covert, but it must be remembered that the grass of which they are formed grows to a height of between 10 and 20 feet. As a matter of fact, the rhinoceros, like the Indian buffalo, makes regular tunnels, or "runs," among this gigantic grass; and from these retreats it may be driven out by beating with a line of elephants, or by tracking on foot. When driven into the open, the animal will often stand for a few minutes, shaking its ears, before it makes up its mind in which direction to flee. A calf and its mother always issue forth together, but the old bulls and cows keep mostly apart,

¹ *Field*, 1909, vol. cxiv. p. 177.

The Great Indian Rhinoceros

although both may have their home in the same patch of jungle. Those who have seen an Indian rhinoceros careering round its enclosure in the Zoological Gardens after a mud-bath, with its heavy, lumbering gallop, will not fail to realise that a charge from such a monster must be a serious matter. Fortunately, in spite of stories to the contrary, the creature in its wild state appears to be of a mild and harmless disposition, seeking rather to escape from its enemies by flight than to rout them by attack. When badly wounded, or so hustled about by elephants and beaters as to become bewildered, a rhinoceros will, however, occasionally charge home. In such onslaughts it is the common belief that the animal, like its African cousins, uses its horn as its weapon of offence; but this is an error, the real weapons being the triangular, sharp-pointed lower tusks. With these a sweeping cut can be made in the leg of an elephant, in much the same way as a boar rips up a horse. Probably all the Asiatic members of the group attack in the same fashion.

Like all its kindred, the great Indian rhinoceros loves a mud-bath, and when plastered over with the mud of some swamp or pool, looks a more than ordinarily unprepossessing creature. Its favourite haunts are generally in the neighbourhood of swamps; and hilly districts are avoided. Morning and evening are the chief feeding-times, the heat of the day being generally passed in slumber. As already stated, the structure of the teeth indicates that its food is chiefly grass; and such observations as have been made confirm the truth of this inference. One individual lived for forty years (1864-1904) in the London Zoological Gardens, and it is stated that others have been kept in confinement for fully fifty years. Consequently, there is no doubt that the animal is long-lived, and it has been suggested that its term of life may reach as much as a century. The cow gives birth to a single young one

Game Animals of India, etc.

at a time, but information is required in regard to the duration of the period of gestation and the frequency with which births take place.

It was an old idea that the hide of the Indian rhinoceros was bullet-proof; but this was erroneous even in regard to such weapons as the military "brown Bess." As trophies, sportsmen may preserve either the entire head or the horn alone; in addition to which a shield-shaped piece of skin is frequently cut from the under surface of the body, where it is thinner than elsewhere, and kept as a memento of a successful "shikar." Cooch-Bihar is now one of the centres for rhinoceros-shooting. Fine examples have been obtained by the Maharaja himself; and it was in this territory that the Duke of Portland obtained specimens in 1882. To shoot females is prohibited.

THE SINGPHO RHINOCEROS

In this place reference may be made to the occurrence of an unknown and apparently two-horned rhinoceros in the Singpho country. According to native reports, there exists in the Singpho country a rhinoceros of larger size than either the two-horned *Rhinoceros sumatrensis* or the single-horned *R. sondaicus*. For this animal the natives have a name distinct from those which they apply respectively to the two species just named, and they further describe it as being of huge size, comparing it in this respect with an elephant. The Singpho country, which is the area marked in the *Times Atlas* as the district inhabited by the Kachins or Singphos (Kakhyens), is the tract lying on the headwaters of the Chindwin River, this being separated from the north-eastern extremity of the Assam Valley only by the Naga Hills and the Patkai Range.



FIG. 1a.—Javan Rhinoceros, shot by Mr. M. Maxwell in 1910.

Game Animals of India, etc.

THE JAVAN RHINOCEROS

(*Rhinoceros sondaicus*)

NATIVE NAMES.—*Gainda*, HINDUSTANI; *Gonda*, BENGALI; *Kunda*, *Kedi*, AND *Kweda* OF THE NAGAS; *Kyeng* AND *Kyan-tsheng*, BURMESE; *Badak*, MALAY.

(PLATE i, fig. 3)

Although possessing only a single horn, the Javan rhinoceros is a very different beast, both externally and in its internal anatomy, from the preceding species. In the first place, it is a somewhat smaller and lighter-built animal. The fold of skin on the shoulders is continued right across the back in the same manner as are the other two great folds. Moreover, owing to the absence of the deep groove on the rump, the tail stands out quite distinct from the hind-quarters, so that its whole extent is exposed in a side view. Very characteristic also is the structure of the skin, which lacks the "boiler-rivets" of the great Indian species, and is marked all over with a kind of mosaic-like pattern.

Yet another peculiarity of the Javan rhinoceros is to be found in the frequent, if not invariable, absence of the horn in the female. Male horns of between 10 and 10 $\frac{3}{4}$ inches in length are recorded.

As regards the height of the animal, the most authentic measurements of wild specimens are those of a male and a female, which stood 5 feet 10 $\frac{1}{2}$ inches and 5 $\frac{1}{2}$ feet at the shoulder respectively.

The present species is of the same dusky-grey colour as the last, and its hide is equally devoid of hair. The cheek-teeth, however, although numerically the same as in the Indian rhinoceros, show a simpler pattern, while their crowns wear into ridges instead of a uniformly flat plane. This may be taken to indicate that the present species feeds chiefly upon twigs and leaves.



FIG. 16.—Javan Rhinoceros (male).

Game Animals of India, etc.

Typically an inhabitant of Sumatra, the range of this rhinoceros extends from Sanderbans, and other parts of Eastern Bengal, to the Terai, Sikkim, Assam, and thence through Burma to the Malay Peninsula and islands. So far as present information goes, the mainland form cannot be distinguished from those inhabiting the Malay islands, so that separate local races cannot yet be differentiated. It is, however, quite likely that this is due to the want of a good series of specimens, the British Museum having, in addition to skulls and skeletons, only a mounted female specimen, presented by Mr. T. R. Hubback, and the skin of a young calf in a condition fit for public exhibition.

Although found in the swampy Sanderbans of Lower Bengal, within a day's journey of Calcutta, the Javan rhinoceros prefers forest tracts to grass-jungles, and is generally met with in hilly districts, where it apparently ascends in some parts of its habitat several thousand feet above sea-level. In most other respects the mode of life of this species is probably very similar to that of its larger relative. Mr. T. R. Hubback,¹ on the evidence of native testimony, affirms that either this or the next species uses its lower tusks for fighting in the same way as the great Indian rhinoceros.

THE SUMATRAN RHINOCEROS

(*Rhinoceros [Dicerorhinus] sumatrensis*)

NATIVE NAMES.—*Kyan* AND *Kyan-shaw*, BURMESE ;
Badak, MALAY

(PLATE i, fig. 4)

Although possessed of two horns, the Sumatran rhinoceros resembles its Asiatic brethren in having

¹ *Elephant and Seladang Hunting in the Federated Malay States*, 1905, p. 24.

The Sumatran Rhinoceros

teeth in the front of the jaw, as well as by its folded skin, and has therefore nothing to do with the African representatives of the family. As compared with the other Asiatic species (exclusive of the still unknown Singpho rhinoceros), the presence of an additional horn, coupled with the fact that it has only a single pair of lower front teeth (the small central pair occurring between the tusks in the other two species being absent), afford ample grounds for regarding this rhinoceros as the representative of a group by itself; and it is noteworthy that an extinct rhinoceros (*R. hundsheimensis*) from the continent of Europe appears to be another member of the same group of the genus.

To distinguish the present species from all its relatives, it is sufficient to state that it is the only named living rhinoceros with two horns and a folded skin; but since it is an animal by no means familiar to most sportsmen, it is advisable to enter somewhat into details. In the first place, this species is the smallest of living rhinoceroses, as it is also the most hairy, its usual height at the shoulder not being more than 4 to 4½ feet, and the length from the tip of the muzzle to the root of the tail only about 8 feet. Some female specimens even fall short of the foregoing dimensions, an old individual from the Malay Peninsula being only 3 feet 8 inches at the withers. The weight has been estimated at a couple of thousand pounds.

As though suggestive of a transition towards the smooth-skinned rhinoceroses of Africa, the folds in the skin of the present species are much less pronounced than in the other Asiatic kinds; and of the three main folds, only one, namely, that situated behind the shoulder, is continued across the back. In structure, the outer surface of the skin is finely granular; and its colour, which varies from earthy-brown to almost black, is likewise different from that of either of the one-horned species. Hair grows sparsely all over the head

Game Animals of India, etc.

and body, but attains its maximum development on the ears and the tail; its colour varying from brown to black. At their bases the two horns are separated from one another by a considerable interval; and although in captive individuals they are generally much worn down; when fully developed they are slender for the greater part of their length, the front one curving backwards in an elegant sweep, and attaining very considerable size. The longest known specimen of the front horn is in the British Museum, and has a length of $32\frac{1}{2}$ inches, with a basal girth of $17\frac{3}{8}$ inches; a second specimen in the same collection measuring $27\frac{1}{8}$ inches in length, and $17\frac{7}{8}$ in circumference.

As regards the cheek-teeth, those of the upper jaw are practically indistinguishable from the corresponding molars of the Javan rhinoceros, and may accordingly be taken as indicative of the leaf- and twig-eating propensities of this species.

The Sumatran rhinoceros inhabits the islands of Sumatra and Borneo, and is also met with in the Malay Peninsula, whence it extends northwards through Burma and Tenasserim to Chittagong and Assam, and it also occurs in Siam. Compared with the typical Sumatran animal (*R. sumatrensis sumatrensis*), a specimen from Chittagong formerly living in the London Zoological Gardens was distinguishable by its superior dimensions, paler and browner hair, shorter and more fully tufted tail, and the strongly developed fringe on the margins of the ears, the interior of which was bare. The skull was proportionately broader; but this seems a feature of minor import. Although originally regarded as a separate species, the Chittagong rhinoceros is best classed as a local race of the Sumatran animal, with the name *Rhinoceros sumatrensis lasiotis*. Other specimens of the hairy-eared race have been subsequently obtained in Assam, where the species is rare; and one example has been killed in Tippera, and a second in the Bhutan Duars. In Tenasserim and the Malay Peninsula it is

The Sumatran Rhinoceros

replaced by a smaller, blacker, and less hairy form, which if distinct from the typical Sumatran animal (as is probably the case) should be known as *R. sumatrensis blythi*.

In habits the Sumatran rhinoceros appears to be very similar to the Javan species; both affecting forested hill-country, which may be at a considerable altitude above the sea. In the Mergui Archipelago a rhinoceros, which may be this species, is stated to have been seen swimming from island to island; and it is probable that all the Asiatic representatives of the family will take readily to the water, although in Somaliland the African rhinoceros is found in absolutely arid districts, where it cannot even drink for long periods.

The type specimen of the hairy race of the Sumatran rhinoceros was a female, captured at Chittagong in the year 1868. When discovered by native hunters she was embedded in a quicksand, and well-nigh exhausted by her struggles to reach *terra firma*. By attaching ropes to her neck she was safely extricated from her perilous position, and fastened to a tree, where next morning she was found so refreshed and so violent that her captors were afraid to approach. Accordingly, a report of the capture was sent to Chittagong, and soon after a couple of English officials arrived with elephants, to one of which the rhinoceros was made fast, and, after some trouble, marched into the station, where she soon became tame. Eventually this animal was secured for the London Zoological Society, and a coloured plate of it was published in the *Proceedings* for 1872. A specimen of the typical representative of the species was procured by the Society at the close of 1872, so that the two forms were exhibited side by side. While in the docks the Chittagong animal gave birth to a young one; and from certain facts that came to his knowledge, the late Mr. A. D. Bartlett was led to conclude that the period of gestation in the species was only a little over seven

Game Animals of India, etc.

months. According to an article by Mr. L. Wray in the *Journal* of the Federated Malay States Museums, the Sumatran rhinoceros is becoming extremely scarce in the Dindings district of the Malay Peninsula, owing to persistent trapping on the part of the natives. The rhinoceroses are caught in deep concealed pitfalls made in their runs; and the Malays state that fifty individuals have been taken in this way in and near the Dindings alone. Catching and exporting these animals has, indeed, become a regular trade in the district for some years past, with the result that, whereas they were formerly quite common, they are now very scarce and difficult to trap.

THE MALAY TAPIR

(*Tapirus [Acrocodia] indicus*)

NATIVE NAMES.—*Tara-shu*, BURMESE; *Kuda-ayer* AND *Tennu*, MALAY

(PLATE i, fig. 5)

Tapirs (so called by an abbreviation of the native name of one of the South American species) offer little attraction to the sportsman, since they yield nothing in the way of trophies except their skulls and skins, and the latter are valuable only as leather. Nevertheless, they are animals by no means lacking in interest, if only from the point of view of their remarkable geographical distribution. Although the typical South American tapir was known by repute to the Swiss naturalist Linnæus, who at first described it as a terrestrial species of hippopotamus, but afterwards had doubts as to its very existence, it was not till 1816 that naturalists were made aware that another species inhabits the jungles of the Malay Peninsula. For this information they were indebted to a Major Farquar, who described

The Malay Tapir

an individual then living in the menagerie of the Governor-General of India at Barrackpur, although he omitted to assign to the Oriental species a distinctive name.

This discovery revealed the fact that while tapirs are common to the Malay countries and South and Central America, they are found at the present day in no other part of the world. Were it not for the investigations into the past history of our globe, we should have been at a loss to explain such a remarkable instance of discontinuous distribution; but we now know that in past epochs these animals were distributed over a considerable portion of the northern hemisphere, whence they wandered southwards to their present widely sundered dwelling-places.

Although in Asia, at any rate, animals that seldom come under the ken of the sportsman in their wild condition, tapirs have been made familiar to the public from specimens exhibited in menageries and museums. In size they may be compared to heavily-built and short-limbed donkeys, but from their comparatively bare skins, general shape, and long flexible snouts, they present a superficial resemblance to large swine, with which group many persons are inclined to associate them. An examination of their feet, in which one toe is much larger than either of the others, and symmetrical in itself, is, however, sufficient to show the incorrectness of this idea, and to indicate that their relationship is with rhinoceroses.

Unlike the latter animals, tapirs have, however, four toes on the front feet, although on the hind-feet the number is three in both groups. From rhinoceroses they are likewise distinguished by the production of the nose and upper lip into a short, mobile proboscis, or trunk. The teeth, too, are very different, both in number and form, from those of rhinoceroses; the total number being forty-two. Both jaws are furnished with a full set of incisors, or "nippers," and tusks;