

THE  
GREAT AND SMALL GAME  
OF  
INDIA, BURMA, & TIBET

BY

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took the elephant fair and square as it did. The remains of the elephant were found dead at the foot of the embankment next morning ; the engine lost both its head-lights in the encounter, the brake gear was injured, and the smoke-box door partially battered in."

Before concluding the subject of elephants it may be mentioned that these animals are peculiar among existing warm-blooded quadrupeds for the almost vertical position occupied by the bones of the limbs. "The motions and positions of the elephant's limb," remarks Professor H. F. Osborn, "as shown by instantaneous photography, are very surprising. It is safe to say that the study of the skeleton alone would have given us a very faulty conception of the animal. The two most striking features are the great play of the wrist-joint and the straightness of the limbs. . . . In standing, the bones of the fore-limb are in a nearly vertical line from the scapula [shoulder-blade] downwards. The elbow-joint is, in fact, much straighter in extreme extension than we should have inferred experimentally by fitting the bones of the arm and fore-arm together."

### THE 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 animals furnished with a horn situated in the middle line of the skull.<sup>1</sup> The horn of a giraffe is, however, very

<sup>1</sup> The southern right-whale has a curious warty protuberance on its nose, which recalls a blunted horn.

unlike the horn (or horns) of a rhino, 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 rhinos, 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 rhino 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 but a single horn, this is always 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 European 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 rhino 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 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, then, 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, and 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-

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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, too, of rhinos 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 grinders, or cheek-teeth, are characterised by a very 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 may be 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 median hollow.

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 a very ancient type of animal. All the three species now 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. It is, however, not a little remarkable that India was at one time the home of a two-horned extinct species (*R. platyrhinus*) closely allied, on the one hand, to the living Burchell's rhinoceros (*R. simus*) of South Africa, and, on the other, to the extinct woolly rhinoceros (*R. antiquitatis*) of Northern Europe and Asia.

The Indian rhinoceros, as the present species may be called, on account of its being confined to India, is the largest of the three 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 two Asiatic species of the genus.

With the exception of a fringe on the margins of the ears, and some bristly hairs on the tail, the coarse and massive skin of this ponderous brute is completely nude, the aforesaid tubercles attaining their maximum development on the shoulders, thighs, and hind-quarters, where they not unfrequently measure fully 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 in number; 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 of these alone being continued across the back, the first inclining backwards towards the second and dying out on the shoulder. In addition to the aforesaid 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 hinder border of the rump-shield, so that the tail is neatly enclosed in a deep groove, in such a manner that only its terminal portion is visible in a side view of the animal. The horn, although never attaining dimensions anything approaching those of the front horn of the African species, is well developed in both sexes; and the general colour of the skin is uniformly blackish grey, showing more or less of pink on the margins of the folds.

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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. These dimensions are the largest given by Mr. W. T. Blanford in the *Fauna of British India—Mammals*. Much larger dimensions are, however, recorded by Mr. Rowland Ward in the third edition of *Records of Big Game*, in the case of specimens shot by the Maharaja of Kuch Behar; the height in three specimens 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, in the same three examples.

As a rule, the length of the horn does not exceed about a foot. Mr. Rowland Ward records, however, a length of 24 inches in a specimen formerly in the possession of the late Dr. Jerdon, and assigned to the present species; and  $19\frac{1}{2}$  inches is the length of a horn in the British Museum. A specimen measuring 19 inches, which comes next on Mr. Ward's list, is stated to be from Burma, and therefore, if the locality be correct, must belong to another species. Three specimens of 16 inches, or over, are recorded from Assam and Kuch Behar. Recently the Maharaja of Kuch Behar obtained a female horn measuring  $16\frac{1}{4}$  inches in length, which is the record for that sex.

As regards its teeth, the Indian rhinoceros has usually one pair of upper and two of lower incisors; the outermost pair of the latter being large, tusk-like, and projecting from the angles of the lower jaw, so as to form formidable weapons of offence when wielded by an animal of the weight and strength of the present species. The cheek-teeth are characterised by their flat plane of wear and complex pattern, the former feature being indicative of grass-eating habits on the part of their owner. 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 Indian rhinoceros was common in the Punjab, where it extended across the Indus as far as Peshawur; and down to the middle of the present century, or even later, it was to be met with along the foot of the Himalaya as far west as Rohilcund and Nepal, and it survived longer still in the Terai-lands of Sikhim. Not improbably, too, the rhinoceroses found till about the year 1850 in the grass-jungles of the Rajmehal Hills, in Bengal, belonged to the present species. Now however, this huge animal has retreated almost, if not entirely, to the eastward of the Tista valley, on the borders of Kuch Behar; its main strongholds being the great grass-jungles of that province and of Assam.

In these jungles the Indian rhino (which, by the way, is the rhinoceros *par excellence*, being the type of the Linnean genus of that name) not only dwells, but is as completely concealed therein as is a rabbit in a cornfield. To those who have never seen an Indian grass-jungle, it may seem incredible that such a huge animal should be hidden by such covert, but when it is realised that the grass of which they are formed grows to a height of between 10 and 20 feet, the difficulty vanishes. 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 it up 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 will of course issue forth together, but the old bulls and cows keep mostly apart, although both may have their home in the same patch of jungle. Those who have seen an Indian rhino careering round its enclosure at the "Zoo" 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, however, in spite of

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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 rhino 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 appears to be one of the numerous popular errors in natural history, and it is stated by competent authorities that the real weapons are the triangular and sharply-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 genus attack in the same fashion.

Like all its kindred, the Indian rhinoceros dearly loves a mud-bath, and when plastered over with the odoriferous mud of some swamp or pool, is even a more unprepossessing creature than ordinary. Its favourite haunts are generally in the near neighbourhood of swamps ; and hilly districts are studiously avoided by this species. Morning and evening are its chief feeding-times, the heat of the day being generally passed in slumber. As already stated, the structure of its teeth indicates that its food is chiefly grass ; and such observations as have been made confirm the truth of this inference. Individuals have lived for over twenty years in the London "Zoo," and it is stated that others have been known to have been kept in confinement for fully fifty years. Consequently, there is no doubt that the animal is very long-lived, Brian Hodgson suggesting that its term of life may reach as much as a century. The cow gives birth to a single young one 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 antiquated weapons as the military "Brown Bess." As trophies, sportsmen may preserve



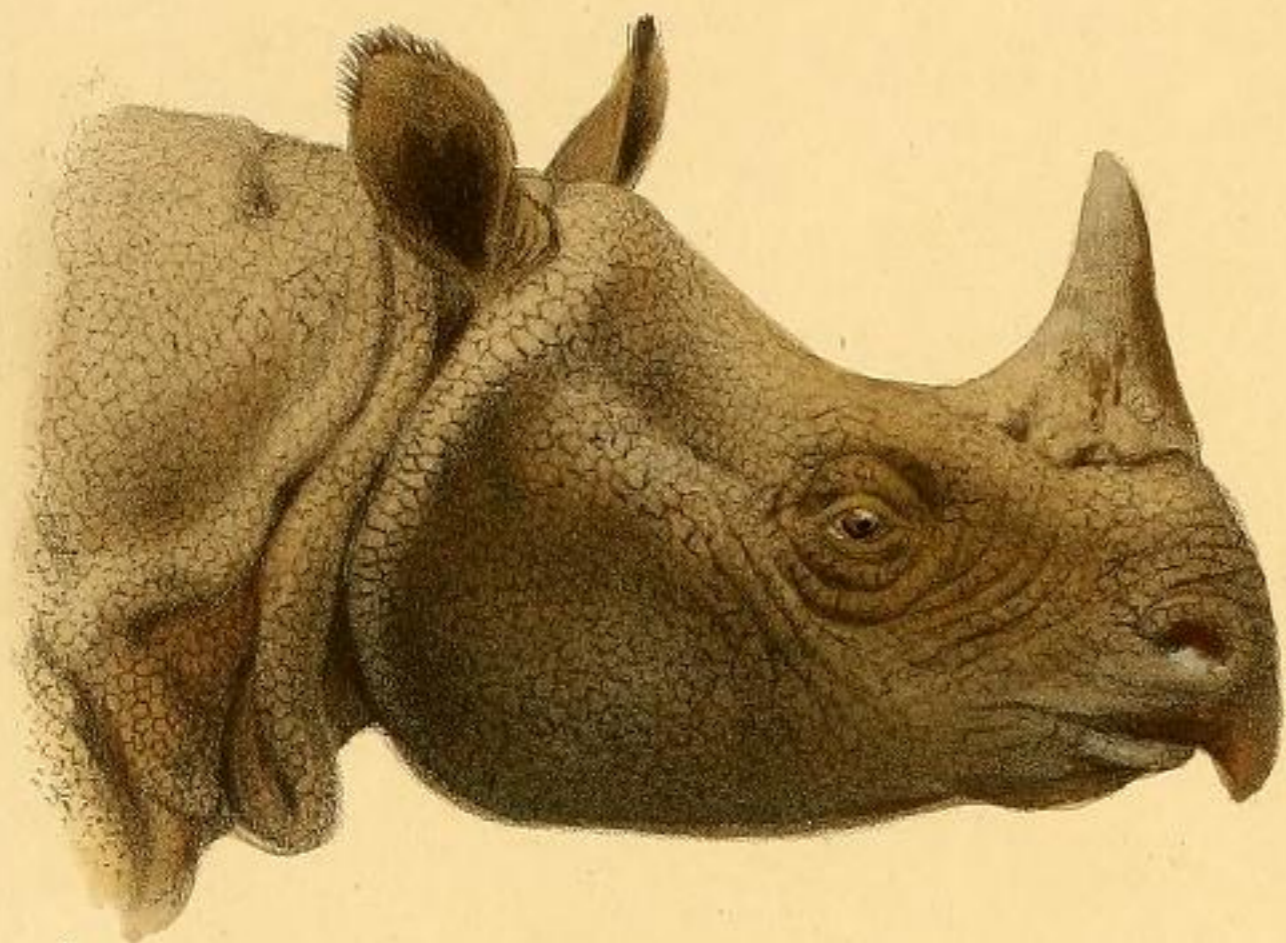


PLATE I

1. Indian Elephant.
2. Indian Rhinoceros.
3. Javan Rhinoceros.
4. Sumatran Rhinoceros.\*
5. Malay Tapir.
6. Kiang.

\* From a Malay specimen. The Malay animal differs from the chestnut-haired Indian form by its black hair, and probably represents a distinct race (*R. sumatrensis niger*).

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." Kuch Behar is now one of the great centres for rhino-shooting, fine specimens having been obtained by the Maharaja himself. It was in this territory that the Duke of Portland obtained his specimens in 1882. Shooting females is strictly prohibited in Kuch Behar, as it probably also is in Assam.

There is no evidence that this rhinoceros was ever found in Ceylon (where, indeed, the genus is unknown), or in the countries to the eastward of the Bay of Bengal, so that it is one of the comparatively few species of large animals strictly confined to the peninsula of India.

## 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 but a single horn, the Javan rhinoceros is a very different beast, both externally and in its internal anatomy, to the preceding species. In the first place, although measurements of adult males are still required, it is a somewhat smaller and lighter-built animal, with a relatively less bulky and less elevated head. Then, too, the folds of skin round the neck are much less developed, and the body-fold on the shoulders is continued right across the back in the same manner as are the other two great folds. Moreover, owing to the

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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 of the animal. 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, caused by the presence of a network of fine cracks in the superficial layer. A piece of skin cut from any part of the body is therefore amply sufficient to determine to which of the two species it pertained.

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 11 inches in length are recorded by Mr. Rowland Ward in *Records of Big Game*. In the same work, under the head of *R. unicornis*, reference is made to a horn of 12 inches in length belonging to an individual shot by General Kinloch in the Bhutan Duars. This animal is, however, probably the one alluded to by Mr. Blanford as having been killed in the Sikhim Terai, and assigned to the present species.

As regards the height of the animal, the most authentic measurement of a wild specimen is that of a female, which stood  $5\frac{1}{2}$  feet at the shoulder; males must almost certainly attain larger dimensions.

It remains to mention that the present species is of the same dusky-grey colour as the last, and that its hide is equally devoid of hair. Its teeth, although numerically the same as in the Indian rhinoceros, show a simpler pattern in those of the cheek series, 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.

Typically an inhabitant of Java, this rhinoceros is also found in the islands of Borneo and Sumatra, as well as in the Malay Peninsula, whence it extends northwards through Burma into Assam, and so into Eastern Bengal and the Sandarbans. As already mentioned, it has been killed as

far west as the Sikhim Terai. 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, by no means unlikely that this is due to the want of a good series of specimens; and it may be mentioned, as a circumstance by no means creditable to sportsmen, that at the present time the British Museum has, in addition to skulls and skeletons, only the skin of a young calf in a condition fit for public exhibition.

Although found in the swampy Sandarbans of Lower Bengal, within a day's journey of Calcutta, the Javan rhinoceros usually prefers forest tracts to grass-jungles, and is very generally met with in hilly districts, apparently ascending in some portions of its habitat to an elevation of several thousand feet above the sea-level. In most other respects the mode of life of this species is probably very similar to that of its larger relative; its disposition is, however, stated to be more gentle, and in Java tame individuals are frequently to be seen wandering about the villages of the natives.

#### HAIRY-EARED SUMATRAN RHINOCEROS

(*Rhinoceros sumatrensis lasiotis*)

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 teeth in the front of the jaws, 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, the presence of an additional horn, coupled with the fact that

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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 whose remains are met with on 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 really sufficient to say that it is the only living rhino with two horns and a folded skin; but since it is an animal by no means familiar to the majority of sportsmen, it is advisable to enter somewhat into details. In the first place, then, this species has the distinction of being the smallest of living rhinos, as it is by far the most hairy, its usual height at the shoulder not being more than 4 to  $4\frac{1}{2}$  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 of the typical race from the Malay Peninsula being only 3 feet 8 inches at the withers. The weight of the animal has been estimated at a couple of thousand pounds.

As though suggestive of a transition towards the smooth-skinned rhinos 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 an earthy-brown almost to black, is likewise quite different from that of either of the one-horned species. Hair is developed sparsely all over the head and body, but attains its maximum development on the ears and the tail, its colour varying from brown to black. At their base 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 a 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 occurs typically in the islands of Sumatra and Borneo, and is likewise met with in the Malay Peninsula. Thence 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 typicus*), a specimen from Chittagong, till recently living in the London Zoological Gardens, was found to be 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, too, was proportionately broader; but this, in spite of assertions to the contrary, seems to be a feature of minor import. On account of these differences the Chittagong rhinoceros was regarded by its describer, Mr. P. L. Sclater, as a distinct species; but it can scarcely be regarded as more than a local race, which somewhere in Burma probably passes into the typical form. 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 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 rhino,

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 common African rhinoceros is found in absolutely arid districts, where it cannot even drink for long periods.

The type specimen of this 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 securely fastened to a tree, where next morning she was found so refreshed and so violent that her captors were afraid to make a near approach. Accordingly, a report of the capture was sent in to Chittagong, and soon after a couple of English officials arrived with elephants, to one of which the rhino was made fast, and, after some trouble, marched into the station, where she soon became very tame. Eventually she was secured for the menagerie of the London Zoological Society, in whose *Proceedings* for 1872 her coloured portrait appeared. By a lucky coincidence, 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 in the menagerie. 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 (who has given an interesting account of the circumstance) was led to the conclusion that the period of gestation in the species was only a little over seven months. She died in the autumn of 1900. It should be added that Mr. J. Cockburn (who wrote on the subject in *The Asian* newspaper of 20th July 1880) is entitled to the credit of recognising that the present form, instead of being entitled to rank as a species by itself, is a local race of the Sumatran rhinoceros ; his view being adopted by Mr. W. T. Blanford in the *Fauna of British India*.