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THE FAUNA OF BRITISH INDIA,

INCLUDING

CEYLON AND BURMA.

*PUBLISHED UNDER THE AUTHORITY OF THE SECRETARY OF
STATE FOR INDIA IN COUNCIL.*

EDITED BY W. T. BLANFORD.

MAMMALIA.

BY
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PREFACE.

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THE first part of this volume, containing the Introduction, Primates, Carnivora, and Insectivora, was published at the end of June 1888. The delay of more than three years in completing the work has been caused by the necessity of devoting a large portion of my time to the editing of the five volumes belonging to the same series that have appeared since the first part of the present work was issued.

The Mammalia of British India, inclusive of Ceylon and Burma, here enumerated and described, just exceed 400 in number. Jerdon's 'Mammals of India,' published in 1867, contained descriptions of 242 species; but the area as now defined considerably exceeds the limits adopted by Jerdon, who excluded from his work all forms peculiar to Ceylon or Burma, and to all countries north of the main Himalayan range, west of the Indus, or east of the Bay of Bengal and of a line drawn northwards from the head of it. The greatest advance since Jerdon wrote, in our knowledge of Indian Mammals, has been in the orders of Chiroptera, Insectivora, and Rodentia, whilst the order with which, at the present time, our acquaintance is most imperfect is that of Cetacea.

In Sterndale's 'Natural History of the Mammalia of India and Ceylon,' published in 1884, the number of species is 482; but some of these are not found in British Territory, and



bordered with whitish or white. Other alleged differences, such as greater size in the *Kiang*, and the presence of a cross shoulder-stripe in the *Ghorkhar*, are not borne out by specimens I have examined. I agree with Sykes, Blyth, Strachey, George, and Flower in classing all these wild asses as one species.

*Habits.* The Asiatic wild ass inhabits desert or semi-desert plains, and is usually found in herds varying in number from 4 or 5 to 30 or 40 individuals; occasionally much larger numbers collect; Dr. Aitchison, in North-western Afghanistan, saw a herd that he estimated to contain 1000 animals. This was in April, and the large herds are said to consist of mares and foals.

The food consists of various grasses, green or dry, and of other plants. The voice of this animal has been described as a shrieking bray. Wild asses are renowned for speed, but in the Rann of Cutch adults have been run down by men on horseback and speared. I believe, however, the animals run down were mares in foal. The young are captured by using relays of horsemen to hunt them until tired out.

In the country west of the Indus the mares are said to drop their foals in June, July, or August. The period of gestation is probably the same as in the horse and ass, about 11 months.

## Family RHINOCEROTIDÆ.

Genus **RHINOCEROS**, Linn. (1766).

In this family also all living species are by most naturalists referred to a single genus. There are three toes on each foot, each toe terminating in a small hoof-like nail. The size is large, the general form is heavy, and the legs are short and stout. The skin in all living forms is thinly clad with hair or is naked, and in all Indian species it is thick (so much so, that it was formerly supposed to be bullet-proof) and thrown into deep folds in places. One or two dermal horns are situated on the median line above the snout. These horns grow throughout the animal's life, and if lost are reproduced. The head is large, the eyes small, and the ears moderate. There are two inguinal mammæ.

The skull is elongate, with a high occipital crest. The nasal bones are large and united, broad behind, and in contact or nearly in contact with the large lachrymals; they are arched in front and project over a wide space that separates them from the premaxillaries. There are no postorbital processes, the orbits opening into the temporal fossæ. Tympanics small, not forming bullæ.

Dentition: i.  $\frac{2(4)}{2(4)}$ , c.  $\frac{0}{0}$ , pm.  $\frac{4-4}{4-4}$ , m.  $\frac{3-3}{3-3}$ . The incisors are somewhat variable: all are deciduous in African species; in adults of the Asiatic forms there are generally one pair, broad and blunt, in the upper jaw, and one or two pairs in the lower, the outer pointed



and formidable weapons ; according to some these are lower canines. The anterior premolar in both jaws is very often wanting. The other upper premolars and molars are subquadrate with a longitudinal crest along the outer side and peculiarly incurved ridges on the inner ; lower molars and premolars narrower, each formed of two crescentic ridges. The patterns on the teeth after wear are shown by the accompanying figure. Vertebrae: C. 7, D. 19-20, L. 3, S. 4, C. about 22. Ulna and fibula well developed and distinct.

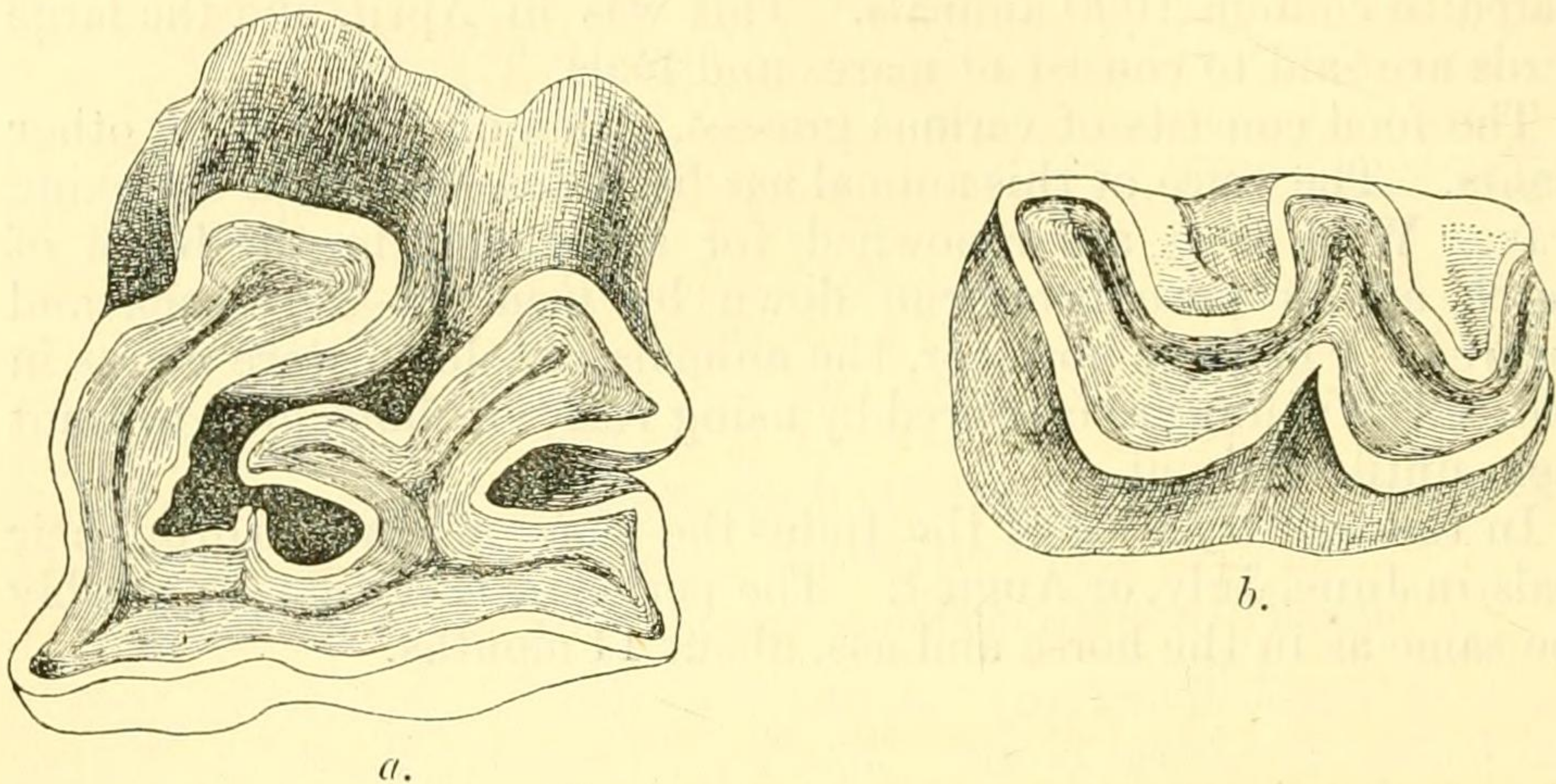


Fig. 153.—Crowns of (a) upper and (b) lower second right true molars of *Rhinoceros unicornis*, the inner side uppermost.

The genus is only found living in Africa and South-eastern Asia. Formerly it was widely distributed. Three extinct species, besides *R. unicornis*, have been recorded from the Pleistocene, and five from the Pliocene and Miocene beds of India.

*Synopsis of Indian and Burmese Species.*

- A. A single horn on the nose.
- a. Fold in front of shoulder not continued over back of neck ; skin of sides bearing tubercles ..... *R. unicornis*, p. 472.
  - b. Fold in front of shoulder continued over back of neck ; skin of sides divided into small polygonal scales ..... *R. sondaicus*, p. 474.
- B. Two horns on nose ..... *R. sumatrensis*, p. 476.

334. *Rhinoceros unicornis*. *The great one-horned Rhinoceros.*

*Rhinoceros unicornis*, *L. Syst. Nat.* i, p. 104 (1766) ; *Hodgson, P. Z. S.* 1834, p. 98 ; *Gray, P. Z. S.* 1867, p. 1010 ; *Sclater, P. Z. S.* 1871, p. 8 ; *id. Tr. Z. S.* ix, p. 645, pl. xcv ; *Flower, P. Z. S.* 1876, p. 454 ; *W. Slater, Cat.* p. 202.

*Rhinoceros indicus*, *Cuv. Règne An.* i, p. 239 (1817) ; *Blyth, J. A. S. B.* xxxi, pp. 151, 199 ; *id. Cat.* p. 136 ; *Jerdon, Mam.* p. 232 ; *Lydekker, J. A. S. B.* xlix, pt. 2, p. 135 ; *Cockburn, J. A. S. B.* lii, p. 56.

*Rhinoceros stenocephalus*, *Gray, P. Z. S.* 1867, p. 1018.

*Gainda, Gargadan, H.* ; *Karkadan, P.* ; *Gonda, Beng.*



Skin naked except on the tail and ears, and on the sides studded with convex tubercles, half an inch to an inch or rather more in diameter, the largest on the buttocks and thighs and on the shoulders. Skin of body divided into great shields by folds before and behind each shoulder, and before each thigh; the folds behind the shoulders and before the thighs continuous across the back, those in front of the shoulders not joined across the back but turning backwards and lost above the shoulder. There are also great folds round the neck, others below the shoulders and thigh-shields and behind the buttocks, so that the tail lies in a groove. Epidermis on limbs forming small polygonal scales. The head is higher and altogether larger than in other Asiatic species. Incisors generally  $\frac{2}{4}$ ; inner lower incisors small, outer large, pointed. Skull very high, mesopterygoid fossa narrow; hinder margin of bony palate simply concave. Horn well developed in both sexes.

*Colour* blackish grey throughout.

*Dimensions.* Height at shoulder 5 feet to 5 feet 9 inches. A large male measured: height 5 ft. 9 in., length from nose to root of tail 10 ft. 6 in., tail 2 ft. 5 in., girth 9 ft. 8 in. (*Kinloch*). Length of horn rarely exceeding a foot. Basal length of a skull 23 inches, zygomatic breadth 15.3.

*Distribution.* At the present day the great Indian rhinoceros is almost restricted to the Assam plain, and it is very rare, if it exists, west of the Teesta river. Twenty to thirty years ago it was still common in the Sikhim Terai, and not many years previously it was found along the base of the Himalayas in Nepal and as far west as Rohilcund. Up to about 1850, or rather later, some rhinoceroses inhabited the grass-jungles on the Ganges at the north end of the Rájmehal hills, and were, I think, probably *R. unicornis*. Formerly this animal was extensively distributed in the Indian Peninsula. It was common in the Punjab as far west as Pesháwar in the time of the Emperor Baber (1505–1530). Semifossilized remains of it have been found in the Bánda district, North-west Provinces, and near Madras; and its co-existence with several mammals now extinct, the Indian hippopotamus for one, is shown by its occurrence in the Pleistocene beds of the Nerbudda Valley.

*Habits.* The great Indian rhinoceros is a denizen of the grass-jungles, tracts of grass from 8 to 20 feet high, that cover so much of the uncultivated portions of the North-Indian alluvial plains. It appears never to ascend the hills; it has a distinct preference for swampy ground, and is fond of rolling in mud. Though each animal is solitary as a rule, several are often found in the same patch of jungle.

Despite its bulk and strength, this rhinoceros is as a rule a quiet inoffensive animal, the stories of its ferocity and of its deadly enmity to the elephant, that were copied from the not very veracious pages of Captain Williamson's 'Oriental Field Sports' into European works on natural history, being fables. A rhinoceros when wounded or driven about will, however, sometimes charge home, though this is an exception. When it does attack, this species



uses its sharp lower incisors (or, as some think, lower canines) much as a hog does. I was shown in Cooch Behar a straight horizontal scar on the leg of one of the Maharaja's elephants just above the foot. This I was assured on good authority was the mark of a

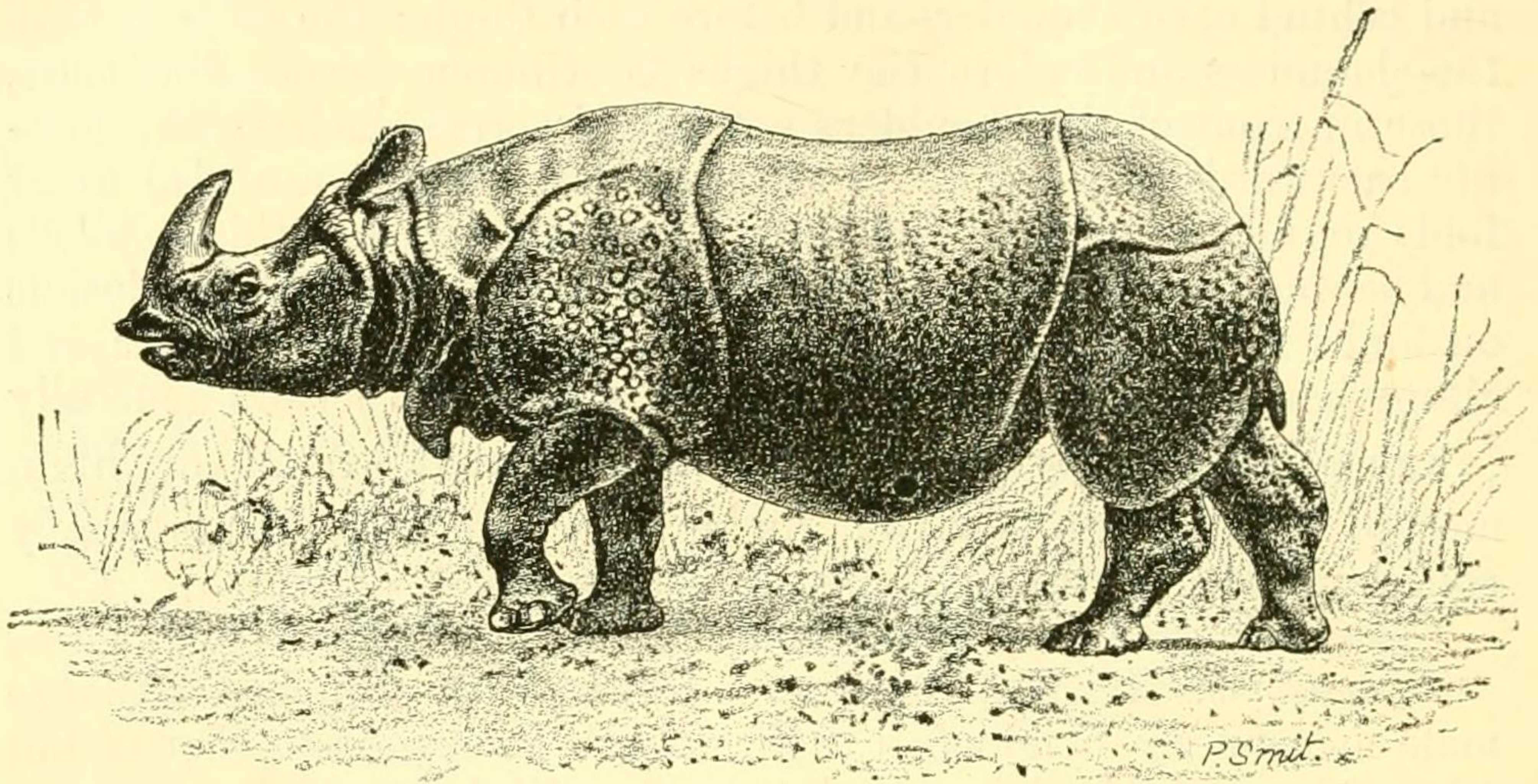


Fig. 154.—*Rhinoceros unicornis*.

wound inflicted by a rhinoceros, and it is manifest such a wound could not have been produced by the horn (see also Blyth, *J. A. S. B.* xi, p. 891).

The only sound known to be produced by the present animal is a peculiar grunt that it repeats frequently when excited. It is said by several writers to have a habit of depositing its dung in the same spot until a pile accumulates. The African *R. bicornis* has, I believe, no such habit.

Like other Ungulata, rhinoceroses can trot and gallop as well as walk. They as a rule sleep during the day and feed in the morning and evening. Their food consists, I believe, chiefly of grass. Their flesh is excellent, as I can testify. This rhinoceros is a long-lived animal and, according to Hodgson, is believed to live 100 years. I have heard of individuals that had existed 50 or 60 years in confinement. The period of gestation is said by Hodgson to be 17 or 18 months, by Desmarest under 9 months, a single young one being produced.

335. **Rhinoceros sondaicus.** *The smaller one-horned Rhinoceros.*

*Rhinoceros sondaicus*, *Cuv., Desm. Mam.* p. 399 (1822); *Blyth, J. A. S. B.* xxxi, p. 151; *id. Cat.* p. 137; *id. Mam. Birds Burma*, p. 50; *Jerdon, Mam.* p. 234; *Slater, P. Z. S.* 1874, p. 182, pl. xxviii; *id. Tr. Z. S.* ix, p. 649, pl. xcvi; *Fraser, J. A. S. B.* xliv, pt. 2, p. 10, pl. v; *Flower, P. Z. S.* 1876, p. 454; *Ball, P. A. S. B.* 1877, p. 170; *Cockburn, P. A. S. B.* 1884, p. 140; *W. Slater, Cat.* p. 202.

*Rhinoceros javanicus*, *Cuv. Hist. Nat. Mam.* livr. 45, pl. 309 (1824); *Rainey, P. A. S. B.* 1878, p. 139.



Rhinoceros inermis, *Lesson, Compléments du Buffon*, ed. 2, i. p. 514 (1848); *Peters, MB. Akad. Berl.* 1877, p. 68, pls. i-iii.

Rhinoceros nasalis and *R. floweri*, *Gray, P. Z. S.* 1867, pp. 1012, 1015.

*Gainda*, H.; *Gondu*, Beng.; *Kunda*, *Kedi*, *Kweda*, Nága; *Kyeng*, *Kyantsheng*, Burmese; *Bádák*, Malay.

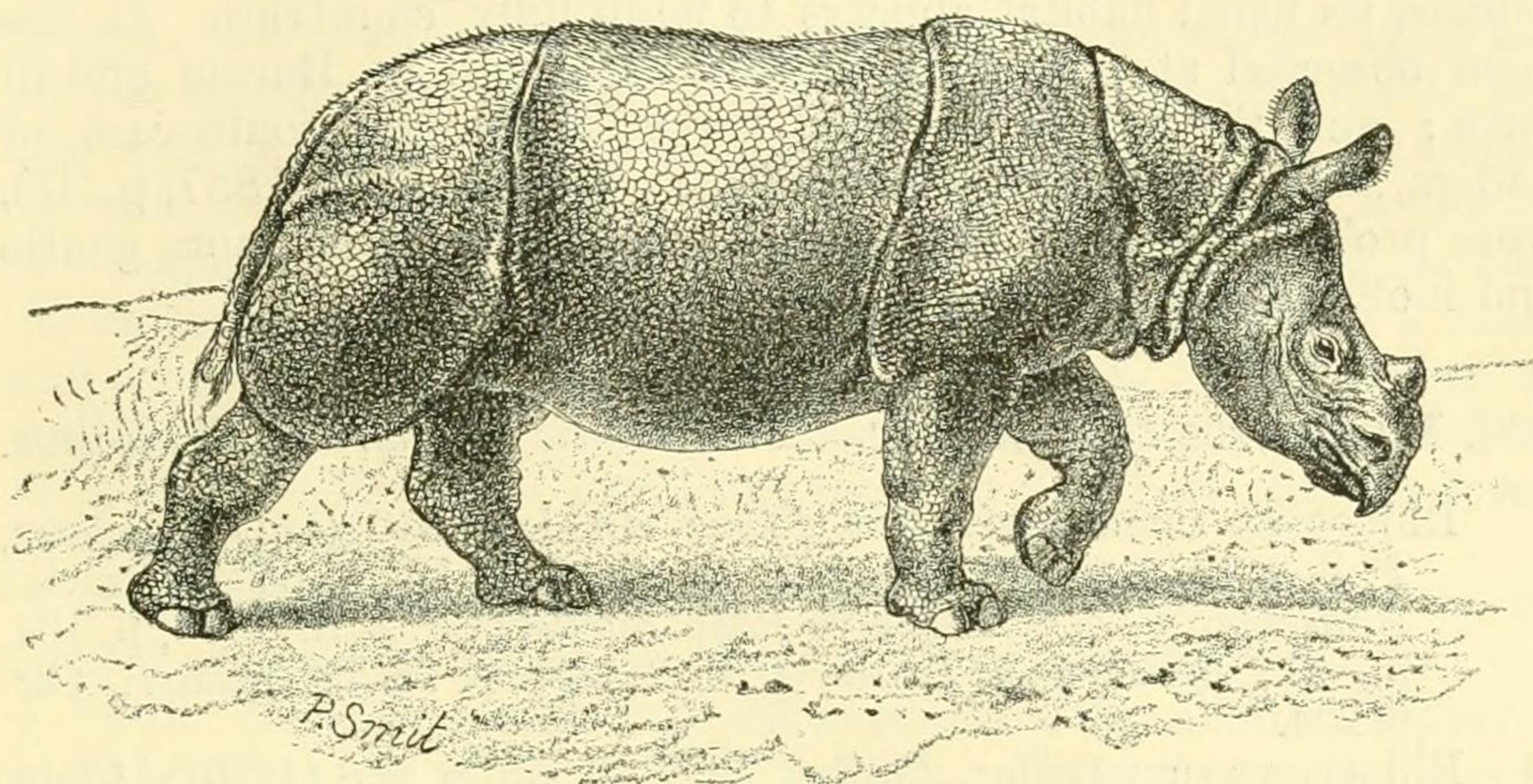


Fig. 155.—*Rhinoceros sondaicus*.

Animal altogether smaller, though scarcely, if at all, lower at the shoulder than *R. unicornis*; head much smaller. Skin naked or nearly so, not tubercular, the epidermis divided by cracks into small, polygonal, subequal scale-like disks throughout the body and limbs. Surface of body divided into shields by folds, as in *R. unicornis*, but the fold in front of the shoulders is continuous across the back like that behind the shoulders and that in front of the thighs. Neck-folds comparatively little developed. Incisors generally  $\frac{2}{4}$ ; upper molars smaller and with a simpler pattern than those of *R. unicornis*; skull and mandible of less height, mesopterygoid fossa broad. Hinder margin of bony palate produced in the middle; a partially ossified septum narium. The horn is frequently, perhaps always, wanting in the female.

*Colour* dusky grey throughout.

*Dimensions.* Rather less than those of *R. unicornis*, but most of the measurements published appear to be those either of young animals or of individuals in confinement, which very often do not attain their full growth. A large female, according to Mr. Fraser and Mr. Cockburn, was 5 feet 6 inches high. A skull measures 23 inches in basal length, 13.8 in zygomatic breadth.

*Distribution.* The Sundarbans and parts of Eastern Bengal; Kinloch shot an undoubted specimen in the Sikhim Terai. From Assam this rhinoceros is found throughout Burma and the Malay Peninsula, and in Sumatra, Java, and Borneo. Blyth states that this species was formerly found near Rajmehal, but does not give any reason for the identification. The statement, mentioned by



Jerdon, that a few individuals existed in the forests of Orissa, has been ascertained by Mr. Ball and myself to be a mistake. So far as I am aware, there is no evidence at present that this rhinoceros ever inhabited the Peninsula of India. Its remains have, however, been found fossil in Borneo (P. Z. S. 1869, p. 409).

*Habits.* *R. sondaicus* is more an inhabitant of tree-forest than of grass, and although it is found in the alluvial swamps of the Sundarbans, its usual habitat appears to be in hilly countries. It has been observed at considerable elevations both in Burma and in Java; and the tracks seen by Major Macgregor south-east of Sadiya, at 7000 feet above the sea (Proc. R. Geog. Soc. 1887, p. 27), were probably made by this species. It is said to be more gentle and inoffensive than *R. unicornis*.

### 336. *Rhinoceros sumatrensis.* *The Asiatic two-horned Rhinoceros.*

*Rhinoceros sumatrensis*, Cuv. *Règne An.* i, p. 240 (1817); *Sclater*, P. Z. S. 1872, p. 790, pl. lxxvii; *id.* *Tr. Z. S.* ix, p. 650, pl. xcvi; *Anderson*, P. Z. S. 1872, p. 129; *Bartlett*, P. Z. S. 1873, p. 104, pl. xi; *Beddard & Treves*, P. Z. S. 1889, p. 7; *W. Sclater*, *Cat.* p. 204.

*Rhinoceros sumatranus*, *Raffles*, *Tr. L. S.* xiii, p. 268 (1820); *Blyth*, *J. A. S. B.* xxxi, p. 151; *id.* *Cat.* p. 137.

*Rhinoceros crossei*, *Gray*, P. Z. S. 1854, p. 251; *Blyth*, P. Z. S. 1861, p. 307; *id.* *J. A. S. B.* xxxi, p. 156.

*Rhinoceros lasiotis*, *Sclater*, P. Z. S. 1872, p. 493, pl. xxiii; *id.* *Tr. Z. S.* ix, p. 652, pl. xcvi; *Flower*, P. Z. S. 1878, p. 634; *W. Sclater*, *Cat.* p. 204.

*Ceratorhinus crossei* and *C. sumatrensis*, *Blyth*, *A. M. N. H.* (4) x, p. 399 (1872); *id.* *Mam. Birds Burma*, pp. 51, 52.

*Ceratorhinus sumatranus*, *C. niger*, *C. crossei*, and *C. blythii*, *Gray*, *A. M. N. H.* (4) xi, pp. 357-360, pl. xi (1873); *id.* *Hand-list Edent. &c. Mam. B. M.* pp. 47-50.

*Ceratorhinus sumatrensis* and *C. lasiotis*, *Flower*, P. Z. S. 1876, p. 455.

*Kyan*, *Kyan-shaw*, Burmese; *Bádák*, Malay.

This is the smallest of living rhinoceroses and the most hairy, the greater part of the body being thinly clad with hair of some length, and there being hair of considerable though varying length on the ears and tail. The two horns are some distance apart at the base; both are slender above, and the anterior horn, in fine specimens, elongate and curved backwards. The skin is usually rough and granular; the folds, though much less marked than in the one-horned species, are still existent, but only that behind the shoulders is continued across the back. Incisors in adults  $\frac{2}{2}$ , the lower pair lateral, large, and pointed; sometimes lost in old animals.

*Colour* varying from earthy-brown to almost black; hair of body brown or black.

*Dimensions.* Somewhat variable. The type of *R. lasiotis* was 4 ft. 4 in. high at the shoulder, and 8 feet long from snout to root of tail; its weight about 2000 lbs. (*Anderson*). An old female from Malacca was only 3 ft. 8 in. high. The average height of adults is probably



4 feet to 4 feet 6 in. The largest known specimen of the anterior horn measures 32 inches over the curve. Skull 20 inches in basal length, 11.25 in zygomatic breadth.

*Varieties.* Specimens from Chittagong and Malacca were living at the same time in the Zoological Society's Gardens, London, in 1872; and the former was distinguished by Sclater as *R. lasiotis* on account of its larger size, paler and browner colour, smoother skin, longer, finer, and more rufescent hair, shorter and more tufted tail, by the ears having a fringe of long hair but being naked inside, and above all by the much greater breadth of the head. Unquestionably the differences are considerable; but by far the most remarkable—the shape of the head—was shown by Blyth to be variable in both *R. unicornis* and *R. sondaicus*, for he figured and described a broad and a narrow type of each (J. A. S. B. xxxi, p. 156, pls. i–iv) as well as of *R. sumatrensis*. The other distinctions scarcely appear to me of specific value, and I am inclined to regard the two forms as varieties only.

*Distribution.* Rare in Assam, though one specimen has been recorded on the Sankosh river, in the Bhutan Duars (P. Z. S. 1875, p. 566). Another was shot 20 miles south of Comillah in Tipperah in February 1876 (P. Z. S. 1877, p. 269). From Assam the species ranges to Siam, the Malay Peninsula, Sumatra, and Borneo.

*Habits.* Very similar to those of the other species; this rhinoceros inhabits forests and ascends hills to a considerable elevation, having been observed 4000 feet above the sea in Tenasserim by Tickell. This is a shy and timid animal, but easily tamed even when adult.

Details obtained by Mr. Bartlett concerning a young animal born in London, induced him to regard the period of gestation as probably a little over 7 months (P. Z. S. 1873, p. 104). This differs greatly from Hodgson's account of the period in *R. unicornis* (P. Z. S. 1834, p. 98), but no details are furnished in the case of the last-named species, whilst the evidence is stated in that of *R. sumatrensis*. Still, for so large and apparently so long-lived an animal, 7 months of uterine life is short.

Anderson, in his 'Fauna of Mergui and its Archipelago,' i, p. 333, mentions his having heard of a two-horned rhinoceros seen swimming in the sea, near High Island in the Archipelago. Probably all rhinoceroses are good swimmers. The story of the Chittagong rhinoceros that was unable to swim (P. Z. S. 1872, p. 494) must be, I think, a mistake. The account given by Mason and repeated by Blyth, of this or any rhinoceros attacking fire, should be received with great caution. To my personal knowledge, Mr. Blyth's principal informant had a weakness for relating "shikar stories," which were frequently good, but not always authentic.