

- Fig. 24. One of the tension-spicula of the interstitial membrane, magnified 80 linear.
- Fig. 25 represents one of the minute subsphero-stellate spicula of the dermal membrane, 530 linear.

PLATE VI.

- Fig. 1. *Halispongia choanoides*, Bowerbank. From Fremantle, Australia. Natural size. (a) the terminal orifice of the great cloacal cavity.
- Fig. 2. A portion of the dermis mounted in Canada balsam, exhibiting the inhalant areas and their pores in an open condition, magnified 36 linear.
- Fig. 3. A small portion of the skeleton-structure, showing the primary fibres containing their characteristic axial line of sand and other extraneous matters, while the secondary ones are free from such materials, magnified 14 linear.
- Fig. 4. A representation of a well-developed gemmule as it appears in Canada balsam, attached to the surface of the sarcodous membranes, magnified 80 linear.

2. Notes on *Rhinoceros sumatrensis*, Cuvier.

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Having had an opportunity of examining a living specimen of this species, I have drawn up the following remarks, which may prove of sufficient interest to merit a place in the Society's 'Proceedings.'

The specimen examined is a young female that strayed into Chittagong in February 1869, when it was captured, and where it has remained till within the last few weeks. It has been brought to Calcutta by Mr. Jamrach of London, to whom I am indebted for my examination of this interesting animal. Mr. Jamrach has purchased it in the hope of being able to take it to London alive, where, if he succeeds in his endeavour, it will doubtless attract much interest, as no living example of this species, that I am aware of, has hitherto reached England. The uncertainty, however, of this enterprise induces me to forward to the Society these notes, together with an unquestionable representation of the external characters of this species.

There is no previous record of this *Rhinoceros* having been found so far west* as Chittagong, about 92° E. long.; but I see nothing remarkable in this, as the fauna of Eastern Bengal is pronouncedly Malayan. It is also probable, as Blyth observes, that it ranges into Assam, because, while at Bhamô in Upper Burmah, I was informed by an intelligent native that two-horned *Rhinocerot*es are found in the Mogonny district, which is close to the confines of Assam, and as far north as the twenty-sixth degree of north latitude. This same informant also assured me that he had seen at Mogonny a *Rhinoceros*-head with three horns.

The female which forms the subject of these observations is about

* In the 'Mammals of India' it is stated to have been shot at as high a latitude as 23° N., near Sandoway, which, however, lies only between the 18th and 19th parallels N.

4 feet 6 inches high at the shoulders, and about 8 feet from the snout to the root of the tail ; it weighs nearly 2000 lbs.

The deep and rather short trunk is set on low stout limbs. The head is not much tapered ; the anterior horn, low and rounded, is placed above the nostril ; the posterior horn is conical and situated above the eye ; the two are separated by a considerable interval. The ears are full and more rounded than pointed, and fringed with long, rather drooping hairs. The eye is small. The upper lip is anteriorly pointed and prehensile. The tail has numerous transverse folds, and reaches nearly to a line with the groin, having long hair on the anterior and posterior borders of its lower third. The skin is ashy grey, and covered with bristles about one inch in length, and its tubercles are small and flat. A pendulous fold on the side of the neck, with the skin behind it thrown into small loose folds ; a fold behind the shoulder, across the back from side to side, with a fold at its lower extremity across the fore leg ; a lumbar fold from the groin, but not reaching to the back ; two short folds behind the haunches, with another fold below them, across the leg.

The hindmost horn is the smallest and about two inches in height ; it has a quadrangular base, with two of the angles external (one posterior and the other anterior), and its apex is conical. It is placed between the eyes, but its posterior basal angle is slightly behind the external margin of the eye, while the anterior angle is about three inches before the inner margin of the eye. The anterior horn, separated from the former by about three inches, is full and rounded, and, although about twice the size of the posterior horn, does not exceed it in height ; it is placed above the nostril, to which, however, its hinder margin is slightly posterior.

A most striking feature of this individual, and one which I have not seen exemplified in three adult heads of this species from Burmah which I have examined, nor have seen referred to in any description of the species, is the long drooping hair of the margins of the ears. In adult males and females the margins of the ears are fringed with strong erect black hairs tipped with brown, and almost one inch, or slightly more, in length ; but in this individual these hairs are nearly five inches long, with their terminal not so bristly as their basal portions—and with this result, that the former droops downwards over the latter. It appears to me that the more delicate portion of the hairs is worn off as the animal increases in years, probably by the friction to which the ears are subjected in the creature's wanderings through the dense jungle to which it is so partial. The hairs are longest and most numerous immediately behind the tip, and shortest on the anterior margin, the three basal-inches of which are all but nude. The insides of the ears are covered with very short greyish hairs about the sixteenth of an inch in length.

The shoulder-fold is the most strongly marked of all the folds, which are much less decidedly developed than in the two other species of Asiatic Rhinoceros. It is prolonged over the back from side to side, and below passes on to the outside of the limb, for a short way at the elbow-joint. At the latter point there is another strong fold

below it, passing upwards and forwards across the outside of the limb, on the front aspect of which it bends inwards and slightly downwards to the chest. The fold before the haunch, between the groin and the back, is short and less strongly marked than the shoulder-fold; and its upper extremity is on a level with the head of the femur, its direction being downwards and somewhat forwards. The two folds on the back of the haunch are very short, and the internal extremity of the upper one is on a level with the lower margin of the genital orifice; the fold below them, across the leg, passes forwards and downwards, and is the most indistinctly marked of all the folds, almost disappearing when the limb is stretched backwards. The more or less pendulous fold of the neck arises from behind and below the level of the ear, and is continuous below with its fellow of the opposite side; the skin behind this fold is loose, and forms another fold, which disappears, however, when the neck is raised.

The tubercles of the skin are so small and flat that the skin is almost smooth; they are about the eighth of an inch in diameter; and each is surrounded by a shallow sulcus, in which usually four bristles are placed. The latter structures are erect and about one inch in length, and are rather richly distributed, being especially numerous on the lower parts of the sides, on the front of the metacarpal and on the back of the metatarsal joints, and less so on the cheeks, throat, and sides of the lower jaw; while, anterior to the eyes, the face appears to be nude, except on the anterior surface of the pendulous upper lip, which has strong bristles set widely apart. On the upper half of the trunk the bristles posterior to the shoulder-fold are almost white in some lights, with a rufous tint in others, while those anterior to the shoulder-fold are dark brown; on the lower half of the trunk and on the limbs they are black, and on the sides of the belly and over the wrist and heel they are depressed and somewhat curly; on the neck and head they are shorter and almost white. The hairs on the two margins of the lower third of the tail increase in length from above downwards, the apical hairs being about six inches in length, black at the base, and dark brown throughout the rest of their extent; the upper two thirds of the tail are covered with light-coloured bristles.

The general colour of the dry skin is ashy grey; but when moist it becomes a light brown. The axillæ and under surface of the groin, and the creases formed by the folds of the body and neck when these are extended, have a fleshy tint.

The animal is remarkably quiet, considering that she is chained by her four feet between two trees. During night she becomes very restless, and on several occasions has contrived, by stretching her hind legs to the utmost, to reach a strongly built brick wall, which she has butted down with her head. Her restlessness rather increases with the dawn, which is the time when tropical animals that are not exclusively nocturnal in their habits are most active in their movements and in their search after food. After the sun is fairly up and she has been satiated by a hearty meal, she lies down on her side, and sleeps until the blazing sun has half run his course between the me-

ridian and the horizon ; she then rises, and once more feeds in the rapidly fading twilight.

She is fed on pulse and grass, but has a special liking for the thick fleshy stems of the plantain and for the small branches of the mango-tree, which she devours with evident pleasure, her powerful jaws crushing with ease young twigs about an inch in diameter, each closure of the living mill exhaling a fine aroma, in which she revels, and which recalls to the bystander the gustatory fragrance, so to speak, of that prince among fruits. Like her kith and kin she is very fond of water, and has a special predilection for a muddy hollow close beside her, in which she wallows, delighting to bury her huge head in the slimy ooze.

She has a peculiar habit of squirting out her urine to a great distance, sending it out behind her nearly twenty feet, a habit which may be the means by which the male is made aware of her presence in the dense recesses of her native forests, where smell is probably the sole guide by which the sexes become aware of each other's presence.

Since writing the above, I have learned from my friend Lieut. Bourne that a smooth-skinned Rhinoceros is said by the Cossyachs to occur in their hills, two days' journey to the south of Charyolah. These men know *Rhinoceros sondaicus*, so that it seems very probable that *R. sumatrensis* extends into the heart of the Cossyah hills.

3. On *Manouria* and *Scapia*, two Genera of Land-Tortoises.

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I have all along been so much struck with the similarity of the carapace and body of *Manouria emys* to those of the Land-Tortoise of Arakan (*Testudo phayrei*), that the probability forcibly suggested itself to me that the two supposed forms were one and the same. Of the former Tortoise the Indian Museum of this city possessed two nearly perfect shells and one thorax, the latter in no way distinguishable from the thoraces of the perfect shells. Of *Testudo phayrei* the museum possessed two specimens—one Blyth's type, and the other the deformed specimen which he has lately stated he gave to Dr. Falconer for examination. All these specimens of *Manouria emys* and of *T. phayrei* are characterized by a divided caudal ; and their general form and all their plates, with the exception of the pectorals, are so alike that, if I simply had had the carapaces to deal with, I could not have separated them as distinct species. Turning, however, to their sterna, three of them were referable to *Manouria*, and two to *Testudo*. The three specimens of so-called *Manouria* were from one locality in Cachar, and Blyth's *T. phayrei* was from Arakan. The two sterna of the former, the thoraces of which measure respectively $20\frac{3}{4}$ inches and $19\frac{3}{4}$ inches in length, varied in the distances intervening between their pectoral plates. The largest