

No. I.

JAN. 1, 1833.

Published on the First of every Month.

PRICE SIXPENCE.

Given Sir Richard P. P.

THE ZOOLOGICAL MAGAZINE,

N

OR

JOURNAL OF NATURAL HISTORY.



CONTENTS.

	Page		Page
The Giraffe	1	The Rhinoceros	17
The Zoological Gardens	14	The Gymnotus, or Electrical Eel	28
Attack by a Tiger	15	The Cuckoo	30
Importation of Furs	16	Zoologist's Calendar for Ja-	
Sagacity of the Dog	16	nuary	32

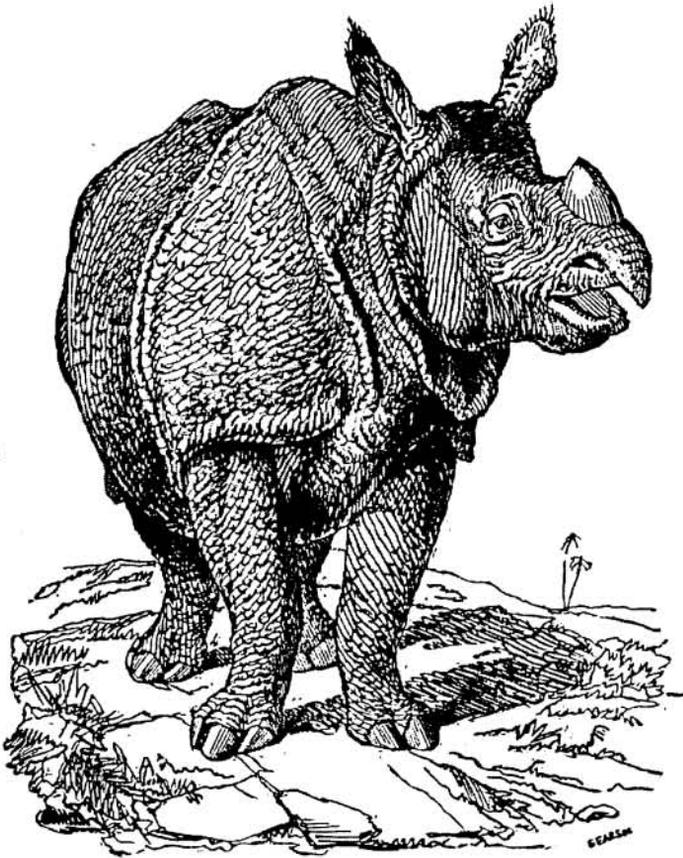
LONDON:

WHITTAKER, TREACHER, AND Co.,

AVE MARIA LANE.

RICHARD TAYLOR, PRINTER,]

[RED LION COURT, FLEET STREET.



THE INDIAN RHINOCEROS, (*Rhinoceros Indicus*, Cuv.)

IF the moderns are able to boast of a more extended knowledge of animated nature than was possessed by the ancients, it must be acknowledged that it is rather the result of their geographical discoveries, than of the zeal of their Governments or commercial Companies for its promotion. And it is humiliating to think that the nations, among which a pure love of science is most widely diffused, still should be debarred the contemplation of those rarer species of quadrupeds inhabiting the Old World, which in ancient Rome were repeatedly exhibited to gratify a tyrant's love of ostentation,

Zool. Mag. No. 1.

c

and a people's lust for the cruel combats and wholesale slaughter of the Amphitheatre.

The history of the remarkable quadruped with which the present work commences in some measure exemplifies this anomalous fact, and the rhinoceros is a still stronger proof of it. This quadruped, which is second in bulk to the elephant alone, is peculiar to the Old World; yet of the five or six distinct species which inhabit Africa and Asia, only one has been exhibited in modern Europe, and that at rare and distant intervals; while the knowledge of the rest has been chiefly acquired in our own times.

The first rhinoceros of which any mention is made in ancient history, was that which appeared at the celebrated festival of Ptolemæus Philadelphus, and which was made to march the last of all the strange animals exhibited at that epoch, as being apparently the most curious and rare. It was brought from Ethiopia.

The first which appeared in Europe graced the triumph and games of Pompey. Pliny states that this animal had but one horn, and that that number was the most common.

Augustus caused two to be slain, together with a hippopotamus, when he triumphed after the death of Cleopatra: and these, also, are described as having each but one horn.

Strabo very exactly describes a one-horned rhinoceros which he saw at Alexandria, and mentions the folds in its skin. But Pausanias gives a detailed account of the position of the two horns, on a species having that number, which he terms the Ethiopian Bull.

Of this latter kind two appeared at Rome under Domitian, and were engraved on some of the medals of that emperor; these occasioned some of the epigrams of Martial, which modern commentators, from ignorance of the species with two horns, found so much difficulty in comprehending.

The emperors Antoninus, Heliogabalus, and Gordian, severally exhibited the rhinoceros: and Cosmus expressly speaks of the Ethiopian species as having two horns: there is abundant evidence, therefore, that the ancients possessed a degree of knowledge respecting these animals, of which the moderns were for a long period destitute.

The first rhinoceros which was exhibited in Europe after the revival of literature, was a specimen of the one-horned species. It was sent from India to Emmanuel king of Portugal, in the year 1513. This sovereign made a present of it to the Pope; but the animal being seized during its passage with a fit of fury, occasioned the loss of the vessel in which it was transported. A second rhinoceros was brought to

England in 1685: a third was exhibited over almost the whole of Europe in 1739; and a fourth, which was a female, in 1741. That exhibited in 1739 was described and figured by Parsons, in the *Philosophical Transactions* (vol. xlii. p. 583), who mentioned also that of 1685 and of 1741. A fifth specimen arrived at Versailles in 1771, and it died in 1793 at the age of twenty-five or twenty-six years. The sixth was a very young rhinoceros, which died in this country in the year 1800: some account of its anatomy was published by Mr. Thomas, in the *Philosophical Transactions* for that year. Lastly, a seventh specimen was living a few years ago in the Garden of Plants at Paris. All these specimens were one-horned, and all from India. So that the two-horned rhinoceros has never been brought alive to modern Europe, and it was long before even an accurate description of it was given by travellers; its existence was known only by specimens of the horns adhering to the skin of the head, which were preserved in different museums. As these specimens were from Africa, and as the first authentic accounts of the living animal of the two-horned species were derived from the histories of African travellers, a general notion prevailed that Asia afforded the one-horned species only, and that the two-horned kind was peculiar to Africa. However, in the year 1793, Mr. William Bell, a surgeon in the service of the East India Company, discovered a species of rhinoceros in the Island of Sumatra, which had also two horns, whose skin, like the African two-horned species, did not exhibit those folds which are so peculiar to the hide of the Indian rhinoceros. This species, however, differed from the African rhinoceros in possessing incisive or front teeth, which in the latter are wholly deficient. The Abyssinian traveller Bruce has given a vague indication of a two-horned rhinoceros, which exhibits the plaiting of the hide peculiar to the Indian species; and some naturalists have supposed it probable, from the form of the horns, that this may ultimately be found to be a true and distinct species. More recently, again, the accurate and scientific traveller Burchell has announced the existence in the interior of the southern promontory of Africa, of a rhinoceros double the size of the ordinary Cape species, which, like it, has also two horns, and a skin without hairs or folds, but which differs in having the lips and nose thickened, enlarged, and as if flattened.

Thus we find that two, if not three, distinct species of two-horned rhinoceros exist in Africa, and that another distinct species, similarly armed, is found in Sumatra. Lastly, we have to add a second species with one horn, discovered by

Sir Stamford Raffles in Java, the smallest of all the living species, and quite distinct from the Indian one-horned rhinoceros.

The characters which these several species possess in common, and which distinguish them from all other quadrupeds, are the following. Both sexes are armed with one or two horns, of an uniform fibrous texture, placed on the nose, and always situated on the middle line of the head. They have three toes on each foot, and each toe is inclosed in a thick rounded hoof. These, therefore, constitute the true generic character of the rhinoceros.

In their large size, bulky body, and thick legs, they resemble the elephant, have a hide even thicker than that animal, and are rendered further peculiar in some of the species by being thrown into deep and extensive folds. The surface of the skin is rough, and devoid of hair: the snout is elongated in some of the species, while in others it is remarkably blunted, and as if cut off: the eyes are very small, like those of the hog: the ears elongated, but much shorter than the head, and supported, as it were, on a sort of pedicle or stalk: the lips project beyond the mouth, and the upper one especially is very moveable: the tail is short, and its extremity bears a number of very stiff and large bristles set on at the sides, and projecting in two opposite directions. The number of nipples are two, and situated on the groin. Some species possess, while others are deficient in, incisive or front teeth; the canine teeth are wanting in all; the grinding or cheek teeth are seven in each jaw on each side.

It is our intention, in succeeding Numbers, to give the most accurate figures and accounts that can be obtained of the several species above indicated. In the present Number the one-horned species of India (*Rhinoceros Indicus*, Cuv.) will be described. As this is the only species which, in modern times, has been brought alive to Europe, it has been most commonly figured. A sketch was taken from the animal sent to Portugal in 1513, which was engraved by Albert Durer. This sketch, as it was improved and embellished by the celebrated painter of Nuremberg, came afterwards into the possession of Sir Hans Sloane; and to it was attached a German inscription, of which the following appears in the Philosophical Transactions for 1744, as 'a close translation.' "In the year 1513, upon the 1. day of May, there was brought to our king at Lisbon such a living beast from the East Indies that is called *Rhinocerate*: therefore, on account of its wonderfulness, I thought myself obliged to send you the representation of it. It hath the colour of a toad,

and is close covered over with thick scales. It is in size like an elephant, but lower, and is the elephant's deadly enemy: it hath on the fore-part of its nose a strong sharp horn; and when this beast comes near the elephant to fight with him, he always first whets his horn upon the stones, and runs at the elephant with his head between his fore-legs; then rips up the elephant where he hath the thinnest skin, and so gores him. The elephant is terribly affraid of the *Rhinocerate*, for he gores him always wherever he meets an elephant, for he is well armed, and is very alert and nimble. This beast is called *Rhinocero* in Greek and Latin, but in Indian, *Gomda*."

The animal which was sent to England in 1739, is described by Dr. Parsons as being "very broad and thick. His head, in proportion, is very large, having the hinder part next his ears extremely high in proportion to the rest of his face, which is flat, and sinks down suddenly forward towards the middle, rising again to the horn, but in a lesser degree. The horn stands on the nose of the animal as upon a hill. I have seen the bones of the head of one of these in Sir Hans Sloane's museum; and the part on which the horn is fixed rises into a blunt cone, to answer to the cavity in the basis of the horn, which is very hard and solid, having no manner of hollow or core like those of other quadrupeds. That part that reaches from the fore part of the horn towards the upper lip may be called the nose, being very bulky, and having a kind of circular sweep downwards towards the nostrils: on all this part he has a great number of wrinkles running cross the front of it, and advancing on each side towards his eyes. The nostrils are situated very low, in the same direction with the opening of the mouth, and not above an inch from it. His under lip is like that of an ox, but the upper more like that of the horse, using it, as that creature does, to gather the hay from the rack, or grass from the ground; with this difference, that the rhinoceros has a power of stretching it out above six inches to a point, and doubling it round a stick or one's finger, holding it fast; so that as to that action, it is not unlike the proboscis of an elephant.

"As to the tongue of the rhinoceros, although it is confidently reported by authors that it is so rough as to be capable of rubbing a man's flesh from his bones, yet that of our present animal is soft, and as smooth as that of a calf; whether it may grow more rough as the beast grows older, we cannot say.

"His eyes are dull and sleepy, much like those of a hog in shape, and situated nearer the nose than that of any other

quadruped I have ever seen, which he very seldom opens entirely. His ears are broad and thin towards the tops, much like those of a hog, but have each a narrow round root with wrinkles about it. His neck is very short, being that part which lies between the back edge of the jaw and the fold of the shoulder: on this part there are two distinct folds which go quite round it, only the fore-one is broken underneath, and has a hollow flap hanging from it, so deep, that it would contain a man's fist. From the middle of the hinder of these folds arises another, which, passing backwards along the neck, is lost before it reaches that which surrounds the fore-part of the body.

“His shoulders are very thick and heavy, and have each another fold downward that crosses the fore-leg, and almost meeting that of the fore-part of the body just mentioned; they both double under the belly close behind the fore-leg.

“His body in general is very thick, and juts out at the sides like that of a cow with calf. His belly hangs low, being not far from the ground, as it sinks much in the middle. From the highest point in his back, the fold of the loins runs down on each side between the last ribs and the hips, and is lost before it comes to the belly; but above the place of its being lost, another rises and runs backward, round the hind legs, a little above the joint: this I call the crural fold, which runs up behind till it meets another transverse one which runs from the side of the tail forward, and is lost before it reaches within two inches of that of the loins.

“The legs of the rhinoceros are thick and strong; those before, when he stands firm, bend back at the knee a great way from a straight line, being very round and somewhat taper downwards. The hinder legs are also very strong, bending backwards at the joint at an obtuse angle, beneath which the limb grows smaller, and then becomes gradually thicker as it approaches the foot; so also does that part of the leg. About the joint of each of his legs there is a remarkable fold when he bends them in lying down, which disappears when he stands.

“The tail of this animal is very inconsiderable, in proportion to his bulk, not exceeding seventeen or eighteen inches in length, and not very thick. It has a great roughness round it, and a kind of twist or stricture towards the extremity, ending in a flatness, which gave occasion to authors to compare it to a spatula. On the sides of this flat part a few hairs appeared, which were black and strong, not short. It is further to be observed, that the hairs on the left side grow out a great way up towards the root of the tail, whereas on

the right side they grow no higher than the flat part. There is no other hair on this young rhinoceros, except a very small quantity on the posterior edge of the upper part of the ears. I have observed a very peculiar quality in this creature, of listening to any noise or rumour in the street; for though he were eating, sleeping, or under the greatest engagements nature imposes on him, he stops everything suddenly, and lifts up his head with great attention till the noise is over.

“The skin of the rhinoceros is thick and impenetrable. In running one’s fingers under one of the folds and holding it up with the thumb at the top, it feels like a piece of board half an inch thick. It is covered all over, more or less, with hard incrustations like so many scabs, which are but small on the ridge of the neck and back, but grow larger by degrees downwards toward the belly, and are largest on the shoulders and buttocks, and continue pretty large upon the legs, all along down; but between the folds the skin is as smooth and soft as silk, and easily penetrated; of a pale flesh colour, which does not appear to view in the folds except when the rhinoceros extends them, but is always in view under the fore and hinder parts of the belly, but the middle is incrustated over like the rest of the skin.

“As to the performance of this animal’s several motions, let us consider the great wisdom of the Creator in the contrivance that serves him for that purpose. The skin is entirely impenetrable and inflexible; if, therefore, it was continued all over the creature as the skins of other animals, without any folds, he could not bend any way, and consequently not perform any necessary action; but that suppleness in the skins of all other quadrupeds, which renders them flexible in all parts, is very well compensated in this animal by those folds; for since it was necessary his skin should be hard for his defence, it was a noble contrivance that the skin should be so soft and smooth underneath, that when he bends himself any way, one part of this board-like skin should slip or shove over the other, and that these several folds should be placed in such places of his body as might facilitate the performance of every voluntary motion he might be disposed to.”

The rhinoceros utters a note like the grunt of a boar; it increases to a shrill sound when he becomes enraged. It will consume 124 pounds of vegetable food in the course of the day, and drink in proportion. The animal described by Dr. Parsons was fed with rice, sugar, and hay; “of the first he ate seven pounds to about three pounds of the sugar; they were mixed together, and he ate this quantity every day, divided into three meals, and about a truss of hay in the week, besides

greens of different kinds, which were often brought to him, and of which he seemed fonder than of his dry victuals, and drank large quantities of water at a time,—being then, as I was informed by his keeper, two years old. It was said by those who took care of him, that from the time of his being first taken, to the time of his landing in England, his expenses amounted to one thousand pounds sterling.”

In a state of nature the rhinoceros commonly lives in solitude, moves slowly, with the head hanging down, and often ploughs the earth with his horn, uprooting vegetables, and casting behind him very large stones. When he runs, the tail is stiffly extended like that of a bull. As the rhinoceros consumes an immense quantity of vegetables and of water, he can only exist in places where they abound. The animal which was preserved at Versailles used frequently to enter and roll about in the water of his bath. In their native haunts these animals, notwithstanding the thickness of their hide, are tormented by the stings and bites of numerous insects; therefore, as a means of defence, they roll in the mud and slime, which, hardening in the sun, forms a sort of cuirass to the naked skin.

The flesh of the rhinoceros, though coarse and fibrous, is said to be similar in its flavour to pork, and better than that of the elephant.

The horn of the rhinoceros is much esteemed by the Asiatics: they make drinking-cups of them, believing them to be antidotes against poison: they are capable of a high polish, and are sometimes sculptured with considerable taste and delicacy. The hide is commonly employed to make whips.

An interesting memoir from the pen of M. Frederic Cuvier, has appeared in the splendid work published by him conjointly with M. Geoffroy St. Hilaire, on the animals in the menagerie in the Garden of Plants at Paris. It relates to the rhinoceros lately living in that establishment, and from which the figure was taken which serves to illustrate the present account.

“This rhinoceros was but young at the time that the figure was taken; and, contrary to the commonly received opinion, was habitually of a very gentle disposition, obedient to his keeper, and receiving his care and attention with a real affection. However, he would occasionally be seized with fits of fury, during which it was not prudent to come near him. No cause could be assigned for these violent paroxysms: one might say that a blind impulse or desire to regain a state of liberty, (which he had never enjoyed,) excited him to break

his chains, and escape from the bondage in which he was retained. Bread and fruits, however, always pacified him; and the claims of hunger always silenced those of liberty; so that this resource against his fury was always kept in reserve. He knew those persons who most indulged him in his *gourmandise*, and they were received with the liveliest manifestations of affection: the moment he saw them he stretched towards them his long upper lip, opened his mouth, and drew in his tongue. The narrow stall in which he was confined did not allow him to manifest much intelligence; and his keeper took no other pains than to induce him to forget or misconceive his own strength, and to obey: but from the attention which he paid to everything which was passing around him, and from the readiness with which he distinguished individuals and recognised those circumstances which seemed the preliminaries of his receiving something agreeable to him, one can readily judge that his intelligence would have acquired a greater development under favourable circumstances. But his immense force, and the apprehensions constantly entertained that in one of his fits of passion he would break down his apartment, insured for him the most indulgent treatment; nothing was required of him without a reward; and the little degree of motion which was allowed him, was an additional reason for requiring from him no other actions than to open his mouth, turn his head to the right or to the left, hold up his leg, &c.

“This animal was brought from the Indies to England, from whence he was transported to Paris in 1815. He was thicker and still more unwieldy in his proportions than the elephant, although less in general size. His height at the highest part of his back was five feet six inches, and his length nearly eight feet; his head measured two feet including the ears. The whole body was covered with a thick tubercular and almost naked skin, which formed a number of deep folds, almost too irregular to be described. It was of a deep violet-gray colour, which seemed almost black when oiled or greased; and this kind of lubrication was performed twice or thrice a week to prevent the skin drying and crackling. Beneath the folds the integument was of a flesh colour, and much softer than at the other parts. At certain parts, as the outer side of the limbs, the knees, and on the head, the tubercles of the skin had acquired such a length, as to resemble horny threads, closely arranged in a parallel manner one against the other, and it is these papillæ which some authors have termed excrescences. The few hairs that are observable, are chiefly situated on the tail and ears, and are stiff, thick, and smooth:

some however of those which are met with on the rest of the body were curled; and although thick and hard, had a woolly appearance. His legs were bent inwards, which was without doubt owing to the close confinement he endured, and to the little strength his joints could acquire in the state of inaction in which he was kept. Each foot was composed of three toes, which were manifested externally only by the three nails with which they were furnished, and which had the form of hoofs, *i. e.* they defended the toes both above and below. The tail was habitually pendent, but was susceptible of voluntary movements to the right and left, and the animal made use of it to drive off from the skin whatever annoyed him.

“The eyes were very small, the eyelids simple, the pupil round, and no accessory organ was found there. The nostrils opened at the sides of the upper lip, and presented an aperture curved like the letter S, but more open in front than behind. The tongue was smooth, the lips entire, the lower one thick and rounded, the upper one very moveable, and susceptible of being extended, and curled downwards like a little proboscis. The ears were moderately large, moveable, and of very simple construction. With respect to the organ of touch, it can hardly possess much delicacy except in the upper lip.

“All the senses of this animal, save that of touch, appeared to be pretty delicate. He frequently made use of that of smell, and preferred sugared fruits and sugar itself over every other aliment. He collected together the smaller morsels of food with his moveable upper lip to carry them to his mouth: and when he ate hay, he formed it with his upper lip into little bunches, which he afterwards introduced between his teeth by means of his tongue.

“His horn is solid, attached to the bones of the nose, and composed of fibres of the same nature as the horns of goats and antelopes. It was short and blunt, and he made use of it to strike against objects at the moments of his rage, and even to tear up and destroy whatever he found could give way to his efforts. One might see that he was borne by an instinctive impulse to make use of that part in preference to every other whenever the employment of his strength was required.”

The learned Bishop Heber confirms the supposition of Frederic Cuvier, as to the tractability of the rhinoceros. In his journey through India, he observes: “At Lucknow there were five or six very large rhinoceroses, the first animals of the kind I ever saw, and of which I found that prints and

drawings had given me a very imperfect conception. They are more bulky animals, and of a darker colour than I had supposed, and the thickness of the folds of their impenetrable skin much surpasses all which I had expected. These at Lucknow are quiet and gentle animals, except that one of them has a feud with horses. They seem to propagate in captivity without reluctance, and I should conceive might be available to carry burthens as well as the elephant, except that as their pace is still slower than his, their use could only be applicable to very great weights, and very gentle travelling. These have sometimes had howdahs on them, and were once fastened in a carriage, but only as an experiment, which was never followed up."—vol. ii.

And in the third volume, he observes: "In passing through the city I saw two very fine hunting-tigers in silver chains; and a rhinoceros, (the present of Lord Amherst to the Guicwar,) which is so tame as to be ridden by a Mohout quite as patiently as an elephant."

The able translator of Cuvier's Animal Kingdom observes: "The power of this species is frequently displayed to a surprising degree when hunting it. A few years ago, a party of Europeans with their native attendants and elephants, when out on the dangerous sport of hunting these animals, met with a herd of seven of them, led, as it appeared, by one larger and stronger than the rest. When the large rhinoceros charged the hunters, the leading elephants, instead of using their tusks or weapons, which in ordinary cases they are ready enough to do, wheeled round and received the blow of the rhinoceros's horn upon the posteriors; the blow brought them immediately to the ground with their riders, and as soon as they had risen, the brute was again ready, and again brought them down; and in this manner did the contest continue until four out of the seven were killed, when the rest made good their retreat.

"By comparing the tenour of these short observations of them in their wild condition and in a state of confinement, we may gather sufficient data on which to form a tolerable estimate of the character of these animals. Endowed with amazing powers of body,—powers which can repel, if not overcome the active ferocity of the lion and the ponderous strength of the elephant, but at the same time seeking their sustenance not by the destruction of animal life, but in the profuse banquet of the vegetable kingdom, they might naturally be expected to avail themselves of their physical power principally in self-defence. Accordingly we find that to the first aggressor the rhinoceros is a terrible enemy; but if left to

the ordinary bent of his own inclination,—if unmolested, in short, he does not wantonly seek occasion to exercise his strength to the injury of other creatures.”*



BARON HUMBOLDT'S OBSERVATIONS ON THE GYMNOTUS, OR
ELECTRICAL EEL.

THE galvanic electricity of the gymnotus causes a sensation which can hardly be said to be specifically distinct from that which is occasioned by the conductor of an electrical machine, a Leyden jar, or even the voltaic pile. The same observation has been made respecting the torpedo, or electric ray. In the gymnotus, however, the difference that does exist is the more striking in proportion as the shocks are greater. No man exposes himself rashly to the first discharges of a strong and highly irritated gymnotus. If, by accident, a shock be received before the fish is wounded or tired out by the pursuit, this shock is so painful, that it is impossible even to find an expression to describe the nature of the sensation. I do not remember to have ever experienced, from the discharge of a large-sized Leyden jar, a shock so dreadful as one which I received on placing my feet on a gymnotus which had just been drawn out of the water. I felt during the rest of the day an acute pain in the knees, and in almost every joint of the body. A blow upon the stomach, a stone falling on the head, a violent electric explosion, produce instantly the same effect. We distinguish nothing when the whole nervous system is affected at once. To experience the difference believed to exist between the sensations produced by the voltaic pile

* Griffiths' Cuvier, vol. iii.