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# ANIMAL KINGDOM

ARRANGED IN CONFORMITY WITH ITS  
ORGANIZATION,

BY THE BARON CUVIER,

*MEMBER OF THE INSTITUTE OF FRANCE, &c. &c. &c.*

WITH

ADDITIONAL DESCRIPTIONS

OF

ALL THE SPECIES. HITHERTO NAMED, AND OF  
MANY NOT BEFORE NOTICED,

BY

EDWARD GRIFFITH, F.L.S., A.S., &c.

*AND OTHERS.*

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VOLUME THE THIRD.

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LONDON:

PRINTED FOR GEO. B. WHITTAKER,

AVE-MARIA-LANE.

MDCCCXXVII.

upon them, and the art of rearing and fattening them was much studied, an art which the Latin writers on rural economy have termed *Porculatio*. Under the Emperors, gluttony and epicurism were carried to an excess equally cruel and disgusting. Among the rich there were two very famous methods of dressing this animal. The one consisted in serving up a Hog entire, with one side roasted, and the other boiled. The other mode was called the *Trojan*, in allusion to the Trojan Horse, whose interior was filled with combatants. The inside of the Hog, from which the viscera had been withdrawn, was stuffed with victims of all kinds, such as thrushes, larks, beccaficoes, oysters, &c., the whole being bathed in the best wine and the most exquisite gravy. So great was the expense of this dish, that it became the subject of a sumptuary law, while the barbarous modes of torturing this poor animal to death, for the purpose of imparting a higher flavour to its flesh, passed unpunished and unregarded. It is not possible to read the anecdotes found in history of such infernal gluttony, without horror; but we shall forbear any mention of atrocities which make us blush at belonging to the species capable of committing them.

In hot climates the flesh of swine is not good. M. Sonnini remarks, that in Egypt, Syria, and even the southern parts of Greece, this meat, though very white and delicate, is so far from firm, and so surcharged with fat, that it disagrees with the strongest stomachs. It is therefore considered unwholesome, and this will account for its proscription by the legislators and priests of the east. Such an abstinence was doubtless indispensable to health under the burning suns of Egypt and Arabia. The Egyptians were permitted to eat pork only once a year, on the feast day of the Moon, and then they sacrificed a number of these animals to that planet. At other times, if any one even touched a Hog, he was obliged immediately to plunge into

the Nile with his clothes on, by way of purification. The swine-herds formed an isolated class, the outcasts of society. They were interdicted from entering the temples, or intermarrying with any other families. This aversion for swine has been transmitted to the modern Egyptians. The Copts rear no Pigs, no more than the followers of Mahomet.—The Jews, who borrowed from the Egyptians their horror of Pigs, as well as many other peculiarities, continue their abstinence from them in colder climates, where they form one of the most useful articles of subsistence.

We have seen that the species of the genus RHINOCEROS vary in regard to the leading character of dentition, both in the number and form of the teeth. The incisors are either altogether wanting, or are four in each jaw, two very strong, and two small and weak, and the pairs varying in their relative situation. They have, however, no canine teeth: the cheek-teeth are seven in each jaw, on each side: the upper teeth are square, with several convex lines; the lower have their crowns furnished with transverse prominences.

The teeth therefore afford no very good generic character. Their distinct toes, while they separate these animals from the swine, connect them as a group or family with Hyrax, or Tapir, or the Common Pachydermata, without a proboscis; but the character which very properly and very strikingly marks them as a genus, is that from which they are named, Rhinoceros, (*ῥιν κερως*), or nasal horn. The species differ in this respect, however, some having one, and others two horns, but they agree in the very singular position of this organ, or weapon, which is on the nose.

The remaining characters we would here shortly refer to as generic, are their heavy body, thick legs, head short, with the occiput elevated, and the cerebral cavity small, eyes small, ears moderate, tail short, round at the base,

and compressed laterally toward the extremity; two inguinal mammae.

The horns of this genus present a singular character: they do not envelop a bony axis, like the horns of the ruminating animals, nor do they partake of the osseous nature of the horns of stags, but they appear to be formed of horny fibres, like thick hairs closely agglutinated together. There is much room for observation on the structure of these horns, but instead of attempting any remarks of our own upon the subject, we shall illustrate it much better by transcribing what has been already so ably observed by Mr. Burchell.

“The horn of the Rhinoceros (says he) differing in structure from that of every other animal, and placed in a situation, of which it is the only example, had long appeared to me to be an anomaly very deserving of examination; and therefore on the present occasion (the first in which he had inspected one recently killed) it was the first object of my curiosity and attention. The view which I now began to take of its structure and nature, was afterwards, in the course of my journey, further confirmed by the following mode of reasoning, which, to render it less complicated, I shall confine to the class of Mammalia, or, as it is more commonly called quadrupeds. Dispersed over the skin of all animals are pores, which I have supposed to secrete a peculiar fluid, which may be designated by the name of corneous matter. This secretion, or fluid, is designed by nature for the forming of various most useful and important *additamenta*, all of which continue growing during the whole life; have an insertion not deeper than the thickness of the skin; and are further distinguished by the absence of all sensibility and vascular organization, being purely exuvial parts, like the perfected feathers of birds. In all these parts, the growth takes place by the addition of new matter at their base. When these pores

are separate, they produce hairs. When they are confluent and in a line, they produce the nails, the claws, and the hoofs, the fibrous appearance of which naturally leads to the supposition of their being confluent hairs; and the same may be said of the scales of the Manis.

“The quills of the Porcupine, Hedgehog, and other animals, may be regarded as hairs of extraordinary size. When the pores are confluent and in a ring, they furnish the corneous case of the horns of animals of the ruminating class; and when confluent on a circular area, they supply matter for the formation of a solid horn, such as we see on the Rhinoceros. An examination of the structure and appearance of this latter will be found to support my explanation of its nature; as about its base, it is in many instances evidently rough and fibrous like a worn-out brush. It grows from the skin only, in the same manner as the hair, a circumstance which entirely divests of improbability the assertion of its being sometimes seen loose, although by no means so loose as some writers have supposed. Nor is it at all extraordinary that the Rhinoceros should possess the power of moving it, to a certain degree, since the Hog, to which, in a natural arrangement it so closely approaches, has a much greater power of moving its bristles, which, if concreted, would form a horn of the same nature. With respect to the idea which I had entertained, of a single horn being an anomaly, it arose from the consideration that all the osseous parts of animals, excepting the spine, were in pairs; those which appear single being in fact divided longitudinally by a suture: so that any bony process, such as that which supports the corneous case of horned animals, must, to be single or in the central line of the face or head, stand over a suture; a case which no anatomist has hitherto discovered in nature. The single horn of the Rhinoceros is therefore no anomaly, because having no connexion with, or not deriving its origin from the bones,

and being, as I have endeavoured to show, only concreted hair, nature might, if its mode of life required, have given it other horns of the same kind on any part of the body, without at all disturbing that system and those laws which she has followed in the structure of every quadruped.

“It is this rule of nature, and consequent reasoning, which will not allow me to believe that the Unicorn, such as we see it represented, exists anywhere but in those representations, or in imagination; and many circumstances concur to render it highly probable, that the name was at first intended for nothing more than a species of Rhinoceros.”

The common Two-horned Rhinoceros, the *R. Bicornis* of Linnaeus, when named, was supposed to be the only species distinguished by two horns; modern discoveries, however, have refuted this notion, and our author substituted the epithet *Africanus* for that of *Bicornis*: this, however, appears to be an insufficient distinction, as still more recently Mr. Burchell has described a second species, with two horns, proper to South Africa.

This species is destitute of incisive teeth, and even of an intermaxillary bone; the skin is excessively thick, but not so much so as the Asiatic species. Mr. Burchell found that musket-balls, of a mixture of lead and tin, penetrated this skin easily, though they were flatted by striking against the bones; but he thinks that balls of lead alone, or if fired with a weak charge of powder, might possibly be turned by the thickness of the hide: it is perfectly smooth, and destitute of those extraordinary folds which mark its Asiatic congener. On the central line down the face, and above the nostrils, is placed the first and largest horn, the lower edge of which is nearly on the same horizontal plane as the eye; from this lower edge is continued the flexible upper lip, which the animal makes considerable use of as an organ of touch, and for seizing its food; the lower horn represents a long sharp-pointed cone, crescented or inclining gently

backward from the base; a very short space above this horn, is situated the second or upper horn, not half the length of the former, but nearly as big at the base, conical in shape, and perfectly straight, and placed nearly above the eyes, in a concavity described from the upper edge of the base of the lower horn to the top of the head. The horns being placed upon, but not emanating from the bone of the nose, are partially moveable, more so than in the Asiatic species, arising probably from a greater smoothness of the bone in question in this. No hair appears upon the animal except at the edge of the ears, and extremity of the tail.

The first view of this beast suggests the idea of an enormous hog, to which besides, in its general form, it bears some outward resemblance, in the shape of the skull, the smallness of the eyes, and the proportionate size of its ears; but in its shapeless clumsy legs and feet, it more resembles the Hippopotamus and Elephant. It is in fact in many less obvious particulars closely allied to all these.

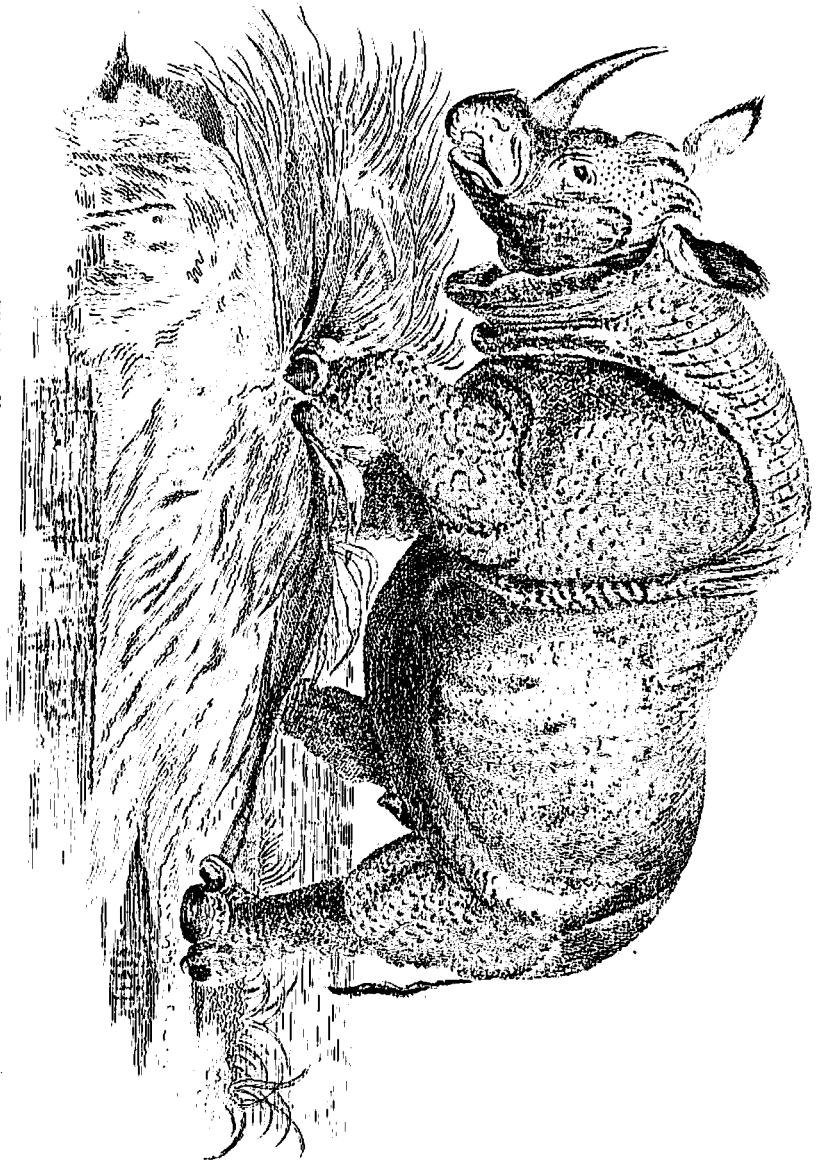
The dimensions of one measured by Mr. Burchell, were in length over the forehead and along the back from the extremity of the nose to the insertion of the tail, eleven feet and two inches, but in a direct line not more than nine feet three inches; the tail, which at its extremity was complanated or flattened vertically, measured twenty inches, and the circumference of the largest part of the body eight feet four inches.

The senses, and a partial account of the character of this species, were described and given to Mr. Burchell by a native South African of experience, than whom no one can be better enabled to give us information on the subject: we shall therefore insert his account. The outline of this account accords with Bruce's interesting description of this animal:—

“Their smell is so keen and nice that they know, even at a great distance, whether any man be coming towards

them; and on the first suspicion of this take to flight. Therefore it is only by approaching them against the wind, or from the leeward, that the hunter can ever expect to get within musket-shot. Yet, in doing this, he must move silently and cautiously, so as not to make the least noise in the bushes as he passes through them; otherwise their hearing is so exceedingly quick, that they would instantly take alarm, and move far away to some more undisturbed spot. But the dangerous part of the business is, that when they are thus disturbed, they sometimes become furious and take it into their head to pursue their enemy; and then, if they once get sight of the hunter, it is impossible for him to escape, unless he possess a degree of coolness and presence of mind, which, in such a case, is not always to be found. Yet, if he will quietly wait till the enraged animal make a run at him, and will then spring suddenly on one side to let it pass, he may gain time enough for re-loading his gun before the Rhinoceros get sight of him again; which fortunately, it does slowly, and with difficulty. The knowledge of this imperfection of sight, which is occasioned perhaps by the excessive smallness of the aperture of the eye (its greatest length being only one inch) in proportion to the bulk of the animal, encourages the hunter to advance without taking much pains to conceal himself; and, by attending to the usual precautions just mentioned, he may safely approach within musket-shot. This creature seems to take as much pleasure in wallowing in the mud as the Hog."

The best accounts and figures, till lately, published of the *Indian Rhinoceros*, are by Parsons, (*Philosophical Transactions*,) by Edwards, (*Gleanings*, vol. i.) and by Thomas, (*Philosophical Transactions*, 1800.) Since the times, however, of these publications in 1815, a specimen was exhibited alive in this country, from which our engraving from a drawing by Mr. Landseer is taken. This individual was afterwards taken to Paris, and M. F. Cuvier in his great



work on Mammalia has given us every particular of its natural history and description. There is no reason to suppose that the Asiatic species differs in its natural habits from its African congener: but as our notice of the latter is principally from Mr. Burchell, whose observations were made on the animal in its wild and natural state, we prefer adopting M. Cuvier's account of his specimen in a captive condition, to repeating the older notices of Parsons, Edwards, and Thomas.

This Rhinoceros was young, and was habitually very gentle, obedient to its keeper, and sensible of his attentions and caresses. He was nevertheless occasionally seized with paroxysms of violence, during which it seemed quite necessary to keep out of his reach: the cause of this occasional violence could not be discovered, unless it were to be traced to a blind impulse or desire of that liberty which he had never enjoyed, and which excited in him an effort to break his chains, and to burst from the unnatural captivity in which he was detained. Bread or fruit, however, soon calmed him. He knew those who were most liberal of food to him; as soon as he saw them, he stretched out toward them his long upper lip, opened his mouth and put out his tongue. The cage in which he was kept being very small, he had little opportunity of displaying the extent of his mental faculties, and his keeper took no other pains than to induce him to forget or misconceive his own strength and to obey; but judging by the attention he bestowed on everything passing about him, and by the distinction he was able to make of persons especially, it might be fairly presumed that his intelligence would have acquired a much greater developement, under more favourable circumstances; but his immense power, and the apprehensions constantly entertained, that in one of his paroxysms he might break his prison, procured him at all times a very gentle treatment. Nothing was required of him without reward; and the slight

also to roll in the mud, which, sticking to its naked skin, serves to defend it from the burning sun of this clime. In size it is nearly double that of the common *R. Bicornis*. These two species are known by the Negroes and Hottentots as distinct, under different names. The principal specific character, next perhaps to size, is in the truncated form of the lips and nose, whence Mr. Burchell names the species *R. Sinusis*. The natives state that it feeds on tender grass, while the other species eats branch and bushes—a statement which seems verified by the difference in the form of the mouth of the two. The head, separated from the first vertebra, was so heavy, that four men could not raise it from the ground, and eight were necessary to get it up into a waggon. In the character of the double horns, and in the absence of the remarkable folds which distinguish the Asiatic species, this agrees with the common African species.

Some others are inserted in the Table, whose specific pretensions are not altogether certain, and of whose general history little is as yet known.

If human passions could be imputed to the Author of nature, we might well picture to ourselves the mixture of ridicule and contempt with which he must frequently have occasion to regard the pigmy efforts of us *soi-disant* lords of the creation when we would subject organized creation to artificial systems and arrangements. Any attempt to divide living beings by distinct lines of demarcation, as we mark out the minor divisions of a great kingdom on a map, are hopeless, unless we submit to endless exceptions, to frequent inconveniences, and occasional absurdities.

Anatomy is certainly the surest guide in the arrangement of the animal kingdom; but, even if the osteology of every animal were perfectly known, and the whole accurately compared, there can be no doubt that in their

osteological as well as in their superficial characters, they would be found to approach each other in some particulars, and to recede from each other in others; to be in fact so irregularly blended together on the one hand and separated on the other, that real divisions between them could nowhere be found; that a certain number of analogies alone must be permitted to constitute a generic separation, and that such separation, when so constituted, to be received correctly, must be looked on with the eye of a liberal latitudinarian, and not with that of a systematic bigot.

Thus when we find the Daman, an animal not much bigger than a Hare, placed with the Elephant and the Hippopotamus, the Horse and the Rhinoceros, we almost involuntarily start; and if told that this is on account of anatomical analogies, we perceive at once that consistency in one particular is sacrificed to the same principle in another, and that disparity of size and physical capability must be tolerated if we would divide animals by their osteological analogies.

Our indefatigable author has now ascertained that the Damans of North and South Africa, which, whether one or two species constitute the genus *HYRAX* in their anatomical characters, are remarkably assimilated to the Rhinoceros and the Tapir, and, consequently, to all the genera, more or less, of the order *Pachydermata*. It is beside our purpose here to enter into all the points of similarity in the anatomy of these animals compared with each other, which Cuvier has investigated in his *Fossil Osteology*: suffice it to say, that these points seem amply sufficient, in spite of the existing and wide differences in dimensions, to warrant the removal of the genus *Hyrax* from the *Rodentia*, in which it had been previously placed, and the transfer of it to the present order.

The Dutch Colonists at the Cape call the South African or *Cape Hyrax*, *Klip-daassie*, or the Rock Badger. Kolbe,  
Vol. III.