

Mr PENNANT names this animal the *white antelope*. M. PALLAS calls it the *antelope pygargus*. The *Systema Naturæ* mentions an animal by the name of *capra cervi-capra*; and it might be imagined, that the spring-bok was meant by it, as a drawing by M. HOUSTON is referred to, in some measure answerable to it; but other circumstances seem to interfere with this idea, particularly the figure in DODART, (which, notwithstanding, is referred to as being a good one,) not bearing the least resemblance to this creature. The name of *cervi-capra*, besides, as denoting an intermediate genus between the deer and the goat, may be applied to the whole race of gazels or antelopes.

Having shot the *spring-bok*, we were forced to remain at so miserable a watering-place as this *Quammedacka* five nights longer, as the two horned (*rhinoceros bicornis*) was alledged to have its chief residence in these parts. The earnest desire I entertained to shoot this remarkable animal was so much the greater, and the less to be wondered at, as it had hitherto been only distinguished by naturalists by the double horns, which at various times had been brought to Europe, and preserved in different cabinets.

KOLBE, 'tis true, pretends to have seen the *rhinoceros bicornis*; but as he not only gives a fabulous account of it, but in the drawing he has given of it, he has represented the tail almost as bushy as that of a squirrel, it is certain, that this author, on this as well as many other points, is merely the echo of certain ignorant inhabitants of the Cape, whose information cannot be relied on. I was so much the more anxious to anatomise the *two-horned rhinoceros*, as the investigation of the internal parts of the *one horned* animal had been entirely neglected, though this creature had been more than once brought to *Portugal, France* and *England*, and had been kept there for some time alive; and upon the whole, has been tolerably well drawn and described, particularly by Dr PARSONS, in the *Philosophical Transactions*. The reader may see, also, on this subject, an extract of my journal, in the *Swedish Transactions* for 1778, p. 307. with a figure of the *rhinoceros*. With what success my wishes were attended, I shall now proceed to mention.

On the 18th of December at seven in the morning, the thermometer stood at 60 degrees; at three in the afternoon it had risen to 84. I had this day a good opportunity to shoot several scarce and uncommon small birds, which in this arid district, where water was so rare, were obliged to come hither in the hottest part of the day, and risque their lives for a few drops of water, which they were in need of, both for themselves and for the young brood they had left in their nests. Though they were unavoidably frightened away by my gun, and indeed some of them wounded by the shot, and at the same time they could but too well see their destroyer, yet they came again, hopping by little and little down to the water-side, in order to dip their bills into it with all speed, for the sake of quenching their vehement thirst; with a continued chirping seeming all the while to bewail their distressed situation, and at the same time to upbraid me with my cruelty. This sight, affecting as it was of itself, ought at this time to have made a still greater impression upon me, because on account of the heat of the weather and the bad quality of the water I had to drink, I felt a thirst little inferior to theirs. "Yet, reasoned I with myself, on the contrary, what a trifle are a few birds compared with the populous fortified towns, which, merely from a lust of dominion, my superiors make no conscience of afflicting with hunger and thirst both, in the highest degree!" and thus proceeded inventing many specious arguments, which cost several more birds their lives; and all this, merely with the expectation of finding among them some one that was rare and curious. So prone are men to perpetuate acts of tyranny and cruelty, and at the same time to invent excuses for their conduct.

The roaring of a lion awakened us about the middle of the following night, which brought to our remembrance, that we might be as trifling in the eye of these ravenous beasts, as the birds I have just mentioned are in those of naturalists. Our oxen and horses seemed now to be much more disquieted than they were on a former occasion, when they heard several lions roaring at one time; nor did our dogs now venture to bark, but with their tails between their legs crept close to the Hottentots;

tots; who on this occasion were very active in stirring up the fire and keeping up a blaze, as they considered it certain that there was a lion at that juncture observing us at no great distance, and suspected that it would not leave the place without paying us a visit. As they likewise thought that the eyes of the lion could be observed at a pretty good distance in the dark, they looked very attentively for them, in order that they might discover from which side they had to expect the wild beast, and make ready to receive it accordingly.

Mr IMMELMAN'S situation and mine was very dangerous; this gentleman, actuated by motives of convenience rather than prudence, had chosen it the preceding evening. We had left our waggon, as being at that time too hot and sultry a place to sleep in; and made our beds on the opposite side of the very same bush, near which the Hottentots had encamped themselves around a large fire. We had also till this moment slept there close by the side of each other, and of our fire-arms; but besides the danger to be apprehended from scorpions and serpents, and the inconvenience of reposing on a plot of ground which was uneven and full of stumps of trees, we found it more adviseable to creep close into the bush, and keep our pieces ready in our laps; for to move at this time from hence to the waggon would have been extremely dangerous, and to push in among the Hottentots near the fire would have had a cowardly appearance, and, indeed, would have been, without any metaphor, a dirty piece of business. During all this time the lion, according to all appearance, had that very night drank out of the well, which was scarcely a stone's throw from us; though it was either not sufficiently hungry, or else had not courage enough to attack us.

The thermometer was at 60 degrees on the 19th, and the same day at twelve o'clock it rose to 84, and at three in the afternoon to 95, being exposed under the tilt of the waggon. I found a kind of *purflain* about this spot, somewhat tougher than the common cultivated sort, and having very small leaves one or two inches in length, and those of a light green colour, (*foliis linearibus, marginib. ad rachid. revolutis, caule herbaceo, superius subquadrangl.*) As I had brought a pint and a half of vinegar with me, lest

we should have been seized with an inflammation of the brain, proceeding from our heads being struck by the perpendicular rays of the sun, I put a small quantity of it, together with a little sugar, to the above-mentioned herb, in order to treat myself with a little salad, which, however, was tough enough, and ate much like grass. One of my Boshies-men, who saw me make ready this dish, by signs gave me to understand, that I began at the wrong end of the plant, and dug up the root of it, which, though I ate it raw, was better tasted than the plant itself; being in shape somewhat like a carrot, and of a white colour, a palm and a half long, and an inch and a half in diameter, (*fusiformis, albid. sesquipalm. diametro sesquiunciali.*)

I learned from this Hottentot, on another occasion, who, contrary to the custom of his nation, was very communicative, that the root of the *da-i'kai*, (vid. p. 20. of this Volume) a shrub of the *mesembryanthemum* kind pretty frequent here, eaten raw, was, indeed, very well-tasted, yielding a sweetish substance, which may be sucked or otherwise separated from the more woody and fibrous parts in which it was contained. I set the more value upon this discovery, as some events might easily happen, which might make it requisite for us to have recourse to this plant, in order to keep us from starving. The colonists of Africa, who are not by far so forward to investigate the virtues of the plants of this country, as by their continual encroachments to increase their property in the country itself, were till now ignorant of the use of this root; neither were the Hottentots, who followed me from *Zwellendam*, acquainted with it; and the Boshies-men themselves were at this time too indolent to dig for the root, when, as it were, they could gorge themselves with flesh.

The Hottentot who was our best shot, had got up this morning before day-break, to go a hunting, together with two of the others; one of whom was constantly his armour-bearer, in order that he himself, being free from the incumbrance of his arms, might have a steadier hand, and be more at liberty, when he found it necessary to creep on his hands and feet and discharge his piece, or else in cases of danger to make a precipitate retreat from
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the vengeance of the enraged animal. Also at different times, he sent the man who carried his arms to reconnoitre the beast, and follow its traces.

The three Hottentots I mentioned that went out in the morning, returned in the evening quite fatigued, and sat down by the well to cool themselves. I enquired at them several times, if they had killed any thing? to which, after some time, they replied, "to be sure there was a great scarcity of game in these parts;" and at last gave me indirectly to understand, that they had shot two rhinoceroses. I mention this trifling incident in so particular a manner, as it affords an instance of that species of reserve peculiar to the Hottentot nation, which several colonists had told me of, and I myself have also experienced. For instance, when any thing remarkable occurs, a Hottentot endeavours if possible, to avoid mentioning it for some days; and at length when he does speak of it, it is with a kind of circumlocution, or, as the colonists call it, with a *draij*, a sort of twist or winding. And indeed, very often, the Hottentot comes out with his intelligence so late, that instead of being of any use, it serves only to tease one. I was, however, in the mean time, extremely well pleased with the news of the rhinoceroses being shot; and wished that my Hottentots had only been so kind as to have told me sooner, that I might have gone back with them and seen the animals alive. However, I have several times since had an opportunity of this kind.

Early in the morning of the 20th, Mr IMMELMAN and I, rode to the spot where the rhinoceroses lay, attended by four of our Hottentots.

We saw in our road a great number of *quaggas* and *hartbeests*, and at the same time pursued a *wood-swine*, but spent our time principally in reconnoitring a herd of *elk-antelopes* (antelope oryx, Vol. II. Plate I,) so that we did not arrive at the spot where the rhinoceroses lay till ten o'clock.

It was about the same time in the day before that these beasts were killed, each of them with one single shot, which penetrated into the very middle of their lungs. They lay at the distance of about a mile and a half from each other, both of them being prostrate on their
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their belly and knees, with their hind legs brought forwards, and supporting their bodies on each side. The first thing I did was to draw and take the dimensions of the lesser of these animals in this position, which, from several others that I had afterwards an opportunity of seeing alive, I altered to a walking attitude.

In order the more easily to form an idea of the shape of this animal, and the mutual proportion of its parts, the reader may turn to the figure annexed in Plate III. Vol. II. For this purpose he must represent to himself the lesser of these beasts, seven feet high, eleven feet and a half long, and twelve feet in the girth. And besides this, when he considers, that, with respect to size, it ranks among four-footed animals the third from the elephant; and, excepting the horns, has hitherto been wholly unknown, with other circumstances which will readily occur to his reflection, he will, perhaps, in some degree, be able to conceive, what a feast the sight and examination of this animal must have been to a naturalist.

The circumstance which first and principally excited my attention was, that in the hide of this beast there were none of those plaits and folds, which we find in the descriptions and figures published of the *rhinoceros bicornis*, and which give it the appearance of being covered with a harness. It was only on the hide of the lesser of these animals that we could observe a small fold or plait, and that merely at the nape of the neck; but this appeared to proceed from the position in which we found it, viz. with the head leaning against the ground, by which means this part was thrown somewhat backwards.

Considering it in other respects, the hide was an inch and a half thick on the back, but somewhat thicker on the sides, though less compact there. The surface of it was scabrous and knotty, and not much differing from that of the elephant, but of a closer texture; and extremely hard when it is dry. It was of an ash-colour, excepting about the groin, where the skin is not so thick by a good deal, but is almost quite smooth, and of the colour of a man's flesh.

The muzzle or nose converges to a point, not only above and beneath, but also very perceptibly on the sides, nearly as it does in the tortoise. The upper lip is somewhat

what longer than the lower. The eyes are small, and sunk in the head.

Though by others, the horns have been diffusely described, yet, in order that the reader may form a just and proper idea of them, it is necessary in this place to make various additions to the descriptions given already. They are of the same shape, and in some measure of the same size in both sexes; yet it seemed to me, that the size of them was not always in proportion to the body. Neither, indeed, is there any constant proportion observable between the foremost horn and the hindmost, though the former is always the largest of the two.

The hindmost, especially in the old ones, is most commonly noticed to be worn away in different parts, which is never the case in the foremost and larger one. This confirms, in some measure, the assertion of the Hottentots and the colonists, that the rhinoceros uses the shorter one only for digging up the various roots, which are said to constitute great part of its food; it being endued with the power of turning the larger horn at that time, on one side out of the way. I was even informed, that in the live rhinoceros the horns were so loose and moveable, that when the animal walks carelessly along, one may see its horns waggle about, and hear them clash and clatter against each other. What appears to add farther confirmation to this account, as to the truth of which, however, I am not without my doubts in many respects, is an excavation or cavity in the base of the horns; particularly that of the foremost, which, like a glenoid cavity, by means of certain articulations, is adapted to, and incloses a round protuberance of the skull. It was with much difficulty that we cut the horns away from the cranium through the sinews and cartilages, by means of which they were attached to it, and of which the remains are still to be seen on the horns I have brought home with me. Had I previously had the smallest hint of the horns being moveable, I certainly should not have neglected to investigate the degree of force with which the muscles and tendons, intended for the strengthening of the joint, and keeping the horn steady and erect, were capable of acting. Of the elder of the rhinoceroses which we had just shot, and whose horns I
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have preserved in the cabinet of the Royal Academy, the hindmost horn is very perceptibly much worn away. I have also found the same appearance on another rhinoceros-horn, which was put up for sale at the Cape. But in the younger animal, which I dissected, and which I allude to particularly in the present description, no marks of this kind were visible. The shape of the rhinoceros-horns are generally conical, with the tips inclined somewhat backwards, as is shewn in the annexed plate; and may be seen still more distinctly in a figure given by Mr KLEIN, which represents a pair of rhinoceros-horns of the natural size.

As to their substance and texture, these horns appear to consist of parallel horny fibres, the extreme points of which on the lower half, especially on the posterior part of the foremost horn, and on the greater part of the hindmost, project in many places; so that the surface in those parts is full of inequalities, and in some places feels as rough as a brush. The upper part of the horns is smooth and plain, like those of oxen.

The anterior horn belonging to the lesser of the rhinoceroses that we had shot, was a foot long, and five inches over at the base. This horn, on the larger of these animals was eighteen inches long, and seven inches in diameter measured at the same part. This rhinoceros, however, did not exceed the other in bulk, in proportion to the size of its horns. Indeed, in the cabinet of the Royal Academy of Sciences, there is a pair of horns preserved belonging to the *rhinoceros bicornis*, the foremost of which is twenty-two inches in length, and the hindmost sixteen. The distance between these horns is hardly two inches. They also differ from the horns I saw in Africa, and from those I brought with me, in being of a lighter colour and straight, and at the same time flat on the sides; so that the hindmost horn in particular, has pretty sharp edges on the upper part, both before and behind. These horns most probably came from the northern parts of Africa, as they were purchased at Naples by Baron EMANUEL DE GEER during his travels, and were sent by him to his father, the late Marquis DE GEER, as an additional ornament to his noble museum, together with which they were presented

by the Marshall's illustrious widow to the Royal Academy of Sciences.

This animal may be said to be wholly destitute of hair, though there are a few dark bristly hairs about an inch long scattered on the edges of the ears, with a very few round about and between the horns. This is also the case at the tip of the tail. This part of the animal is about an inch thick, diminishing by degrees from the root to the tip, which is somewhat enlarged in the fore part, and particularly in the back part, and at the same time rounded off, but is flattened at the sides. It is directly on the edges, produced by this conformation, that there are some strong stiff hairs an inch, or an inch and a half in length to be seen. Such of them as stand towards this creature's hard and rough body, are visibly worn down and stunted.

As may be seen in the figure, the feet are not much wider than the legs. In the fore parts they are furnished with three hoofs each, which do not project much, and of which the middlemost is the largest and most circular. Like those of the elephant, the soles of the feet are covered with a thicker and more callous skin than the other parts; and, if we except the edges, (which are composed of the hoofs) together with a fissure in the heel, are somewhat of a circular form.

I chose the lesser of the rhinoceroses for the purpose of making the dissection, as well as a description and drawing of this animal. I and my people, making five in all, were not able to stir the carcase, when, with an intention to get at it with the greater convenience, we endeavoured to lay it on its back. This, however, proceeded in a great degree from the laziness of my Hottentots, and their unwillingness to assist me. In the position, therefore, in which this unwieldy creature lay, we cut up its left side, and took a large slip from off its thick hide. This we could not do without much trouble, and repeatedly sharpening our knives.

Though the animal had lain above twenty-four hours, and an ecchymosis was formed about the wound, yet the flesh had as yet been preserved from putrefaction by the thickness of the hide. We broiled a piece of this flesh immediately, which tasted somewhat like pork, but was,

in my opinion, much coarser. In the mean time, we cut through the ribs with an axe, and what with hacking and tearing together, we at last made shift to empty the cavity of the abdomen. I made drawings and descriptions of these parts, and took the dimensions of them with as much haste as possible; after which we took out the diaphragm, and a naked Hottentot crept into the carcase, in order to pluck out the lungs and heart.

As the animal had received its death from a shot in the large blood-vessels of the lungs, these parts were already affected with some degree of putridity. The lungs, liver and milt therefore, had not been long exposed to the open air, before they began to swell and effervesce. And indeed, the violent heat of the sun at noon, together with the thirst we suffered, and the stench of the carcase, rendered this operation in a short time extremely dangerous as well as disgusting. In the mean time, I made the following observations.

The viscera of the *rhinoceros bicornis*, have the greatest similarity to those of a horse in my opinion. So that this animal, altho' it is furnished with horns, by no means belongs to the ruminating tribe, but rather to that class whose fat is not hard like tallow, but of a soft nature like lard.

The stomach has not the smallest resemblance to that of a horse, but rather to that of a hog or a man. It was four feet long, (as I have lately discovered in my notes, since I described this animal in the Swedish Transactions) and two feet in diameter; and to this viscus an intestinal tube of twenty-eight feet in length, and six inches in diameter was annexed. This intestinal canal ended three feet and a half from the bottom by a large cœcum, if I may so call a viscus, which at its upper end was of the same width as the stomach, viz. two feet, and of above twice as long, that is, eight feet and a half, and lay on the spine of the back, being attached to it at both ends, after which it was contracted into a rectum six inches wide, and eighteen inches long.

The kidneys were a foot and a half in diameter, and the milt scarcely a foot in breadth, but full four feet in length. The heart was a foot and a half long, and the breadth not much less. The right lobe of the lungs had an incision in it, but was in other respects undivided and

entire, being two feet in length. The left was subdivided into two lobes, the smallest of which was next the base of the heart. The liver, when measured from right to left, was found to be three feet and a half in breadth; but in depth, or measuring from above downwards, as it hangs in the animal when it is in a standing position, two feet and a half. It consisted of three larger and perfectly distinct globes, almost of the same size, and of a small lobe besides, which projected to about a foot from the concave side of the liver, at the middle of its upper edge. No gall-bladder, nor any traces of it, was to be found. In this respect the rhinoceros resembles the horse.——

Immediately before I finished the dissection of this animal, I opened its stomach, which was very much distended, in order to examine upon what it usually fed. The contents of the stomach were entirely free from smell, and perfectly sweet and fresh, consisting of roots and small branches of masticated trees, some of which were as big as the end of a man's finger. This animal, as it appeared, had likewise eaten a great quantity of succulent plants, among which I thought I distinguished two or three which were harsh and prickly. The whole of this mass diffused around a very strong and at the same time an aromatic smell, which in a great measure took off the stench arising from the putrid viscera. It might indeed be some particular herb, or, perhaps, the root only of an herb, with which I was entirely unacquainted, that produced the chief part of the aromatic flavour? In the excrements of this animal, which were four inches in diameter, and in other respects similar to those of a horse, though of a much drier nature, there is usually a quantity of bark and fibres of trees observed, a circumstance to which the hunters pay attention; and by this means are able to distinguish it from the dung of the hippopotamus, an animal which subsists wholly on grass. I thrust my hand into this animal's mouth, which was half open, and found the tongue to be perfectly soft, which is in direct opposition to the common idea, viz. *Quod lambendo trucidat*, (that he kills by licking with his tongue.) I was likewise not a little surprized to find no fore-teeth in any of the three carcasses of the rhinoceroses, although one of these animals appeared to be aged; and,

and, indeed, there is little room for fore-teeth, as the mouth goes off so sharp at the fore part, that there it is only an inch and a half in breadth. Besides, it has no use for any teeth there, as the lips, like the skin, are so extremely hard, that it can clip off the tops of plants and shrubs with them: and that with so much the more ease, as the under jaw goes within the upper; so that this species of rhinoceros is probably capable of laying hold of its food with its lips, and conveying it into its mouth, with the same dexterity and ease as Dr PARSONS remarked on a similar occasion in the common rhinoceros.

I could not at this time possibly separate the flesh from the other bones, to examine them. I expected, however, that, when I returned, the eagles and wolves would have saved me that trouble. And, in fact, this was so far the case, that I had it in my power to carry home with me the cranium of the smallest rhinoceros, which I dissected, very nearly in a compleat state. It is from this skull that the annexed drawing was made; and this part of the creature is too important, to omit describing here.

When both the jaws are clapped together in their joint, they measure nineteen inches at the aggregate height in the back part; and, at the fore part from the tip of the nose, fifteen; the length, measured from the tip of the nose to the back part of the cranium, is in a direct line twenty-three inches, or somewhat short of two feet.

In order to avoid being prolix in my description, I refer my readers to the annexed figure in Plate III. of this Volume, from which they will be able readily to conceive the proportion, &c. of the other parts. It is on the fore part of the *os frontis* that the lesser horn is placed; it will, therefore, probably, be easily observed from the annexed drawing, that *sagittal future* is obliterated, and that the *os occipitis* is terminated by a flat surface, along which it goes strait down in a perpendicular line to the condyloid processes, one of which may be seen in the plate.

The cavity which contains the brain, does not extend much farther downward than the *ossa bregmatis*. The other bones by which it is encompassed are tolerably thick,

thick, so that this large animal has but a small brain proportioned to its size; the cavity for containing this organ being barely six inches long, and four high, and of an oval shape. In order to know more certainly the capacity of it, we filled it with peas, which we afterwards measured, and found scarcely to amount to a quart. In order to discover the proportion between the brain of the rhinoceros and that of a man, I likewise filled a middle-sized human skull with peas, and found that nearly three pints were necessary for this purpose. On the contrary, the cavity of the nose in the rhinoceros is of a considerable size, which probably not a little contributes to the quickness of this animal's scent. At least, physiologists commonly explain the superiority of hounds in this particular, from the circumstance of the *tunica schneideriana* or the nervous membrane appropriated to this sense, being so extensive, (when expanded and extricated from the various folds which it makes in the cavity of the nose, with the greatest art planned for this purpose,) as to cover the whole body of the animal; while on the other hand, this membrane, is only capable of covering the head in the human species.

Six *dentes molares* only, or grinders as they are called, were observed on each side of both jaws, belonging to the two oldest of the rhinoceroses killed by us, and five only in the least or youngest, as the annexed drawing of its cranium demonstrates; yet far back in the mouth we discovered the marks of two more on each side, the foremost of which had begun to make its appearance, but the hindmost was almost wholly included in its socket. Hence it follows, that an aged and full grown rhinoceros has fourteen teeth in each jaw, in all twenty-eight.

In the anterior part of the *os palati*, this animal seems to have a tooth-like process, which is lost in the skull that I brought home. Considering the distance of it from the lower jaw, it should appear that it can scarcely serve any purposes of a tooth. I have to thank M. PALLAS for this piece of information; who, when I had transmitted to him this engraving, was so good as to send me the beautiful figures of the cranium of a rhinoceros, transmitted to him by M. CAMPER for the *Acta Petropolitana*.

The dotted lines drawn about the cranium, show pretty nearly the situation of the horns and lips.

As I have before mentioned that the rhinoceros may be killed by a single shot, it follows that the hide of this animal is not so impenetrable as has been supposed. BONTIUS has remarked long ago, that this creature is usually killed with powder and ball. M. DE BUFFON probably did not pay attention to this passage, when he asserted, on the authority of GERVAISE, that its hide cannot be penetrated by any ball, excepting only about the ears. To these, however, M. DE BUFFON appears, of his own free will and bounty, to have added the eyes and the belly. It is true, indeed, that leaden balls will sooner be flattened against the skin than pierce it; but that balls or cylinders made of iron (*des lingots de fer*) should not be able to make the least impression on it, appears to be another of M. DE BUFFON'S additions, equally absurd with the former. It often becomes requisite for me to correct in this manner, the voluminous works of this illustrious author; which, indeed, merit this correction so much the more, as the errors in them, being in other respects frequently dressed up in an elegant style, have imposed on many with charms which ought to be the attendants only on pure genuine truth, and unadulterated nature. It is therefore probable, that M. DE BUFFON'S sportive genius, must at times have operated in imposing also on its owner; but I am willing to hope, that this gentleman being *by profession* the interpreter of nature and truth, will on this account see with the greater pleasure, any strictures and remarks which are necessary to free natural knowledge from falsehood and error.

For this reason I shall proceed, without farther ceremony, to inform the reader, that the hide of the rhinoceros, as well as that of the elephant, is capable of being penetrated by darts and javelins. I bade one of my Hottentots make a trial of this with his *hassagai*, on one of the dead rhinoceroses. Though his weapon was not in good order, and had no other sharpness than what it had received from the forge, yet, by means of a certain manœuvre the fellow made use of, it received such an impulsive force, as at the distance of five or six paces,

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to pierce through the thick hide of the animal half a foot deep into its body.

The Hottentot or Caffre hunters are accustomed to steal both upon the elephant and the rhinoceros while they are asleep, and wound them in different places at one and the same time. After this they follow the traces of the animal for one or two days, till it falls down with weakness or dies of its wounds. However, according to their own account, they generally poison one or two of their darts, immediately before they attack an animal of this size; in which case, they have no occasion to wait so many days, as they otherwise would, before their prey falls into their hands. A farmer told me, that he had seen an elephant wounded in this manner and dead within twenty-four hours.

With respect to the one-horned rhinoceros, M. DE BUFFON, in Tom. XI. changes his opinion three times in the space of a few pages. In page 177, without quoting his authority for it, M. DE BUFFON considers the hide as being so tough, as not to be penetrated either by the fire-arms or side-arms of the hunter, (*ni du fer ni du feu du chasseur.*) In page 181 again in the notes, he quotes, approves, and highly commends the account given by M. Mours relative to this point, which yet is in contradiction with the former. This, however, he appears again to have forgot, when, in page 195, (without producing any authority for it) he assures us, that javelins (*les javelots & les lances*) are not able to pierce this animal's side.

Not content with asserting that the hide of the rhinoceros is impenetrable, M. DE BUFFON, in page 176, will not even allow it the smallest portion whatever of sensibility, (*prive de toute sensibilité*) and this without quoting any authority, or having any other foundation for the assertion, than merely what his own imagination has furnished him with. And yet, had M. DE BUFFON but paid a moderate degree of attention to the clear and distinct account drawn up by Dr PARSONS in the *Phil. Trans.* which he himself has quoted, it would seem that he must have been of a different opinion. In that paper it is said, that the rhinoceros emitted his penis, when he was tickled under the belly with a wisp of straw. M. DE BUF-

FON too remarks himself, that the rhinoceros, like the hog, is fond of wallowing in the mire: but I will leave it for others to judge, how this agrees with the absolute insensibility he attributes to the hide. And, indeed, when even the thick hide of the elephant is affected by the stinging of flies, how can we suppose that of the rhinoceros to be absolutely insensible? In fact, the skin on the sole of a man's foot, though thicker than it is in other parts of the body, is notwithstanding by no means void of sensibility. Besides, the skin of the rhinoceros, however tough and close in its texture, has, (at least about the groin,) vessels, blood, and juices, adapted for the nourishment of insects, and which, indeed, actually do nourish them; this beast being infested with a kind of *acari*, which I have observed on its pubis and groin, and have drawn up an account of them, inserted in the VIth Tome of *Memoires sur les Insectes*. Neither does the thickness of this animal's hide prevent it from perspiring.

This creature, soon becomes black when it is hard hunted, though at all other times it appears to be of a grey colour. This proceeds from the dust and dried mud sticking to the animal's skin, and moistened by sweat. This fact, besides that I have been assured of it by others, I think I once myself saw a manifest instance of, in the case of a rhinoceros, which was pursued by some other sportsmen, and very unexpectedly passed within the distance of forty or fifty paces of my waggon, and, luckily for me, without perceiving it, or doing it any damage. This beast was much darker coloured than any I ever saw, the number of which, however, in all, did not exceed eight.

From the figure of the rhinoceros referred to above, and from the description I have already given, it follows, that M. DE BUFFON, in his notes to page 186, accuses KOLBE, without any foundation, of having described the lesser horn as being placed in a straight line behind the other, and upon the animal's forehead. *It is impossible,* says he, *that the two horns should be placed so far from each other; for in the horns which are preserved in SIR HANS SLOANE'S museum, there is only the distance of three inches between the larger horn and the smaller.* Indeed, this eminent naturalist appears rather too hasty in the foregoing
remark,

remark, and forgets that every animal's nose is placed near its forehead; so that while one horn is fixed on the rhinoceros's nose, the other may be very well fixed, and actually is so, on the forehead. A figure so plain and simple as KOLBE's (vide the French edition) might have been sufficient to prevent mistakes on this subject.

In fine, it is necessary to inform my readers, that what M. DE BUFFON advances concerning the copulation of the one-horned rhinoceros, viz. that it is performed *croupe a croupe*, is not at all applicable to the rhinoceros bicornis; but in all probability, this opinion is not true with respect to either species, as in the two-horned rhinoceroses which I examined, the penis was placed as forward under the belly as it is in a horse; though, in proportion to the different bulk of the two animals, it is much shorter. In the animal which I dissected it was no more than seven or eight inches long, as may be seen in the specimen I brought home with me. In a rhinoceros, which seemed to be old, it was not much larger. M. DE BUFFON, after Dr PARSONS, describes the penis in the one horned species as being still shorter. Besides, he does not say a word concerning the situation of this member, but founds his conjecture on the subject of this animal's copulation, merely on the circumstance of its having been noticed to bend its penis backwards when it staled, in which direction consequently the urine was emitted. But this, perhaps, was owing to an accidental and vicious conformation; or it might be done out of cleanliness, more especially as we know that the *rhinoceros bicornis* at least has a very acute smell, and appears to love cleanliness, from the circumstance of its chusing certain places near the bushes to stale upon. Indeed, it is possible, that the animal may have a kind of *musculus erector*, for the purpose of occasionally altering the direction of this member. But I am afraid of wearing out my reader's patience, by dwelling so long on the subject of this quadruped; I shall therefore at present only mention it, just as it may happen to occur in the course of my journal.

Mr IMMELMAN also was at length weary of standing by and seeing me dissect this beast, and therefore set out before us on his way home, with a view to repose at intervals, and cool himself under some shady tree. In order

der to go, as it appeared to him, by a nearer way, he rode over a hill overgrown with bushes. From this spot a rhinoceros rushed out upon him, and he certainly would have been trampled to death by this huge creature, or else have been taken up by it on its horns, and, together with his horse, thrown up into the air, had not this latter in his fright made a sudden start, and by several side leaps carried his rider through the bushes, out of the sight and scent of the animal.

It must here be noticed, that the rhinoceros's eyes are sunk in its head, and are but small when compared to the size of its body; in consequence of which it sees, as it is said, but indistinctly, and that only straight forwards. But to make up for this deficiency in sight, its organs of smelling and hearing are so much the more acute; therefore, at the least noise more than usual, this creature takes the alarm, and pricking up its ears, stands clapping with them and listening. Above all things one must be careful even when at a great distance, not to get to the windward of it; for in that case, it seldom fails directly to follow the scent, and attack the object, as it was very near doing by Mr IMMELMAN. This gentleman, having with much difficulty made his escape, struck into a bye-path, in order, after passing through a little dale, to get into the straight and plain road. Here he overtook me, on a spot whither I had retired to screen myself and my horse from the burning rays of the sun, and was turning over my drawings and memorandums. He was still somewhat out of breath in consequence of his adventure, at the time he gave me an account of it; while I, for my part, could not avoid in some degree envying his good fortune, in having at so cheap a rate seen this huge unwieldy animal alive, together with the motions it made in the cumbersome hide in which it was incased: but, indeed, he himself had seen so little of it, that we soon determined to ride up together on the other side of the very hill, in which he had just been put to flight by the rhinoceros. From hence we expected we should be able to descry this creature on the plain; but that we might not be betrayed by the effluvia of our bodies, in case he should return again to the thicket, we threw some dust into the air, in order to determine more
certainly

certainly which way the wind blew, and thus be able to direct our course precisely in opposition to it. And indeed, we had not been long arrived at the spot before my horse began to be a little shy, and at length was quite restive, behaving just as he had done before when I first rode him up to the carcases of the two rhinoceroses. This circumstance I observed to my companion, considering it as a sign that in all probability, there was a rhinoceros near the spot; but he went on, saying, it was impossible, as it did not strike him just then, that there might be more than one in that vicinity. We therefore advanced still nearer, till being but fifteen paces off, I heard a rustling noise like that of an animal raising itself up leisurely on its legs. Immediately upon this a rhinoceros appeared, with its horn projecting over one of the bushes. I now thought it full time for us to turn back immediately, and made signs to my companion, that it might be done as quietly as possible. He too had perceived the snout of this animal, and we rode away as softly as possible; our horses' feet, notwithstanding, made a crackling noise among the dry branches which had fallen from the trees, and with which the narrow paths between the bushes were every where covered. On this account, we did not forget during our retreat to look behind us, in order that we might make off as fast as possible, in case the rhinoceros should have been alarmed by the noise, and have been induced to pursue us. What I call paths were merely tracts made by the buffaloes and rhinoceroses forcing their way through the thickets; but among these also we found many blind paths, i. e. such as terminated on a sudden in some high and impenetrable bush. Into a place of this kind we might in our flight easily have strayed, and there have been caught by the rhinoceros, as it were, in a trap. This adventure made us afterwards suspect, that every bush harboured a rhinoceros; and induced us for some time to give up all thoughts of reconnoitring among the bushes with so much confidence, an animal that did not seem as if it was to be trifled with.

From the preceding relation, I think we may infer, that this rhinoceros was different from that which put Mr IMMELMAN to flight; as also, that this latter did not
pursue

purſue us, by reaſon that, in conſequence of our having rode up to it full in the face of the wind, it could not get ſcent of us; beſides, this animal did not hear our talking nor the crackling of the branches, with a ſufficient degree of certainty to engage it to make an attack upon us: and in fine, it appears, that it had with great forecaſt choſen a thick and high buſh, by way of entrenchment, on that ſide of the buſh, from whence the wind prevented it from getting ſcent of any thing. If I may draw any concluſion from my horſe's ſtopping, it would appear, that he had got ſcent of this beaſt as far off as the diſtance of forty or fifty paces, though the wind was very moderate from that quarter.

On our way home, (for ſo we always called our waggon, or baiting-place in the deſert) we came within piſtol-shot of a herd of *elk-antelopes*, probably the ſame with thoſe we had given chafe to in the morning without ſucceſs; but what was very ſingular, they at this time ſcarcely ſhewed the ſmalleſt fear. The males, which were of the ſize of an ordinary galloway, appeared much more bulky and corpulent than their females, and appeared to run rather heavily.

We received an unexpected viſit in the evening. This was from eight coloniſts, who were come hither from *Camdebo* with four waggons, and had brought with them two of their wives, and two children. They were going to the ſalt-pit before-mentioned near *Zwartkops*-river, in order to fetch ſalt from thence; but having been informed by us of the violent drought they would meet with in their way thither, part of them only went with two waggons, that being fewer of them, they might be leſs liable to ſuffer for want of water. Theſe people told us, that they had chanced to awake a rhinoceros that very day, juſt by the road ſide; but that the beaſt probably ſcared by the noiſe and buſtle it had heard from different quarters at once, ran by them without doing them any hurt. They related to me, however, an inſtance, in which a rhinoceros had run up to a waggon, and carried it to a conſiderable diſtance on his ſnout and horns. They alſo informed us, that the diſtemper among the horſes had already begun to commit ravages in the diſtrict of *Camdebo*, where, however, it otherwiſe ſeldom uſed to make