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very much from their neighbours. You need only compare them with some of these, to be convinced that the drinker of wine excels the drinker of beer and water, both in body and mind, and that the inhabitant of the south is much flouter than he who lives in the north; for though the wine drinker may not have quite as much flesh as he who drinks only beer, he has better blood, and can bear much more work. Tacitus had already observed this, in his treatise *De moribus Germanorum*. "The large and corpulent bodies of the Germans (says he) have a great appearance, but are not made to last." At that time almost all the Germans drank only water; but the mere drinking of wine has effected a revolution in several parts of Germany, which makes the present inhabitants of these countries very different from those described by Tacitus. Black and brown hair is much commoner here than the white, which made the Germans so famous in old Rome. "It will be easily imagined (says Baron Reisbeck), that the monks fare particularly well in so rich a country. We made a visit to the prelate of Erbach. These lordly monks, for so in every respect they are, have an excellent hunt, rooms magnificently furnished, billiard tables, half a dozen beautiful singing women, and a stupendous wine cellar, the well ranged batteries of which made me shudder. A monk, who saw my astonishment at the number of the casks, assured me, that, without the benign influence which flowed from them, it would be totally impossible for the cloister to subsist in so damp a situation."

RHINFELS, a castle of Germany, in the circle of the Lower Rhine, in a county of the same name. It is looked upon as one of the most important places seated on the Rhine, as well in regard to its strength as situation. It is near St Goar, and built on a craggy rock. This fortress commands the whole breadth of the Rhine, and those who pass are always obliged to pay a considerable toll. In the time of war it is of great importance to be masters of this place. E. Long. 7. 43. N. Lat. 50. 3.

RHINLAND, a name given to a part of South Holland, which lies on both sides the Rhine, and of which Leyden is the capital town.

RHINOCEROS, in zoology, a genus of quadrupeds belonging to the order of belluæ. The name is entirely Greek; but these animals were totally unknown to the ancient Greeks. Aristotle takes no notice of them, nor any other Greek writer till Strabo, nor Roman till Pliny. It is probable they did not frequent that part of India into which Alexander had penetrated, since it was near 300 years after that Pompey brought them to Europe. From this time till the days of Heliogabalus, the rhinoceros was frequently exhibited in the Roman spectacles; and he has often been transported into Europe in more modern times; but they were long very ill represented, and very imperfectly described, till some that arrived in London in 1739 and 1741 were inspected, by which the errors and caprices of former writers were detected.

There are two species of rhinoceros, the first of which is the *unicornis*, the length of which, Buffon

tells us, from the extremity of the muzzle to the origin of the tail, is at least 12 feet, and the circumference of the body is nearly the same. "The rhinoceros which came to London in the year 1739 was sent from Bengal. Though not above two years of age, the expence of his food and journey amounted to near L. 1000 Sterling. He was fed with rice, sugar, and hay. He had daily seven pounds of rice, mixed with three pounds of sugar, and divided into three portions. He had likewise hay and green herbs, which last he preferred to hay. His drink was water, of which he took large quantities at a time (A). He was of a peaceable disposition, and allowed all parts of his body to be touched. When hungry, or struck by any person, he became mischievous, and in both cases nothing appeased him but food. When enraged, he sprung forward, and nimbly raised himself to a great height, pushing at the same time his head furiously against the walls, which he performed with amazing quickness, notwithstanding his heavy aspect and unwieldy mass. I often observed, says Dr Parsons, these movements produced by rage or impatience, especially in the mornings before his rice and sugar were brought to him. The vivacity and promptitude of his movements, Dr Parsons adds, led me to think, that he is altogether unconquerable, and that he could easily overtake any man who should offend him.

"This rhinoceros, at the age of two years, was not taller than a young cow that has never produced. But his body was very long and very thick. His head was disproportionally large. From the ears to the horn there is a concavity, the two extremities of which, namely the upper end of the muzzle, and the part near the ears, are considerably raised. The horn, which was not yet above an inch high, was black, smooth at the top, but full of wrinkles directed backward at the base. The nostrils are situated very low, being not above an inch distant from the opening of the mouth. The under lip is pretty similar to that of the ox; but the upper lip has a greater resemblance to that of the horse, with this advantageous difference, that the rhinoceros can lengthen this lip, move it from side to side, roll it about a staff, and seize with it any object he wishes to carry to his mouth. The tongue of this young rhinoceros was soft, like that of a calf. His eyes had no vivacity: In figure they resembled those of the hog, and were situated lower, or nearer the nostrils, than in any other quadruped. His ears are large, thin at the extremities, and contracted at their origin by a kind of annular rugosity. The neck is very short, and surrounded with two large folds of skin. The shoulders are very thick, and at their juncture there is another fold of skin, which descends upon the fore legs. The body of this young rhinoceros was very thick, and pretty much resembled that of a cow about to bring forth. Between the body and crupper there is another fold, which descends upon the hind legs. Lastly, another fold transversely surrounds the inferior part of the crupper, at some distance from the tail. The belly was large, and hung near the ground, particularly its middle part. The legs are round, thick, strong, and

D d 2

Rhinoceros.
Plate
ccccxxxviii
Buffon's
Natural
History,
vol. vi. p.
92, &c.

(A) "Their food in a state of nature is the grossest herbs, as thistles and thorny shrubs, which they prefer to the soft pasture of the best meadows; they are fond of the sugar cane, and eat all kinds of grain, but for flesh they have no appetite."

Rhinoceros. their joint bended backwards. This joint, which, when the animal lies, is covered with a remarkable fold of the skin, appears when he stands. The tail is thin, and proportionally short; that of the rhinoceros so often mentioned, exceeded not 16 or 17 inches in length. It turns a little thicker at the extremity, which is garnished with some short, thick, hard hairs. The form of the penis is very extraordinary. It is contained in a prepuce or sheath like that of the horse; and the first thing that appears in the time of erection is a second prepuce, of a flesh-colour, from which there issues a hollow tube, in the form of a funnel cut and bordered somewhat like a flower-de-luce, and constitutes the glans and extremity of the penis. This anomalous glans is of a paler flesh-colour than the second prepuce. In the most vigorous erection, the penis extends not above eight inches out of the body; and it is easily procured by rubbing the animal with a handful of straw when he lies at his ease. The direction of this organ is not straight, but bended backward. Hence he throws out his urine behind; and from this circumstance, it may be inferred that the male covers not the female, but that they unite with their cruppers to each other. The female organs are situated like those of the cow; and she exactly resembles the male in figure and grossness of body. The skin is so thick and impenetrable, that when a man lays hold of any of the folds, he would imagine he is touching a wooden plank of half an inch thick (B). When tanned, Dr Grew remarks, it is excessively hard, and thicker than the hide of any other terrestrial animal. It is everywhere covered more or less with eruptions in the form of galls or tuberosities, which are pretty small on the top of the neck and back, but become larger on the sides. The largest are on the shoulders and crupper, are still pretty large on the thighs and legs, upon which they are spread all round, and even on the feet. But between the folds the skin is penetrable, delicate, and as soft to the touch as silk, while the external part of the fold is equally hard with the rest. This tender skin between the folds is of a light flesh-colour; and the skin of the belly is nearly of the same colour and consistence. These galls or tuberosities should not be compared, as some authors have done, to scales. They are only simple indurations of the skin, without any regularity in their figure or symmetry in their respective positions. The flexibility of the skin in the folds enables the rhinoceros to move with facility his head, neck, and members. The whole body, except at the joints, is inflexible, and resembles a coat of mail. Dr Parsons remarks, that this animal listened with a deep and long continued attention to any kind of noise; and that, though he was sleeping, eating, or obeying any other pressing demands of nature, he raised his head, and listened till the noise ceased."

These animals never assemble or march together in troops like elephants. Being of a more solitary and savage disposition, they are more difficult to hunt and to overcome. They never attack men, however, except when they are provoked, when they are very furious and formidable; but as they see only before them, and

not very sharply, and as they turn with great difficulty, Rhinoceros they may be easily avoided. The skin of these animals is so extremely hard as to resist sabres, lances, javelins, and even musket balls, the only penetrable parts being the belly, the eyes, and about the ears. Hence the hunters generally attack them when they lie down to sleep.— Their flesh is considered as excellent by the Indians and Africans, but especially by the Hottentots; and if they were trained when young, they might be rendered domestic, in which case they would multiply more easily than the elephant. They inhabit Bengal, Siam, Colchin-China, Quangsi in China, the isles of Java and Sumatra, Congo, Angola, Ethiopia, and the country as low as the Cape. They love shady forests, the neighbourhood of rivers, and marshy places. They wallow in the mire like hogs, and are said by that means to give shelter in the folds of their skins to scorpions, centipedes, and other insects. This is denied by Buffon and Edwards, though the surgeon of the Shaftesbury had observed in a rhinoceros, newly taken after having weltered in the mud, several insects concealed under the ply of the skin. This carries with it every appearance of probability; for as the creature welters in mud, it is impossible for it to do so without bringing up with it some of the insects which live in that mud; and when this is the case, it surely cannot be unnatural to suppose that they would shelter themselves under the plaits of the skin. Mr Bruce had an opportunity of examining the skin of a rhinoceros before his muddy covering had been scraped off, and saw under it several very large worms, but not of the carnivorous kind. He saw likewise several smaller animals resembling ear-wigs, which he took to be young scolopendræ; and, though he searched no farther, we must certainly consider this as a proof of what the surgeon of the Shaftesbury related. Mr Bruce supposes, too, that they welter in mire, partly in order to screen themselves by a case of mud from the attacks of that mischievous fly which infests the animals of Abyssinia to such a degree. "The time of the fly (says he) being in the rainy season, the whole black earth turns into mire. In the night, when the fly is at rest, the rhinoceros chooses a convenient place, and there, rolling himself in the mud, he clothes himself with a kind of case, which defends him against his enemy the following day. The wrinkles and plaits of his skin serve to keep this muddy plaster firm upon him, all but about his hips, shoulders, and legs, where it cracks and falls off by motion, and leaves him exposed in those places to the attacks of the fly. The itching and pain which follow occasion him to rub himself in those parts against the roughest trees; and this is at least one cause of the pustules or tubercles which we see upon these places, both on the elephant and rhinoceros." They bring forth only one young at a time, about which they are very solicitous. They are said to consort with tygers; a story founded merely on their common attachment to the sides of rivers, by which means they are often found near each other. Their skin, flesh, hoofs, teeth, and even dung, are used in India medicinally. The horn, especially that of a virgin rhinoceros, is considered as an antidote against poison. Every horn,

(B) This Mr Bruce denies to be the case, and suspects, where it does occur, that it is the effect of disease, or of a different habit acquired by keeping. In their natural state, he thinks they prevent this rigidity by wallowing in the mud.

rhinoceros horn, however, has not this property; some of them selling very cheap, while others are extremely dear.

Some writers are of opinion, that the rhinoceros is the unicorn of holy writ and of the ancients, and that the oryx or Indian afs of Aristotle, who says it has but one horn, was the same, his informers comparing the clumsy shape of the rhinoceros to that of the afs.— It was also the *bos unicornis* and *fera monoceros* of Pliny, both of which were of India; and in his account of the monoceros he exactly describes the great black horn and hog-like tail. The unicorn of Scripture is considered as having all the properties of the rhinoceros, as rage, untameableness, great swiftness, and vast strength. This opinion is most ably supported by Mr Bruce. “The derivation of the Hebrew word *reem* (says he), which in our version is translated *unicorn*, both in the Hebrew and the Ethiopic, seems to be from erectness, or standing straight. This is certainly no particular quality in the animal itself, who is not more or even so much erect as many other quadrupeds, for in its knees it is rather crooked; but it is from the circumstance and manner in which its horn is placed. The horns of all other animals are inclined to some degree of parallelism with his nose or os frontis. The horn of the rhinoceros is erect and perpendicular to this bone, on which it stands at right angles, thereby possessing a greater purchase or power, as a lever, than an horn could possibly have in any other position. The situation of the horn is very happily alluded to in Scripture; ‘My horn shalt thou exalt like the horn of an unicorn.’ And the horn here alluded to is not wholly figurative, but was really an ornament worn by great men in the days of victory, preferment, or rejoicing, when they were anointed with new, sweet, or fresh oil; a circumstance which David joins with that of erecting the horn.

“Some authors, for what reason I know not, have made the reem, or unicorn, to be of the deer or antelope kind; that is, of a genus whose very character is fear and weakness, directly opposite to the qualities by which the reem is described in Scripture: besides, it is plain that the reem is not of the class of clean quadrupeds; and a late modern traveller very whimsically takes him for the leviathan, which certainly was a fish. Balaam, a priest of Midian, and so in the neighbourhood of the haunts of the rhinoceros, and intimately connected with Ethiopia, (for they themselves were shepherds of that country), in a transport, from contemplating the strength of Israel, whom he was brought to curse, says, they had, as it were, the strength of the reem. Job makes frequent allusion to his great strength, ferocity, and indocility. He asks, ‘Will the reem be willing to serve thee, or abide by thy crib?’ that is, Will he willingly come into thy stable, and eat at thy manger? And again, ‘Canst thou bind the reem with a band in the furrow; and will he harrow the valleys for thee?’— In other words, Canst thou make him go to the plough or harrows?

“The rhinoceros, in Geez, is called *Arwe Harich*, and in the Amharic *Auraris*; both which names signify ‘the large wild beast with the horn.’ This would seem as if applied to the species with one horn. On the other hand, in the country of the Shangalla and in Nubia he

is called *Girnamgirn*, or ‘horn upon horn;’ and this would seem to denote that he had two. The Ethiopic text renders the word *reem*, ‘Arwe-Harich;’ and this the Septuagint translates *monoceros*, or *unicorn*. The principal reason of translating the word *unicorn* rather than *rhinoceros*, is from a prejudice that he must have had but one horn. But this is by no means so well founded as to be admitted the only argument for establishing the existence of an animal, which never has appeared after the search of so many ages. Scripture speaks of the horns of the unicorn; so that even from this circumstance the reem may be the rhinoceros, as the Asiatic, and part of the African rhinoceros, may be the unicorn.”

The rhinoceros bicornis was long known in Europe merely by the double horns which were preserved in various cabinets; and its existence, though now past all doubt, has been frequently questioned. Dr Sparman, in his voyage to the Cape of Good Hope, killed two of these animals, which he dissected, and very minutely describes. The horns, he says, in the live animal are so mobile and loose, that when it walks carelessly along, one may see them waggle about, and hear them clash and clatter against each other. In the Phil. Trans. for 1793, we have a description of the double-horned rhinoceros of Sumatra, by Mr Bell, surgeon in the service of the East India Company at Bencoolen; and this account, though it differs considerably from that of Sparman in some particulars, we shall insert here. “The animal (says Mr Bell) herein described was shot with a leaden ball from a musket about ten miles from Fort Marlborough. I saw it the day after; it was then not in the least putrid, and I put it into the position from which the accompanying drawing was made. (See Plate ccccxviii.) It was a male; the height at the shoulder was 4 feet 4 inches; at the sacrum nearly the same; from the tip of the nose to the end of the tail eight feet five inches.— From the appearance of its teeth and bones it was but young, and probably not near its full size. The shape of the animal was much like that of the hog. The general colour was a brownish ash; under the belly, between the legs and folds of the skin, a dirty flesh colour. The head much resembled that of the single-horned rhinoceros; the eyes were small, of a brown colour; the *membrana nictitans* thick and strong: the skin surrounding the eyes was wrinkled; the nostrils were wide; the upper lip was pointed, and hanging over the under.

“There were six *molars*, or grinders, on each side of the upper and lower jaw, becoming gradually larger backward, particularly in the upper; two teeth in the front of each jaw; the tongue was quite smooth; the ears were small and pointed, lined and edged with short black hair, and situated like those of the single-horned rhinoceros. The horns were black, the larger was placed immediately above the nose, pointing upwards, and was bent a little back; it was about nine inches long. The small horn was four inches long, of a pyramidal shape, flattened a little, and placed above the eyes, rather a little more forward, standing in a line with the larger-horn, immediately above it. They were both firmly attached to the skull, nor was there any appearance of joint or muscles to move them (c). The neck was thick and short, the skin on the under side thrown in-

to

(c) Mr Bruce, however, says, that in the living animal the horns are extremely sensible. He informs us, that

Rhinoceros. to folds, and these folds again wrinkled. The body was bulky and round, and from the shoulder ran a line, or fold, as in the single-horned rhinoceros, though it was but faintly marked. There were several other folds and wrinkles on the body and legs; and the whole gave rather the appearance of softness: the legs were thick, short, and remarkably strong; the feet armed with three distinct hoofs, of a blackish colour, which surrounded half the foot, one in front, the others on each side. — The soles of the feet were convex, of a light colour, and the cuticle on them not thicker than that on the foot of a man who is used to walking; the testicles hardly appeared externally; the penis was bent backward, and opened about 18 inches below the anus. At its origin it was as thick as a man's leg, and about two feet and a half long; the bend in it occasions the urine to be discharged backwards. The glans is very singular; the opening of the urethra is like the mouth of a cup with its brim bending over a little and is about three quarters of an inch in diameter; the glans here is about half an inch in diameter, and continues that thickness for an inch and a half: it is then inserted into another cup like the first, but three times as large; the glans afterwards gradually becomes thicker, and at about nine inches from the opening of the urethra are placed two bodies on the upper part of the glans, very like the nipples of a milch-cow, and as large; these become turgid when the penis is erected; the whole of this is contained in the prepuce, and may be considered as glans. From the os pubis arises a strong muscle, which soon becomes tendinous; this tendon is continued along the back or upper part of the penis; it is flattened, is about the size of a man's little finger, and is inserted into the upper part of the glans, near the end. The use of this muscle is to straiten the penis. On the under side of the penis there are two muscles, antagonists to the above; they arise from the os ischium fleshy, run along the lower side of the penis, on each side of the corpus spongiosum, and are inserted fleshy into the lower side of the glans; the action of these muscles will draw in the penis, and bend it. The male has two nipples, like the female, situated between the hind legs; they are about half an inch in length, of a pyramidal form, rounded at the end.

“The whole skin of the animal is rough, and covered very thinly with short black hair. The skin was not more than one third of an inch in thickness at the strongest part; under the belly it was hardly a quarter of an inch; any part of it might be cut through with ease by a common dissecting knife. The animal had not that appearance of armour which is observed in the single-horned rhinoceros. Since I dissected the male, I have had an opportunity of examining a female, which was more of a lead colour: it was younger than the male, and had not so many folds or wrinkles in its skin; of course it had still less the appearance of armour. The only external mark which distinguishes it from the male is the vagina, which is close to the anus; whereas in the male the opening for the penis is 18 inches below the anus.”

From the difference between this account and Spar-

man's, which in some particulars is considerable, and from the difference of shape, we are disposed to think them varieties. Mr Bruce's drawing of the rhinoceros bicornis is unquestionably a deception; the body of the animal, as there represented, corresponds exactly with that of the unicornis except in its having two horns on its head. In the museum of the late Dr William Hunter, the two-horned animal was preserved, agreeing exactly with the general accounts and figures we have of that animal, but differing essentially from Mr Bruce's. For further particulars respecting these curious animals, we refer to Buffon, vol. vi. p. 92—117; Sparman's Voyage to the Cape, vol. ii. chap. 12.; and Bruce's Travels, vol. iv. p. 296, &c. and Appendix, p. 85, &c.

RHINOCEROS-BIRD. See BUCEROS.

RHITYMNA. See RETIMO.

RHIZOBALUS, in botany: A genus of the tetragynia order, belonging to the polyandria class of plants; and in the natural method ranking under the 23d order, *Tribilate*. The calyx monophyllous, fleshy, and downy; the corolla consists of five petals, which are round, concave, fleshy, and much larger than the calyx; the stamina are very numerous, filiform, and longer than the corolla; the styli are four, filiform, and of the length of the stamina; the pericarpium has four drupæ, kidney-shaped, compressed with a fleshy substance inside, and in the middle a flat large nut containing a kidney shaped kernel. Of this there is only one species, viz. *Pekia*. The nut is fold in the shops as American nuts; they are flat, tuberculated, and kidney-shaped, containing a kernel of the same shape, which is sweet and agreeable. Clusius gives a good figure of the nut, and Aublet has one of the whole plant.

RHIZOPHORA, the MANGROVE, or *Mangle*, in botany: A genus of the monogynia order, belonging to the dodecandria class of plants; and in the natural method ranking under the 12th order, *Holoraceæ*. The calyx is quadripartite, the corolla partite; there is one seed, very long, and carnos at the base. These plants are natives of the East and West Indies, and often grow 40 or 50 feet high. They grow only in water and on the banks of rivers, where the tide flows up twice a-day. They preserve the verdure of their leaves throughout the year. From the lowest branches issue long roots, which hang down to the water, and penetrate into the earth. In this position they resemble so many arcades, from five to ten feet high, which serve to support the body of the tree, and even to advance it daily into the bed of the water. These arcades are so closely intertwined one with another, that they form a kind of natural and transparent terrace, raised with such solidity over the water, that one might walk upon them, were it not that the branches are too much encumbered with leaves. The most natural way of propagating these trees, is to suffer the several slender small filaments which issue from the main branches to take root in the earth. The most common method, however, is that of laying the small lower branches in baskets of mould or earth till they have taken root.

The description just given pertains chiefly to a particular species of mangrove, termed by the West Indians

that once at a hunting match he saw the point of a rhinoceros's horn broken off by a musket-shot; the consequence of which was, that the creature was for a moment deprived of all appearance of life.

Rhinoceros Bicornis.



Unicornis.



A. Bell Pinx. M. J. Sculptor fecit.