

THE  
CIRCLE OF THE SCIENCES:

A SERIES OF TREATISES ON THE PRINCIPLES OF SCIENCE,  
WITH THEIR APPLICATION TO PRACTICAL PURSUITS.

---

VOLUME III.

---

ORGANIC NATURE—VOL. III.

VERTEBRATED ANIMALS—W. S. DALLAS, F.L.S.

NEW EDITION.

LONDON AND GLASGOW:  
RICHARD GRIFFIN AND COMPANY,  
PUBLISHERS TO THE UNIVERSITY OF GLASGOW.

1860.

said even to walk at the bottom of the water. On shore, they trot heavily but with considerable rapidity, and when two of them meet on solid ground they frequently fight ferociously, rearing up on their hind feet, and biting one another with great fury, so that, according to African travellers, it is rare to find a Hippopotamus which has not some of his teeth broken, or the scars of wounds upon his body. When not irritated, they appear to be quiet and inoffensive; but a very trifling irritation is sufficient to rouse their anger, when they attack the offender most furiously with their teeth; and a Hippopotamus which had been touched accidentally by a boat, has turned upon it and torn out several of the planks, so that it was with difficulty the crew got to shore. A Hippopotamus has also been known to kill some cattle which were tied up near his haunts, apparently without the slightest provocation.

The flesh of this unwieldy animal is said to be very good, and not unlike pork; it is in high esteem with the inhabitants of South Africa, both native and European. The feet, the tongue, and the tail are the favourite parts, and a thick layer of fat which covers the ribs is held in great esteem when salted and dried. It is called *Zeehoe-speck*; the name given to the Hippopotamus by the Dutch colonists being *Zeehoe*, or Sea-cow. The skin is cut into whips, which are highly prized, and the large canine teeth are sometimes used to furnish ivory. Two specimens of the Hippopotamus a male and female, are now living in the gardens of the Zoological Society; the male was the first ever brought to Europe, at all events in modern times. †

A second species of *Hippopotamus* (*H. senegalensis*), inhabiting the rivers of Western Africa has been described by some authors; but its distinctness from the old species still requires confirmation. The fossil remains of several species are found in different parts of the world, principally in Europe and Asia.

A fourth family is that of the *Rhinocerotidae*, including the different species of Rhinoceros, which are nearly as bulky and unwieldy as the Hippopotamus, and, like that animal, are covered with a naked skin. The skin, however, in these animals, has a much rougher exterior than in the preceding family, and in some cases is laid in large folds, which give the creatures a curiously shielded appearance. The head is elongated and triangular, and from the upper surface of the muzzle there springs a single or double horn, composed of a solid mass of horny fibres, supported upon a broad bony protuberance of the nose. These horns are of considerable size, measuring frequently two feet and a half in length, and sometimes much more. They are of an elongated conical form, and usually more or less curved backwards; but in the British Museum there are two horns which are evidently curved in the opposite direction, and probably belonged to a species of which nothing further is

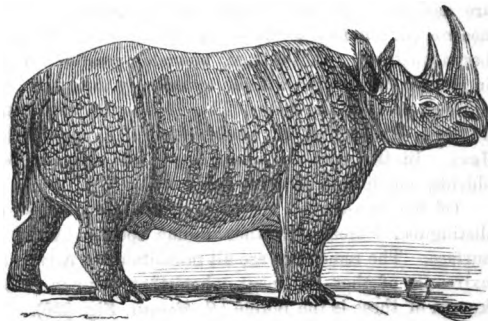


Fig. 330.—Two-horned Rhinoceros or Bicornis (*Rhinoceros bicornis*).

at present known. The same collection contains another horn, which is more slender than usual, and curved backwards almost in a semicircle; all these have been described by Dr. Gray (*Proc. Zool. Soc.*). When two horns are present, they are placed one behind the other, and the hinder one is much shorter than the anterior. Only two sorts of teeth, incisors and molars, are found in the jaws, and of these the former sometimes fall out before the animal is full grown. The canines are entirely wanting. The molars are usually seven in number on each side of each jaw; their surface exhibits projecting lunate ridges. The body is very bulky, and is supported upon short, strong legs; the feet have three toes, which are only indicated externally by the hoofs.

These animals are found in the same regions of the Old World which are inhabited by the Elephants; they live like them in the forests, and feed upon herbage and the leafy twigs of trees and shrubs. They appear, as a general rule, to be peaceable animals, unless irritated; but in this case they charge with great fury upon their enemy, holding the head down, so as to present the point of the horn towards him. They are generally hunted merely for the sake of sport; but the natives of the countries inhabited by them kill them when they can, for the sake of the flesh; walking-sticks of great beauty are cut out of their thick hides, and their horns are worked into boxes and drinking-cups; to the latter of which the eastern nations attribute the power of indicating the presence of poison in any fluid that may be put into them.

Little more than twenty years ago only four living species belonging to this family were known, but the number has since been increased to seven; and Dr. Gray has very recently described the horns of what appear to be two other species, distinct from any of those previously described.

Of the seven species, two have only a single horn upon the nose, and both these are natives of the East Indies and its islands. The best known is the Indian Rhinoceros (*R. unicornis*), which appears to be the species with which the ancients were best acquainted. It is a huge, unwieldy creature, measuring twelve or thirteen feet in length, and covered with an excessively thick skin, which lies in broad folds upon different parts of the body. This is also the case with a second eastern species, the Javanese Rhinoceros (*R. sondaicus*), which appears to be confined to the island of Java. In this species the surface of the skin is covered with numerous pentagonal shields, which constitute the epidermis.

Of the two-horned species, one (*R. Sumatranus*) is found only in Sumatra; it is distinguished from the other Indian species by the comparative smoothness of its surface. The remainder are all inhabitants of Africa, and principally of the southern extremity of that continent, where they occur in considerable abundance. The best known of these is the Borélé (*R. bicornis*, Fig. 330). The bones of several species of this family have also been found in a fossil state.

The division of the *Zygodactyla*, in which the feet are formed of two hooved toes available for walking, and two others placed at some little elevation on the back of the foot, includes only a single family, that of the *Suidæ*, or Swine, of which the common Hog may be taken as an example. In these animals the nose, although possessing considerable power of motion, is not produced into a proboscis, nor is it swelled up into a blunt rounded mass as in the Hippopotamus, but runs in a tapering cylindrical form to the extremity, where it is suddenly truncated. The tip is of a firm cartilaginous nature, and is principally employed in turning up the earth in search of

roots and other articles of food. The skull is of a pyramidal form and the nasal bones



Fig. 331.—Head of the Boar.

are not elevated as in the Tapirs; but the facial bones are very large in comparison with the cranium. The jaws are always furnished with the three kinds of teeth whilst the animals are young, but the incisors are always small, and in some cases fall out with increase of age. The canines, on the contrary, are always of large size, especially in the males, in which they project from the sides of the mouth; those of the lower jaw, from constantly rubbing against their fellows in the upper, are usually sharpened to a most acute edge, and constitute formidable weapons. The molar teeth vary from three to seven on each

side in both jaws. The feet consist of four toes, of which the two middle ones are considerably longer and stouter than their fellows, forming a cloven hoof, upon which the animals walk; the two lateral toes are also furnished with hoofs, but they are placed at the back of the foot at some little elevation from the ground. One of these hinder toes is wanting in some cases, whilst monstrosities have occurred with five toes, and others with a single hoof. The eyes are small, and the ears of moderate size and upright. The form of the body resembles that of our ordinary swine, but is lighter and less bulky in the wild species. The tail is rather short and slender; in most cases it is capable of being twisted up into a sort of curl upon the rump. The skin is covered with bristles.

Unlike the Pachydermata of the preceding families, which only produce one or at the utmost two young at a birth, the Swine are very prolific, bringing forth frequently from eight to twelve young ones. The species are found in the warmer parts of both continents, only one, the Common Hog (*Sus scrofa*), being found wild in the temperate parts of the Old World. They live in the woods and forests, generally in marshy places, and feed partly upon roots and herbage and partly upon animal substances, such as insects and their larvæ, small mammalia, and even upon carrion. The females and young males live together in flocks, but the old boars are usually solitary, except during the rutting season, which they pass in company with the females; and at this period they have tremendous combats amongst themselves.

The best known species is the Common Hog (*Sus scrofa*), which is found wild in many parts of Europe, all over Asia, and in the north of Africa. It is also the original of our tame breeds, and from individuals of these which have escaped from captivity the American forests have been supplied with a numerous race of wild hogs. They feed at night, and often do immense damage to the crops cultivated in the neighbourhood of their abodes, rooting up all the produce in search of food. In the autumn they find a plentiful nourishment in the acorns and beech mast which fall from the trees. They are pursued with powerful dogs, and hunting the Wild Boar has always been a favourite sport in the countries where they abound. The flesh is superior to that of the domestic swine.

Domestication has produced an immense number of varieties in this Hog, but in all cases it is a most valuable animal. Its flesh is very good, and bears salting and drying remarkably well; it furnishes an abundance of fat, and both the leather made