

THE  
AMERICAN CYCLOPÆDIA:  
A  
Popular Dictionary  
OF  
GENERAL KNOWLEDGE.

EDITED BY  
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to the sea, and are generally from 25 to 30 ft. above the lowest level of the river.—The basin of the Rhine is estimated at 80,000 sq. m., of which 13,000 belong to the upper, 40,000 to the middle, and 27,000 to the lower Rhine. The river is generally covered with ice for from six weeks to two months in winter; and when snow accumulates and a thaw suddenly sets in, the lowlands are liable to inundations that are sometimes attended with great loss of life and property. The different arms of the Rhine are united by numerous canals, and the river itself is connected by canals with the Saône and Rhône, the Scheldt, Maas, and Danube; and an extensive trade is carried on upon all these as well as the chief navigable tributaries, the Moselle, Main, Ruhr, and Neckar. The annual traffic is of great importance, and is regulated by treaties between the different states through which it runs, all of which lay toll duties on vessels and goods passing their boundaries.—The Rhine is celebrated for the picturesque beauty of the scenery in the upper and middle part of its course, and is annually visited by a multitude of tourists. More than 1,000,000 passengers are conveyed up and down annually. Steam vessels ply between the principal towns on its banks. It is crossed at several points by pontoon bridges, and many of the principal places on either side are connected by railways. There is great discrepancy among ancient writers with regard to the number of mouths by which the waters of the Rhine formerly flowed into the sea. Some speak only of two; others say there were three; and Cæsar says there were several branches.

**RHINE, Province of the, or Rhenish Prussia** (Ger. *Rheinprovinz*, *Rheinpreussen*, or *Rheinland*), a W. province of the kingdom of Prussia, lying on both sides of the Rhine, bordering on the provinces of Westphalia and Hesse-Nassau, the grand duchy of Hesse, Bavaria, Alsace-Lorraine, Luxemburg, Belgium, and Holland; area, 10,416 sq. m.; pop. in 1871, 3,579,347, of whom about 74 per cent. were Roman Catholics, 25 per cent. Protestants, and the remainder Jews. The N. part of the province is level, the E. and S. parts mountainous. The principal mountain ranges are the Hohe Venne, the Eifel (about 2,500 ft. high), and the Hunsrück, W. of the Rhine, and the Siebengebirge, E. of it. The chief river next to the Rhine is its western affluent the Moselle. The province is rich in minerals, and is fertile and well cultivated. The manufactures are extensive, and comprise almost every species of industry. It is divided into the administrative districts of Cologne, Düsseldorf, Coblenz, Treves, and Aix-la-Chapelle, and contains besides the cities of those names Bonn, Crefeld, Elberfeld, Jülich, Wesel, Berg, and Cleves. Capital, Cologne.

**RHINOCEROS** (Gr. *ῥίς*, nose, and *κέρας*, horn), an ungulate mammal, surpassed in size among present terrestrial animals only by the elephant, and perhaps by the hippopotamus. The head

is long and triangular, and from the upper surface of the end of the nose springs a single or double horn, composed of a solid mass of agglutinated hairs or horny fibres; this is supported on the nasal bones, though not connected with them, belonging entirely to the skin and removed with it; it is often more than 3 ft. long, and gently curved backward, and so sharp as to make it a very formidable weapon; when there are two horns, the hinder is generally much the shorter. There are no canine teeth, and the incisors sometimes fall out when the animal is full-grown; the molars are  $\frac{7}{1}$ , with lunate ridges; the nose is blunt and rounded, and the upper lip elongated and very movable; the eyes are small, and the ears moderate, tipped with rigid hairs; the body is very bulky, the legs short and strong, and the feet three-toed with as many broad hoofs; the tail is short, round at the base, compressed laterally toward the end, and hairy at the tip; on the hind feet are sebaceous glands opening on the posterior surface, in a sacculated inversion of the skin, as on the anterior surface of the feet of sheep; the mammae are two, and inguinal. The skin is naked, very rough and hard, divided into large folds which give to the animal a shielded appearance; it is impervious to the claws of the lion and tiger, will turn the edge of a sword, and is impenetrable to ordinary musket bullets. The stomach is large and simple, the intestinal canal eight times as long as the body, the villi of the small intestine greatly developed, the large intestine very wide, and the cæcum sacculated. The ribs are 19 pairs, the iliac bones very wide, and the femur with a prominent ridge on the outer border terminating in a hook-like process and with the great trochanter exceedingly prolonged; the incisor teeth seem to be developed in an inverse ratio to the horns; the brain is large, but the relative size of the cerebrum, especially the upper and anterior portion, is less than in the elephant. The rhinoceros is found in the warm regions of Asia and Africa, living with the elephant in forests, and feeding on herbage and leafy twigs and shrubs. It is peaceable unless irritated; it then charges upon its enemy with the head down and the horn forward; though not very active, its great weight and strength make it a formidable assailant, and a match even for the elephant. The senses of smell and hearing are so acute that the hunter must approach against the wind and in perfect silence; it is hunted for sport by Europeans, and the natives eat the flesh, and sell the skin to traders for the manufacture of canes, whips, and defensive armor, and the horns for boxes and cups. In its native forests the rhinoceros has a tortoise-like appearance, with its stolid expression, slow movements, thick armor, short legs and tail, and curved upper lip.—Several species have been described, of which the best known is the single-horned or Indian rhinoceros (*R. unicornis*, Linn.; *R. Indicus*, Cuv.). This animal measures about 12 ft. in length,

with a circumference of the same, and a height of 6 ft.; the skin is very thick, arranged in broad folds in many parts, rough and tuberculated, and deep purplish gray. It was well known to the ancients, and is generally believed to be the unicorn or *reem* of the sacred writings, though not of the Arabian poets, which was either a wild bull or an antelope. It leads a quiet indolent life, wallowing on the marshy borders of rivers and lakes, and bathing in their waters; it moves slowly, the head carried low as in the hog; its strength enables it to pass with ease through the thickest jungles; it is found in the warmer parts of continental India. In captivity, especially if taken young, it is gentle, obedient, and grateful for kind treatment, with occasional paroxysms of rage without apparent cause; it is fond of bread, fruit, and particularly sweets, collecting and holding its food by the long upper lip; it is not uncommon in menageries, and has been trained to perform simple tricks, but its intelligence is far inferior to that of the elephant; though these two animals are said to have a natural antipathy to each other, they agree very well together in confinement. The Java rhinoceros (*R. Sondaicus*, Horsf.), with a single horn, is confined to Java; the epidermis is arranged in pentagonal shields. The Sumatran rhinoceros (*R. Sumatrensis*, Cuv.) is a smaller species with two horns and a comparatively smooth skin. For an account of its breeding see Maunders' "Treasury of Natural History" (London, 1874).—The black African rhinoceros (*R. bicornis*, Linn.; *R. Africanus*, Camper), the *borélé* of the S. African aborigines, has two horns, and a smoother skin, wrinkled instead of folded;



Black African Rhinoceros (*Rhinoceros bicornis*).

the incisors are either latent or fall away early; the horns, which as in the other species occur in both sexes, are brightly polished by rubbing against the trees, and the posterior is only one third the length of the anterior, the latter being rarely more than 18 in. The general color

in the male is black, in the female pale yellowish brown with purplish tints on the head, and the groins flesh-colored; the head seems too deep in proportion to its length, giving it a very clumsy appearance; the upper lip is scarcely at all prolonged; the neck short and thick, with a deep furrow where it joins the head, and a rudimentary hump on the shoulder. In size and habits it resembles the Indian species; it was formerly found even on the slopes of Table mountain, but has now been driven far beyond the limits of Cape Colony into the interior, where it is seldom molested. They keep concealed by day, wandering at night in search of water and food, especially the branches of the wait-a-bit thorns; the gait is equal to that of a good horse, and when disturbed the head is carried high; they are usually seen singly or in pairs. They are suspicious and savage, attacking the traveller, and so lean that the flesh is rarely eaten; wherever the footprints are seen, the ground and bushes are found torn up; this they do, not from rage, but in a mere wanton display of strength; they also dig the ground with the fore feet, throwing it backward in the manner of a dog. Dr. A. Smith, in his "Zoölogy of South Africa," makes three species; Dr. Livingstone considers that all the species made by naturalists beyond two are based on mere differences in size, age, and direction of horns, which vary much within the limit of a single species. The *R. keillou* (A. Smith) is a rather smaller species, with two horns nearly equal in length, with more slender head and longer neck than in the *borélé*; the general color is pale brownish yellow, with a black mark on the inside of the thighs; the upper lip is elongated; it is swift, fierce, and dangerous, comparatively rare, and not found further south than lat. 25°.—The white rhinoceros (*R. simus*, Burch.), the *mohookoo* of the Bechuanas, is the largest of the genus; the color is pale brownish white, with purplish tints on the shoulders and posterior parts; the head is comparatively long and slender, the face concave, forehead convex, neck long with three well marked wrinkles on nape, the nose truncated, the upper lip perfectly square and ox-like, and the shoulders with a distinct hump; the horns are two, the first very long and pointed, the second just behind it, short and obtuse. This is a rare species, timid, unsuspecting, easily captured on account of its slow movements, and much prized by the natives for its fat flesh; the food is principally grass. The Bechuanas call the rhinoceros by the general name of *chukuroo*. The best friend of this animal is a bird of the genus *buphaga*, known as the rhinoceros bird, which warns it of the approach of danger. It makes a harsh cry in the ear of the sleeping rhinoceros, which awaking rushes off into the forest to escape the hunter; it perches on the animal's back, returning when frightened or swept off by the branches, and remains with it all night. Cumming says he has often shot the rhinoceros

at midnight at fountains, and that these birds, imagining "chukuroo" was asleep, would remain until morning, and on his approaching, before taking flight, would try to awaken him from his deep sleep.—The rhinoceros played an important part among the animals of the tertiary and diluvial epochs, numerous species of great size occupying cold countries of Europe, where they now could not exist. Since 1781 many fragments have been found in Germany, Italy, France, England, and Russia. A few species have been detected in the lower miocene of France, of which the *R. tapirinus* (Pomel), of the size of a tapir, belonged to Kaup's group of *acerotherium*, characterized by two large incisors in each jaw, four toes on the anterior feet, and probably a very small, if any, nasal horn. In the upper miocene of France and Germany occur many species which De Blainville has united into the single *R. incisivus*, without bony partition between the nostrils, with two large incisors in each jaw and three toes on each foot. In the pliocene of France and England are species without bony nasal partition and with moderate incisors, like the *R. megarhinus* (Cuv.). The best known fossil species is the *R. tichorhinus* (Cuv.), of the diluvial deposits of Siberia and the most of Europe, contemporary with the mammoth. The most remarkable specimen was found in 1731 in arctic Siberia by a hunter; the body was well preserved and half buried in the frozen sand, in lat. 64° N.; it was 11½ ft. long, with a skin like leather covered with short hair; the nasal bones were curved in front of the nose to unite with the intermaxillaries, and the partition between the nostrils was bony to the extremity, giving greater solidity to the nose for the support of the two large horns, which were further separated than in the living species; the incisors fell out in the adults, and the symphysis of the lower jaw was very long; coming nearest to the *R. bicornis* of Africa, it had a longer and narrower cranium, more bulky body, and shorter and stouter limbs. It occurs in diluvial sands, in caverns, and in bone breccia. This genus has also been found in the tertiary and diluvial deposits of Asia; Cautley and Falconer describe four species among the Sivalik hills of northern Hindostan. The most singular fact in connection with the geological distribution of the rhinoceros is its occurrence during the diluvial period in America, like the elephant not now existing on this continent; several species differing from *R. tichorhinus* are described by Profs. Leidy, Marsh, and others, from the tertiary of Nebraska, Texas, the upper Missouri, California, and the neighboring territories. The genus *elasmotherium* of Fischer probably comes near if not in the rhinoceros family; judging from the teeth, and the size, form, and thickness of jaw, it must have been an animal of heavy proportions, with the size and habits of the rhinoceros, and essentially herbivorous; it was found in Siberia. The family *brontotheridæ*, so fully

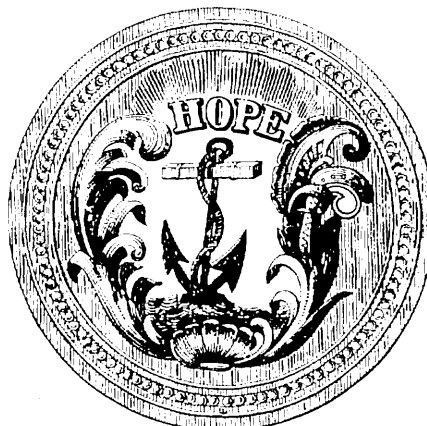
described by Profs. Marsh and Cope, from the miocene of Colorado and the adjoining territories, seems to have combined some of the characters of the rhinoceros and elephant, which succeeded them in the pliocene period.

**RHINOCEROS HORNBILL.** See HORNBILL.

**RHINOPLASTY.** See AUTOPLASTY.

**RHIZOPODS.** See FORAMINIFERA, GLOBIGERINA, and PROTOZOA.

**RHODE ISLAND**, one of the thirteen original states of the American Union and one of the New England states, the smallest of the 37 of which the Union is now composed. It is bounded N. and E. by Massachusetts, S. by the Atlantic ocean, and W. by Connecticut, and lies between lat. 41° 9' and 42° 3' N., and lon. 71° 8' and 71° 53' W.; extreme length N. and S. 47½ m., greatest breadth E. and W. 40 mi.; area, 1,306 sq. m. It is divided into five counties: Bristol, Kent, Newport, Providence, and Washington. These are subdivided into two cities, Providence (pop. in 1875, 100,675) and



State Seal of Rhode Island.

Newport (pop. 14,028), and 34 towns. Providence and Pawtucket, which had 68,904 and 6,619 inhabitants respectively in 1870, have since received territory from North Providence. The largest towns are Pawtucket (pop. in 1875, 18,464), Woonsocket (13,576), Warwick (11,614), Lincoln (11,565), Bristol (5,829), Cranston (5,688), Westerly (5,408), Burrillville (5,249), Johnston (4,999), Coventry (4,580), and South Kingstown (4,240). The population of Rhode Island in 1730 was 17,935; in 1755, 40,414; in 1770, 59,678. According to the federal enumerations, it has been as follows:

CENSUSES.	White.	Free colored.	Slave.	Aggregate.
1790.....	64,470	3,407	943	68,825
1800.....	65,438	3,804	380	69,122
1810.....	73,214	3,609	108	76,931
1820.....	79,413	3,554	43	83,069*
1830.....	93,621	3,561	17	97,199
1840.....	105,537	3,233	5	108,830
1850.....	143,875	3,670	..	147,545
1860.....	170,649	3,952	..	174,620
1870.....	212,219	4,980	..	217,353

\* Including 44 persons not classified.