

A  
MANUAL  
OF  
ZOOLOGY.

BY  
M. MILNE EDWARDS,  
MEMBER OF THE "INSTITUT."

ADOPTED BY THE COUNCIL OF PUBLIC INSTRUCTION OF FRANCE.

TRANSLATED BY  
R. KNOX, M.D., F.R.S.E.  
LECTURER ON ANATOMY,  
AND CORRESPONDING MEMBER OF THE IMPERIAL ACADEMY OF  
MEDICINE.

ILLUSTRATED BY 500 FIRST-CLASS WOOD ENGRAVINGS.

LONDON:  
HENRY RENSHAW, 356, STRAND.  
1856.

osseous head, the size of the cranial capacity, compared with the area of the face, is supposed to be in the ratio of the intelligence, with certain exceptions; as we recede from man, the face becomes comparatively larger, and the cerebral cavity smaller, proportionally to the face; the orbits are directed more outwards, and cease to be distinct from the temporal fossæ; and the occipital condyles, which in man are found at the base of the cranium, and which form the plane by which the head rests on the vertebral column, recede more and more, until they come to be placed almost on a line with the axis of the body. The same happens with the jaws. Still, we find always the same bones, the same form of articulation of the lower jaw; between its condyles and the temporal bone there is no intermediate bone, as in birds, reptiles, batrachia, and fishes.

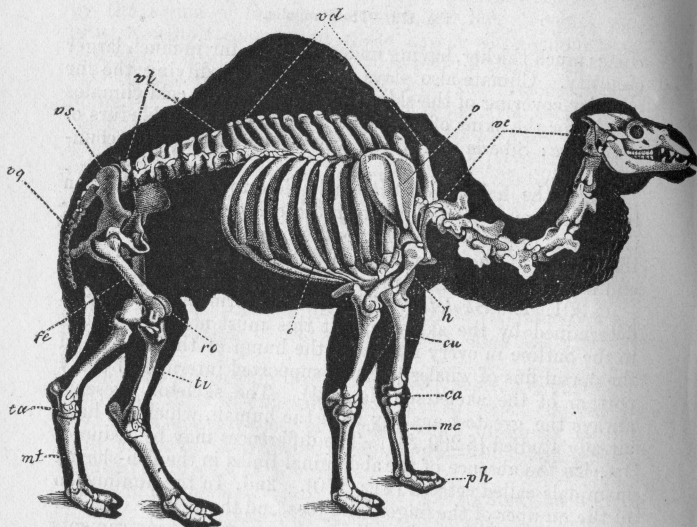


Fig. 174.—Skeleton of the Camel. (See page 134.)

§ 393. Various mammals are provided with horns. These are sometimes mere appendages of the skin, and seem to be formed of the hair matted together; this is the case as

regards the horn or horns of the rhinoceros; but generally it is otherwise, and it is a prolongation of the frontal bones, which forms the axis of these horns. All mammals provided with such horns are ruminants. Sometimes the osseous protuberance remains covered with the common integument, and continues so; this happens in the giraffe (Fig. 217). In some, the skin which covers the osseous core or axis disappears, and leaves the bone exposed; which, after being so for a time, falls or is thrown off, to be replaced annually by another growth: such are called antlers, and are found only in the deer kind (Fig. 177); finally, in others the osseous axis is never shed, but continues to grow during the life of the animal, covered with a kind of sheath composed of an elastic substance, especially called *horn*, which grows by layers, and is analogous to nail and hair. The term *hollow horns*, is given to horns thus covered with a horny sheath, formed seemingly of agglomerated hairs, and found in different species of the

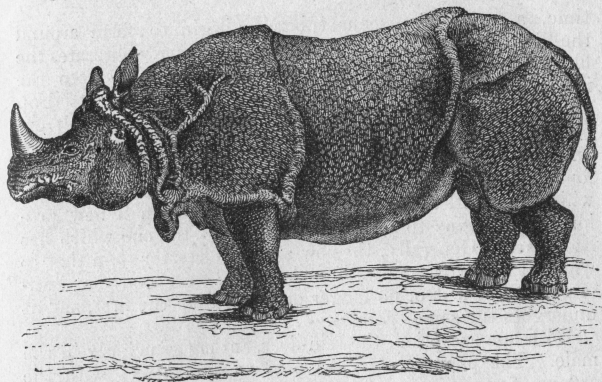


Fig. 175.—Rhinoceros of India.

goat (Fig. 176), ox, sheep, and antelope. It ought further to be remarked, that in all these animals, with the exception of the antelope, the osseous axis of the horn is hollowed out into cells communicating with the frontal sinuses, and thus receiving into their interior the external air.

The mode of formation of the horns called antlers, is as follows:—At a certain age there appears a growth of bone on