

[*Presentation Copy.*.]

CATALOGUE
OF THE
PREPARATIONS
OF
COMPARATIVE ANATOMY

IN THE
Museum of Guy's Hospital,

BY
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P R E F A C E .

When appointed Lecturer on Comparative Anatomy in 1866, I was asked by Dr. Wilks, then Curator of our Museum, to look over the Zoological Collection, and to draw up a Catalogue of the Specimens. We had then a good series of articulated skeletons, and were rich in some other departments, especially those of the Heart, the Brain, and the Uterus: but others were scantily represented, and the Invertebrate specimens were few and poor. In 1869 I arranged the Collection in the present three Divisions of Vertebrata in physiological series, Invertebrata in zoological order, and Pathological specimens. Meanwhile, the most important gaps were being gradually filled up; and when, two years ago, the Museum was removed to the New Building, I began the descriptive Catalogue which is now completed.

Since 1866 more than 300 new specimens have been added, of which 39 are microscopical, and many of the old ones have been dissected and remounted. After throwing away all those which appeared to be useless, we have now more than 1400 preparations in the Vertebrate, nearly 600 in the Invertebrate, and 180 in the Pathological division, beside 56 admirable wax models by Mr. Towne, chiefly illustrating the brain and the ovum.

In determining the numerous skeletons and detached bones which were not at all or erroneously named, I have constantly used the splendid osteological collection in the Hunterian Museum, and am much indebted to Professor Flower for his ever ready assistance. In the difficult task of naming a tolerably large collection of Snakes, sent from various parts of the world by old Guy's men, I availed myself of the unequalled knowledge of Dr. Günther, who, with great kindness, went through the whole of this department for me. My thanks are also due to other gentlemen on the staff of the British Museum for determining the species of Insects and Shells of which I was ignorant.

I have great pleasure in acknowledging the help I have received from some of our own students in the preparation of the Catalogue, particularly from Mr. F. J. Carey, M.A., from my brother, Mr. R. J. Pye-Smith, and from Mr. A. W. Green, who has also put up the excellent series of Birds' skulls.

Lastly, I owe my best thanks to my friend, Dr. Cavafy, of St. George's Hospital, for his valuable aid in correcting errors in the proof-sheets, for some of which the printer was not responsible.

31, *Finsbury Square*,

January, 1874.

MAMMALIA.

This order, with Proboscidea and *Hyrax*, corresponds with Cuvier's Pachydermata and Ruminantia.

On the Palaeontology of Ungulata, see Flower: Lectures in "Nature," March 20—April 3, 1873.

Sub-order Perissodactyla.

Syn.—Imparidigata, Anisodactyla.

Char.—The third digit is in the centre of the foot, and the others are smaller and symmetrical with regard to it; hence they are called "odd-toed." There are twenty-two dorsolumbar vertebræ. The femur has a third trochanter. Simple stomach; large cæcum; diffuse placenta.

There are only three existing families: the *Tapiridae*, the *Rhinocerotidae*, and the *Equidae*, or *Solidungula*.

Beside fossil species of these families which have been found in temperate climates (e.g. the woolly rhinoceros—*R. tichorhinus*), numerous intermediate forms of this Sub-order occur in the tertiary and post-tertiary formations. Of these the tapir-like animals *Palæotherium* and *Anchitherium* were first described by Cuvier from the Eocene strata around Paris; and the *Hipparium* completes the gradation between them and existing horses.

103. Indian Rhinoceros (*R. unicornis*). Hindoostan.

Beside a closely allied one-horned sp. (*R. sondaicus*) there are two smaller two-horned sp. (*R. sumatranaus* and *R. lasiotis*) in the Indo-Malayan region, and two larger ones, also with two horns, in South Africa, *R. bicornis* and *R. simus*.

Notice the strong arched nasal bones for carrying the horn; the absence of canines, the small incisors (which in the African species drop out early) and complete series of molars, four false and three true. The ribs are nineteen, the digits three, equal; the ilia expanded, the ulna and fibula complete. No acromion, large metacromion.

See also Prep. 476.

104. American Tapir (*T. terrestris*). Neotropical Region.

Beside a remarkable species from Panama (*T. vel Elasmognathus Bairdii*), there is another larger one in the East India Islands (*T. vel Rhinocerus bicolor, sumatranaus v. indicus*).

Notice the short nasals and large anterior nares for its proboscis, with grooves by the side for air sacs; also the eighteen ribs, the additional anterior digit (no. v.) and complete ulna.

See also Preps. 531, 657, 808, 1018, 1070⁵, 1155.

Murie: "J. Anat. and Phys." Nov. 1871.

EXOSKELETON.

470. Two specimens of tail of Beaver, showing the arrangement of its imbricated epidermic scales.

470^s. Callousities of the Horse's legs.

There is one of these corns or "chesnuts" on the inner side of each forearm, and one on the inner side of each metatarsus. They form, with the bushy tail, a specific character, the Ass and other species of *Equus* having only the front pair slightly marked.

471. Two feet of Elephant, showing the character of its hoofs.

If a nail be defined as covering only the dorsal surface of a digit, it will be seen that Ray was justified in classing the Elephant among the unguliculate rather than the ungulate mammals.

471^s. Foot of Camel, in section, showing the nail-like hoof and horny pad, whence the name *Tylopoda* (cushion-footed), applied to the family.

472. Cleft, or bisulcate, hoof of ox.

473. Hoof of Horse.

473^s. A wet preparation of the same.

The "wall" is seen to be lined with lamellæ, which fit into corresponding grooves between the papillæ of the matrix (Cf. 117, 118, 119). The front is the "toe," the sides the "quarters," and the back the "heel." The upper edge is the *coronet*, and the lower, where the shoe is attached, the *crust*. These parts all correspond with the human nail (*unguis*), but the horny part covering the palmar surface of the digit is characteristic of the hoof (*ungula*). This portion consists of the flat "sole," seen outside, with the two "bars" coming to an angle in front, and the soft frog (i. e. *fourche*) behind them, with its median cleft. Inside, this cleft is seen as a projection.

474. Hoof of Horse with the sole and frog removed, leaving only the crust and bars.

474^s. Other specimens.

475. Hind foot (right), of male *Ornithorhynchus* with spur.
This is a secondary sexual character.

476. Solid azygos horn of *Rhinoceros*, showing its construction of hairs densely matted together.

It grows from a patch of follicles in the skin of the nose, and is supported on the nasal bones, but unattached to them.

477. Pair of horns of *Bison*.

One retains the bony core on which it is moulded. This, in the hollow-horned ruminants, is always supported on the frontal bone.

DIGESTIVE APPARATUS.

Ungulata herbivora.

- 648. Stomach of Foal ; dried.
- 648⁶. Cardiac orifice of stomach of Horse.
- 649. Pylorus of Horse.
- 650. Part of stomach of Horse, at junction of squamous and glandular portions.

- 651. Cæcum of Colt, with part of ileum and colon.

The cæcum of the Equidæ is very large, and sacculated, in correlation with their simple stomach. The colon in the adult Horse measures 20 feet.

- 653. Part of small intestine of Ass, injected.

- 655. Stomach of Elephant ; dried.

Notice its elongated form : it has no subdivisions.

- 656. Cæcum of Elephant ; dried.

Though capacious, this viscus is rudimentary compared with the cæcum of the rhinoceros and the horse.

- 657. Part of ileum of Rhinoceros, injected, showing the villi.

Herbivora Ruminantia.

- 660. Part of Æsophagus of Giraffe.

- 661. Part of first stomach of Giraffe.

This is the cardiac cul-de-sac enormously dilated. It is lined with thick squamous epithelium, and is known as the *rumen*, *ingluvies*, or paunch (*l'herbier*).

- 662. Part of second stomach of Giraffe.

This *reticulum*, or honeycomb stomach (*le bonnet*), apparently answers to one of the progastric sacs of the peccari. Cf. prep. 645.

- 663. Part of the third stomach of Giraffe.

This *psalterium*, *omasus*, "bible," or manyplies (*le feuillet*), apparently answers to the second (left hand) progastric sac of the peccari.

- 664. Part of fourth stomach of Giraffe.

This is the true digestive cavity, lined with a vascular mucous membrane containing peptic glands, and answers to the *antrum pylori*, the pyloric half of the human stomach. It is known as the *rennet-bag*, *abomasus*, or reed (*la cailette*).

- 665. Specimen showing these parts in their mutual relation.