

ESSAYS AND OBSERVATIONS

ON

NATURAL HISTORY, ANATOMY,
PHYSIOLOGY, PSYCHOLOGY, AND GEOLOGY.

By JOHN HUNTER, F.R.S.;

BEING

HIS POSTHUMOUS PAPERS ON THOSE SUBJECTS,
ARRANGED AND REVISED, WITH NOTES:

TO WHICH ARE ADDED,

THE INTRODUCTORY LECTURES
ON THE HUNTERIAN COLLECTION OF FOSSIL REMAINS,

DELIVERED IN

THE THEATRE OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND,

MARCH 8TH, 10TH, AND 12TH, 1855:

By RICHARD OWEN, F.R.S., D.C.L.,

SUPERINTENDENT OF THE NATURAL HISTORY DEPARTMENT, BRITISH MUSEUM;
FULLERIAN PROFESSOR OF PHYSIOLOGY IN THE ROYAL INSTITUTION OF GREAT BRITAIN;
FOREIGN ASSOCIATE OF THE INSTITUTE OF FRANCE, ETC.

VOLUME II.

LONDON:

JOHN VAN VOORST, PATERNOSTER ROW.

MDCCCLXI.

There are two *venæ cavæ superiores*.

The little epiploon is attached to the liver, as in the guinea-pig. The liver is divided into four lobes and the lobulus Spigelii. The gall-bladder is attached to the second lobe from the left side, which is the largest, and has also the fissure in it for the vein. The *capsulæ renales* are oblong bodies, distinct from the kidneys.

The lower part of the abdomen lies upon the anterior part of the pubis, and the testicles lie on each side of the symphysis, so that the bend of the penis is seen within the cavity of the belly, making a little projection, as it were, between the origin of the two *musculi recti*. The epididymis is very much detached from the testis. The rings of the abdominal muscles are very large, so that the testicles can occasionally lie in them, but never can go far beyond them, as there is no scrotum. The *vesiculæ seminales* are two long bags bent upon themselves. The penis, when not erect, is bent back; it has two bones on each side as in the guinea-pig. The prepuce is very glandular, secreting a thick mucus. The anus would seem to bend down upon the penis. The eyes are very large like a bird's, with a very large or broad cornea: the crystalline humour is very large in proportion to the eye. The external ears are thin, of a middle size. The *meatus auditorius externus* is large like that of a bird. The tympanum is very large¹. The lacrymal glands are large and white, as it were granulated².

[Family ARCTOMYIDÆ.]

THE MARMOT [*Arctomys Marmotta*³, Schreb.].

The stomach is pretty round; the pylorus, of course, is near the

¹ [Hunt. Prep. No. 1599. See also the Appendix to Russell's 'History of Aleppo,' where the above notes are given, with the following remark:—"Having met with nothing more on the internal structure of the jerboa than what is given by Gmelin from M. Buffon (Hist. Nat. tom. xiii.), I applied to my worthy friend Mr. John Hunter, who very obligingly favoured me with the following circumstances from his 'Adversaria' by way of supplement:—"then follows an extract from the notes in the text. When alluding to this testimony by Dr. Patrick Russell to the 'Adversaria' of Hunter in the ed. of the 'Animal Economy,' 8vo, 1837, p. 393, I believed them to be lost.]

² [In the menagerie of the late Sir R. Heron, M.P., the female of a pair of jerboas, kept in confinement since June 1843, brought forth, May 14th, 1844, two young ones, which were blind, naked, and so continued to the 12th of June. Five weeks elapsed ere they appeared to have the use of their eyes or limbs; they had then "little fur, but were a good deal grown." At 46 days' old they were three-quarters grown, well clothed, active, and ate corn. The jerboas were never seen to drink.—Proceedings of the Zoological Society, August 13th, 1846.]

³ [The skull of this marmot is No. 2256, Osteol. Series.]

oesophagus. The duodenum is long and loose; as it passes down the right side it is attached to the first bend or fold of the colon, round or behind which it passes, and then comes forward on the left side, forming the jejunum. In all this last-mentioned sweep, the duodenum is attached by a mesentery to the ascending colon upon its concave side on its lower bend; and on the left, it is attached to the descending colon by a mesocolon on its convex or left edge. The cæcum is a large and pretty long gut, lying upon the fore-part of the loins just above the pelvis, and is a little bent upon itself, having a narrow mesocæcum: its external appearance is that of a quilted petticoat. From the entrance of the ileum the colon passes up on the right side before the descending part of the duodenum; it is just a continuation of the cæcum, but soon becomes narrow or small; it then makes a long and loose bend upon itself, adhering to the descending duodenum, and then to itself by a narrow mesocolon. This fold is about 8 inches long. From this bend it inclines to pass to the left, but it soon makes another fold, somewhat more than half the length of the former. From thence it passes down the left side to the pelvis, becoming much stronger in its coats, having a pretty broad mesocolon. Where it begins to make its first bend or fold upon itself, the fæces are soft, but are beginning to be divided, becoming harder and harder as they pass to the rectum¹.

The great epiploon is attached forwards to the stomach, pylorus, and a little piece of the upper part of the duodenum, and on the right, behind, and on the left, by the transverse pancreas, the spleen, and the diaphragm. The little epiploon is attached to the upper part of the duodenum, pylorus, small curve of the stomach, oesophagus, diaphragm and liver, covering the mouth of that passage or hole; that part which is attached to the body of the liver makes an angle downwards on that viscus, as it were making room for the Spigelian lobe behind. The spleen is a long small body lying in the left of the epiploon. The body of the liver is divided into four lobes, the left being the largest; each becoming smaller towards the right: the lobulus Spigelii is a continuation of the third or fourth, and is attached to the hollow curve of the stomach by a thin membrane: the umbilical vein is attached to the second lobe from the left. The gall-bladder is attached to the same lobe, projecting a little below the lower edge of the liver; its duct enters the duodenum about an inch from the pylorus. The attachment of the liver to the diaphragm is by a thin membrane and vessels, not by any contact of surface.

¹ [Home, *Comp. Anat.* vol. i. p. 446, who prefaces the abstract with the following:—"The first of the chisel-teethed animals, whose intestines I shall describe, is the marmotte."]

The kidneys are conglobate, the right being rather the highest.

The anus is a considerable way from the tail, is very little projecting, but the rectum cannot be said to terminate at the verge of the anus; but about three-quarters of an inch higher up, that lower part seems common to the anus and to a glandular apparatus whose ducts open into it. It is something like the common vagina to the bladder and uterus, or the common passage to the rectum and oviduct, in fowls. These ducts in many of this class open externally, as in the rabbit, hare, &c.: also in the pikito [*Bathyergus*, p. 235] from the Cape of Good Hope, brought home by Mr. Banks, which is a very different kind of animal.

The external vulva is below the anus; it projects but little: the common skin on both terminates all at once at the verge of both. The common and the proper vagina are almost one undistinguishable canal, with flat longitudinal rugæ: the urethra opens on the largest, which terminates quickly in the common vagina. At the os tincæ the uterus is hard and closed a little: there are two ora tincæ, which are very irregular: the two horns are as in a rabbit¹.

Male Parts.—The opening of the prepuce is more than an inch from the anus. The penis is retromingent. The testes are very small, and rather longer for their thickness than in most other animals: they lie in the rings of the abdominal muscles, and can be pushed with ease either into the abdomen or entirely out, as occasion serves: the tunica vaginalis will admit of a total inversion into the cavity of the abdomen, as in the rat, mouse, and mole. The spermatic artery passes down the loins in a broad membrane or mesospermatica, which is a doubling of the peritoneum. This is very fat in some.

[Family *SCIURIDÆ*.]

THE VIRGINIA GREY SQUIRREL [*Sciurus cinereus*, Linn.²].

The stomach is short and thick; the thick end is not far from the œsophagus, and is very obtuse: the small end is bent upon the small curve of the stomach, so that this small curve is very short, and the two orifices are very near one another: it is not made, like the rat's, thinner in its coats at one end than at the other.

The beginning of the duodenum is nearer the left, on account of the fold of the small end of the stomach: it passes pretty near the liver in

¹ [Hunt. Prep. No. 2748. The uteri are connected together for about an inch before they diverge towards the ovaria.]

² [Parts of the skeleton of this squirrel are numbered 2287—2289, Hunt. Osteol. Series. The fore- and hind-foot form the wet-preparation, No. 1415.]