

*V. Account of a monstrous Lamb. In a Letter from Mr. Anthony Carlisle, to the Right Honourable Sir Joseph Banks, Bart. K. B. P. R. S.*

Read January 29, 1801.

DEAR SIR,

I AM much indebted to you for the privilege of inspecting the monstrous lamb sent by Dr. PULTENEY of Blandford, whose laudable interest for the promotion of science, induced him to present it to you. The animal is a male, and apparently at the full period of gestation : its whole frame, excepting the head, is of the natural structure; the deviation in structure of this part, resembles none of the series of monsters which are usually met with among complicated animals. I have preserved the entire skin, in hopes of retaining the outward peculiarities of this creature. According to your suggestion, I took the opportunity, while the subject was in perfect preservation, to examine the brain and its connections : they seem to me very remarkable, and might have afforded matter, to an acute observer, of high interest in the science of physiology, had this monster been yeaned alive. Perhaps it may not be altogether unuseful, to record those internal deviations from the ordinary structure which this dissection presented; and the suggestions arising may possibly excite the attention of some future observer, who may be more happily circumstanced.

The head is disproportionably small; there being no other resemblance to the natural form than in the external ears,

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which are brought together by their insertions in the front part of the head : the apertures called by anatomists *meatus externi*, are wanting. Immediately between the insertion of the ears, an opening presents itself, lined with cuticle, and capable of receiving a bougie, the size of the human male urethra : this proved to be the common passage to both the œsophagus and the trachea. The outer surface of the head is regularly clothed with wool ; and there are no appearances of abrasion, or mechanical injury, having taken place at an early period of its formation ; such as are observable in monsters, and perhaps sometimes produced by the rubbing of the umbilical cord, or by the contiguity of the uterine contents, whilst the young animal is yet in a soft state. See Plate IX. Fig 1, and the references.

The whole of the organs which are naturally found in the face, are, in the present instance, defective : no vestiges of the eyes, the nose, or any of the apparatus belonging to the mouth, are to be seen. The cranium is perfectly formed into hard bone, and bears a near resemblance to the head of a tortoise ; it is about the size of a plover's egg. The *os hyoides*, and its processes, are in the natural state : there is no other part of the tongue. The cartilages of the larynx, together with their muscles and vessels, are in their places, saving the epiglottis, which is joined in with the common aperture, making a cartilaginous ring. The bones, muscles, blood-vessels, and nerves of the neck, are natural. Under the skin which lies between the cartilaginous insertions of the outward ears, there is a small depression in the skull, in which are lodged three regularly formed bones, of a tooth-like structure, immersed in a gelatinous substance, like that which is found in the bony part of very young growing

teeth : from the shape and size of these bones, added to their situation and the want of enamel, I take them to be portions of the ossicula auditus, run together, and united into masses. See Fig. 3. The internal surface of the cranium, is neatly lined with the dura mater : it is deficient in all the processes which divide the different portions of the brain. The anterior limits of this cavity terminate at the hinder part of the sulci ; where the middle lobes cerebri ought to be lodged. The internal carotid arteries, and the pituitary gland, are missing. The two vertebral arteries enter the skull as usual, and form the basilar artery ; which soon divides itself again, for the supply of the pia mater and brain of this monster. The pia mater envelops the brain, as is usual, and is unconnected with the dura mater ; these membranes being each of them smooth, loose, and natural. I was surprised to find the whole cerebrum, and all its nerves, deficient : the cerebellum disposed quite orderly, and the following pairs of nerves nearly in their natural situations. First, a large pair, at the anterior inferior part, which is analogous to the crura cerebri : these seem to stand in the place of the sixth pair, only that their whole substance terminates in the upper cervical ganglion of the intercostal chain of nerves. Secondly, a large double pair, analogous to the seventh, coming out at the tuberculum annulare, and penetrating the meatus auditorius internus : the portio dura of this double pair appears on the side of the neck, after its exit from the cranium ; the portio mollis remains in the labyrinth of the organ of hearing. From the sides of the medulla oblongata, immediately at its origin, a number of separate fibrils come out, which are joined into one common chord, becoming the par vagum, and being finally dispersed in the ordinary manner. The

accessorius to the par vagum, comes up from the medulla spinalis, and takes its departure with its usual companion. Not a vestige of any other nerve appears in the cranium; the cavity being perfectly filled, and all the parts free from diseased appearance. See Fig. 4. The vena magna GALENI, or a vein analogous to it, passes down the hinder part of the cerebellum, into the lateral sinuses, which are the only receptacles for the returning blood; and all the veins of the pia mater open directly into these sinuses. Upon cutting through the centre of the brain, longitudinally, the intermixture of the cortical and medullary substances form the appearance called *Arbor vitæ*, in a perfectly natural state; the texture of those two substances being firm and natural. The fourth and only ventricle is unusually large; and the portio mollis of the seventh pair of nerves arises from its inside, as is usual. The anterior rounded ends of the crura cerebri, present a mass of healthy medullary substance. The outer surface of the cerebellum is divided into the parallel layers or folds, and those vermiform processes, which distinguish its general character.

The narration of these appearances assists and confirms other facts, in demonstrating, that the formation and growth of animals in the uterus, are independent of any influence from those parts of their brain which properly belong to sensation. We have to regret, that this animal did not live to shew the phenomena of volitions directed to its limbs, and other apparatus, without that intelligence from the organs of the senses which regulates and directs the efforts of perfect animals. The careful observance of such circumstances may, in future, bring us to discoveries of the highest value, in that part of physiology which is now enveloped in deep mystery: the facts at

present collated are not sufficient. The intellectual phenomena of persons who sustain known injuries of particular parts of the brain; the appearances on the dissection of ideots, with their mental particularities; the anatomical history of maniacs, all promise, when properly cultivated, a series of truths, which it may not be extravagant to hope, will open sublime views into those recesses of our construction which justly rank among the most curious, if not the most important objects of research. Returning you many thanks for the favour you have done me, by committing this inquiry to my hands,

I am, &c.

ANTHONY CARLISLE.

March 28, 1800.

## REFERENCES TO THE FIGURES. SEE PLATE IX.

Fig. 1. A front view of the head, and part of the neck, of this monster.

*a, a,* The external ears.

*b,* The common aperture of the larynx and œsophagus.

Fig. 2. The naked skull, and part of the neck dissected.

*a,* The second vertebra of the neck.

*b,* The œsophagus.

*c,* The trachea.

*d,* The common opening of the œsophagus and larynx.

*e,* The situation of the small bones, supposed to be the rudiments of the ossicula auditus.

*f,* The horn of the os hyoides.

*g,* The body of the os hyoides.

*b,* The anterior part of the skull.

Fig. 3. The three pieces of bone, shewn in Fig. 2, letter *e*.

Fig. 4. The side view of the brain, and its nerves.

*a,* The beginning of the medulla spinalis.

*b,* The par vagum, with the accessorius nerve.

*c,* The portio mollis and dura of the auditory nerve.

*d,* The supposed sixth pair.

*e,* Part of the basillary artery.

Fig. 1.

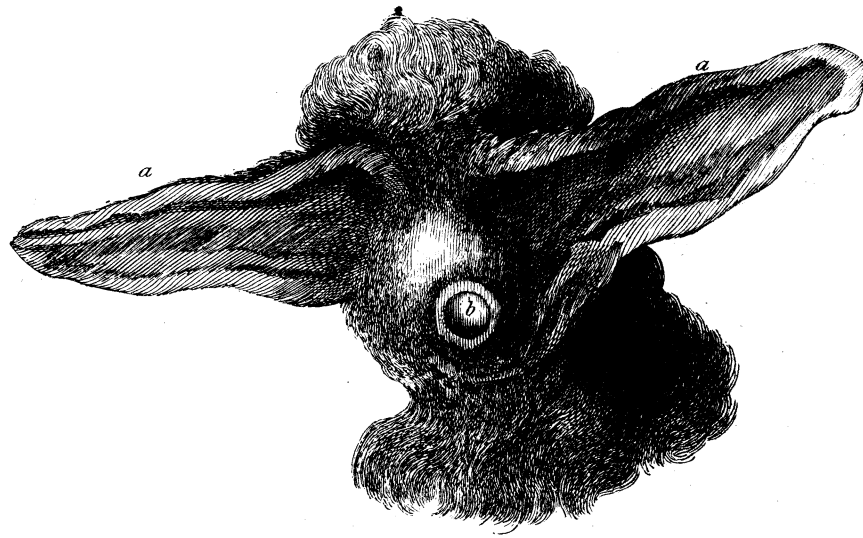


Fig. 2.

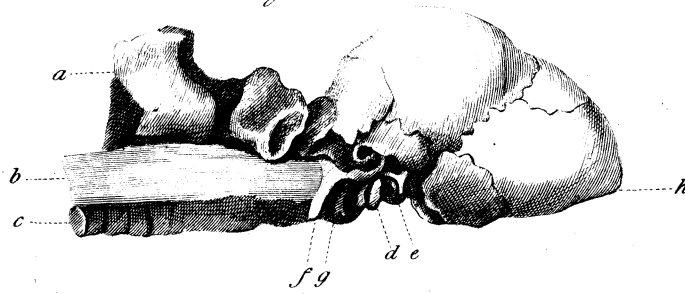


Fig. 3.



Fig. 4.

