

Sketch of a Monstrous Fetus.

N^o 7.



2

THE
Medical and Physical Journal.

VOL. IV.] SEPTEMBER, 1800. [NO. XIX.

A Case of Mal-formation, with an Engraving.

To the EDITORS of the MEDICAL and PHYSICAL JOURNAL.

Gentlemen,

THAT peculiarity in the foetus, which consists in its deprivation of brain, is not very uncommon; I met with an instance of it eight years ago, and have seen others in different anatomical collections. The deficiency in the subject I am about to describe, is extended to the medulla spinalis; and as it is new to me, and has given rise to some reflections, which may not be altogether uselefs, I have taken the liberty to transmit them for insertion in your Journal.

The mother was delivered at Bolton, by Mr. Barlow, to whom I am indebted for the history of the case, and for the foetus itself. The only material circumstance in the former, was, the woman's positive assertion that she went two months over her time, which, however, I am inclined to doubt, and would rather suppose, that she had committed an error in her reckoning. In the cases most analogous, the birth has been usually premature, generally at the seventh month, and it happened so in my former case.

In this child, the upper part of the cranium is entirely wanting; and there remains only a thin plate of bone, covered with a doubling of membrane, in place of the cervical and the greater part of the dorsal vertebræ. This fold contained no medulla, though it exhibited, on being slit open, some slender fibrils, which might be construed into nerves; I should compare it to the proper coverings of the medulla spinalis, of a thinner texture. Lower down, a displaced portion of vertebræ is shewn, which was hollow, but contained no medulla; the rest of the spine consisted of a solid column of bone, without any spinous processes. The child had, besides, a slight inversion of the feet, and a hare-lip on the right side; in other respects, it was full grown, and the colour of the skin was natural.

There did not appear to be any deviation from the common structure and arrangement in the viscera of the thorax and abdomen: the heart, lungs, and thymus, occupying the former cavity, in their proper order; and the stomach, liver, spleen, kidneys, great and small intestines, &c. the latter. The larger intestines were also distended with meconium.

In the chest too, I traced the phrenic nerves, descending to the diaphragm in their usual course; and in the neck, the par vagum, with its ganglia and intercostal, lying between the carotid artery and internal jugular vein. Though the eyes were outwardly well formed, I could not find by dissection any optic nerve.

The nerves in the upper and lower extremities were, nevertheless, perfect; for I traced them in the arm and in the thigh, and in neither did I observe any difference in their number, size, colour, or distribution.

This foetus was still born, which, if I mistake not, has always been the case when the brain has been wanting. However, the mother was not sensible, during pregnancy, of any difference from what she had been formerly accustomed to, either in her own feelings or in the motion of the child; and she had had many children. The birth was marked by no particular occurrence; it would probably be facilitated by the reduced bulk of the head.

In comparing the defective structure of this child with the ascertained uses in others of those parts of which it was deprived, I have been led to conclude, that nervous influence is not at all necessary to the growth of the foetus in utero. At an early period after conception, it is highly probable, that the augmentation of the foetus is maintained by the circulating system alone; and as it is self-evident from this case, that it can go on at a later, without either brain or spinal marrow, the nerves must grow like the other component parts of the body, and perfectly distinct from any other influence than that of the circulation.

It is proved by experiment, that when the spinal marrow, or principal nerves of a limb are divided, the parts below are immediately deprived of their sensibility, and become torpid; hence, we may reasonably infer, that no peculiar property is resident in the nerves themselves. Assuming then, that the nerves serve merely to convey the influence of the brain and medulla spinalis, it is obvious, that when deprived of these sources, they can impart none. Thus, it is evident, that although this foetus had attained the full size, and its motions were not perceptibly different from another, yet, having no sensorium, it could possess no sensation.

Throughout

Throughout all Nature we observe the wisdom of Providence, in adapting the structure of every animal to its peculiar mode of existence. In the foetus, we note several contrivances for the uterine state, which become unnecessary soon after birth; as the foramen ovale, the funis umbilicalis, and the ductus arteriosus; the thymus too may be numbered, though its use be at present unknown: others, as the lungs, then lie dormant, and are called into activity by its change of condition. But, to bestow their proper functions on the nerves, would then be at least a work of supererogation, as there is no object to which the impulse derived from sensation could be destined. On the contrary, sensibility would expose it to hazards, which Nature has been sedulous to avert; by depriving the funis of nerves, and by surrounding it with the liquor amnii.

Mr. Barlow informs me, that he has repeatedly tried the experiment upon a presenting upper or lower extremity, and that the result has always confirmed my opinion.

As far as I have been able to determine, sensation is coeval with respiration; for when, after birth, respiration has been delayed, and during the pulsation in the funis no appearance of sensation has arisen till the child began to breathe, the functions of the lungs, and of the nervous system, were then roused into activity in the same moment of time.

I purposely avoid any further discussion, though the subject is pregnant with much curious matter. My object now has been to prove,

1. That nervous influence is not at all necessary to the growth of the foetus in utero; and,
2. That the foetus in its uterine state does not possess sensation.

The figures will require but little explanation. In No. 1, the dark colour, as it appeared in the subject, in the direction of the brain and spine, shews the deficiencies in those parts; and the probe, the hollow portion of vertebræ. A little lower down, the light represents the protuberance of the spine, the solid structure of which is delineated in figure, No. 2; and under the left arm, is given a portion of intestine, distended with meconium. A cloth was thrown over the legs, because it was thought unnecessary to represent them. The natural and healthy appearance of the skin is preserved, and the maturity of growth well displayed. The nerves have not been delineated, as they contained nothing remarkable, either in their structure or distribution.

Manchester, July 29, 1800.

W. SIMMONS.

N. B. The Drawing is made of the natural size.