

uterus, with that nervous power which it requires during labor."

The sources of the nerves supplying the uterus.—The nerves are derived from the hypogastric plexus, and branches from the sacral nerves.

The enlargement of the nerves during pregnancy.—As the various subperitoneal ganglia and plexuses do not exist, or but very imperfectly, in the unimpregnated uterus, the enlargement which is supposed to take place must be very great indeed, and equal to that of the other structures. This enlargement has been considered by John Hunter to be "probably fifty times." Also, the nerves "return after parturition, to their original condition before conception takes place."

Opposed to these views of Dr. Robert Lee, we have the opinions of all the previous authors who have directed their attention to this subject. - Walter, in 1783, figured the nerves of the uterus and described them as very fine, and going to the neck of the organ and os uteri. Haller, in 1763, gives a very similar description to that by Walter. Dr. William Hunter, in 1794, to whom the previous descriptions were unsatisfactory, carefully dissected a female subject for the purpose of describing the nerves. He describes them as the continuation of the hypogastric plexus, and says—"They spread out in branches, like the portio dura of the seventh pair." No mention is made of large nerves or ganglia. John Hunter, about the same time, also speaks of the uterine nerves being small. Tiedemann, in 1822, figures the nerves, and describes them as fine, soft, and slightly red.* Lobstein, in 1823, says that branches of nerves are very rarely seen to enter the substance of the uterus, either in the unimpregnated or in the gravid state, and mentions that he could not find any nerves in the uterus of a woman who died twelve hours after parturition, although he carefully looked for them. In subsequent examinations, however, he was more successful. Osiander, in 1829, says, (I quote from Dr. Lee's folio, "On the Anatomy of the Nerves of the Uterus,") "Although it is very probable that the uterus possesses nerves, still, hitherto, they have been very unsatisfactorily demonstrated, either as regards their number or their nature. I myself, like others, deceived by the authority of more scientific persons, formerly stated that nerves were spread over the whole of the human uterus, since I believed that more skilful anatomists than myself had really seen them; for example, Walter, who speaks so confidently, of nerves which accompany the larger arteries. But I know now that they have not been seen by others any more than by myself; and I can only assume that the uterus as an irritable organ, must possess nerves. But I have not seen, and it certainly does not possess, any nerves that are easily demonstrable by the scalpel, and still less any large branches."

It would be easy to add many more authorities, all expressing the same opinions, but these appear sufficient to show the univer-

sally, there is no evidence to show that the uterus receives any supply of nerves which can be supposed to especially influence or preside over gestation.

The uterus is supplied from the hypogastric plexus, which plexus is a continuation from the superior aortic plexus, and consists of gelatinous nervous fibres, partially derived from the ganglia in the aortic plexus, and tubular nervous fibres, derived from the lumbar spinal nerves. The branches from the sacral nerves are not supplied to the uterus, but are distributed to the bladder, vagina, perinæum, and some to the lower part of the rectum.

The nerves of the gravid uterus are of the same size as those of the unimpregnated uterus, and, consequently, either no increase has taken place during pregnancy, or no decrease has occurred after parturition.

The nerves of the virgin uterus are of the same size as those of the gravid uterus, and, consequently, they do not enlarge during pregnancy, nor do they undergo any change after parturition.

sal belief which prevails upon the subject. And when we consider that the authors already quoted, rank amongst the most celebrated anatomists and the most accurate observers, we cannot avoid asking the question, have they overlooked these structures described by Dr. Lee? or have they seen them, and not believed them to be nerves? Had it been one or two small branches of nerves, or one or two small ganglia, we might have considered they had been overlooked, and were now brought to light by our improved methods of dissecting. But it exceeds the possibility of belief, to suppose that John Hunter, William Hunter, Tiedemann, Lobstein, and Osiander, should have carefully dissected the gravid uterus, and not discovered structures which cover the whole anterior and posterior surface of the uterus; which pass up the sides of the organ as large broad nerves, and which form large ganglia, more than two lines in thickness. We are, then, forced to the conclusion, that they must have seen these structures, but did not consider them nerves. Dr. Lee describes them as "presenting the appearance of a layer of dense structure, composed of fibres strongly interlaced together, and having a yellowish-brown color;" "as a dense, reddish-brown colored mass, consisting of fibres firmly interlaced together," as "thick and solid, and consisting of a yellowish-brown substance." And, I would ask, what anatomists of the present day will have the hardihood to affirm, that tissues having these characters are nervous structures? But we might still have been left in uncertainty and doubt, had not Lobstein especially pointed out these structures, and cautioned anatomists from falling into the error of supposing them to be nerves. After mentioning the examination of two gravid uteri which he performed, he observes, (Addimentum, p. 169,) "On this occasion, I am led to observe, that when the external tunic of the uterus is taken away, there occurs many fibres which decussate in various ways with themselves, and are united by loose cellular tissue, both with each other, and with the denser and deeper substance of the uterus. These fibres, of whose growth I am ignorant, may be readily taken for the continuation of nervous branches, yet they differ from them, not only in their direction and greater thickness, but also by the greater flatness of their figure. Wheresoever the nerves of the uterus are finally distributed, it appears certain to me, that they do not interlace with each other in the substance of the uterus."

In making these remarks, I have endeavoured to place the question upon the "common sense" view, and to give the opinions of authors who wrote prior to the publication of Dr. Lee's papers. But I may now add, the improvements which have taken place in microscopes and in microscopical anatomy, since the time that Lobstein wrote, enable us to determine, that the layer of fibres, of the nature of which he was ignorant, are, in fact, a layer of organic muscular fibres. I am aware, that in consequence of hasty and imperfect observations, some difference of opinion has existed between microscopical observers upon this subject. But I am also aware, that the difference has not been nearly so great as some have endeavored to make it; for words and opinions have been attributed to gentlemen who neither spoke the one nor entertained the other.

The next question at issue is the condition of the nerves during pregnancy. Upon this subject John Hunter remarks, "The uterus, in the time of pregnancy, increases in substance and size, probably fifty times beyond what it naturally is; and this increase is made up of living animal matter, which is capable of action within itself. I think we may suppose its action more than double; for the action of every individual part of this viscus, at this period, is much increased, even beyond its increase of size, and yet we find that the nerves of this part are not in the smallest degree increased. This shows that the nerves and the brain have nothing to do with the actions of the part, while the vessels, whose uses are evident, increase in proportion to the increased size; if the same had taken place with the nerves, we should have reasoned from analogy." Dr. William Hunter observes, "I cannot take upon me to say what change happens to the system of uterine nerves from utero-gestation, but I suspect them to be enlarged in some proportion, as the vessels are." Whilst Tiedemann states that the nerves increase both in number and magnitude during pregnancy. Although Tiedemann mentions this enlargement, yet he is far from believing that they undergo the enormous increase which Dr. Lee mentions, or that a "great and special nervous system" springs up in the gravid uterus, and is "formed for the purpose of supplying the uterus with that nervous power

* Dr. Robert Lee remarks—"From Professor Tiedemann's work it might justly be inferred, that the human gravid uterus is more sparingly supplied with nerves than any other organ in the body." Dr. Lee has also quoted all the authorities in the first part of his folio brochure, with the apparent intention, of showing how much they differ from his own views.