

THE PREVENTION OF PUERPERAL FEVER.

In the last number of the *Monthly Abstracts*, page 231, we directed the attention of our readers to the valuable work which our German confrères are doing in attempting to introduce an antiseptic element into the conduct not only of severe, but of normal midwifery cases. The subject is of such importance that we think no apology is needed for again adverting to it, and adducing yet further evidence of its utility. The information of which we are now making use is derived from an excellent article by Professor Zweifel of Erlangen, in No. 1 of the *Berliner Klin. Wochenschrift*, 1878.

It appears that the idea of "Listering" in obstetrics (the German have coined the verb "Listern" to express the use of Professor Lister's antiseptic method, just as from Galvani's name we have coined the verb "galvanize") was first started by Bischoff, of Basle, in 1870 (*Correspondenzblatt für Schweizer-Aerzte*, 1875, No. 22, 23). His plan consisted in giving a bath as soon as the first pains of labour were observed, washing out the vagina with a 2 per cent. solution of carbolic acid every two hours, and anointing the fingers of the medical attendant with 10 per cent. carbolic oil at each examination, the hands being previously disinfected by washing them with 3 per cent. aqueous carbolic acid. In case the hand had to be passed into the uterus, or if the foetus was dead and decomposed, the uterus was washed out with a 2 to 3 per cent. solution of carbolic acid; and in every case frequent injections of the latter were made into the vagina and uterus for thirteen days after the birth of the child. Immediately after the labour, any wound was touched with a 10 per cent. carbolic solution, no ligature, if such were necessary, being applied until this had been done. Lastly, a pad of wadding soaked in carbolic oil (one to ten) was placed in the entrance of the vagina and constantly renewed. Under this system the number of cases in which morbid symptoms were present, consisting in a febrile temperature of more than two days' duration, and reaching 38.5° Cent. (101.3° Fahr.) at least on one day, tenderness of the abdomen on pressure, and fetid discharge, etc., was, in 1870, 14 per cent; 1871, 22.3 per cent.; 1872, 24.5 per cent.; 1873, 16.8 per cent.; 1874, 10.7 per cent.; 1875, 8.9 per cent.; or taking the average of the whole, 16.2 per cent. for the six years.

In 1875, A. Fehling published (*Archiv für Gynakologie*, Band xiii., s. 298) the results of experiments made for about a year in Professor Credé's clinic at Leipsic, and which consisted in applying a mixture of salicylic acid and starch (one to five) to any wounds of the external genitals and in syringing the vagina four to eight times daily, in case of fever and fetid discharge, with solutions of salicylic acid ($\frac{1}{2}$ to $\frac{1}{10}$ per cent.). The effect was excellent, but the use of

carbolic spray during labour, which was also tried for some time, was given up in consequence of the post-partum hemorrhages which it appeared to induce.

In 1877, Adrian Schucking (*Berliner Klin. Wochenschrift*, No. 26) suggested that the vagina should be washed out at the end of the labour with a 5 per cent. carbolic solution, and that immediately afterwards the uterus should be continuously irrigated by means of the apparatus of which we gave a brief description in our former article on this subject. This method was carried out in eight cases, in five of which the patients had had severe labours, and all recovered satisfactorily, no temperature being recorded over 38.4° Cent. In the other three the injection was not begun until after the commencement of febrile symptoms, but an immediate and decided defervescence was the result. Professor Zweifel's objection to Schucking's conclusion, that in the five former cases the fortunate termination was directly due to the treatment, is, first, that the number of Schucking's cases is too small; and secondly, that equally good results are possible without any antiseptic treatment. With this objection most persons will, we think, be inclined to agree.

Professor Zweifel's own method, to which we shall devote the remainder of the article, is founded partly on the use of antiseptic measures, properly speaking, and partly on the adoption of the most scrupulous cleanliness in connection with the surroundings of the puerperal woman. In the first place, all vaginal examinations *during pregnancy* are in his clinic made only after careful washing of the hands and smearing with carbolic oil, the vagina being further washed out afterwards in some cases with 5 per cent. carbolic solution. The reason for these precautions is the possibility of infectious matter being introduced into the vagina previous to labour of its lying there and being sucked up into the uterus after the expulsion of the fetus. "This," says Professor Zweifel, "is a possibility which no one will deny."

The rooms and beds destined for the use of the lying-in women are carefully disinfected by burning sulphur in them in fireproof vessels, allowing about four grammes of sulphur to each cubic metre of space. The bedclothes are spread out so as to expose as large a surface as possible to the fumes, which after a few hours are allowed to escape by opening of the windows.

After each labour in which the hand has been introduced into the uterus, or where air has gained entrance to it, or gaseous decomposition occurred in it, the uterus is washed out with several litres of fresh water.

Since almost all the cases of puerperal fever are found to be complicated either with ruptured perineum, small rents in the vagina and vulva, or with the introduction of air into the uterus during some operation, the greatest care is