

noticed this. The reports generally made are, "Very trifling hæmorrhage," "No secondary hæmorrhage," &c., and in the midwifery cases this was very striking. In several instances in which there was previously a disposition to flooding, there was none when chloroform was used; or without any previous flooding of a serious character, the reports state, "Very little discharge," or "Less hæmorrhage than usual." The result of experience thus far is therefore in favor of this agent, as regards this particular effect.

*Excoriation of the lips and nose* had generally been stated to be caused by using an impure specimen; but it had also been observed in so many cases in which every care had been taken to have pure chloroform, that it must be considered as an effect of the agent itself. It may, however, be prevented by taking care to avoid direct contact.

*Pathological appearances after death from Chloroform.*—The recent experiments, by Mr. Wakley, in addition to those of Dr. Gibson, of Newcastle, Mr. Gore, M. Gruby, and others, have proved indisputably that death may be caused by the inhalation of chloroform vapour, or by its introduction by injection into the vascular system. In all these cases the post-mortem appearances were the same:—"Excessive congestion of the lungs and large vessels of the heart, such as was perhaps scarcely ever witnessed in post-mortem examinations,"—Wakley. "Enormous congestion of the lungs, so that they appeared almost like one vast apoplectic spot,"—Gibson. "Great congestion of the lungs—not very great congestion of the vessels of the brain,"—Gore.

Several cases of death at periods varying from twenty-four hours to two or three days, were mentioned in the reports from which Dr. Nevins derived his information; but unfortunately they were nearly all cases of operation for hernia, or upon the abdomen in some way, and peritoneal symptoms had been chiefly sought for, whilst the state of the brain was not once alluded to, and that of the lungs very slightly in only one or two, and in these no mention was made of great congestion. In one respect the experiments of Mr. Gore were particularly interesting in their bearing upon midwifery. He killed a rabbit which was nearly at the full period of utero-gestation, by the repeated inhalation of chloroform vapour, and then extracted six young ones from the uterus of the mother, which all lived for several minutes. Dr. Nevins had been struck by the few cases of still-born children in the midwifery reports sent to him. He had the particulars of about eighty cases of labour in which chloroform or ether was administered for periods varying from ten minutes to sixteen hours and a half, of which eighteen were cases requiring turning or instrumental assistance. Six children only were still-born; of these, two had undergone craniotomy; one was a funis presentation; one was turned for placenta prævia; and the other two were restored by appropriate treatment. In fact, it appeared as if the child had a better chance of life after the employment of chloroform than without it, as it was usual to have a greater number of still-born children with such cases as had been reported.

From the experiments of Mr. Gruby, it appeared that the uninterrupted inhalation of chloroform for from three to five minutes caused death in several of the animals experimented upon, whilst similar animals breathed the vapour for upwards of an hour and a half, without injury, if occasional draughts of unmixt atmospheric air were interposed; from which the important inference might be drawn, that we ought, in every case of its administration, to remove the sponge occasionally, and allow the patient to inspire pure air alone.

The statement that the vitality of the blood was impaired by anæsthetic agents was not borne out by facts; for in Dr. Snow's report of ether cases he says the blood coagulated firmly in every case, and the jets of blood from divided arteries had the usual vermilion colour. This was observed in many of the reported cases, whilst in one or two the

colour was said to be "perhaps not quite so light as usual, but the venous blood was not so dark;" and in a rabbit killed by chloroform, Mr. Gore found that the blood drawn from the jugular and cranial veins just before death coagulated quickly and firmly. The inference drawn by Mr. Nunn, of Colchester, from the fluid state of his patient's blood after death, was, therefore, not confirmed by other cases.

*Midwifery.*—Dr. Nevins had the reports of about eighty cases of labour under the influence of this agent, the general result of which was highly favourable. No case of death has reached him in which this termination could be attributed with any fairness to it. One woman had died of puerperal fever on the third day after its employment, and a second patient had also died about the same date with sloughing of the os uteri and interior of the uterus, after the application of the short forceps; but he had ascertained that at the same time one or two cases of puerperal fever had occurred in the practice of surgeons who had used chloroform, and erysipelas was also prevalent in the town at the same time. Now it has been often observed, that when the latter disease is prevalent, cases of puerperal fever were also met with; and there was, therefore, no presumption that the occurrence of the fever had any connection with the employment of the chloroform. Another patient had been affected with œdema of the epiglottis, commencing about twenty-four hours after labour, in which she had cried out a good deal prior to the exhibition of the chloroform, but not so much as many women in ordinary labour. Here, then, a presumption might arise that the œdema was owing to the inhalation, but further experience was necessary to confirm or disprove it. Another patient began to rave violently after the inhalation, but she had been previously much excited by the number of persons around her, (students and others) who had questioned her frequently while preparing for its administration, and when just beginning to be under its influence: she ultimately did well. Another young woman with her first child, to whom ether was given, which was afterwards ascertained not to have been of the full strength, had severe convulsions beginning about ten hours after labour was completed. By bleeding and the common treatment, she was cured in the ordinary length of time.

With these exceptions, no untoward circumstances had occurred after the use of the chloroform; and it was evident that any connection, except that of time, between some of these and its employment, was very doubtful.

The general description of the labours was, that the patients accomplished them in the usual time, but without the fatigue of ordinary parturition, and they were entirely free from the exhaustion so commonly experienced afterwards: they expressed themselves as if the labour had scarcely been of any consequence, and the recoveries, with the above exceptions, were all described as "unusually quick and favorable." In many, perhaps most cases, the after pains were decidedly less than usual, or than they had been in previous labours. In several, however, they were as severe as usual, in none more so. If administered prior to the dilatation of the os uteri, no particular effect was noticed upon it; but when the vagina was hot, dry, and swollen, as in some of the cases, it generally became soft and moist almost immediately. In about one-third of the cases, the uterine contractions were decidedly enfeebled, and the intervals lengthened; but so much relaxation of the soft passages was produced at the same time, that, with one or two exceptions, the labour was not reported as having been prolonged beyond what might have been anticipated had chloroform not been used. In nearly every instance, the abdominal muscles acted in concert with each uterine contraction, and the legs were generally stretched out at the same time, and the patients often uttered a low moan