

the case it is evident that we have in the puerperal condition a state of the blood, charged as it is with the excrementitious products of the foetus, calculated to produce irritation of the nerve centres, more especially if elimination on the part of the mother be from any cause interfered with.

May not the greater frequency of convulsions during labor be in some measure accounted for by the interference with respiration during the pains, increasing the amount of carbonic acid in the blood?

Thus much for the causes of centric origin, which arise as a result of the pregnant state; and while they no doubt account for the occurrence of a considerable number of cases, directly or indirectly, we cannot ignore the evidence furnished us pointing to the direct and unquestionable action of reflex causes; but while we cannot doubt the influence of these irritants, I wish to draw attention particularly to the fact that none of them in a normal condition of the system would, of themselves, be likely to produce eclampsia; that is, there must be a pre-existing state of nervous excitability, exaggerated as a result of the pregnant state. This is a circumstance that I think demands more attention than has generally been accorded it by authors, explaining as it may the fact that, under apparently the same conditions in other respects, such a large number escape compared with the few who suffer from eclampsia. Returning to the case of albuminuria, we have albumen present and even marked evidence of uræmia (as amaurosis with other nervous disturbances) without showing symptoms of convulsions; and, on the other hand, all imaginable reflex causes must be repeatedly present in innumerable patients who, however, escape eclampsia. In this fact we have an important indication for treatment, for while we may not feel inclined to question the influence of uræmic and other poisons in the blood or of the various reflex irritations, whether of the uterus, stomach, intestines or elsewhere, we have to take account not only of these, but of the accompanying condition of the nervous system which makes it possible for these to be operative. This I hold to be the bond of union underlying all the other conditions which have been considered as the more immediately concerned in the production of convulsions. It is a lessening of the power of resistance if you will, the consideration of which is important, because if we can remedy this it is a great gain being perhaps all that is needed, or giving time for the discovery and removal of the more immediately acting agents. I do not wish it to be understood that I would advocate paying exclusive attention to this feature of the case where the direct cause can be readily ascertained and as quickly removed; as in a case cited by Bedford where the convulsions were evidently due to the presence of a large quantity of plum cake and preserved quinces in the stomach; no albumen was present, and an emetic promptly relieved the patient. This case offers an excellent example of the occurrence of convulsions from eccentric causes acting on an over excitable nervous condition. In this case even had albumen

chanced to be present, it would have been no argument in favor of the uræmic theory.

It is not my object to speak of the means to be employed in the various cases of reflex origin. Of course the obvious indication that will suggest itself to all is the removal of the offending cause when that is possible; but my intention is rather the necessity for considering the nervous basis of the trouble, even when other more prominent factors claim our attention, not, however, in the sense of ignoring these.

In the view that I take of the treatment of convulsions we have two aims, one to remove the irritating cause, and the other to block the action of that cause or in other words, to lessen the impressibility of the nervous system. To meet the latter indication, I have, in a limited experience, found nothing to act more satisfactorily than chloral given in enema of 75 grs. or more. I prefer it in this way because of the difficulty of swallowing and on account of the probability of vomiting. I would also suggest the local anæsthetic action on the pelvic nerves as being an additional claim in its favor in this form.

Chloroform is indispensable where any operative interference is to be undertaken, but under other circumstances I should prefer chloral on account of its more continuous and lasting effect. A case that occurred in my practice in the fall of '87 may serve as a comparative test of the value of the two measures: Mrs. R., a primipara, 7 mos. pregnant, was found during the morning in her room insensible, and from that time till evening convulsions occurred at short intervals accompanied by vomiting in spite of bleeding, artificial delivery, and the almost constant use of chloroform. Finally I injected 75 grs. chloral into the rectum, when the fits yielded at once. I may say that, three days after, they returned when chloroform having been administered without avail they were again stopped by the use of chloral as before, after which they did not return and the patient made a good recovery physically, though there was for a long time considerable derangement of the mental faculties which, I believe, is not entirely recovered from at present. The child died in convulsions an hour or two after birth.

In another case, also a primipara, the labor, which was a favorable one, terminated in about 3 hours, and everything promised well until 2 hours after when convulsions occurred. In this case I did not use chloroform to the same extent, but on the first injection of chloral (sixty grains) they ceased, though in 17 days, after over exertion combined with costive bowels they returned. A moderate dose of morphia and a purgative was all that was used. There was no albumen present in the urine at this time, though I was unable to obtain a sample of the urine at the time of the first occurrence of the convulsions.

Of the immense hypodermic injections of morphia, 1½ grs. repeated in 2 hours, I have no experience and should feel rather conservative about venturing upon it, though it would seem that comparatively large doses would be required as compared with other