the consideration of the members of this Association may be to produce a marked diminution in the deaths arising from hernia; for the Reports of the Registrar-General must ever continue to be the test and sure demonstrative evidence of improvement and of advance in the curative results of practical surgery.

ON THE

TREATMENT OF PUERPERAL CONVULSIONS.*

By JOSEPH GRIFFITHS SWAYNE, M.D.,

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In the remarks I am about to offer upon the treatment of puerperal convulsions, it is not my intention to propose anything new, but rather to confirm the value of what is old, and was at one time well established. I shall endeavour to prove, from cases in my own practice and that of others, that there is no remedy in the treatment of this disease which deserves a higher place than blood-letting. To have written a paper for such a purpose, twenty or thirty years ago, would have been a most useless work of supererogation, so universally was the belief in the efficacy of this remedy received and acted upon. But now it is far otherwise. So steadily has the current of medical opinion set in the contrary direction, that it requires no small amount of courage to recommend the use of the lancet in any disease, no matter how sthenic may be the character of the complaint, or how clear may be the indications of local or general plethora. This remark especially applies to the treatment of puerperal convulsions. This was a disease which, above all others, seemed to require a free and unhesitating use of the lancet, and, accordingly, we find that the most discreet and cautious practitioners of the old school did not scruple, in such cases, to take away 40, 50, or even 80 ounces of blood at a time, and often with the best results. But within the last thirty years, bleeding has been resorted to less frequently and more sparingly in all cases of puerperal eclampsia, until, at the present day, it may be said that medical men halt between two opinions; some are for and others against the use of the lancet in this disease. It is true that the majority of obstetric works still recommend blood-letting, but there are some that condemn it; and if we read reports of the discussions upon this subject in various obstetrical societies we shall often find that the opponents of the lancet are quite as numerous as its advocates. This phase of medical opinion has been partly owing, no doubt, to the increased disuse of the lancet in all diseases, but partly also, I think, to the circumstance, that within the last twenty years we have acquired a new remedy of undoubted value in the treatment of puerperal convulsions, viz., chloroform; whilst, men, such as Professor Braun (*Uremic Convulsions*, translated by Dr. J. M. Duncan, p. 57) of Vienna and others who have been foremost in recommending chloroform, have usually been likewise the most active opponents of venesection. This being the state of the question at present, it appears to me that every case is worth bringing forward that will prove without doubt the value of a remedy which is falling, I think, into unmerited neglect, and I am therefore induced to direct attention to the following, which occurred in my own practice.

I was hastily summoned about 5 P.M., on December 5th, 1865, to see a lady who was being attended in her first confinement by my friend Mr. Sheppard. The patient, Mrs. P., was about 30 years of age, and from what I heard from her father, must have had an hereditary predisposition to convulsions. I was told by him that she was the eldest of five children, and that her mother suffered from convulsions at the first confinement, and afterwards died from the same cause, whilst giving birth to the last child. On my arrival at the house, Mr. Sheppard told me that the first stage of the labour was lingering, but presented no peculiar features until the os uteri was fully dilated. She then had two severe attacks of convulsions in rapid succession. With a view to deliver her promptly, Mr. Sheppard proceeded to turn, and had brought down one foot beyond the os externum, at the time when I arrived, but had not been able to complete the operation. She was then partially conscious, but almost immediately afterwards had another rather severe fit of an epileptiform character. On examining I found the forehead presenting, the head being firmly jammed into the pelvis by the side of the leg which had been brought down. With some difficulty I pushed up the head, brought down both feet, and succeeded in delivering her of a large still-born male child, which we in vain endeavoured to restore by artificial respiration; the child was born about 6 P.M. Soon after this she seemed better, partially regained consciousness, and was able to re-

cognise her husband. I saw her again at 10 P.M., she had had a slight fit since delivery, but in other respects seemed better. She recognised me, but said that she could only see one half of my face and complained of headache. Almost immediately afterwards a severe fit came on. We ordered her hair to be cut off, and cold to be applied to her head, and gave her 5 grains of calomel immediately, and an enema containing half an ounce of turpentine and half an ounce of castor oil. I was summoned about eight the next morning, when Mr. Sheppard told me that she went on well during the night, until about 1 A.M. when she had another fit, and again another at 3, and at 4.30; and these were followed by five or six more violent fits, between that time and eight when I arrived. There was complete unconsciousness and stertorous breathing between the fits; pulse 140. Some urine was drawn off by the catheter and tested. The albuminous deposit formed about one-sixth of the whole quantity. We bled her to twelve ounces and ordered sinapisms to the calves of the legs, a blister to the back of the neck, and another purgative of calomel and jalap. Almost immediately after the bleeding the respiration became less stertorous, and the pulse slower and steadier. We next saw her at 2 P.M., she was then much better and had had no fit since 9 A.M. The breathing was natural—pulse 124; and she recognised us and answered our questions in a collected manner. At 10 P.M., there had been no recurrence of fits, and she was in every respect better. Scarcely a trace of albumen could be found in the urine. As the purgative had not acted, we gave her a drop of croton oil. We saw her on the next day, December 3rd, at 3.30 P.M., she was going on very well and perfectly rational; pulse 112. The pill had acted well, producing two large, dark, offensive stools. The urine, however, on being examined, contained a deposit of albumen equal to one-third of the whole. When we saw her on Dec. 4th, she was doing well in every other respect, except that she had had very little sleep; pulse 110; urine contained albumen to the extent of about one-fourth of its bulk. To have thirty minims of liq. morph. acet. of P.B., and ten minims of spirit of chloroform. On the 7th she was going on perfectly well; there was no albumen in the urine, and from that time she made a good recovery.

In this case we observe that two convulsive attacks occurred just at the commencement of the second stage of labour. Delivery was then resorted to; but this remedy, which is considered by many to be the most important of all, merely produced a temporary amelioration of the symptoms. Within two hours the fits recurred with increased severity. Free purgation was then had recourse to, with shaving the head and the application of cold; but these measures only gave relief for a time. In three hours the fits returned with much greater violence and frequency, and continued for seven hours until I saw her again, when I found her completely unconscious with stertorous breathing and a pulse of 140. She was then bled, had another purgative given her and counter-irritation applied to the back of the neck and calves of the legs. The bleeding was followed by a decided diminution of the stertorous breathing and the rapidity of the pulse, and this improvement took place too speedily to be referable either to the purgatives (which did not act at first) or to the counterirritants. There were no more fits, and the recovery from this time was steady and progressive.

In 1863, I published the particulars of eleven cases of puerperal convulsions, in all of which bleeding was employed; and I have since met with three more which I have treated in the same way; but although in nearly all the result of venesection was most satisfactory, I cannot bring forward any of them as undoubted proofs of the efficacy of this remedy, because other efficient means, such as delivery, chloroform, purgatives, etc., were employed simultaneously. Other practitioners, however, have given cases of their own, in which the evidence in favour of bleeding was still more conclusive than in the one I have related. Professor Depaul, of Paris, who is a great advocate for the use of the lancet in puerperal eclampsia, gives the case of a woman who was attacked by puerperal convulsions, and who was kept for four hours under the influence of chloroform, upwards of three ounces having been used. Instead of becoming fewer and less severe, the attacks became more violent and numerous, although the patient had been delivered for some hours. M. Depaul then caused her to be bled twice within half an hour, and the convulsions ceased. A similar instance of the success of bleeding in arresting convulsions, after the failure of chloroform, is given by Dr. Bruce, in the *EDINBURGH MEDICAL JOURNAL* for September, 1861.

Dr. Dyce, of Aberdeen, has lately published a small pamphlet (reprinted from the *BRITISH MEDICAL JOURNAL* for April, 1868), giving the result of his experience in eight cases of puerperal convulsions. In all, bleeding was the chief remedy employed, and it was employed very freely; thirty ounces of blood being the quantity usually taken. In four instances it was necessary to repeat the bleeding. In one case the patient was bled three times, and lost eighty ounces within twenty-four

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hours. In all the result of the bleeding was most satisfactory, and the mothers made a good recovery. In three cases the convulsions ceased immediately after bleeding. On reading over these cases carefully I cannot see how the good result can be due to anything but the bleeding. Artificial delivery, which is usually considered so all-important a remedy, was only had recourse to in three cases, and chloroform in one. The other means employed were purgatives, cold to the head, and counter-irritation. But the most conclusive case of the kind which I know, is one which occurred to my brother, Mr. S. H. Swayne, and was recorded by him in the *BRITISH MEDICAL JOURNAL* for June 20th, 1863. A woman in the seventh month of her pregnancy, was attacked with puerperal convulsions, for which blisters, cold to the head, purgatives, and enemata were administered without effect. The urine, on being examined, contained so large a quantity of albumen that the deposit formed by it occupied about five-sixths of the whole bulk of the fluid examined. She was bled on the next day to twenty-five ounces. No more convulsions occurred. Some urine, passed within twenty-four hours after the bleeding, was examined, and the albumen was found to occupy only one-sixth of the whole volume after subsidence. Although the fœtus appeared to be dead, no attempt was made to deliver, because there was no dilatation of the os uteri. The woman went on well for twelve days, when labour set in, and terminated favourably, without convulsions, in the birth of a dead child somewhat decomposed. My brother remarks respecting this case, that "no other exciting cause for the convulsions beyond the uræmia could be discovered; and that the presence of the fœtus in the uterus had little share in bringing them on or maintaining them, would seem to be shewn by the cessation of the convulsions and of the albuminuria, notwithstanding the presence of a dead child in the uterus; and by the uterus remaining quiescent for a fortnight after the first fits. That the improvement was due to the measures employed, especially to the bleeding, can, I think, scarcely admit of a doubt."

The *modus operandi* of bleeding is not quite so evident, because obstetric writers are not yet agreed as to what are the essential causes of puerperal eclampsia. It is quite certain that these convulsions are usually accompanied by cerebral congestion, and also by a state of toxæmia as shown by the presence of albuminuria; but it is not so certain that they are *produced* by either of these conditions. It is most probable, however, that such is the case, and hence we can readily understand why bleeding should afford such signal relief, by diminishing cerebral and (as is shown in two of the cases narrated above) renal congestion, and thus removing the two most powerful causes which act immediately on the nervous centres, or, as they have been termed, the "centric" causes of puerperal convulsions. Amongst the "eccentric" causes, or those which act on the peripheral nerves, the most frequent and powerful is, undoubtedly, uterine irritation; and the most efficient remedies for this condition are chloroform and delivery. With respect to chloroform, I do not intend to detract in the least from its merits as a palliative, or as, in fact, the most effectual sedative we know of, for mitigating the severity of the fits and tranquillising the patient whilst artificial delivery is being effected; or again, as a curative in those exceptional cases of purely reflex convulsions occasioned by great irritation of the uterus or some other organs; but at the same time it ought not in most cases to be considered as a substitute for bleeding, which, when convulsions arise, as they usually do, from centric causes, is a remedy in my opinion far superior in efficacy to chloroform and even to delivery.

BROMIDE AND BIBROMIDE OF MERCURY AS THERAPEUTIC AGENTS.*

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MERCURY, known and administered as a remedy by Paracelsus, has ever since been used in a variety of forms, both in its pure state, and as oxide, sulphide, chloride, etc. Of these, its combinations with chlorine have been most generally used. In the present paper, I desire to draw attention to its combination with another element of the same group—bromine—forming the analogue of calomel and corrosive sublimate. Though, chemically, substances may vary only slightly in constitution, and may bear a certain analogy to another set of substances, yet, therapeutically, it is impossible from the knowledge of the effects of one body to premise the action of its analogue. We know little or nothing of the *modus operandi* of medicines, but are obliged to grope about ex-

perimentally and empirically till we arrive at the correct knowledge of the nature of a remedy.

The halogens, fluorine, chlorine, bromine, and iodine, remarkable for their affinity with substances at ordinary temperatures, are here mentioned in the order of their atomic weights; fluorine having the lowest. Their respective equivalents are as follows: Fl. 19, Cl. 35.5, Br. 80, I. 127. Their chemical affinity is in inverse ratio to their atomic weights; so, therefore, their power of decomposition is as their atomic weight. In the instance before us, the bromides appear to be therapeutically more active than the chlorides, as the iodides probably excel both, though the percentage of mercury in combination decreases from the chlorides to the bromides and iodides, as will be more apparent from the following table, showing the comparative percentage of the four elements above enumerated, and of the mercury in combination.

	The Halogen.	Mercury.
Fluoride of Mercury	8.8	91.2
Bifluoride of Mercury	16.4	83.6
Subchloride of Mercury (Calomel)	15.1	84.9
Perchloride of Mercury (Corrosive Sublimate)	25.9	74.1
Bromide of Mercury	28.6	71.4
Bibromide of Mercury	44.5	55.5
Iodide of Mercury	38.9	61.1
Biniodide of Mercury	56	44

Hence these four elements, in their combination with mercury, show the following comparative percentage to their base; viz :

Fluorine	8.8 and 16.4
Chlorine	15.1 and 25.9
Bromine	28.6 and 44.5
Iodine	38.9 and 56

In exhibiting mercury, we either use it when minutely divided in the metallic state, as in blue pill and grey powder, or in the sparingly soluble form of calomel, or the soluble corrosive sublimate. As pure mercury is almost inert as a medicine, the action of the first two, due probably to some protoxide of mercury, is comparatively slow. Of the calomel administered, only a very small quantity is taken up; and there is a great diversity of opinion as to the method of its absorption. Dr. Headland, in his excellent observations on the absorption of mercury, states his belief that in the bile are to be found the elements of a solvent for calomel; and this he endeavours to substantiate by experiment. The perchloride, being soluble, is at once absorbed, and so readily acts on the system: its effect, therefore, can be more depended upon, and more accurately traced.

It may not here be uninteresting to make a few remarks on the action of the elements of this combination.

First, as to mercury, little need here be said, since so much is at present doing, both on the part of its advocates and opponents, that we are likely to have the question soon thoroughly sifted. Moreover, we are to receive during this meeting the Report of the Edinburgh Committee on the Action of Mercury, the names enrolled on which are a sufficient guarantee that we may confidently expect some valuable conclusions as a result of their investigations.

Secondly, with regard to bromine, it has seldom been given alone; and we are more conversant with its effects in combination as bromide of ammonium and bromide of potassium. Dr. Bazire, in a note to Professor Trousseau's lecture on Epilepsy, has left some valuable remarks on bromide of potassium. It acts chiefly on the nervous system, as a sedative, producing, to a certain extent, anaesthesia of the pharynx and palate. The sense of taste is impaired, if the medicine is pushed far. Sensibility of the conjunctivæ is lessened, and a general lassitude supervenes. The patient, however, retains the power of swallowing, together with a good appetite. For its wide-spread use, we are indebted to Sir Charles Locock, who brought it before the notice of the Royal Medical and Chirurgical Society fifteen years ago. Sir George Gibb, in writing on the action of bromide of ammonium, says that it has the power of absorbing hypertrophied structures, especially enlargement of the spleen, liver, lymphatic glands, and scirrhous growths. Now, in the bromide of mercury, the percentage of mercury being less than in the chlorides, and the percentage of bromine consequently greater, it would seem to indicate that the bromine is the active agent. At the same time, the mercury, being proportionately less, would seem to act only as an alterative. Reverting to Sir G. Gibb's observations: he considers the bromide of ammonium a tonic, improving the appetite, keeping the tongue clean, and often relieving dyspeptic symptoms. Moreover, it produces a clearing of the complexion when florid. It produces anaesthesia of the fauces, etc., more rapidly than the bromide of potassium. It is employed as a remedy for obesity, and as an emmenagogue. In Macnamara's edition of Neligan's *Medicine*, he mentions that bromide of ammonium is also useful in uterine and ovarian irrita-

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