extract of elaterium every other morning for a week. Although the elaterium acted very freely on the bowels, the abdomen did not become much softer, so on Oct. 8th he was ordered the following diuretic.

R. Potassa bitart. gr. xx; tinct. digitalis, ℥x; aque juniperi ℥ss. *M.* Sumat bis quotidie.

After he had taken this mixture for a short time, there was considerably less oedema of the legs and scrotum, and he got smaller in girth. The urine became more abundant, but the quantity of albumen did not alter.

He became so much better towards the end of November that he was allowed to be made an out-patient. Dr. Paget informs me that the patient has presented himself from time to time at the hospital, and that the last time he saw him the dropsy had quite disappeared and the man was able to work.

I have described the case somewhat in detail in order that it may appear clear that there were no symptoms indicative of Bright's disease previous to the occurrence of the ague; and also to show that as soon as the first attack of ague left the patient unmistakable evidence of kidney mischief set in. The case is also instructive as showing that, when purgatives and tonics have failed to be of service in Bright's disease, it is quite legitimate to resort to diuretics to get as much work as possible out of the kidneys.

ON PUERPERAL CONVULSIONS.

By ROBERT DYCE, M.D., F.R.S. Edin.,
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THERE are few more frightful accidents which can happen to a pregnant woman than the occurrence of puerperal convulsions. The suddenness of the attack, the alarm of the friends, and, it may be, the indecision of the medical attendant—all give a threatening aspect to the disease. Yet, although puerperal convulsions must always be looked upon as a disease of a most dangerous character, still, in a great majority of instances, happily the patient recovers well. In these days, when we hear so much of the change of type in disease, with the consequent dread of bleeding, the minds of many in the profession may perhaps be startled by my recording the following cases where bleeding and other lowering remedies were so fearlessly carried out in the treatment of this alarming disease. I have the satisfaction, however, of stating that every case without exception terminated favourably. It will be observed that in whatever class of patients the disease occurred—whether in the nervous and irritable, whether in the plethoric and robust female, or at whatever period of pregnancy or labour the attack appeared, the same practice was pursued, and with the same unvarying success. It will also be specially noticed that in some albumen was ascertained to be present, while in others, though not looked for, its existence was strongly presumptive, from the extent of oedema, not only in the limbs, but in the face and body generally, yet no essential difference in the treatment took place.

These cases show not only the value of bleeding as our sheet-anchor, but also the great extent to which it may be carried, whatever be the period of the attack, and whatever the constitutional character of the patient; and this, too, without any interference with the rapid convalescence of the patient, and her ultimate usefulness as a nurse to her helpless infant. These facts have strongly impressed me with the belief that there must be some special provision made in the parturient female, to admit of such a great loss of blood, not only when these losses are so enormous as on some occasions follow ordinary parturition, but also in cases where it may be deemed necessary to remove blood, such as in those now under consideration; for assuredly such a loss at any other time, under ordinary disease, could not be borne without entailing serious, almost irreparable mischief.

Whatever may be looked upon as the primary cause of puerperal convulsions, whether blood-poisoning from so-called retention of uræa, or solely congestion of the brain, the same remedy I consider to be equally demanded. The chief danger is in the brain. The cerebral circulation must be relieved—lessened in all cases; and it is by this remedy only that the brain can be preserved from serious injury. But, to attain this end, there must be no half measures; the remedy must be fearlessly practised, and repeated as required, from the moment of the attack; and I cannot doubt that equal success will follow this practice in the hands of others. This is no new observation; it has been

strenuously urged by our predecessors, and its success proved; and, though the use of bleeding is now by many in the profession still admitted, it is also by not a few very eminent men ignored altogether, or to such an extent as to be nearly absolutely useless in saving life. I think that we are too apt to despise antiquated notions, and too ready to adopt novelties, without regard to strict philosophical reasoning, and thus to lose sight of the main point at issue. I think, also, that too much weight has been attached to the mere presence of albumen, if taken as a prognostic of eclamptic fits; for I have detected albumen in pregnant women, and yet they went through all the stages of labour and childbed without fits; and others have met with cases in which albumen has been consecutive upon convulsions.

There is one fact in reference to the following cases worthy of notice; viz., that the recovery in every case was complete, was rapid, and that in no case did coma, or even a half-conscious state, remain beyond a very short time after a permanent impression had been made on the system by bleeding; whereas, if the patient be bled sparingly, the coma may be prolonged for days, the convalescence rendered tedious and uncertain; nay, even death may be the result.

I might refer to numerous cases which have been recently published as strongly confirmatory of these facts. I only mention three recorded by Dr. Donkin of Durham, as strikingly confirmatory of my views and treatment. Two were fatal. One of these, however, seemed more like an apoplectic than epileptic convulsion, as there was only one fit, and consciousness never returned. The second case was bled sparingly, and died. The third case was largely bled; coma was not continuous, and perfect consciousness returned in twelve hours. Dr. Suckling of Birmingham records a case of recovery from convulsions where there was no evidence of albumen, though looked for. The patient remained incoherent on the third day. Another very similar case I met with some months ago, to which I was summoned to the north of England in consultation. The patient, who was in the seventh month of her first pregnancy, was seized with convulsions from eighteen to twenty hours before I saw her. They had continued to recur, and she remained in an unconscious state for forty-eight hours afterwards. Bleeding was so strenuously objected to by the gentlemen attending, the views of the day in regard to albumen being urged in confirmation, that I was very unwillingly induced to give way. At length, a few leeches were permitted to be applied, not to the head, but to the loins—I presume, on the supposition that pressure upon the renal vessels, and consequent congestion of the kidneys, had been the cause of the convulsions and albuminous urine. As might be expected, little good resulted. She, however, gradually came round, and was delivered of a dead child a week after the first convulsion, and with no untoward symptom. This patient made a very tedious recovery. I think, however, that, if she had been more actively treated, even after I saw her, her restoration to perfect consciousness and health would have been more rapid; and I am free to confess that, had the result been otherwise, I would have for ever felt that I had been aiding and abetting in her death.

Although my chief reliance is placed on the free use of the lancet in all such cases, it is not to the exclusion of other very important remedies. Still, all of them, I consider, are but auxiliary and conditional remedies, and only to be employed subsequently to, or in conjunction with bleeding. Thus, the free and immediate use of the cold douche, with purgatives, is essential; so also opium, if given judiciously and with the restrictions so well pointed out by Collins, may often supersede the necessity of farther depletion; but, if given injudiciously at the outset, and without previous bleeding, opium in any shape will be absolutely and positively injurious.

Again, chloroform is a very important adjunct, especially if it be necessary to hasten and conclude the labour. Its administration will allay the great restlessness and tossing about of the patient, and thus admit of the application of the forceps without the fear of any injury, a circumstance always to be dreaded in operative midwifery under such circumstances. After bleeding, on any indication of an approaching fit, marked by rigidity of the limbs, a staring fixed expression of the eyes, and increased restlessness, chloroform should be freely given, and the effect kept up until these symptoms subside, and quiet sleep is induced; the pulse being especially watched (on which I solely depend). But, if it fail in arresting or shortening the fit, it should be discontinued, or given with more caution, and recourse again had to the lancet. By these means, the risk of fatal oppression of the brain or extravasation will be prevented, and the convulsions lessened.

But there is another, and a very important part, in the treatment which remains to be considered. The patient is suffering from a disease dependent upon the state of the uterus, which state, it is believed, can only be got rid of by terminating the labour. What, then, are the principles that should guide us regarding delivery in these difficult cases? In short, will it be proper to interfere with the progress of gestation or par-

tion? As far as my own experience goes, I believe that generally interference is prejudicial in whatever stage of the labour the convulsions may occur. Most assuredly, during gestation, and before labour has commenced, it will be universally conceded as admitting of no dispute, that until labour has commenced, any interference on our part would be highly injurious; so that, in convulsions during pregnancy, we have, as Gooch says, "nothing to do with the uterus, but solely to attend to the convulsions." It will also be equally admitted that, in the first or early stage of labour, should convulsions come on, every attempt, by the finger or other artificial means, to dilate the os uteri, ought to be avoided; as it will be found not only to bring on convulsions, but generally to increase them in violence. Denman assures us, that he "attempted gently during every pain to assist in the dilatation of the os, but he was soon convinced that the convulsions were not only brought on and continued, but increased in violence; he, therefore, desisted, and left the work of delivery to Nature." Thus, then, before labour comes on, or in the first stage of labour, I consider interference wholly inadmissible, and only tending to increase the danger. But, in the second stage, when the head has come well down into the pelvis, and within reach of the ordinary short forceps, if, after free bleeding and the use of the other remedies, the convulsions were not manifestly lessened, provided the restlessness of the patient could be controlled, I would at once apply the forceps and bring away the child; as this may now be easily accomplished, and is the only expedient left on which reliance can be placed for the permanent removal of the convulsions.

With regard to turning, I consider the operation a very questionable practice under any circumstances; as I should fear that the irritation occasioned by the introduction of the hand would do far more harm than would be compensated by the benefit derived from emptying the uterus. If it be attempted, it ought to be confined to that stage in which the os is fully dilated, while the membranes are unruptured, so that there may be as little increase of irritation as possible; for, if the uterus closely embrace the child, as it does after the escape of the waters, or the os be not fully dilated, the danger of the operation will be very great. But, unfortunately, the mere emptying the uterus does not always arrest the progress of the disease; for I have known cases where the fits have continued unabated for several hours after delivery; and a case will be detailed, in which the first fit occurred some hours after a favourable and easy labour, showing some other cause for their continuance than mere uterine irritation. I would much prefer and would recommend watching the result of repeated bleedings; and if it were found that the return of the convulsions had been prevented, or even that they were lessened in violence, I would refrain from immediate delivery, and perhaps this forbearance would be followed by natural delivery, the progress of which, it should be remembered, is always more rapid under convulsions. It hence requires constant watching, lest, as has happened in many instances, the patient has been delivered unknown to all, and the child lost. This rapid progress of labour under convulsions is an argument in favour of some consideration when so doubtful an operation as turning is contemplated. But, besides these objections, it will be found to be an unquestionable fact, that far more women die when they are officiously delivered by artificial means of whatever nature, than when they are left to their own resources.

I conclude these remarks by giving in detail some cases corroborative of my views; merely observing that, if I had been deterred by the fear of poisoned blood, and had had no fear for my patient's brain, in my treatment of puerperal convulsions, I would have had less favourable results to record.

CASE I. Convulsions during the Eighth Month of First Pregnancy: Mother Saved.—I was requested by a medical friend in this neighbourhood to visit his wife, who was near her confinement of her first child, on the forenoon of May 18th, 1855. He stated that for some weeks past she had been complaining of headache, of occasional faintness, and pain at the pit of the stomach; that during the previous night she could not sleep in consequence of its severity; that she rose early in the morning and walked restlessly about, grasping her head, then lay down, and shortly afterwards became convulsed. He had only applied cold to her head. I saw her at 1 P.M. She was then quite conscious, but her husband did not think her altogether in her ordinary state. Her face was flushed; the pulse full and hard. She complained much of her head, which was hot. The limbs were much swollen, and her face about the eyelids was oedematous. The urine was scanty. She had felt no motion of the child for two or three days past. There was no indication of labour. She was immediately bled to thirty ounces, and ordered to have a smart purgative of senna and salts, with cold applications to the head, and to live on gruel and tea.

May 19. The bleeding had completely relieved the headache; and she expressed herself as feeling freer of discomfort than she had done for a long time. The medicine had acted freely.

May 21. She had a return of headache this morning, but not severe. Towards the afternoon the headache increased, with flushing and restlessness. She was bled again to twelve ounces with immediate relief. The medicine still operated. In the evening labour pains came on, and she was delivered of a dead child in a few hours.

May 22. She had no headache during the labour, nor any uncomfortable feeling. She slept tolerably well. The urine was more abundant, and the oedema less.

In this case the urine was not examined, but it may be fairly presumed, from the great extent of oedema of the whole body, not excepting the abdominal parietes, that albumen would have been found in abundance. The dropsical symptoms entirely disappeared by the third day, and she made a good recovery. This lady has had a second child, but with no return of these symptoms.

CASE II. Convulsions before Labour in the Ninth Month of First Pregnancy: Child Alive.—A patient of mine called on the morning of March 5, 1859, to ask me to see his sister, Miss —, aged 21, who had unfortunately become pregnant, and who had, an hour before, had some sort of fit. I saw her at 8 A.M. She was in bed, conscious, yet confused in her manner, and wondered what had brought me so early. She was not aware that she had been ill. I learned that she had had a violent convulsion about an hour before while moving about in her room; that a medical man had seen her; that he had ordered an anodyne draught and left her. While I was talking to her she stared wildly, tried to sit up, and immediately became convulsed. Her face was livid, and pulse slow; breathing stertorous, and limbs rigid. I at once bled her until she became sensible; twenty-five ounces were taken. I directed her to have cold applications to the head, and as soon as she could swallow, to have a smart dose of senna and salts. I also requested a consultation in an hour with the medical gentlemen who had seen her. We met at 10 A.M. He approved of the treatment, admitted that he had never seen a similar case, believing it to be hysterical, and that he had dreaded bleeding from the weakness of her pulse. There was no oedema.

March 6. There was no return of convulsions, but she had been restless. The bowels were scantily opened; pulse fallen. In the evening she had some headache. The purgative was ordered to be repeated, and cold to be applied to the head.

May 7. She slept quietly the first part of the night. Towards morning labour commenced, and proceeded favourably and rapidly; but, just as the head was about to be born, she had another convulsion of shorter duration. She was again bled, but to a smaller amount (twelve ounces). The placenta came off in a few minutes. The child was alive and healthy. She had no further attack, made a good recovery, and nursed her child the usual time.

In this case there was no oedema. She was a little spare woman, and, as far as I could learn from her friends, she had been in perfect health until the moment of the attack.

(To be concluded.)

PREPARATION OF NITROUS OXIDE.*

By ALBERT R. LEEDS, A.M.,

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WHATEVER be the particular form of the apparatus employed in the manufacture of nitrous oxide, it must always consist of three essential parts: the generator, purifier, and receiver of the gas.

1. Generator.—The simplest form of generator is a plain glass retort. Those with glass stoppers are objectionable on several accounts; they are more costly than plain ones; it is difficult to make the opening impermeable to gas, and the dropping of fragments of fused nitrate of ammonia directly upon the thin bottom of the retort is apt to fracture it. The generator should be of glass, on account of the formation of vapours of nitric acid along with the nitrous oxide. These acid vapours would corrode a metallic vessel, and be themselves converted into deleterious fumes of nitric oxide. A retort of the capacity of one pint affords ample room for the safe decomposition of three-quarters of a pound of the nitrate, either fused or crystallised: one containing a quart for any amount under two pounds.

In order to obviate the great liability to fracture, which attends the direct application of flame to the bottom of the retort, and in order to communicate the heat gradually and equally, the retort should be set in a sand-bath. And it is well also to cover the neck of the retort with five or six square inches of sheet zinc or iron, bent into a cap, for the same reason.

* From the "Philadelphia Dental Cosmos", June 1866.