nerves. Those to be considered in the present communication are all of the former class.

Bloodletting .- The action of bloodletting on the spinal marrow is greatly modified by the condition of the circulation. In fullness of the vascular system, it is the most powerful sedative of spinal action we possess. Hence, venesection is the grand remedy in the simpler form of puerperal convulsion, where the disease chiefly depends on stimulation of the spinal marrow by excess of blood, or on the mechanical pressure exerted by the blood on that organ, together with the counter-pressure of the distended brain on the medulla oblongana. In such cases, bleeding should be performed with a view to its sedative action on the spinal marrow, and to avert the mechanical effects of vascular pressure from this organ. Alone, it will frequently be sufficient to subdue the disease, particularly when the fits come on before the beginning of labour, or after delivery. But another most important intention of bloodletting should never be lost sight ofnamely, that of preserving the brain from injury during the convulsion. Besides the primary cerebral congestion, which may have been the cause of the attack by its counter-pressure on the medulla, the convulsive action itself, with the glottis closed, ex-erting great muscular pressure on the whole vascular system, and causing, as it does, the greatest turgidity of the vessels of the head is a dangerous source of fatal cerebral congestion, or of serous or sanguineous effusion. As in the case of epileptics, women in peurperal convulsions frequently die of apoplexy, produced by the immense pressure exerted on the cerebral column of blood during the fits. It is in great measure from the effects of bloodletting in warding off accident from the brain that bleeding is so universal in this disease. The due recognition of the distinct operation of bloodletting on the cerebral and spinal systems is of the utmost consequence. In plethorie states of the circulation, it is in this discase, curative in its action on the spinal marrow, preventive in its action on the brain.

In the absence of definite ideas regarding the effects of bloodletting in this malady, it has been often pushed to excess, or practised where it should have been altogether avoided. In the numerous cases where, beside vascular excitement of the spinal marrow, some irritation of spinal excitor nerves exists as a conoined cause of convulsion, repeated bleedings will often fail to subdue the disease, unless the eccentric irritation be at the same time removed. When 'irritation of the uterus, the rectum, or the stomach, is in part excitor of the convulsion, bleeding alone cannot be relied on. It may at first diminish the impressibility of the central organ, rendering it less susceptible of the incident irritation, but if presisted in to a large extent without the removal of the eccentric irritation, it becomes in the end positively injurious, by increasing instead of diminishing the excitability of the spinal marrow.

In vascular plethora, depletion is undoubtedly a sedative to the spinal system, but when the circulation is reduced considerably below par, loss of blood becomes an actual stimulant to this organ. Hence it is that the reports of those who have most pertinaciously followed bloodletting, exhibit the loss of a greater number of patients than those who have been more cautious in this respect. The propriety and extent of venesection must be estimated, then, not by the violence of the disease, but by the state of the circulation in the interval of the fits, and with especial reference to the different effects of vascular plethora and vacuity on the spinal centre.-I should avoid these manifest repetitions had I not thoroughly convinced myself that patients rightly bled in the first instance are frequently subjected to successive depletion until loss of blood itself becomes the cause of the final seizures. Nothing 18, I believe, more certain to remove this deplorable source of mischief than the distinct preception of the effects of venescction on the spinal marrow, the true organ of puerperal convulsion.

Similar remarks would apply with almost equal force to the other parts of the common antiphlogistic regimen. Nearly allied to the modus operandi of bleeding are the effects of nauscating doses of emetic tartar, which have been found so serviceable in the treatment of puerperal convulsions by Dr. Collins. It is extremely probable that this remedy acts on the spinal system through the medium of its effects on the circulation.

In the convulsions occuring in delicate anæmic women, bleeding is generally inadmissable, becoming, in fact, an exciting cause of the disease under such circumstances. Still, in cases ap-

requires to be followed promptly by sumulants; such cases are, however, rare in comparison with those in which fulness of tho circulation exists at the outset of the disease.

Dilatation of the glottis.—During the attack of convulsion the glottis is partially or entircly closed. The greatest authority on this point, Dr. Marshall Hall, questions if true convulsion could ever occur without this state of the glottis, and the cerebral and spinal congestion it occasions. We know that sometimes the cuileptic attack is warded off by the dash of cold water on the face or chest, so as to excite a sudden inspiration and the dilatation of the glottis. It is on the same principle, that of exciting a strong inspiratory act, that we stimulate the nostrils or sprinkle the face with cold water in syncope. Excitation of the incident nerves of inspiration in the same way has been known to prevent the puerperal convulsion.

Harvey gives an instance in which stimulation of the trifacial nerve in the nostrils recovered a woman who became comatose during labour. Denman also relates an interesting case, in which a convulsion was excited during every labour-pain, but in which he kept off the attacks until delivery was completed, simply by throwing cold water on the face with a bunch of feathers at each accession of pain. It was found that this mode of proceeding, from which he augured so favourably from its effects in this and other cases, did not prove equally efficacious on all occasions. He observes, that this is "a safe remedy," which cannot be said of all measures resorted to in this disease. It certainly must be productive of benefit in cases where the glottis is not so firmly locked as to render its dilatation by this means impossible. Even if it does nothing to prevent the accession of the fit, every time we can dilate the glottis, and cause a full inspiration, we take off a considerable amount of vascular pressure from the nervous centres, and lessen the proportion of venous blood in the system.

The application of cold.-Cold, applied to the head in the form of napkins, lightly wrung out of iced or cold water, ice itself, or a full stream of cold water poured from a height, has become an approved remedy in puerperal convulsions. It therefore becomes an interesting question-How does cold thus used act on the ner-vous system? It may act as a sedative on the cerebral portion of the spinal marrow, or it may lessen the distunded state of the corebral circulation, and thus relieve the counter-pressure of the brain on the intra-cranial portions of the spinal system. Probably it acts in both of these modes. When used in the form of the continuous douche, as recommended by Dr. Copland, it would, in addition, tend to excite acts of inspiration and thus dilate the glottis. The sedative action of cold on the nervous centres would seem to be shown satisfactorily by the reputed good effects of cold applied to the whole length of the spinal column in tetanus.

The application of cold to the spine as well as to the head may hereafter be found beneficial in puerperal convulsions. Whenever cold in any form is resorted to, its use, except for the purpose of exciting the respiration, must be continuous, as the intermittent application of cold, locally or generally, would excite instead of allay the spinal system. The benefit derivable from cold must arise from its local action on the nervous centres, because in tetanus, the purest form of increased morbid spinal action, cold applied to the spine is serviceable, whereas, when applied to the whole surface of the body, it is extremely dangerous, and even fatal.

Administration of opium .- It is an object of very great therapeutic importance to ascertam the true effects of opium on the spinal system. One author maintains that opium diminishes the contraction of the uterus in after-pains, another, that it increases their energy. Some recommend it in uterine hæmorrhage, as an efficient means of exciting uterine contractions, while some blame its administration on the plea that it produces uterine inertia and hæmorrhage. Some, again, maintain that it retards, and others that it accelerates, the progress of labour. With respect to the propriety of its use in convulsions, there is a great discrepancy of opinion. Though we may not yet have sufficient data to form a perfect and decisive judgement, I believe we can at the present time make a pretty considerable advance in the right direction.

When the amphibia are in a state of narcotization from opium, the whole excito motory system is exalted to an intense degree .... The slightest irritation of the surface of the body produces universal convulsions. If this fact were applicable to man, it would be an argument to show that it is a powerful spinal stimulant, as it certainly is in the amphibia. In the state of narcotization by proaching to this state, cautious bleeding may be sometimes opium in man, there is no positive evidence that the incident spinecessary to preserve the brain from injury, but here venesection hal nerves are more excitor than at other times; still, in polyoring opium in man, there is no positive evidence that the incident spi-

161