lead among their molecular constituents, and partly by the loss of nervous power, in the way mentioned by Heubel, an uncertain intermittent contraction of the enfeebled fibres will in all probability replace that "sustained state of gentle contraction" which produces their "tone" in health, and consequently a general tremor of the affected muscle will quickly ensue.

MECHANISM OF EXPULSION OF THE PLACENTA.*

By WILLIAM LYON, A.M., M.R.C.S.Eng., Peter-Culter, by Aberdeen.

HAVING had my attention directed to the natural mechanism of the expulsion of the placenta by reading Dr. Matthews Duncan's paper, I was anxious to know what could be learned of the subject from books. I was both disappointed and astonished at the unsatisfactory results of my search, and to find that the subject was not even alluded to in the directions given by midwifery authors for the management of the placenta. I have been long satisfied that Nature observes a particular form in the expulsion of the placenta, from careful observation of the manner in which she conducts the ordinary process.

In most cases of detached placenta, where undue interference has not been practised, we find, on examination, that its lower part is lying in the cavity of the pelvis, and its upper more or less above the brim. When the uterus contracts, the placenta is folded on itself, with sometimes the uterine and sometimes the foetal surface in contact, and the folds always longitudinal or in the direction of the length of the passages. The doubled mass is then expelled with its two edges foremost, and the part which first passes the os vaginae is the point where the two edges meet in forming the double.

I have so often observed this process, that I believe that every placenta, when separated from the uterus, will be expelled in this form, provided that Nature is allowed to work alone, and no pretended assistance is given by pulling the cord or otherwise. We cannot help admiring the mechanism displayed in this process as much as we admire that of natural labour; and we must at the same time be convinced of the propriety of withholding all interference, except what may contribute to uterine contraction—the only admissible moving power. The adaptation of the mass to the shape of the passages, and its consequent facility of egress, will be more apparent if we contrast the case with one in which the protrusion is effected by pulling the cord. Under such circumstances, the placenta is brought through the passages in the form most certain to offer resistance, and is protruded like a plug. The irritation caused by this treatment may raise a pain, which may assist in its expulsion; but it is remarkable how much force is often required to effect that purpose, if the placenta be of large size. Cases may occur, however, which may seem to contradict my statement. We may sometimes feel the placenta advancing in the form of a smooth ball, by purely uterine effort; and may be unable to detect the edge of the mass; but, on particular examination, we find that the insertion of the cord is up in the cavity of the uterus, and that the membranes are still adhering to the edge of the placenta. The situation of the insertion of the cord proves that the presenting part must be the edge of the placenta; and, if we wish for further proof, it will be obtained by tearing the membranes with our finger-nail, and converting the case into an ordinary natural one. If the expulsion take place before we can accomplish that, as is sometimes the case when the membranes are strong, we can take the most prominent part between our finger and thumb, and retain our hold till it is completely protruded, when we will be quite sure. We find also, in cases in which the whole mass is brought into the pelvis by traction of the cord, that it will be expelled, if left to uterine contraction, in the regular way, and not otherwise; whereas, if the traction be continued till the completion of the process, the part which is first protruded is that into which the cord is inserted. Under the same circumstances, also, if it be necessary to help the pains, we effect our purpose most easily by reaching the edge of the placenta with our finger, and using a little pressure on it, so as to form a natural folding. It will then be in the most favourable position for being expelled, whether it be left to the action of the uterus, or assisted by pulling the cord.

We must look on this subject as something more than mere matter of curiosity, because it affects the management of the placenta—a very important part of labour. The temptation to pull the cord, both when there are no pains and when they are not sufficiently strong, is the cause of much rough treatment; and such conduct can only be defended

on the ground that it tends to ensure contraction of the uterus. But surely such a state is more certain and less painful when induced by the natural effort, or by manipulation of the uterus in the abdomen.

ON ANÆSTHETICS.

By WILLIAM ALEXANDER, M.D., F.R.C.P.,
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THE general subject of anæsthetics, to which the JOURNAL prominently calls the special attention of the profession at this moment, is second to none other in its importance and practical value; and, having had frequent opportunities of witnessing the relative merits of nearly all these agents, and having introduced the hydrate of chloral from Berlin, I have to offer a few reflections as my mite of contribution to the appeal of the editor.

During 1847 and the two or three following years, we used ether inhalation at the Infirmary here, and privately pretty generally, without any ill result. We found it very apt to occasion cough and a sense of suffocation, which might probably have been obviated had the patient previously practised with the mouth-piece, and had an anhydrous preparation been employed. Total oblivion was with difficulty obtained, and the cerebro-spinal reflex action never utterly lost. The volatile liquid used had about 85 per cent. of ether, with a gravity of 0.750, and was given in half-ounce quantities every two or three minutes until the desired effect was induced. Its stimulating, intoxicating property was often very conspicuous, as evinced by very profane ejaculations. As with chloroform, I look to the respiration rather than the pulse, and see that the heaving of the chest is properly performed, voluntary suspension of that function being commonly attempted whilst consciousness remains. No doubt the pulse must be carefully watched, since paralysis of the cardiac ganglia and pneumogastric nerve is unquestionably the customary cause of death.

For etherisation, Morgan's inhaler, used at Mercer's Hospital, would probably answer better than that of my late friend, Dr. Snow, as it altogether obviates the dilution of the vapour by atmospheric air, and thus earlier secures the object desired; but the conical towel and sponge, or even folds of lint, supply a ready method and answer the purpose. An empty stomach is desirable, though after-sickness very rarely follows, and the somnolent effect soon vanishes.

So far as is yet ascertained, the percentage of accidents is very greatly in favour of ether. Dr. Jones, who was a great authority on this matter at St. George's Hospital, feels assured that, efficiently administered, ether will soon supplant chloroform as the anæsthetic in general use. It should not be forgotten, however, that casualties have always occurred occasionally, and are incident to operative manipulation arising either from shock or syncope, or from idiosyncrasy of constitution. "If a sufficient amount of chloroform be given to produce narcotism," Dr. Jones observes, "there is sufficient in the system to cause death in these cases"; and he illustrates the axiom by reference to a case in which but five per cent. of it was inhaled—the amount prescribed as being within the limit of safety—and yet the patient died suddenly without any warning, by lividity of countenance or other symptom. Unlike such instances, the signals of danger usually come on gradually, and may, fortunately, be arrested. When full narcotism is accomplished and consciousness abolished by chloroform, it seems very desirable, if the effect be desired to be kept up, to change the anæsthetic to ether or nitrous oxide. Mr. S. Charles Smith of this town informs me that this practice is already adopted at most of the London ophthalmic hospitals.

In the selection of one of the two great agents, I should be much governed by the precise nature of the case; as, for example, traumatic injury with hæmorrhage, or a morbid condition of the heart or other viscera. Wherever alcohol would be indicated I should give the preference to ether, its special action being stimulant. Complete stupor by the protoxide of nitrogen is difficult and ephemeral, though safe, and is accompanied by a great mitigation of local pain under the knife. It is rather a curious circumstance, as mentioned by Mr. Woodhouse Braine, that the lowest known temperature is produced on the combined mixture of two anæsthetics—the bisulphide of carbon and compressed liquid nitrous oxide; viz., 220 deg. below zero of Fahrenheit.

On a review of the question so hastily and imperfectly expressed, my impression is, that the late ventilation of the subject has greatly added to the store of our knowledge, and restored ether to its pristine position. It has given us the option of one or other of these agents, or a combination of them in any threatened cardiac failure. Profound narcotism is, no doubt, more easily induced by chloroform, were it unattended by danger. On Tuesday last I administered a drachm and a

* Read before the Deeside Medical Association.