prove not only a blessing to the profession, but principally to suffering mankind. My past experience, therefore, emboldened me also to use, in the following case, for the removal of a loose cartilage from the knee-joint, the direct incision instead of the subcutaneous one, the account of which I herewith relate.

Mr. L., of Ilfracombe, the subject of the present paper, aged 21, had four years ago a severe fall on his left knee. An abscess formed outside; this was laid open, and remained so for one month before it entirely healed up. Two years after this accident, the patient felt occasionally severe pain round the joint, particularly in walking downhill, and he fancied he heard now and then a snapping noise in the knee-joint. Last year an attack of synovitis set in, and made it necessary for the patient to lay up for six weeks; after this he sometimes felt suddenly excruciating pain in the joint after over-exertion, and about that time he frequently himself felt a foreign body moving about in the joint, which occasionally he could lay hold of with his own fingers, mostly on the inner, but now and then also on the outer, side of the joint. The symptoms were at times most distressing; and, as every palliative treatment had been of no avail, the patient wished anxiously to submit to a radical cure in order to get rid of this severe suffering, and for this purpose he was admitted on May 2nd into the Sanatorium of the German Hospital. On the following day, the patient, after having himself got hold of the foreign body with great dexterity near the inner condyle, was placed on the bed, and, the limb having been put in semi-flexed position, Dr. Nieden was enabled to hold the foreign body (which, felt through the integument, was seemingly of the size of a plum-stone) firmly between his thumb and index finger). I then made a longitudinal incision about two inches in length over the foreign body, during which time a continual spray of carbolic acid solution, according to Professor Lister's method, was directed on it; and then, gently cutting on and limiting gradually the length of the incision as I cut towards the capsule, I opened this part so far that, by a slight pressure of Dr. Nieden's fingers, the body jumped out of the joint. The wound was immediately united by five carbolised catgut sutures, and dressed likewise according to Professor Lister's method with the carbolised gauze; the whole limb was then placed on a straight splint and rather tightly bandaged, as a little oozing of blood had been going on between the interstice of some sutures, and for this reason also ice was applied to the knee. During the following night, the patient complained of much pain, due, however, merely to the tightness of the bandage, the pain leaving directly the bandage was loosened. Twenty-four hours after the operation I looked at the wound, the carbolic acid spray of course being administered during the inspection; the entire wound was glued together, and only between the two lower sutures a small superficial interstice was discernible, due very likely to the slight oozing of blood which still had continued after the operation, and which had prevented a perfect union through the entire thickness of the skin. The neighbourhood of the wound, however, was not in the least reddened; the whole knee had a natural appearance, and was nowhere painful to the touch; the general health of the patient was perfect. On the second day I did not find it necessary to undo the bandage, the temperature being normal and everything going on most favourably; on the third day I removed three sutures; and on the fourth the last ones were taken out, when the wound itself was found to be perfectly united. One circumstance I wish to mention at this point: the carbolised catgut sutures had decidedly irritated the parts more than I had anticipated; and therefore, as in simply incised wounds we shall seldom require to leave the sutures longer in than at the utmost from three to five days, I think the finest Chinese silk will be by far preferable to the carbolised catgut sutures. I have always used this kind of silk in my rhinoplastic operations, and found it answer exceedingly well; the irritation it produces is very limited, and has never interfered with the ultimate object I had in view, viz., union by first intention. Although now on the fourth day the patient could be pronounced to be perfectly well, I did not venture to allow him to get up before the end of the first week, when I considered it safe to do so. The patient remained in the hospital up to May 17th, when he was discharged. I therefore had ample opportunity of watching the result, which proved satisfactory in every way.

Although I am well aware that the direct incision for the removal of loose cartilages in joints has often been successful without having had recourse to Professor Lister's treatment, yet no surgeon can and will deny that the fact of opening a joint by an incision is of itself always a procedure connected with more or less danger; while, on the other side, I firmly believe that we shall soon consider the simple opening of a joint under Lister's method for the removal of a loose cartilage as an operation connected with no more danger than a simple incision into other less important parts of the body.

In concluding these remarks, let me express the hope that the reader

may not think this case alone has convinced me of this fact; there are other cases on record treated in a similar way also with a favourable result; and Professor Lister's case (*Glasgow Medical Journal*, November 1868) is particularly instructive. I merely wish to say that this case is for me a new and strong proof of the invaluable help we have at our disposal by the employment of the antiseptic treatment.

THE DEPRESSANTS OF THE CIRCULATION AND THEIR USE.*

By J. MILNER FOTHERGILL, M.D., M.R.C.P.

[Continued from p. 9 of last number.]

THE most important matter, however, connected with our subject was the introduction of a vegetable depressant agent into the treatment of pyretic conditions. In 1844, Dr. Fleming published his Inaugural Thesis for graduation at the University of Edinburgh, entitled "An Inquiry into the Medicinal Properties of the *Aconitum Napellus*," and struck the key note of a new treatment. Certainly aconite had been studied before, so early indeed as by Störck, in 1763; but Fleming made the subject his own. His conclusions were, that aconite is a powerful antiphlogistic, and that it is calculated to be of great service in all cases where there is inordinate activity of the circulation. The data on which these conclusions are founded were, the lowering of the pulse, its alteration of character, the effect upon the fever along with the action upon the cutaneous vessels, produced by the administration of aconite. The reduction in the frequency of the pulse was marked, amounting even to thirty-six or forty beats per minute; a reduction which must exercise a marked influence upon the circulation and the chemical interchanges. The cutaneous exhalation was increased with much itching, and not unfrequently an eruption of vesicles indicated its powerful action upon the skin. Thus we see that aconite acts in a manner very similar indeed to antimony. The immediate dangers in the use of both are much the same, but the after effects of aconite are less objectionable. The use of aconite as an antipyretic agent has maintained its position, and indeed is gaining ground. Its empirical use has been the sheet-anchor of homœopathic practice in pyrexia; and though we cannot credit that body of irregular practitioners with a very scientific administration of such an agent, we cannot withhold from them their just claim to have demonstrated on a large scale the practical value of aconite in the treatment of pyretic conditions, especially in inflammatory and simple febrile affections.

In 1872, Ringer, in his well known work on *Therapeutics*, writes in a manner which vindicates the expectations of Fleming. He says, "Aconite is to be most esteemed for its power, little less than marvellous, of controlling inflammation and subduing the accompanying fever. It will sometimes at once cut short an inflammation. It will not remove the products of inflammation, but by controlling the inflammation it prevents their formation, so saving the tissues from further injury. When given in the earliest stages of the commoner and milder pyrexia, the skin, dry, hot, and burning, becomes in a few hours comfortably moist; and in a little time longer is bathed in a profuse perspiration, often to such an extent that drops of sweat run down the face and chest. With the sweating comes speedy relief from many of the distressing sensations, as restlessness, chilliness, heat, and dryness of the skin, aching pains and stiffness; and at the same time the quickness of the pulse becomes much reduced in frequency, and in a period varying from twenty-four to forty-eight hours, both pulse and temperature reach their natural state."

Finally, Ringer sums up, "It has been shown that aconite lessens the rapidity of the circulation. It may, therefore, be used in all cases where it is needful to subdue vascular excitement; in fact it may be given in precisely those cases which were formerly treated by bleeding."

Thus we see that after thirty years, and those years too during a most sceptical era, a time almost of eclipse as regards faith in therapeutics, the predictions of Fleming have been endorsed, and the line of treatment inaugurated by him developed into a scheme which includes many of our new remedial agents, and shadows out the practice of the future.

The depression of the heart, and with it the lowering of the circulation and the chemical changes, on the one hand, and the dilatation of the peripheral vascular area on the other, including the consequences of cutaneous exhalation, are the two grand factors in the modern treatment of pyretic conditions, co-equal with the direct use of cold.

* Read before the Medical Society of London.

Not only so, but they afford efficient aid in the relief and treatment of several other conditions shortly to be alluded to. Indeed, it is not merely the effect produced on an inflamed area by the depressant action of the agent used, though that is a great matter; but the questions of the effect of high temperature, and the induction of sleep are involved in this inquiry as to the action and use of the depressants of the circulation.

As to the inflamed area itself, it may be said that to dilate the blood-vessels generally will affect the vessels of the inflamed area, and so aggravate the mischief. But as a matter of fact, the vessels of this area are already paralysed, and so removed from any effect exercised by the agent administered. The impression produced on the circulation generally reduces the blood-pressure and the supply to the inflamed area, and so moderates the inflammatory action. Then as to the effect of a high temperature upon the system, the action upon the nerve-centres, the tissues, and the excretory actions, the accumulation of waste products in the blood and the production of the typhoid condition or uræmia, often constitute the great danger of a pyretic condition.*

And now, as to the production of sleep. The relation of cerebral anæmia to sleep has attracted much attention of late, since the publication of Mr. Arthur Durham's well-known paper; and, though cerebral anæmia may not be all that is requisite to sleep, it is a most important factor in its production; without it, indeed, sleep is impossible. Thus hydrate of chloral is a good hypnotic, because it dilates the blood-vessels. A good dinner near a warm fire after long exercise against the wind, especially in cold weather, is an irresistible hypnotic, because the vessels of the skin and the muscles, as well as the visceral vessels, are now all dilated, and sleep cannot be resisted. The blood is so drawn away from the brain that cerebral activity is no longer possible. The relation of the depressants of the circulation to sleep is very important.† Thus, we find opium, especially in combination with antimony, a good hypnotic, as also hyoscyamus, conium, the secondary effects of alcohol, chloral, etc., probably as much by their effect on the vascular system as by any narcotic action. So in a cold, with a dry skin, chloral loses much of its hypnotic power, even with those in whom, under other circumstances, it produces sleep with certainty.

Very important matters, indeed, are involved in the question of the action of the depressants of the circulation, and form a sufficient apology for my bringing the matter before this venerable Society; and I trust that none of us will be worse practitioners for knowing a little of the means by which these agents, in all probability, exercise their apyretic action, or for having a theory of how they act. There is room for hope, indeed, that a more general recognition of the mode of their action will lead to a more extensive use of them; and that the constituents of fever mixtures will be selected by the light of physiology as well as by the practised groping of empiricism, without detriment to their efficiency.

But, while we can see the additions to our armamentarium in the treatment of conditions where inflammation, a high temperature, and insomnia are leading factors; conditions, as we have seen above, often found together, and alleviated by the same remedial agent; conditions which frequently demand the attention of the profession; we may cast a glance at the effects of the depressants of the circulation over other than the before-mentioned states.

Thus aconite can be used in the relief of non-febrile conditions. A friend of mine is subject to fits of congestive headache with great contemporary coldness of the hands and feet. Various lines of treatment were tried without effect, when a non-professional person advised him to try aconite. Ere doing so, he asked me about it, and I advised him to try it, as it might do him good. He did so with entire success. The peripheral blood-vessels being dilated, the blood was enabled to return to its wonted channels, and the headache was relieved by the removal of the cerebral hyperæmia. The improvement is permanent. In many cases of local hyperæmia, aconite has been found very useful.

A word, however, *en passant*, as to the dilatability of the blood-vessels. Ludwig, Schiff (*La Nazione*, August 9th, 1872), and others, have been led to the conclusion that the vascular system is normally in a state of semicontraction, and that, in full dilatation, it can hold twice the normal amount; or, in other words, that it took the whole of the bulk of blood of an identical animal to raise the blood-pressure again to the height at which it had stood ere full dilatation was induced.

Goltz found that the intestinal veins would hold all the blood of the animal experimented upon.

This dilatability of the blood-vessels permits, then, of most effective bleeding after the manner of Rasori; indeed, an amount of blood may be so withdrawn from the circulation far beyond what could be safely done by withdrawal of it from the system altogether. And the list of agents by which this can be done comprises mercury, antimony, iodide of potassium, hydrate of chloral, nitrite of amyl, Calabar bean, aconite, veratrum, and, to a less extent, opium, acetate of ammonia, alcohol, guaiac, ipecacuanha, and a host of others.

Mercury is a direct cardiac depressant; and George Harley (*Proceedings of the Royal Society*, 1864) found that the injection of corrosive sublimate into the femoral vein of a dog produced paralysis of the heart beyond the power of a feeble galvanic current to excite it long before the vermicular action of the intestines had ceased. Such action should not be forgotten in its administration. As to its action on the skin and other emunctories, we are all familiar with it, and utilise it at times. But its use in consecutive doses for such a purpose is now only found in antiquated practice alongside the moxa and the strengthening plaster.

Antimony, especially in the form of tartar emetic, has long been used for its depressant action. Twenty grains of tartar emetic was considered a capital measure to lower the violence of a maniac in past times; and it, indeed, formed an effective measure. Unfortunately, however, acute gastritis and pustular inflammation of the intestines often followed such doses, ending fatally; which led to its abandonment. Such action of tartar emetic is still utilised by the cotton-spinners' wives in Lancashire, in order to control the violence of their drunken spouses on Saturday nights. It is purchased at the druggists under the name of "quietness," and administered in the cup of tea offered to the riotous inebriate. (Bucknill and Tuke's *Psychological Medicine*).

Iodide of potassium is a depressant of the circulation acting powerfully upon some persons (Ringer), and by its action, especially upon the cutaneous vessels, is admirably adapted to the treatment of the early stages of catarrhal fever, or thoracic inflammation. Combined with ipecacuanha and acetate of ammonia, it is most serviceable in the early stage of bronchitis, when the bronchial membrane is turgid and swollen with congested vessels, and the secretion almost totally arrested. Here the turgescence must be relieved, and secretion established as the first step in the treatment. This combination is very useful where mercury or antimony are contraindicated.

Alcohol is often useful for its effects upon pyretic conditions, and is often given to lower the temperature, which it probably does by its effect upon the skin. While acting upon the heart by increasing its contractions, there is such a current established through the skin, the blood being rapidly driven through the dilated vessels, that the temperature is lowered (Binz). Alcohol and opium both act readily upon the vessels of the head, and so are at first excitants; but, as the other peripheral vessels become dilated, the brain becomes anæmic and sleep ensues. When coma comes on, then there is venous congestion (Hammond).

Having briefly disposed of our old therapeutic friends, let us look a little more carefully into the action of our new acquaintances on the list of depressants of the circulation. We may take chloral hydrate first.

Hydrate of chloral is a depresser of the temperature, as well as a hypnotic; and, though possibly possessing, like opium, an action on the nerve-centres—some unknown narcotic action—still its effect upon the vascular system probably accounts for much of its action. There is some evidence that chloral depresses the heart, but it acts upon the cutaneous vessels very markedly. Liebreich, B. W. Richardson, Tay, Hammond, and others, found that it is not at all uncommon for the temperature to fall three or four degrees, or even more after a full dose (40-80 grains) of chloral-hydrate.

Hammond found the retina to become pale and exsanguine at the oncome of sleep, its natural colour coming back as sleep wore off. My friend Dr. Lauder Brunton has made some very interesting experiments as to the action of chloral. He finds that, after large doses, the temperature falls till it can no longer be measured by ordinary clinical thermometers. Having found out what dose would kill an animal when exposed to the air, he gave this quantity to two similar animals, wrapping one up in cotton-wool. The one so wrapped up survived, while the other died. Then he found out the dose which was lethal after wrapping up in wool, and gave that to two similar animals, wrapping one up in wool and putting the other in a warm chamber. The one in wool died; the other recovered. A larger dose still was fatal to the one in the warm chamber. These experiments throw much light upon the action of chloral hydrate. After this, we can no longer feel surprise at the concomitance of sleep and a free perspiration with

* For further information on this important matter, readers may consult an article by the writer in the *Edinburgh Medical Journal* for September 1873, on "The Typhoid Condition."

† The delirium of opium-poisoning is converted by sleep into a dream; but in belladonna-poisoning the raised blood tension will not permit of sleep, and the delirium is waking, though no memory of it remains after.—JOHN HARLEY.

its fall of temperature in the crisis of malarial fever. They are alike the result of dilatation of the cutaneous vessels; and are not uncommonly the combined results of the administration of a single agent.*

Dr. Theodore Williams has also found hydrate of chloral useful in spasmodic asthma (BRITISH MEDICAL JOURNAL, Oct. 25th, 1873).

[To be continued.]

CLINICAL MEMORANDA.

INSUSCEPTIBILITY TO VACCINATION.

IN reply to the inquiry of Dr. Cowie—"Insusceptibility to the infection of cow-pox, even for a very limited period, is an occurrence of excessive rarity"—"of upwards of 9,000 vaccinations at the Blackfriars Station of the N. V. E., there was but one case in which a second trial was unsuccessful" (Seaton's *Handbook of Vaccination*, London, 1868, pp. 174-5). At my own stations during a period of upwards of ten years, including considerably more than 10,000 vaccinations, I have met with only two instances in which there was failure after three trials in consecutive weeks; and even in these the insusceptibility may have been only temporary. I believe that temporary insusceptibility, more or less complete, is sometimes the result of the incubation of certain of the exanthemata or other diseases; although, curiously enough, the early latent stage of small-pox does not generally prevent the successful inoculation of vaccinia.

A. B. STEELE, Liverpool.

OBSTETRIC MEMORANDA.

POST PARTUM HÆMORRHAGE.

THE discussion on *post partum* hæmorrhage reminds me of an occurrence worth relating. In the month of October, 184—(I cannot remember the year), I was called early in the morning to a labour at some distance. The frost was so great as to impede my journey, and thick ice was on the ground, which caused some malediction on my part. The labour was soon over, but was followed by such fearful flooding that defied all control—so much so, that I called the husband into the room, that he might be present at the death. All at once, I thought of my enemy, the frost. I desired the husband to bring me a handful of ice. It was no sooner said than done, and in a few minutes I thrust a handful of ice into the uterus. Contraction at once took place; my patient was saved; and from that moment I never abused an early frost.

In a pretty large practice of nearly fifty years, I can honestly say I never lost a patient from *post partum* hæmorrhage in my own practice, though I have seen two or three in consultation. My invariable method was to empty the uterus and tickle the inside with my right hand, at the same time grasping and kneading the uterus with the left hand. If time permitted, I placed my hand now and then in a pail of very cold water. This plan never failed to produce contraction (except in the case above mentioned); but it was necessary to continue the grasp for perhaps an hour to prevent the uterus from expanding again, and until the patient was sufficiently recovered as to have a bandage applied. Those who have undergone the fatigue of bending over a patient and grasping the uterus for so long a time, may be glad to hear of a substitute; and I can give one. I was called to a case suddenly; and, having a "Salmon and Ody's" *single* truss in my hand at the time, I put it in my pocket. Having procured contraction, I put on the truss, placing the flat pad on the uterus, and the other on the spine. It answered admirably, the women present being astonished at the *new invention*, the real nature of which I of course concealed. It is really worth a trial. In cases where, from past experience, hæmorrhage may be expected, I quite hold with giving a large dose of ergot before the expulsion of the child. The presence of internal hæmorrhage is sometimes very deceptive, the os uteri being stopped by a clot. The nurse has often assured me there was no bleeding, because the napkin was unsoiled; when, on placing my hand on the uterus, I found it full of blood. The poor Princess Charlotte fell a victim to this mistake. The doctor had gone to bed, and the nurses thought all was right because there was no outward sign of bleeding, while the Princess was dying from internal hæmorrhage. The doctor was at last called, but too late.

C. M. THOMPSON, St. John's Hill, Sevenoaks.

* The effect of a feverish cold and a dry skin over the action of chloral has been noticed before.

REPORTS

OF

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS OF GREAT BRITAIN.

REPORTS FROM THE METROPOLITAN HOSPITALS ON THE USE OF TORSION IN SURGICAL OPERATIONS.

The following additional reports have been forwarded.

Mr. SPENCER WELLS (Samaritan Hospital) has introduced a kind of artery and torsion forceps, which very conveniently replace the old spring artery forceps of Liston, and the bull-dogs used for the temporary stoppage of bleeding vessels during operations, while they are the most readily applied of any of the varieties of torsion-forceps met with in the shops. They are represented in this sketch, and were first

made for Mr. Wells by Krohne and Sesemann. The grasping and holding extremity is roughened by rather deeply cut transverse teeth, so that the bleeding vessel is forcibly compressed, and its coats squeezed or almost crushed together. This is alone often sufficient to stop the bleeding without any torsion, especially if the instrument be left on the vessel for a minute or more. But if the vessel be large, then two or more rotations may be added. Instead of the spring-catch, the fastening is effected by a Mathieu's catch in the handles. This is quite as easily fixed and opened as the spring, and is much less likely to get out of order. The instrument is made of steel, but is coated with nickel, which prevents any rusting after use. Mr. Spencer Wells, as is well known, trusts to the clamp for securing the pedicle in ovariectomy whenever it can be applied without too much pull on the uterus or broad ligament. Where the pedicle is very short or broad, he either uses the cautery, the ligature, or the *écraseur*. He has never trusted to torsion alone, though occasionally securing one or more vessels in this way. With the bleeding vessels in separated omentum, he trusts to torsion when the vessels are distinct; but when oozing surfaces rather than separate vessels are seen, he uses ligatures of fine pure silk, cutting off the ends short and returning them. He prefers this silk to catgut. With bleeding vessels in the abdominal wall, torsion, or simple compression with the torsion-forceps, is sufficient.

Mr. MAC CORMAC (St. Thomas's Hospital) writes: I have used torsion, to the exclusion of other methods, for a considerable time. I consider it perhaps the safest mode of occluding a divided blood-vessel. It is easy to apply to the larger vessels, more difficult in the smaller vessels, since they cannot be so readily separated from surrounding parts. For the same reason, it is difficult to twist vessels embedded in tissues altered by chronic inflammation. I have safely used torsion to arteries of all sizes, even the femoral, after disarticulations of the hip. During the war of 1870, I twisted the vessels in a very large number of cases of amputation for gunshot injury. I only remember a single instance of secondary hæmorrhage from a twisted vessel. It was a case of amputation through the knee-joint, in which acute pyæmia supervened, and secondary bleeding would probably have occurred as readily had the ligature been employed. This fact is of importance in respect of a class of injury very generally prone to the occurrence of secondary bleeding. Torsion is more difficult and tedious in its application than the ligature. It is inapplicable when the arteries are diseased. For the smaller arteries I have used unlimited torsion. For large vessels, lying loosely in unaltered sheaths, it is better to limit the length of artery twisted by grasping the vessel with a second forceps, otherwise the artery may be needlessly and dangerously disturbed in its relations to its sheath. I twist until I feel the internal coats giving way. The number of turns required to effect this varies even in arteries of similar size. The sharpness of the motion in making the twist may have some effect on the number of turns required. If difficulty be experienced in stopping the flow of blood from the smaller vessels, ligatures may be employed instead; but after amputations or excision, the time consumed in twisting the vessels is often a positive advantage, since it lessens the chance of intermediary hæmorrhage.