XLV. Croup; aged 9. Death in four days.
 XLVI. Diphtheria; aged 6. Cured.
 Total cases of Tracheotomy, 46. Cured 17; Died 29.
 Tracheotomy in Croup, 16. Cured 6; Died 10.
 „ Diphtheria, 30. Cured 11; Died 19.

The average result is precisely the same, viz., one child is saved out of every two and two-thirds operated on; and, as the operation was always done when there seemed no hope of recovery otherwise, it may safely be stated that the lives of these seventeen children were saved by tracheotomy.

UNUSUALLY RAPID ACTION OF THE HEART.

By JOHN CAVAFY, M.D.,

Assistant-Physician to St. George's Hospital.

DR. FARQUHARSON'S interesting paper on this subject, published in the *JOURNAL* of June 12th, recalls to my mind a very similar case which came under my notice some years ago, and which deserves, I think, to be recorded.

A groom, aged 32, was admitted into St. George's Hospital, under the care of the late Dr. Fuller, on March 15th, 1871. He had suffered from acute rheumatism seven years before, but had presented no cardiac symptoms till his present illness, the history of which was as follows. He had been in the service of a French family, with whom he was shut up in Paris during the siege. In October, his master's horses were killed for food, and he was consequently discharged. Since that time, he had lived very poorly, barely supporting himself by odd jobs of various kinds, and for the last two months had been subjected to great privation. He could obtain no meat, and only small quantities of bread and wine. He grew thin, and became subject, for a fortnight before his admission, to violent palpitation and præcordial pain on the least exertion or excitement. The fits of palpitation would often last a whole night. He left Paris on March 13th, with only two pounds of bread, and, on reaching Charing Cross, was penniless and destitute. He begged a lodging, and was offered food, but could not eat. The next morning, he swallowed a cup of tea, but this was immediately vomited. Violent pain and palpitation came on, and continued with barely appreciable intervals of rest, till he was admitted into the hospital on the following day.

He was then sweating profusely; there was great dyspnoea, and the heart's action was extremely rapid. The pulsations were counted as follows: at 1.30 (by Dr. Barclay), 228; at 2.15 (by myself), 216; at 2.20 (by the house-physician), 208; a little later (by Dr. Dickinson), 200; at 3 (by Dr. Whipple and myself), 176. A few minutes later (by Dr. Jones), the pulse suddenly became very weak, irregular, and intermittent, and dropped to 100-108. He was fed with small quantities of egg and brandy mixture every hour. The feeding was continued during the night, which was quiet, with the exception of one comparatively slight attack of pain and palpitation, and, at 11 on the following day, I found the pulse irregular, 100 to 108, with occasional intermission, and a harsh systolic murmur was now audible at the apex. Next day, the pulse had fallen to 82, and he steadily improved. He gradually became able to take food, the palpitation diminished in force and frequency, and by April 12th he was well enough to go to the Convalescent Hospital at Wimbledon. The treatment consisted of egg and brandy mixture, gradually diminished and replaced by food; bark and ammonia, and latterly citrate of iron and bromide of potassium in effervescing ammonia draught. No digitalis was given.

In this case, there are, it will be seen, many points of similarity to that published by Dr. Farquharson. There was valvular disease, the murmur was inaudible during the very rapid action of the heart, and there was a sudden fall (preceded in my case by a gradual diminution) in the number of pulsations, accompanied by irregular and intermittent action. With regard to the causation of palpitation, it seems probable that, in the great majority of instances, it is due to paresis of the inhibitory fibres of the pneumogastric, and not to stimulation of the accelerator nerves. Palpitation occurs chiefly in anæmic and otherwise weakened patients; in the case before us, it came on after insufficient food and consequent exhaustion, and it is difficult to suppose that, in cases such as these, there can be increased nervous action of any kind. I am aware that, in exophthalmic goitre, the palpitation and increased action of the heart are considered by some to be owing to stimulation or irritation of the accelerator nerves. But even here the majority of symptoms—dilatation of arteries, flushing, heat, sweating, etc.—point to paralysis of the sympathetic, or at least of the vaso-motor nerves. Friedreich has suggested that the increased action of the heart is secondary to vaso-motor paralysis, the coronary arteries being thus dilated, and the heart in consequence receiving an increased blood-

supply. It should, however, be remembered that dilatation of arteries means diminution of blood-pressure, and that this always increases the frequency of the heart's contractions. A high blood-pressure, on the contrary, stimulates the centre of origin of the pneumogastric, and thus diminishes the frequency of the pulse.

THE LATE DISCUSSION ON PUERPERAL FEVER, AND ON ITS TREATMENT BY INTRAUTERINE INJECTIONS.

By EDWARD JOHN TILT, M.D.

WHEN, in opening the discussion, Mr. Spencer Wells stated that he came to learn and not to teach, those who hold him in high esteem thought this was only the usual artifice of the orator, seeking to moderate expectations so as to ensure the success of a final effort; and great was our surprise, when his turn came to close the debate, to find that he had trotted us out to show our paces, without having any definite object in view. Henceforth this discussion will be memorable among others; for, although the business of the Society was suspended for four consecutive meetings, and although the discussion was well carried on by many men well prepared by length and quality of observation, and who did their best to put their thoughts in small compass, no one gave them their proper place and weight in a general *résumé* of the debate; for this was left undone by Mr. Spencer Wells, by the President of the Society, and by the principal organs of the medical press.

I have no intention to do the work that should have been done by others; but, before responding to an appeal made to me by a correspondent in the issue of the *British Association Journal* of July 17th, that I should more fully state the best means to evacuate the fœtid contents of the womb, I propose to make a few remarks on puerperal fever. I am glad of the opportunity to rectify the apparent one-sidedness of the remarks I made at the Obstetrical Society; for it is obviously advisable, when a speaker has to treat a vast subject in fifteen minutes, that he should devote the time to the elucidation of some undervalued point of practice rather than to the delivery of a mere sylabus of his views of the subject.

I am not aware that I am indebted to the discussion for any new views on puerperal fever; but it has deepened the conviction I already entertained, and I hold:—1. That, during the puerperality, the blood is in such a state "of trembling equilibrium", to use Dr. Richardson's happy expression, that the unknown poison of puerperal fever may be developed within the blood by cold, or mental emotion, or zymotic influence, while the lochia remain perfectly normal. I say *may*, for sometimes even the poison of scarlet fever follows its usual course in a puerperal patient without causing puerperal fever, and without in the least interfering with the healthy tenor of the puerperal processes. 2. That, the womb and lochia being in a healthy condition, cold, mental emotion, or zymotic influence may render the lochia putrid, and thereby develop a poison which, soaking into the surface of the womb and its sinuses, is taken up by the uterine lymphatics, which pass it into the blood, so as to cause puerperal fever. 3. That the seat of placental attachment, a bruised portion of the womb, or any rent in its tissue, may inflame unhealthily, and thus produce pyrogenic fluids, which may be taken up by the lymphatics and cause puerperal fever, as already mentioned. 4. That fragments of placenta, of the membranes, and blood-clots, if retained in the womb, decompose, and produce septic fluids which may cause puerperal septicæmia. 5. That, as with other patients, so with puerperal women, when attacked by zymotic influence, the whole of their secretions may be vitiated, so that scarlatina, for instance, may poison the lochia, if it find them healthy, or intensify the virulence of the poison if it find them already made putrid by any of the causes previously enumerated. 6. That, just as other poisons often pass through the lymphatics into the blood without inflaming them, so the poison of puerperal fever may pass through the uterine lymphatics into the blood and into the peritoneum without inflaming the lymphatics sufficiently to fill them with pus; extensive purulent lymphangitis being rather the exception than the rule, unless certain epidemic influences prevail.

For all that relates in the previous propositions, to the mode in which the lymphatics convey from the womb the poison which, on coming in contact with puerperal blood, lights up puerperal fever, as well as for the explanation of the very early advent of puerperal peritonitis and the subsequent occurrence of puerperal cellulitis, pelvic abscess, and ovaritis, I refer the reader to my paper on Lymphangitis in Pelvic Pathology, in the sixteenth volume of the *Transactions* of the Obstetrical Society of London. Those who take interest in this mo-

mentous question will find a satisfactory attempt to establish the differential diagnosis of puerperal lymphangitis and puerperal phlebitis in a recent communication of Dr. Siredey.*

I do not share the dislike that some entertain for the term puerperal fever, and, however much they may object, it will be the term used by medical men to their patients, so long as they speak English, while the scientific name will vary according to the notion entertained by the profession respecting the nature of the complaint.

Drugs were not mentioned at the late discussion, yet it was eminently practical; for, as each speaker laid most stress on what he considered the chief cause of puerperal fever, the auditors were urged to renew their efforts to shield puerperal women from cold, mental emotion, zymotic influence, and to prevent the stagnation of foul fluids in the womb by ascertaining more carefully the state of the lochia.

Vaginal Injections.—It is customary with many practitioners to tell the nurse to inject a weak solution of Condé's fluid, or of carbolic acid, or of chloride of lime, into the vagina by means of an India-rubber syringe, when the lochia are said to be offensive. The plan is highly commendable; but I think it would be well, if it were accepted as a rule of practice, that, whether the lochia be foetid or not, a vaginal injection should be made every morning, about the third or fourth day after parturition; that is, when the blood-flow from the womb has greatly diminished. The cervix is always bruised and often lacerated, the fourchette often torn, and almost always so in primiparæ; it is therefore advisable to bathe the parts with a warm fluid, as well as to remove foul secretions. I have already† advocated the practice as a means of preventing uterine inflammation; and it would also provide for the early removal of whatever is foul in the vaginal fluids. I can recommend nothing better for this purpose than a solution of a drachm of acetate of lead in a pint of warm water, with the addition of a dessert-spoonful of laudanum, if there be pain, or of Condé's fluid, should the lochia be at all offensive. The womb will better relieve itself of its contents if the patient be shifted from back to side, and her position thus changed several times a day; and by letting her micturate in the usual way, much sooner than we usually do, after parturition, according to the practice of Dr. Goodell of Pennsylvania University.

Intrauterine Injections.—Nothing that I may have said or written should be construed as meaning that it is the common practice on the Continent to use intrauterine injections when the contents of the womb are supposed to be foetid during puerperality. There is no mention of intrauterine injections in the accounts of the epidemic of puerperal lymphangitis, by which the Great Maternité of Paris was decimated from 1827 to 1832, nor in the two that occurred in 1842-44 at the Hôtel-Dieu of Rennes, graphically described by Dr. Bottrell. As far as I am aware, Dr. Dupierris, a Cuban practitioner, is the first who had recourse to intrauterine injections; but principally with the view of preventing *post partum* flooding. Dr. Wynn Williams has lately stated that he has made intrauterine injections to cure puerperal fever by the removal of foetid secretions from the womb for the last twenty years. Professor Stoltz, once Dean of the Strasburg, and now of the Nancy Faculty of Medicine, assures me he has done so with singular advantage for the last fourteen years. Dr. Fontaine,‡ who now practises in Madrid, has made three hundred intrauterine injections soon after parturition. Dr. Despinè§ of Geneva has done so in thirty cases, Dr. Lucas-Championnière informs me that lately, at the Paris Maternité, a patient of Dr. Hervieux was rapidly cured of *post partum* purulent metritis by intrauterine injections; and that, during last winter at the Hospital of Anger, Dr. Guichard made intrauterine injections in fifteen cases, in which the lochia were foetid, and that pus was found in the lymphatics of those who died. If I had time to search the journals, I should find a certain number of cases in which French or English practitioners have resorted to the same practice. Several of the speakers in the late discussion have likewise done so; and, while many testified to the remarkable coincidence between the abatement of uterine factor and the amendment of alarming symptoms of puerperal fever, none mentioned peritonitis or any other untoward symptom having been caused by the practice.

I have recommended intrauterine injections during puerperality only when the lochia are foetid, as a curative measure; but I|| have suggested to those practising in India, that it would be worth while trying whether the plan would not be useful there, as a means of preventing *post partum* flooding, dysentery, and defective uterine involution. I did so because

when practising in Cuba some thirty years ago, Dr. Dupierris,* finding that his patients frequently died of *post partum* hæmorrhage, and that tetanus supervened if he checked flooding by the introduction of ice into the womb, adopted the plan of injecting a solution of iodine into the womb, immediately after removing from it the placenta and the clotted blood. This plan prevented flooding, and had also the advantage of preventing that form of puerperal fever that depends on foetid uterine secretions. The success of the plan was so great, that it was adopted by several Cuban practitioners, and it seems to have stood the test of time; for Dr. Dupierris published an account of it in 1870, substantiating his assertions by numerous cases.

When employed as a means of curing puerperal fever, I should like it to be accepted as a rule, that it is the duty of a medical man to make disinfecting injections into the womb, whenever symptoms of puerperal fever coincide with foetor, however slight, of the vaginal secretions, unless the foetor can be explained by lesions of the vagina itself.

Instruments Required.—To prevent accidents, it is always advisable to use an instrument with a double current when making intrauterine injections in the *unimpregnated* womb; but, during the first eight days of the puerperal period, during which intrauterine injections are most wanted to remove foetid secretions, the cervical canal is sufficiently wide to permit the free escape of small fragments of decomposed tissue with the outflowing stream of water; I therefore think a No. 9 or 10 gum-elastic catheter, in the extremity of which can be fitted the nozzle of an India-rubber bottle, is as good an instrument as can be used; it is one easily obtainable, and none other has been used by some of those who speak best of the practice. The use of so simple an instrument as a gum-elastic catheter ensures the possibility of its being burnt to avoid chance of spreading infection to another patient. The little instrument sold for injecting perchloride of iron into the womb would do very well. I have used the ordinary patent India-rubber syphon syringe for the same purpose, and that portion of the tube that screws on can in like manner be burnt at the end of the case. I place the woman on her back, with her thighs well separated and the edge of the bason well under the nates, the bed having been previously protected by a square of mackintosh. The tube of the instrument should be pushed well up to the fundus, and the fluid should be injected very gently and evenly.

Professor Stoltz uses an instrument with a double current action, the two tubes being enclosed in a third about the size of the index-finger; and he assures me he has never found a difficulty in passing this tube through the cervix during the first week of puerperality. No such instrument is to be found at the instrument-makers'; but Mr. Coxeter has made one at my suggestion. It may be objected that fragments of septic tissue may lodge inside this instrument, remain there, if it be carelessly washed, and thus transfer contagion to another woman; but I think that due care would prevent such an occurrence; for the instrument would carry within itself the antidote to the poison it encountered, and, before using it, the nozzle could be steeped in a strong solution of the disinfectant to be afterwards used in a more diluted state.

Fluids to be used.—A solution of Condé's fluid of chloride of lime might be made available, if nothing better were at hand. A strong solution of alcohol has been frequently used by Dr. d'Espine and several French practitioners; but it seems to me that its disinfecting action is indirect, and that the alcohol acts by contracting the womb and closing the uterine sinuses, while the foetid contents of the womb are diluted and evacuated. There is also a certain amount of alcohol in the lotions that have been most extensively used in association with carbolic acid and with iodine.

I do not know the strength of the alcoholic solution of carbolic acid that has been always used by Professor Stoltz; but Dr. Guichard washes out the womb with a pint of tepid water, in which he puts an ounce of a solution made by adding to ten ounces of water six ounces of alcohol and an ounce of crystallised carbolic acid. It would be well to begin with this dose of half a drachm of carbolic acid, and to increase it cautiously, if at all; for carbolic acid is a powerful remedy. One of carbolic acid to 200 of water is Dr. B. Hicks's proportion.

I believe tincture of iodine is the best disinfectant for intrauterine injections; for iodine is well borne by fistulous passages, closed cavities, and even by the peritoneum. Tincture of iodine, by its action on the nerves of the womb, is a powerful hæmostatic, while its anti-septic properties are undeniable; so it is doubly useful when there are putrid contents to purify and uterine sinuses to close; and I have no doubt it will ultimately supersede the perchloride of iron in cases of *post partum* hæmorrhage. I have repeatedly injected one of water

* Dr. Dupierris *De l'efficacité des Injections Iodées dans la Cavité de l'Utérus pour arrêter les Métrorrhagies qui succèdent à la Délivrance, et de leur action comme moyen préventif de la Fièvre Puerpérale.* Thèse de Paris, 1870.

* La Fièvre Puerpérale n'existe pas, *Annales de Gynécologie*, Mars et Avril 1875.

† On the Prevention of Uterine Inflammation. *BRITISH MEDICAL JOURNAL*, November 1st, 1873.

‡ *Études sur les Injections Uterines après l'Accouchement*, 1869.

§ *Contribution à l'étude de la Septicémie Puerpérale*. Paris: 1873.

|| *Health in India for British Women, and on the Prevention of Disease in Tropical Climates*. J. and A. Churchill.

and two of tincture of iodine into the womb in cases of chronic internal metritis. It has occasionally caused severe uterine tormina, which subsided in a day or two. My friend Dr. Emmet of New York, after operating on the interior of the womb, injects it or soaks it with tincture of iodine; and, since he has adopted this plan, he has not had a case of septicæmia. Dr. Fordyce Barker, to check severe hæmorrhage following abortion, lately injected an ounce of the undiluted tincture of iodine (and the American tincture has double the strength of ours) with perfect success and no ill-effects; so it is not likely that any would follow the injection of a very strong solution of iodine into the womb soon after labour. I have then injected four drachms of the tincture in half a pint of tepid water, Dr. Wynn Williams has been in the habit of using three drachms to the same quantity of water; but Dr. Dupierri's practice has been to inject into the womb, immediately after the removal of the placenta, four drachms of tincture of iodine (double the strength ordered in the *British Pharmacopœia*), ten grains of iodide of potassium, and one ounce of distilled water.

It remains to be seen which is the best plan, either to inject the tincture of iodine little diluted, so as to act strongly on the womb, or to largely dilute the tincture, so that it may wash away fragments of putrid tissue.

Had I been aware that Dr. Braxton Hicks had already treated this subject, I should have contented myself by referring to his trustworthy teaching,* which shows that he has been long aware that puerperal fever is likely to arise from the retention of foetid uterine fluids. These remarks of mine may not be, however, altogether useless; and most acceptable were those made by Dr. Wynn Williams, in the JOURNAL for August 7th, on the washing out of the puerperal womb.

CASE OF INVERSION OF THE UTERUS, OF THREE MONTHS' STANDING.†

By J. H. EWART, L.R.C.P.,
Surgeon to St. Mary's Hospital, Manchester.

ELIZABETH V., aged 22, married, was attended by a midwife in her first confinement on March 27th, 1874. She was at full term, and the labour went on well to the end of the second stage; there was then, according to her account, some difficulty with the afterbirth, which the midwife endeavoured to overcome by pulling at the cord. Eventually a surgeon was called in, and he and his assistant attended the patient up to the time of her admission to St. Mary's Hospital, Manchester on the 6th July, 1874, *i.e.*, for upwards of three months. She stated that she lost an alarming quantity of blood at the time of her confinement, and that she had had more or less hæmorrhage ever since. Sometimes she had lost a very considerable amount of blood; the last occasion on which this occurred was about a fortnight before her admission. Various injections had been given to her for the purpose of controlling the loss; no vaginal examination, however, was made after the confinement.

On admission to the hospital, the patient presented a most blanched appearance. She complained of no pain; the appetite was pretty good; the pulse 100, feeble. A small pear-shaped tumour, bleeding readily when touched, was found in the vagina.

On the following day (8th July), the patient was placed under the influence of chloroform, for the purpose of further examination. The tumour was smaller than I should have expected an inverted uterus to be; it bled very readily; on passing a finger into the rectum and pressing the fingers of the other hand at the same time deeply above the pubes, no intervening substance could be felt. The absence of the uterus from its normal position was further demonstrated by passing a sound into the bladder, and again by the impossibility of introducing the uterine sound by the side of the tumour, the neck of which was tightly constricted. Being now satisfied that the case was one of inversion of the uterus, I tried digital pressure, and persisted in it for some length of time. (I regret I did not notice the time accurately.) Considerable force was used; as much, indeed, as I deemed justifiable. I therefore desisted, with the intention of employing the elastic stem-pessary described by Dr. Barnes in the first volume of the *Obstetrical Transactions*, and in the event of that failing, of incising the neck, as recommended in the same communication. Some of those present, however, thought that further efforts should be made with the hand, and I reluctantly gave my consent. Pressure was accordingly resumed; and

after some time the operator announced that he had succeeded in reducing the inversion. It was obvious to the onlookers that the success was due to the exertion of extreme force; and, on examination, two fingers could be passed into a rent in the anterior vaginal wall just where it formed the cervix uteri. There was also some laceration of the perinæum, but at what stage of the proceedings this happened is uncertain. After the operation, the patient's pulse was pretty good, and her general condition was not alarming.

July 9th. She complained of soreness, and a little abdominal pain. Temperature normal; pulse 110.

July 10th. She felt chilly; had no pain. Temperature 98; pulse 104.

July 11th. She felt better. Temperature normal; pulse 100.

July 12th. There was a good deal of whitish discharge. Temperature normal; pulse 100.

August 8th. Since the last note, the patient had not had a single bad symptom; the vaginal rent had healed, a very slight thickening marking its site; the uterine sound passed two inches in the normal direction. The woman then became an out-patient, and preparations of iron were prescribed for her on account of her extreme anæmia. She subsequently went to Southport for six weeks; and on October 21st, she again presented herself at the out-patient room, looking much improved in colour and general appearance. She had menstruated twice since leaving the hospital. The uterus was normal in position; the sound passed rather more than two inches; the os was somewhat flabby, and presented the appearance of a little superficial ulceration, which soon yielded to the application of nitrate of silver; the situation of the vaginal rent could not be discovered.

I saw my patient after some time, when there were signs of commencing phthisis; after this, I lost sight of her, and am now unable to obtain any trace of her.

Inversion of the uterus is not a very common occurrence, only fifteen cases having been reported in the English journals since the year 1871. It does not seem necessary to enter into the details of these cases; suffice it to say, that nearly all of them are said to have been due to traction on the cord.

In the BRITISH MEDICAL JOURNAL for January 28th, 1871, Dr. Tylecote reports a case of spontaneous inversion twenty-four hours after labour. Dr. Braxton Hicks relates a similar case in the JOURNAL for August 31st, 1872; and also another where the inversion followed delivery by forceps; and in the first volume of the *Obstetrical Journal* (page 319) Mr. J. Prankerd narrates a case where inversion occurred during the effort of straining at stool seven days after labour. With regard to the possibility of spontaneous inversion, and for an explanation of this phenomenon, I beg to refer my hearers to Dr. Hicks' paper in the BRITISH MEDICAL JOURNAL for 1872.

The treatment of these fifteen cases varied; most of them were reduced by pressure of one kind or another; two died before medical aid could be procured; in two, the uterus was removed as a last resource in order to save life; and in two others Dr. Barnes succeeded in reducing the inversion by the method to which I have already alluded, and the value of which cannot be overestimated.

Dr. Barnes has clearly pointed out how an inverted uterus *ought* to be treated; it has fallen to my lot to bring before the profession a case which teaches how it *ought not* to be treated; for the satisfactory termination of the case does not prove that the treatment was one to be recommended.

How many women would have recovered after such severe injuries? and what would have been the result if the rent had occurred posteriorly instead of anteriorly? Now, how are such accidents to be avoided? We are directed to use as much force as is justifiable: what is the measure of justifiable force? What amount of strain will the vaginal walls bear? Speaking from my experience in the case here recorded, I would urge that the utmost care, care even approaching timidity, be used in the application of manual pressure to chronic cases, and that, in the event of failure by this method, recourse be had to the air-pessary, or even incision of the neck, inasmuch as such an operation must be far less serious than rupture of the vaginal wall.

INVERSION OF THE UTERUS.

By WILLIAM KELLY, M.D., Physician to the Taunton and Somerset Hospital.

In the abstract of Mr. Ewart's case of successful reduction of an inverted uterus of three months' standing, as given at page 231 of the JOURNAL of August 21st, the author is stated to have said "that, in any future case, he would firmly discountenance the treatment adopted in the case here recorded".

* On *Post Partum* Douching of the Womb (BRITISH MEDICAL JOURNAL, November 13th, 1869).

† Read before the Obstetric Medicine Section at the Annual Meeting of the British Medical Association in Edinburgh, August 1875.