removing any granulations of the mucous membrane which is painless, requires no preliminary dilatation of the cervix, and is oftentimes very effectual.

Before concluding, it is necessary to consider whether intra-uterine medication is attended by any risks which might outweigh the good effects to be derived from it. If roughly and injudiciously used, I can fancy that intra-uterine, like any other form of uterine treatment so carried out, might produce serious inflammatory mischief. When judiciously applied in suitable cases, I am satisfied that no risk of the kind is run. I have been daily practising intra-uterine medication for many years, and I have only in one case seen any trouble of the kind. Every gynaecologist is, however, aware that even the simple passage of the uterine sound may, now and again, produce a like effect; and certainly the possibility of this is no argument against the use of that instrument. Practically, the only bad effect that is at all likely to occur is the occasional production of a hemorrhagic discharge. This most commonly happens either when the treatment is first commenced, presumably because the mucous lining of the uterus is then most likely to resent any mechanical interference, or when the application is made too near the expected advent of menstruation. The discharge, however, never lasts beyond a day or two, and never leads to any serious trouble.

Mr. Wigglesworth, in the paper already alluded to, has stated his fear that intra-uterine medication might produce sterility, by destroying the uterine mucous membrane. If there were any foundation for this (and Mr. Wigglesworth brings forward no cases in support of his theory), it would, of course, be a very strong argument against the practice. As a matter of fact, however, I am satisfied that the apprehension is quite groundless. So far from this being the case, I have long been in the habit of considering the cure of chronic endometritis by intra-uterine medication as one of the most certain means of removing acquired sterility. I have seen so many cases of the kind that, as I stated in a short paper on "Intra-uterine Medication and Sterility", published in the *Obstetrical Journal* of February last: "It has been a matter of every-day experience with me to meet with many cases of chronic endometritis, with subinvolution, after a labour, perhaps years before, in which intra-uterine medication has been followed so rapidly by impregnation as to leave no doubt of the result being due to the removal of the cause which led to the sterility. So commonly have I found pregnancy follow the cure of these conditions, that I have over and over again remarked to patients, who have expressed themselves as rather aggrieved at finding themselves in the family way, that I had come to look upon pregnancy as the nearly certain result and proof of a satisfactory cure." It may suffice to dispose of this theory if I state that, since writing that paper, only a few months ago, I have had no fewer than five cases in my own private practice in which pregnancy has rapidly followed the use of intra-uterine medication in patients who had been long sterile, in one case eleven years, in another seven, having elapsed since the last pregnancy.

In conclusion, I feel that an apology is due to the Association for the very superficial, and therefore necessarily imperfect, way in which the short space of time at my disposal has rendered it necessary for me to treat this important subject. I trust, however, that enough has been said to elicit from others their opinion and experience on a topic of great and increasing practical interest.

ON INTRA-UTERINE MEDICATION.*

By EDWARD JOHN TILT, M.D.,

Past President of the Obstetrical Society of London.

As we have been left to interpret the scope of the subject of discussion, I do not suppose we are asked to discuss the well understood treatment of cervical diseases, nor to consider whatever kind of treatment the inside of the womb may require for cancer or other diseases; and I shall limit my remarks to the treatment of the several varieties of internal metritis.

These varieties are characterised anatomically by great congestion of the mucous membrane lining the body of the womb, by more or less distension of its blood-vessels, by softening or ulceration of tissue; lesions giving rise to purulent, mucopurulent, or sanious discharges. The mucous membrane may be also found roughened by the enlargement of its utricular glands; they may be so enlarged as to look like fungoid bodies, and they were called "fongosités utérines" by Recamier, who recognised in them a not uncommon cause of frequent loss of blood. Admitting that, without some morbid ovarian influence, there is no membranous dysmenorrhœa, that disease cannot well be detached

from internal metritis, to which it often leads; for I have found a history of membranes having been habitually passed, in ten out of fifty cases of internal metritis, long before they came under my care.

Intra-uterine medication may be doubtless required for the cure of the above-mentioned diseases, but very seldom indeed; and that is the object of a first remark. There may be severe internal metritis while the cervix is comparatively healthy, but as a rule there is a considerable amount of cervicitis whenever internal metritis is sufficiently severe to make one think of intra-uterine medication; and I have no hesitation in asserting that this is unjustifiable, until the cervix has been restored to health. Here is a kind of case that I have often had to treat. The cervix is two or three times its average size, harder than usual, and covered with a dusky red mucous membrane. The lips are more or less ulcerated, and the epithelial desquamation extends to the whole length of the cervical canal. The body of the womb is too large, painful on pressure, and, about every two or three months, there is a gradual increase of pelvic bearing-down pains, and then violent forcing pains suddenly expel from the body of the womb about half a teacupful of pus, which is sometimes spoken of as the bursting of an internal abscess. I find that, if the inflammation of the cervix be rightly treated, this forcible expulsion of pus from the womb occurs less frequently, and ceases altogether when the cervix is thoroughly cured. I also find that what remains of pain and enlargement of the womb generally subsides if the patient take moderate care of herself at all times, and great care at menstrual periods, during the following year or two. I thus cured, without intra-uterine medication, fifty well-marked cases of internal metritis, that I carefully studied for my work on *Uterine Inflammation*; and, if I be not mistaken, the same principles had already guided Dr. H. Bennet, and he also found that internal metritis generally yielded to the thorough cure of inflammation of the cervix.

Such, then, is the safe and rational mode of treating the vast majority of cases of internal metritis; and intra-uterine medication should be reserved for very exceptional cases of the following forms of disease.

1. Incoercible blood-loss, resisting milder remedies and menacing life;
2. When internal metritis menaces life or reason, rather by the intensity of its reaction on the system, than by the amount of purulent discharge; for insanity may be sometimes fairly attributed to an impairment of brain-tissue, due to long protracted internal metritis;
3. When, independently of ovariitis, internal metritis leads to an aggravated combination of dysmenorrhœa and menorrhagia menacing life or reason;
4. Membranous dysmenorrhœa of exceptional severity;
5. Habitual abortion, independent of syphilis and ovariitis, and seemingly caused by some morbid condition of the lining membrane of the body of the womb.

It is now admitted, as an essential preliminary of all intra-uterine medication, that it is indispensable to establish a free passage through the cervix for all fluids injected into the womb or by it secreted; and I have found the dilatation of the whole cervical canal by laminaria-bougies, a day or two before menstruation, to diminish greatly the pain and blood-loss attendant on membranous dysmenorrhœa and the uterine irritation that follow the expulsion of the membrane.

With regard to treatment, when internal metritis is leading to death by blood-loss, I recommend the injection of the undiluted tincture of iodine; for, by doing so, I have repeatedly checked flooding, and also uterine exfoliation in membranous dysmenorrhœa. Tincture of iodine commends itself by antiseptic as well as by hæmostatic properties, and by the fact of its having been found trustworthy, for the purpose under consideration, by Drs. Savage, Routh, Fordyce Barker, and Emmet. I have only heard of its use having been followed by one fatal issue, in Dr. Gaillard Thomas's hands; I am not aware of its having led to any pelvic disease of a serious nature; and a manageable amount of acute metritis is the worst result I have observed in my own practice. Similar immunity from serious results cannot be recorded of the injection of a solution of nitrate of silver in cases of internal metritis. The plan has often led to death, and still more frequently to pelvic peritonitis, from which patients have recovered with difficulty. I am struck by the fact, that the liability to serious disease after using intra-uterine injections is not proportional to the energy of the fluid injected, for formidable accidents have followed the injection of glycerine and of plain water. For that reason, when internal metritis has necessitated intra-uterine medication, I have sometimes had recourse to the solid nitrate of silver, and I have dropped into the womb about five or six grains of it, by means of Simpson's "porte-caustique"; thus returning to what Recamier did fifty years ago. I have seen this followed by acute peritonitis; and, as there are cases on record where death has ensued, I am ready to welcome a better plan of treatment. I trust our meeting at Cork will enable us to settle this best plan of treating such cases, for we are now able

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to compare notes with many distinguished representatives of the Irish school of gynaecology. Our President was the first who had the courage to swab a greatly enlarged uterine cavity with fuming nitric acid, and Dr. Lombe Atthill has recommended this plan in the cases under discussion. I ask these gentlemen to tell us, how often they have thus used this seemingly dangerous plan of treatment, and to say by what accidents it has been followed, fatal or otherwise, so as to enable us to judge whether we are justified in following their example.

INTRA-UTERINE MEDICATION BY IODISED PHENOL.*

By ROBERT BATTEY, M.D., Fellow of the American Gynaecological Society, etc.

EIGHT years ago, I was impressed with the opinion that the results obtained from intra-uterine medication by argentic nitrate and other escharotic remedies, as was then the custom in America, were very unsatisfactory. In my own practice, it was a common observation, that scanty menstruation of a permanent and intractable character followed upon the treatment, due apparently to a cicatricial condition of the endometrium left behind. In not a few cases, stenosis of the os had to be remedied, and in some instances recurred time and again. In a few cases, entire occlusion of the os occurred, and retained menses had to be evacuated.

In casting about for eligible substitutes, the iodine tincture and carbolic acid presented themselves, and were successively tried, both separately and in combination, but the results thus obtained were meagre and unsatisfactory. Theoretically, iodine appeared to offer decided advantages, not only as a local stimulant to the uterus, but, in consequence of its ready absorption, as a local and general alterative also, but the official tincture proved too feeble in power to secure satisfactory results, and the stronger preparation of Dr. Churchill of Dublin was to me then unknown.

The thought of employing carbolic acid as a solvent for iodine suggested itself, and experiment developed a knowledge of the remarkable solubility of the latter in the liquefied acid. At first, one drachm, then two, three, and four drachms of iodine, was found to be soluble in an ounce of the acid. The last, and strongest, solution proved to be decidedly escharotic in its action upon the tissues, and especially upon heterologous growths of low vitality, and has been much used by the writer for attacking uterine cancer, and more particularly to supplement the curette. The standard solution employed in intra-uterine medication consists of one part by weight of iodine dissolved in four parts of liquefied carbolic acid, and to this solution I have given the name iodised phenol.

Iodised phenol is believed to be simply a concentrated solution of iodine in carbolic acid, and not in a proper sense a chemical compound. It is black in colour, syrupy in consistency, and possesses in marked degree the pungent odour of iodine, which is rapidly given off when it is heated.

Since its introduction into my practice, the iodised phenol for intra-uterine medication has been employed by me to the almost entire exclusion of other remedies. In February 1877, it was brought to the notice of the profession in America through the columns of the *American Practitioner*, and is to-day very much employed, but more especially in the southern states. The recital of cases to illustrate its uses would be inconsistent with the brevity which should characterise the present writing, and hence it is proposed to present in general terms only the method of its application and the results obtained from its use.

At first, it was employed in a state of more or less dilution with glycerine; but, more recently, it has been used only in its full strength, being the energy of the application, regulated by the quantity employed and the extent to which it is carried into the uterine cavity.

The instrument employed in making the application may be one of the many forms of applicators, so-called, or any uterine probe or sound which will easily enter the canal. It is my habit, and I specially prefer, to use a rather slender and elastic hard India-rubber probe, made slightly tapering, and with a blunt, not bulbous, point. The elasticity of this probe allows it to yield rapidly to pressure, to change its course, to follow easily the canal of the cervix, and to enter the uterine cavity proper, and this in spite even of a moderate flexion or version of the uterus. From the cotton-factory is obtained cotton-wool in the form of an untwisted rope or roll, the fibres of the cotton being perfectly straight, and lying parallel to each other. It is technically

known to the cotton-spinners as "the lap", and can be purchased of the best quality at our factories for eightpence to tenpence sterling per pound. It is admirably suited for general gynaecological uses.

Mode of Application.—Having selected six or eight of the elastic probes, I break off from the cotton "lap" four or five inches, and with my fingers separate or split it into several fasciculi of such size as, when wound upon the probes, will enlarge them to the thickness desired. The end of a probe is now moistened slightly, and the fasciculus of cotton wound spirally upon it. The cotton-armed probe is now dipped into the iodised phenol, any redundancy is allowed to drip away, and the probe is passed into the uterus with a slow spiral movement as it advances. At first, the probe is introduced but a short distance, and immediately withdrawn, and the case rests here to test the tolerance of the uterus for the remedy. At subsequent stages, the probe may be carried to the fundus, and followed immediately by a second, and even by a third or fourth, if well borne. The remainder of the wrapped probes are employed for wiping off the cervix or vaginal wall any of the phenol that may have touched these tissues. The energy of the application is regulated by the size of the wrapping, the depth to which the probe is passed, and the number of medicated probes used. When a very decided impression is to be made, a backward turn is given to the probe in its withdrawal, so as to leave the saturated cotton in the uterus, there to remain twenty-four hours, or even until it is spontaneously expelled. The application is renewed every four to fourteen days, according to the energy of the treatment.

I have abandoned the use of sponge-tents in connection with the treatment set forth. When dilatation is required, the cotton-wrapped probe is employed, and the cotton left as a soft tent in the canal. The dilating power of this is notably less than of sponge, but nearly equal to sea-tangle, and, it is believed, entirely safe. The results are the following.

1. A perfect removal of all cervical mucus, which is promptly coagulated, and comes away closely adhering to the cotton. The probes subsequently passed bring the remedy directly in contact with the diseased membrane.
2. Always comparative, and usually entire, freedom from pain. This is a marked feature of the method, and in striking contrast with former experience. Carbolic acid is a local anæsthetic, and so numbs sensibility as to make the energetic application of iodine for the most part entirely devoid of pain.
3. The iodine is so rapidly absorbed by the uterus, that the patient remarks its metallic taste in the mouth and throat, ordinarily in five or ten minutes after the application.
4. Softening and more or less dilatation of the cervix and os.
5. There is temporary arrest of leucorrhœa, followed by
6. Watery discharge, sometimes bloody.
7. There is exfoliation of the superficial layer of the mucous membrane, which comes away in shreds, sometimes entire, and resembles glove-kid.
8. Abrasions of the os promptly heal.
9. Indurations of the uterus disappear.
10. Leucorrhœa is permanently arrested.
11. Villosities of the endometrium are removed without resort to the curette.
12. Subinvolution of the uterus disappears.
13. The menses become regular and healthy; menorrhagia and scanty menstruation, as well as dysmenorrhœa, are remedied.
14. The appetite and digestion improve, and this, in many instances, without the use of medicines.
15. So thoroughly is the system impregnated with iodine, that alterations by the stomach are not used.
16. The form of the cervix and os is often completely changed; a large puffy cervix, with patulous slit-like os, becomes even virginal in type after long use of the remedy.
17. Stenosis has not followed the treatment in any case noted.
18. Barrenness of nine to fourteen years' duration has been removed in several instances.

REMARKS.—Rapid, and at the same time satisfactory, cure of chronic uterine ailments, such as are contemplated in this paper, is not attainable by any method of treatment known to me. It is not proposed that rapid cures can be made by the means herein set forth; on the contrary, the long standing and obstinate cases, such as usually fall into my hands, require many months for satisfactory cure.

BEQUEST.—The *New York Medical Record* states that the late Mrs. Emma Strecker has left 10,000 dollars each to the German Hospital and St. Luke's Hospital in New York; and about 250,000 dollars to be divided among sixteen charitable institutions, medical and others. The will is, however, contested.

* Read in the Section of Obstetric Medicine at the Annual Meeting of the British Medical Association in Cork, August 1879.