Abortion

and

The Vulsellum Foreps

as a

Rapid Uterine Dilator

by

James Carson Rattray

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Dr. Matthews Duncan in his lecture before the British Medical Association at Norwich in Feb 1874 said, "It may be division of labour we secure growth. As each department of medicine grows it is like the parent stem doomed to subdivision. He who brings the widest attainments and most varied talents to bear on his chosen branch will, ceteris paribus, be the greatest in his department but who equal to the demands of any department? To tell the truth there is not a single man who has mastered all the details and work of one single individual topic. One finds that the histology of his branch fully occupies his powers, another is simpler placed in regard to its chemistry. A third finds full occupation in its physical relations, a fourth glancing behind all finds his hands full in trying to be practically useful to his patients." To this humble class of gleaners, so to speak, evidence to belong, Dr. Matthews Duncan now
uttered truer words than when he said that we gleaned have our hands full in trying to be practically useful to our patients. The knowledge which we as ordinary practitioners glean from experience is often allowed to die with the predecessor, because, it may be, either he could not formulate it, or perhaps in being practically useful to his patients he had not the time. He himself might be able to treat a difficult case admirably, but he was not able to teach another how he did it. The knowledge was there but not in a communicable form. It is however our duty to gather and garner, not for ourselves alone, but for our fellow-workers and successors, and if each would but add his little the harvest truly would be a great one. Wandering over the broad field of medicine in the wake of the other labourers who had gone before I came across what I am told enough to think had been overlooked, viz the use of the ordinary vulsellum forceps.
as a rapid uterine dilator especially useful in Abortion, though not confined to those cases alone. In the Thesis now before me it will be my endeavour to add this little to the general store, and should it prove useful to any, who like myself have to bear the heat and labour of the day, then my labour will not have been in vain.

Abortion.

Definition - Under the title of abortion one may treat of all cases of expulsion of the product of conception up to the period of stability.

Period of Abortion - Abortion may take place at any period after conception. Of course when it takes place immediately we have no means of distinguishing the ovum from that thrown off at any ordinary menstrual period. Then again symptoms of abortion in the first or second month are overlooked, even that in a case of delayed menstruation we have no
thrown off. The liability to abortion is greater in the early months, when the union between chorion & decidua plazae and easily admits of hemorrhages occurring into the space between them, thus cutting off the temporary communication between mother & child, before the formation of the placenta. In these early cases of abortion it is a fortunate thing that the ovum generally escapes entire and also that the hemorrhage accompanying expulsion of the ovum is not of a grave character. But the cases in which special danger are dreaded are those occurring between two & a half, and five & a half months.

**Frequency of Abortion.** On this point I can find no reliable statistics so I have to rely on the frequency in my own abstract. During the years 1894, 95 & 96 my partner & I attended 765 labours and 49 abortions, giving a rough average of one abortion to every 16 labours. Whitehead says that 84% of women who live in wedlock until after the
Infrequent abortion as some time in their married life.

Occurrence of Abortion — abortion may occur spontaneously or it may be artificially brought about. Artificial abortion may be therapeutic or criminal. The great majority of cases which occur spontaneously occur at what would otherwise have been a menstrual period. Both have given the proportion as nine out of ten.

Causes of Abortion — These are numerous and act in various ways which all tend to the excitation of the utrine muscular fibres.

1. General health of the mother. In this connection Dr. Lee says: “Very sick women rarely miscarry. Sickness in fact seems to be a preventative and to keep down morbid irritability or rigidity of utrine fibro. This I should say is apart from anything which may have a deteriorating effect on the general health as we find that anything causing deterioration of the mother’s general health gives a susceptibility to abortion.” Any
serious disease whether acute or chronic may cause abortion directly, and the symptoms of such disease may be aggravated by its occurrence. Febrile disorders, especially small-pox, scarlatina, and relapsing fever may be taken as causes and small pox amoebic these cases to be very fatal to the mother. Of chronic diseases I should place syphilis first with regard to influence exercised on the ovum. The infection may come from the father, or the mother, and in one curious case reported by Mauriceau the mother was only the medium or conductor of the disease, without being herself affected by the virus.

II. Reflex irritation - The irritation may start from any part of the alimentary canal and the nature of it be revealed by dyspepsia, dysentery, dysenteric, worms, etc. There may be irritation of the nerves and which act in sympathy with those of the uterus e.g. mammary nerves. Dyke Smith considers abortion from reflex irritation as being an exciti
motor disease or comparable with an excito-motor disease. Thus from certain causes of irritation an excitable condition of the aero concerned with parturition is produced. This state of excitability, being arrived at, slight causes which would have no effect on a healthy person, have a spasmodic effect on the fibres of the uteru and so cause abortion. It is necessary that the nervous area, whether bethal, mammary, or otherwise should be irritable for a considerable time, when an irritable or charged state of the uterine nerve fibres be produced, and when that is the case slight causes will produce abortion. Leichman says, when reflex irritation has its origin in the ovaries there is a tendency always to separation of the ovum at what would have been a menstrual period and this fact taking into consideration the identity of the decidual and mucous membrane seems to confirm the views of those who affirm that menstruation entails a periodic
al discharge of that membrane. Again, women affected in this way had for the most part suffered before impregnation from some form of Amenorrhoea.

III. Abortion from diseased of the ovum. Velpeau records that examination of the ova in 200 cases where abortion occurred after three months, showed one-half of them to be diseased. The most common disease is fatty degeneration, especially attacking the decidua and placenta, and the particular variety which exercises the greatest influence on the ovum consists in a degeneration and change in the fetal and maternal structures of the placenta. Then the various parts of the ovum, like other vital structures are liable to congestive and inflammatory affections, and these affections cause death or have other influence on the vitality of the ovum, either by producing degeneration or an exudation of a phlegmunicous nature into the placenta and this exudation may— as in what Cruveilhier terms
apoplexy of the placenta — cause the death of the ovum and inevitable abortion merely by interruption of the circulation caused by the presence of the enclosed fluid. Again we have syphilis and fever affecting the fetus and producing abortion and also we find that there may be present in the fetus itself apart from the mother. The cord too may be a factor in the production of abortion, the circulation being stopped or impeded from twisting or knotting the cord. Disease or degeneration may also attack the cord, and shortness of the cord also may cause abortion. Another part of the ovum — abnormality of which may cause abortion is the placenta. Placenta praevia is sometimes, very frequently, a cause of women's dying.

IV Abortion caused by drugs. Among the causes of abortion one must not forget to mention those drugs to which the name of abortifacients has been given. The most familiar of these are ergot of rye, horehound.
These drugs exercise an undoubted influence on the muscular tissue of the uterus; but their action is not thoroughly understood though ergot is said to act upon the spinal cord. Then again carbonic acid has an undoubted influence in the production of abortion as has been shown in cases of carbonic acid poisoning, and Dr. Brown baguard advances the theory that it is to the oxydoxie action of carbonic acid in the blood that the occurrence of labour at full time is due. Then again active catharties, and even laxatives and stimulies, have caused abortion. The use of drugs in the production of abortion foreshow as far as it is possible to go the Hindoos had vegetable preparations which they used— one for each month that such medicines were used by the Jews we gather from the Talmud where their use is forbidden to the pregnant. The Romans & Greeks used mintha pulegium & erosto sativus. German physicians of the
16th Century speak of smoke from the manure of a donkey and also of sulphur and gallumum.

V. Abortion caused by emotion.
The emotions of a patient such as fright, joy, grief, anger, we have been known to produce abortion.

VI. Abortion caused by diseases of neighbouring organs and tissues, as well as by displacements of the uterus, is well known. Again the presence of tumours in the neighbouring parts and anything which may hinder the proper development of the uterus or bend it down in any way may cause expulsion of the embryo.

VII. Abortion caused by coitus. Now I come to what has forced itself on my mind to be a very fertile cause of abortion and that is frequent coitus after conception has taken place. Here in a manufacturing town where good wages are earned the working classes marry early. They require to eat a considerable amount of flesh meat to make up for the whole engendered by their
hard work. They seem to become gross, and lose control over their passions, with the result that husband and wife are together in sexual intercourse never holding whether impregnation has occurred or not. In such a state of affairs there is no wonder that abortions are frequent and repeated.

Abortion caused by mechanical violence. — Violence of any kind such as falls, blows, etc. is often followed by abortion. The violence may cause expulsion of the ovum either by the effect produced on the tissues of the mother, or by injury to the fetus itself sufficient to cause its death. Some women, however, who are pregnant withstand violence in a wonderful manner.

Dr. Sagan, who was Professor of midwifery in Glasgow University, relates a case where his coachman drove right over a woman who was in the eighth month of pregnancy, and thinking that pregnancy was delivered must by necessity
follow, caused inquiries to be made, with the result that he found the pregnancy was in no way disturbed, and the woman was delivered of a healthy child at full time.

**IX. Abortion caused by habit.**

We find cases in which abortion takes place on the least provocation. In these, the uterus seems to have acquired the habit of aborting, and these women seem unable to carry the product of conception to the full time. This habit may be due to some anatomical or physiological cause, which, acting mechanically, produces periodical abortion. Putting aside anatomical or physiological defect we find women in whom an inculcated habit exists, and which must otherwise be explained. During the time I have been in practice I have found that a woman who has previously aborted is more liable to miscarry than one who has not, and I know of some cases in which a very great
amount of care had to be taken so that the women concerned might be able to carry the product of conception to full term. In these cases the habit causes expulsion of the ovum at about the same period of pregnancy upon each separate occasion, so that it would seem that there was some perverted state of irritability of the uterus, which when arrested at, caused abortion to take place. Kleinwachter forwards a view to account for this phenomenon. "I would attribute the existence of the phenomenon to the circulating current of the ovum acting on the ovary, thus causing the ovum to remain in the ovary," he writes. Others say it is due to want of power in the uterus to assimilate sufficient nutritive material to allow of its going on to full development, so that we see that in some cases the causes only predispose to abortion, while in others, they are the causes proper in themselves.

**Symptoms of Abortion**

The symptoms of abortion vary very
much in different women, according to the cause of the abortion, and also to the period of pregnancy to which the case may have attained.
In the first place let me state that the most constant symptom is pain. Sometimes, however, we find abortion occurring with very slight pain or discomfort of any sort, indeed in early abortion the pain may not be more severe than that attending an ordinary menstrual period. The seat of the pain is usually in the lumbar or sacral region; but it may extend to the groins and down the thighs. This may be accompanied by a sense of weight in the pelvis and some irritability of the bladder and rectum, together with alternately flushes of heat and chilliness, as premonitory signs. Thus a small increase in the amount of pain, together with the presence of some solid matter in the discharge may cause the abortion to be looked upon as a delayed menstruation. Delayed menstruation however may be
unquenched from abortion by the fact that hemorrhage precedes the pain in abortion — quite no relief, whereas pain precedes hemorrhage and when the hemorrhage is thoroughly established, the pain may cease in delayed menstruation. When abortion comes on at a more advanced period the symptoms are more marked. Thus we find that it may be ushered in by a rigor followed by a febrile state—increase in the height of the temperature, increased frequency of the pulse, thirst and sometimes nausea. Then sometimes other symptoms are present, as palpitation, cold extremities, dimness of vision, and dark rings around the eyes, a cold uneasy feeling and a sense of weight about the pelvis, with lumbar pains and irritability of bladder and rectum. If the breeding symptoms e.g. morning sickness, full state of the mammary ce have been present they cease. These symptoms are of course premonitory but they are soon succeeded by an
increase of the lumbar pain, which becomes periodic and extends into the hypogastric region. If the fetus can be distinguished it will now be felt to contract and this marks the commencement of the uterine expulsive effort. If hemorrhagic discharge has not previously taken place, it will now come on, and the amount will vary according to the extent to which the ovum has been detached from its attachments. The ovum and cervix have become confined according to the period to which the pregnancy has advanced, and in addition the ovum is somewhat patulous. The uterine contractions go on rhythmically and with increasing energy, and the ovum dilates more and more; but as full development has not taken place, the dilating powers are at a disadvantage owing to the rigid state of the os uteri. In early abortions the ovum is expelled with the, which is a very fortunate circumstance, and this accounts for the comparative freedom from danger...
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fetus dies and the expulsion comes on after a lapse of time, more or less considerable. This comes about by the irritation caused by the dead mass, which, contrary to a living child, upsets the law of organic life, and that of gravity, and this too is the cause of the feeling of weight in the pelvis.

In threatened abortion along with other symptoms we have a small amount of discharge which may last for days. There may be delicate contractility, but these are not rhythmic. In inevitable abortion, on the other hand, we have clear evidence that the ovum is dead. There is also profuse hemothysis recurring at short intervals. A rhythmic contraction of the uterus of discharge of the liquor amnii takes place. It is a very bad sign; but we require to put the question to ourselves “Is this the discharge of the liquor amnii or hydrometrocolpos?” Sometimes we find the fetus dissolved in the liquor amnii; it is then of a jellyy consistency, mummification
or drying up of the foetus sometimes occurs, and also we sometimes hear of a foetus in which the tissues have been converted into adipose, as recorded by Drevigne. This may happen without conscious feeling to the mother.

**Retained Placenta.**

In all cases of abortion where the placenta is retained after the expulsion of the ovum, it remains in utero for a much longer period than in a labour at full time. It is of course after the eleventh week and before the seventh month, that we have this occurring, and that the attention of the physician is directed to the occurrence. Utterine contraction is sufficient in these cases to expel the ovum; but after the cord is broken or tied, the uterine contracts and the placenta (with its mem branes) is enclosed — it may be, only for a few hours, but very often for days in the uterus. Then we have our patients going about, as they will not believe that rest and quiet are essential. They try to make them-
selves believe that they are perfectly well again. The contrivance which
I am about to describe is very acceptable in these cases, because it
using the old tedious method of
compressing the closed or, the hemorrhage
from the utero-placental vessels con-
tinues, and it is only when the
placenta is expelled or extracted that
the hemorrhage ceases. Again, if there
be no effort at expulsion, the placenta
may undergo retrograde changes. In
this we have the risk of blood previ-
ously passing through the uterine veins. Should
such take place, there is a dark and
fetid discharge, which causes much
annoyance to the patient, besides
making the parts so painful that
it is almost impossible for the patient
to allow of the necessary manipulations
being carried out. In those cases of
retained placenta I always make it
a point to get as much information as
I can concerning the nature of the dis-
charges before I came, and then through-
ly to inspect all the discharges which
day occur while in attendance, because
by so doing the gravity of the case may be somewhat accentuated.

Treatment of Abortion.

Here let me say that it is not an easy matter for the young practitioner to make up his mind as to what course of treatment he ought to pursue. There are so many plans of treatment that one wonders which plan he ought to follow. Of course every obstetrician knows that the treatment tends towards

1. Prevention if possible.
2. Favoring expulsion where prevention is impossible.

1. Prevention if possible. Now even preventive treatment taken in a practical way comes under various forms. For instance, in a woman who has aborted several times, it must be taken up long before the symptoms of abortion show themselves, and you can only take up the treatment in a woman who shows symptoms for the first time at the time when the symptoms have shown themselves, for it is only then that you are called in. We make a careful study of the case or cancel.
which have induced the abortion on previous occasions, and by this mean we find, it may be, in what direction treatment must be directed. Then again, there is in those cases of repeated abortion a tendency to separation of the placenta at the same period of pregnancy on each separate occasion, and it often happens that no maternal or foetal cause for abortion can be made out, so we put it down to habit. Now on general principles our treatment tends to tide over that period if possible, and if success crown our efforts the pregnancy may progress to full time without the occurrence of any bad symptoms. However, whether pregnancy goes on to full time or not, the mere fact that the habit is broken is a great gain in itself, and will help very much in any subsequent pregnancy. In a case of this sort my usual—although not invariably—course of procedure is to get my patient to rest in bed, before, during, and after the habitual period, and rest, I should say, is of primary importance. Here
also I consider rest during what would have been the menstrual periods efficacious. However in a manufacturing town complete rest is not always possible, as the patient cannot give up her housekeeping, cooking, etc. and these I always recommend to rest themselves as much as possible. Again sexual intercourse must be forbidden, and this is a great stumbling block because although the wives may be willing to carry out your orders, it does not follow that the husbands will do so. Rest however is not essential in all cases of habitual abortion, on the contrary. I had one case in which resorting to gentle exercise had the desired effect by improving the patient's general health, and here it may be said that deterioration of the general health must be seriously taken into account. In these cases of habitual abortion, emotional causes must be avoided, and in one case which I shall relate I found the exhibition of an antispasmodic of great efficacy in overcoming habit again any such irritation which might act reflexly on the uterus.
such as irritation of the skin, bladder, or alimentary canal must be guarded against. I have even seen it mentioned by some author, that such a remote irritation as toothache has produced abortion by reflex action. Sometimes in enquiring about previous abortion we find that diarrhoea or some vesical irritation was a symptom prominent at the time, and rectification of the disturbed function may go a long way towards producing a good result. Again patients should be warned against the injurious effects of tight lacing – i.e. besides ordinary preventive treatment, a tonic treatment for constitutionally delicate women combined or not with sea bathing before and after conception, produces in some cases very good results. In the forefront of constitutional causes to which repeated abortion is due and which requires to be overcome stands syphilis, and after an abortion due to this cause I should have the patient and the husband also brought.
under the influence of mercury, before again sanctioning coitus. Diseases of the placenta act by interfering with the proper oxygenation of the blood, and these have been treated by drugs containing a large proportion of oxygen. Again, diseases of the fœtus have been treated through the mother, e.g., the mother takes drugs in the hope that their influence may affect the fœtus, but cases of habitual abortion do not readily yield way to medical treatment without. There are due to syphilis. Perseverance, however, should at all times be the watch-word of the physician, and even in the most obstinate cases a good result is sometimes the outcome of our honest endeavours. Prevention of abortion, of course, takes into account those cases in which symptoms of abortion have already shown themselves, and in which there is still ground for hope. Here the physician's attention is directed to the expulsive contractions of the uterus. The first and most important indication is to get rid of
any irritation which may exist, or if not possible to get rid of it, then we must do the next best thing and strive to allay it as much as possible. It is very important to have rest of body and mind. The patient should be advised to lie flat on her back on a hard mattress. She should change her position as seldom as possible & be kept cool. The food should be light & easily digestible. Stimulants and animal food are in most cases to be forbidden. As hemorrhage is one of the alarming symptoms which we desire to overcome, the food should be cool at least, if not cold. Sea water should be used cautiously, as it is quite possible that from injections and its minimal use, reflex action may be set up, and though hemorrhage may be overcome, the object for which we are striving may be lost. Opium, both to allay irritation and arrest the action of the uterus is the drug which we must put in the forefront. This treatment according to some authors has been most successful even in cases
where the oo was considerably open, and the discharge somewhat profuse. Full doses of opium give the best result, and to secure full advantage of the sedative action of the drug a very large dose of hy. Opia Scatlurus should be administered, and after an interval of half an hour, the dose should be repeated. I am inclined from observation to believe that with this preparation the sedative effect is more sure, less irritation of the alimentary canal is produced, and as the quiescence of the uterus is more easily brought about. In some cases it is not advisable to give opium by the mouth, and here I should use a starch laudanum enema, or a suppository might be introduced into the rectum, containing from 15 to 20 minims of laudanum. Some authorities speak well of the action of chloral in these cases, but I cannot say much about its effect myself. When reading the Medical Annual for 1895, I came upon a plan of treating patients who had previously aborted, and in whom habit was feared, and I de-
urmimed to try it. The treatment was advised by an Italian physician named
Lurazza, and the plan indicated was
to use Asafoetida. In my case it proved
successful; but I must say that the
patient was naturally hysterical, and
this may go against one saying that
it would be successful in all cases.
Mrs. C. of Swindon had a child four
years old. During these four years
she had become pregnant twice and
miscarried both times about the same
period of pregnancy on each occasion.
Becoming pregnant again in Dec. 1894,
I had two grammes of Asafoetida mixed
into a pill, as recommended, and be-
gan with one twice a day. Up to the
seventh month the dose was increased
till the patient was having two pills
each day. The dose was then gradually
decreased until full time. When she
was delivered of a male child, of
course rest during what would have
been her menstrual periods, and
at that stage of pregnancy at which
she had previously aborted was also
carried out. So long as a chance
of saving the ovum remains, the rule is — if not sure that the fetus is dead, one should act as if it were alive; but keeping in mind that evidence of death is a warrant for the immediate suspension of all endeavors towards retention of the ovum.

2. Favouring expulsion when prevention is impossible. This brings us to the subject of Inevitable Abortion — when the violence of the pains, and the quantity of the hemorrhages, with discharges of liquor amnii, all show that the abortion is inevitable, then a treatment differing widely from that adopted above is always resorted to, as the indications here are arrest of the hemorrhages and emptying of the uterus. It is often a very difficult matter to conduct the case to a successful issue, which I should say consists in a thorough emptying of the uterus, and the promotion of a safe and speedy recovery to the mother. First let us consider the ordinary method of treatment. During the first three months the less interference on the part of the physician
the latter, as experience shows that in these cases the ovum nearly always comes away entire. This is absolutely the best thing that can happen. By interfering we may cause retention of some part of the ovum, the very thing we wish to avoid. It is unusual. I should say, in cases at this early period for him to say it be very great; but if it should be so I used always to plug the vagina with a piece of soft sponge—large enough to fill the vagina without causing pain. The sponge having been previously soaked in vinegar. Other practitioners prefer to use the tampon, or plugs of carbonized cotton, introduced in successive pieces, through the speculum, with tails for their easy removal. Others again prefer to use an india rubber bag introduced and distended with water or air: but in any case the plug may have to be removed, and renewed again & again, without producing any effect on the ov. Very often, of course, the plug causes reflex contractions of the uterus and it is then of great advice again in abortion after the sixth month.
we may use the plug and the so may remain contracted, and yet we only have an internal hemorrhage - inside the uterus - endangering the life of the patient, the blood accumulating in the womb and only slowly escaping. Astringents are frequently given in cases of hemorrhage, but it is only in the earlier abortions that such drugs as acetate of lead, gallic acid, the mineral acids, &c., are of any practical use. The more advanced the pregnancy, the more we have to fall back on oxytocics, so as to produce uterine contractions and expulsion of the ovum, or any part of it, which may have been retained. Of course in cases which are not invuln-
dable, we would hesitate to make use of a method, which would destroy all chance of the ovum being retained; but even here I would say, that when it comes to a question of the mother's life being in danger from the hemorrhage, it does not admit of discussion at all, as to whether we should try to save the ovum: because admitting that we did save it at a serious risk to the mother.
what possible guarantee have we that some accident which will cause the death of the foetus or its expulsion will not happen before the completion of the pregnancy?

Management of the Placenta - Here lies the difficulty in cases of abortion, and because of its frequency, it causes to the young obstetrician (if my own experience be any guide) an amount of worry and anxiety, that only the hand of a very skilful could at first until I had fallen upon my own contrivance — the ordinary vulsellum forceps used as described later on — I must say that I undertook a case of inevitable abortion with fear trembling. However, after some years' use of this method a case of abortion causes me about as much uneasiness as a case of labour at full term, so surprising have been the results of this very easy method of treatment. As I have said before, in the early months the ovum generally comes away entire. In the later, the uterine contractions are sufficient to rupture the membranes and propel the ovum; but the connection between the uterus on the one hand, and the placenta on the other, is so firm, that after this has happened, the ovum again closes the placenta is retained.
Now we all know the best treatment is to get away the placenta immediately after the ovum is expelled if possible. If we go on the old line of treatment, we may have to wait for days (as was my experience), sometimes for weeks, before nature causes the expulsion of the placenta. During this time the hemorrhage may be going on, the danger of septicemia is considerable, and as I contend that my process by the use of the vulsellum, is of the greatest service, being at once rapid and effectual.

Moreover it is an instrument which is in the bag of nearly every obstetrician, as it has the further advantage of being handy. I may state that in no case of mine, since I began its use, has hemorrhage to any degree, or septicemia taken place. Again the finger should be used in preference to the many varieties of ovum forceps, and here also is the vulsellum of use as it will enter where any ovum forceps will. Besides, by means of the vulsellum the cæcum may be pulled down to the vulva, and then the task of removing the placenta by means of the fore-finger, is an easy one. And now I come to the description of my method of using the vulsellum forceps as a rapid uterine dilator.
Rapid Method of Dilating the Os

Articles required.
1. Pair of ordinary vulsellum forceps.*
2. Piece of absorbent cotton wool.

Method.
First separate widely the legs of the forceps and round the sharp teeth at the end of each leg wrap a small piece of antiseptic absorbent cotton wool. This is to prevent the teeth from scratching the finger of the operator, or the vagina or interior of the uterus of the patient. With a small piece of thread secure each piece of wool to prevent their slipping off during downward traction. If small pieces of wool — just sufficient to cover the teeth — be used, it is surprising how little they add to the bulk of the blades. The instrument is then soaked in Carbolic Acid (1 in 20), and the wool smeared over with carbolised vaseline. Before introducing the instrument remove the

*The forceps as illustrated in the diagram answers well.
small round nut from the cross-piece. Separate widely the two arms of the forceps, so that the cross-piece is entirely withdrawn from the arm of the instrument. Now place the nut on the cross-piece and screw it round until it is in the position P, as shown in fig. III. The cross-piece is then inserted into its slit and the instrument closed as in fig. IV. It is now ready for introduction. The reason for removing the nut from the position it holds in fig. III to that as in fig. IV is, that as the arms are separated, the nut can be unscrewed, and it thus prevents the arms coming together again until required. The arms can be fixed at any angle by simply adjusting the nut, and thus the legs (L & L' fig. V) can be retained at any angle when in the uterus.

To illustrate the working of the vulscellum, let us take as a typical case one where the placenta is retained in utero after abortion about the third month.
The patient is placed in the ordinary position on his left side, and the vagina is washed out with Carbolic Acid (1 in 100). Now insert the forefinger of the left hand — with its palmar surface anterior — into the vagina until its tip reaches the os externum (Sir D'Arcy). On passing the forefinger along the palm, the forefinger guides it into the os. Insert the forceps for a distance of about two inches, then separate slightly the two arms (a & a', fig. I): by this means the legs, L & L', inside the uterus are also separated. Screw the nut from position P to P', and the legs inside the uterus are thus fixed, and cannot be approximated until the nut be again screwed back. Make steady traction downwards: by so doing the uterus is drawn nearer to the vulva, and at the same time the os is being dilated by the legs, L & L'. One finds that the os externum is being dilated to a slightly greater extent than the os externum, a point of considerable importance in practice. Close the legs again, by unscrewing the nut from P to P', fig. I, and insert them a little further into the uterus. Open them out a little more than before, fix them by means of the nut, and again pull gently, and steadily downwards. By this means the os is still
more dilated and brought nearer to the vulva. This manoeuvre is repeated until the os is quite close to the vulva and sufficiently dilated to admit the tip of the forefinger. Next, by means of the forceps slowly pull the os uteri downwards over the right forefinger first up to its second joint, and then very gradually up to its junction with the palm of the hand. As a rule it is now a matter of little difficulty to get the tip of the finger on, or over the placenta and to extract it; but in some cases it is necessary to dilate still further, and this is done by inserting also the tip of the second finger within the os. Do this slowly and steadily, the left hand still keeping hold of the forceps, and making steady traction downwards. When the second finger has been introduced into the os, I have never found any difficulty in introducing the osum forceps or curette should either be required. The one great advantage I have found in using the curette with the vulsellum forceps in situ is that the os can be brought down, quite close to the vulva, at the same time the uterus is fixed and steadied thus facilitating the procedure of scraping.
The advantages of the Vulsellum forceps are:

1. No wounds or punctures are made in the cervix, as in the case where the Vulsellum is used in the ordinary way. This in itself is a great advantage. It gets rid of the anxiety which one must of necessity feel in making punctures in the cervix, especially where there is either a fetid discharge or a fetid product of the ovum, to be got rid of.

2. No tents are required, thus doing away with a fertile cause of irritation, inflammation, and septicemia. Besides it is a matter of no little difficulty, to one who is not a specialist, to get a tent into the os of a primiparous woman, because the more one pushes the tent upwards the further does the os recede from the guiding finger, and in a narrow vagina, with the os small, rigid and high up, one may find it quite impossible. More over the dilating force exercised by tent ever when they have been successfully introduced is not under the control of the medical man, and this certainly is another disadvantage to their use.
with tents again one has to wait for hours before they act, whereas with the Valsalva forceps it is a matter of minutes. To a busy Country Practitioner a journey of ten miles each way to meet a tent and the same next day to withdraw it is another serious drawback.

C. Over the ordinary dilators. The dilators as used by Gritsch, Godson, Sagar, Macnaughton Jones, others are all after the same pattern. They one and all have the same drawback as tents, in that the more they are forced upwards against the oo, the further does the oo recede, and thus their introduction is no easy matter unless the tenaculum be used to steady the oo, and here we have the disadvantage of punctures and wounds. Besides the working of them requires a good deal of force, and inflicts an unnecessary amount of pain on the patient, not to speak of the time necessary for their introduction. Lawson, Iaki,订阅 dilator is a good idea, but it has the following disadvantages. When introduced it requires — according to
his own statement - a skilled nurse to look after the tightening of the elastic threads, and a trained nurse is out of the question in a working class practice. Besides, the time necessary, from 24 to 36 hours, is in my opinion a fatal objection to its use.

The pattern of uterine dilator used by Simpson, Sins, Priestley & others seems to me to be the most useful for working purposes. But I think I am not exaggerating when I say, that not one medical man in a 100 possesses a special dilator, while on the other hand, the Vulcellum forceps is in the midwifery bag of most general practitioners, and as this instrument is all that is required for dilating purposes - it being reliable and effective - a special dilator is not necessary.

In fact a Vulcellum in part...
Notes of a few cases in which the
Vulsellum forceps were successfully
used in the manner just described.

Case of Retained Placenta —
On the 13th Jan. 1893, I was called to 574, Deacon St. Swindon, a primipara. She informed me that she had missed three periods, that on the previous day she had passed what she thought to be a large blood clot, but which had been thrown away, and that there had been bleeding ever since. On examination I found the vagina so narrow that I could only introduce one finger, the os was very high up, quite closed. The uterus was enlarged, and as there were no pains, a threatened abortion was diagnosed. She was advised to keep to her bed, to have light, cool and bland nourishment. Stimulants and animal food were forbidden. Lig. Op. Sedativum (m/40) was given, and in half an hour, another dose of the same amount.

During the night and the next day, the bleeding was certainly less, and there were no pains to speak of. The hemorrhage
however came on again, as profuse as at first, and with it severe pains. The same treatment was again adopted during the succeeding three days, but with very little success. As the patient was becoming blanched, I thought it my duty (after consultation with my partner, Dr. Lavry) to empty the uterus. This was more easily said than done. First I tried to introduce a tent, but the os was small and high up, the vagina was also narrow, and I found that the more I proceeded the tent against the os, the further did the os recede from the guiding finger, and I failed entirely in my endeavour. Next I plugged the vagina with ergot: on the following day, the plug was removed, but the os remained in the same condition. As the patient was getting weaker and still losing blood, Dr. Brightsmith of Bristol, was called in. He advised waiting until the os was dilated sufficiently to admit of a tent, and to plug as before. On the following night I was able to introduce a small form elastic bougie through the os, the vagina was again plugged.
and slight givin. Next morning the os was found to be slightly more open, and I tried to meet the finger-up at the same time pressing on the fundus from above. This I could not do, as the abdominal wall was extremely rigid, and the vagina too narrow to admit of more than one finger. I then sent to Arnold's for a set of Hegar's dilators: but I found them quite as difficult to introduce as the tent, and it was while finger-

icing my vulsellum forceps, preparatory to catching hold of the cervix, that the idea occurred to me—"Why not use this as a dilator? Vulsellum combined by introducing the legs into the os and separating them?" The idea I at once put into practice, and with a very gratifying result; for I found that I could bring the os quite low down, and that in doing so the os was gradually dilating. In a very short

time, the cause of all the trouble—a piece of placenta the size of a walnut—was easily removed. The patient made a slow, but perfect recovery.
She has once been delivered of a healthy female child, by my assistant.

II. Case of Placenta Praevia—

At 8.30 P.M. on the 18th May 1895, I was sent for, by Dr. Lavers, to come to a case of hemorrhage in a multiparous woman, who was eight and a half months pregnant. The bleeding was profuse, and had taken place with frequency during the previous four weeks. The patient was blanched, and her pulse was small and feeble. On examination, the placenta could be felt and with each pain there was a very considerable amount of hemorrhage. The oo was about the size of a shilling, soft, high up. I inserted the culde-sac, pulled down the uterus and easily dilated the oo by inserting one, then two, then three fingers. As recommended by the late Sir James E. Simpson, the placenta was completely separated, and as a shoulder presented I turned at once and delivered. Before doing so, however, a full dose of ergot was
administered. The child seemed at first to be dead, but with the usual treatment for suspended animation, he soon came round. The mother made a good recovery, and for the anaemia she had the following medicine.

\[ RX \]

* Terra et Ammon. Crt. fr \( \frac{1}{2} \)

* Sul. Ammon Carb fr \( \frac{1}{10} \)

* Spiv. Chloroformi \( \frac{1}{4} \)

* magnes. Sulfat. fr \( \frac{1}{10} \)

* Lact. Aee. Vom \( \frac{1}{4} \)

Ag ad Ixx. This was given three times a day after food, followed by a draught of water.

Case of Uterine Polypi -

In a case at William St. Swindon, aged 36, 6-para consulted me about a discharge of blood, which had lasted thirteen weeks. She also complained of palpitation, pains in the head and under the left breast. She was also very anaemic. On vaginal examination, a small pedunculated tumour was found protruding through the orifice into the vagina. By means of the speculum, the tumour was seen to be elongated
and of a bright red colour. She was told to go to bed, and on the following day I called at her house to remove it. Remembering that the late Sir James Simpson advocated dilating the cervix in those cases, I used the Dildolium in the manner described. Having done so, a second polypus was found in the cervical canal. Both were easily removed, and the patient made an uninterrupted recovery. The menstrual period became normal, both as regards time and amount.

IV. Miscarriage. Retained Placenta, non-fetid.

On the 25th June 1876, I was called to see Mrs. A., a farmer's wife at Blundown. She had just come into this district, and gave the following history. In weeks previously she had a miscarriage at the third month, and was seen by her own medical man. She kept her bed for a week, but as the hemorrhage did not seem to abate she informed the doctor, who gave her some medicine but without any satisfactory result. She also said that there was now a
constant slight hemorrhages with frequent
floodings especially on exertion. Her
husband also informed me that she
had lost all her colour, and was altogether
a miserable week compared with what she
was before the miscarriage. On examin-
ation, the uterus was found to be enlarged
with the os soft and patulous. By means
of the vulsellum I dilated the os, drew
it down, and found a piece of placenta
the size of a half crown still adhering
to the uterine wall. The discharge did
not smell, thus showing that the uterus
and the piece of placenta were vitally
adherent. The retained piece of placenta
was scraped away with the finger, the
uterus washed out with corrosive sublin-
ate (1 in 4,000) and the following recipe
given every four hours.

Re. Est. Ergst. Lig. m751
Imet Hucio Dom. 975
Ag ad 3 tab.

The hemorrhage ceased, and she was about her
work again in two weeks' time. She had then the
vion recipe for the anaemia as in Case 77, and
when I last saw her in August, she was
a picture of health.
V. miscarriage. Retained Placenta. Fetal
Mrs. W. Swindon, 28 years old, 2-para, had
a miscarriage at about the fourth month,
and was attended by a mid-wife, who
said that as everything had come away,
there was no need to call in a doctor.
The discharge, however, did not cease,
and it became so very offensive that in
her own words she "could hardly bear
it." When the patient was first seen,
some two weeks after the miscarriage, the
abdomen was very tender and swollen,
the pulse was weak and rapid (128), and
the temperature in the axilla was 103°.
She complained of great thirst, sickness,
and diarrhoea. The uterus was enlarged
and so tender was the abdomen, that I
was compelled to give her chloroform in
order to thoroughly examine her, and
ealso to remove the fetal mass. The vul-
cellum forceps were used as before to dilate
the os, and to bring it down within
easy reach of the fore-finger. Nearly a
whole placenta was found free in the
uterine cavity, and was easily removed.
A douche of corrosive sublimate
with permanganate of potash was
used to wash out the uterus, and a
similar vaginal douche was ordered
to be given twice each day. Although
diarrhoea was present, five grains of
calomel were given, and the following
mixture to be administered every four
hours.

Rx. Acidi nitrohydrochlorici dil. m\text{x}
Spiritus Chloroformi m\text{vi}
Zinc. Sulphat. f. \text{iii}
Magnesii Sulphat. f. \text{xx}
I. met. Cardam. Co. m\text{xi}
Ag. ad 30c.

She was ordered a milk diet, e.g. milk,
milk and soda water, milk pudding,
and beef tea. At the end of a week
her temperature was normal, the pulse
80, the diarrhoea abated, and the fetid
from the discharge gone. She was then
put upon ordinary diet, and her gener-
al health rapidly improved. Fifteen
months later she was delivered of a
healthy male child, after a labour
which was normal in every respect,
with the exception that the placenta was
partially adherent and had to be re-
moved.
VI. Case of Septic Endometritis.—

Mrs. B. Swindon, 3-para, was delivered of a child by a mid-wife. She informed me that from the third day she seemed to get gradually worse. She complained of pain and tenderness most severe just above the pubis, less so in the hypogastric region. The pain was also referred to the perineum, scrotum, and thighs. Micturition was attended with pain and was frequent. Her face was flushed, and she also complained of shiverings. The skin was harsh and dry, but after the rigors she was quite cool from perspiration. Her breathing was short and rapid, the pulse 148, small. During the night she was inclined to delirium. The tongue was dry, and covered with cords, and she was quite unable to retain any nourishment. On vaginal examination the uterus was found to be enlarged and very tender. The vagina was hot and there was a profuse yellow discharge, which proceeded from the os uteri, and was very irritating to the skin of the vulva. She was kept in bed, six leeches were
Nurse's Chatelaine or Wallet.

This is a strongly made Morocco Case, provided with two pockets (see illustration).

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COMPLETE, £1 0s. 6d.

Wallet, No. 2, of the usual form               | ...   |
Ditto, fitted with Instruments complete, as above, nickel-plated | ...   |

All the above Instruments are of best English make and are warranted strong. Any Instrument can be had separately at the price marked. Wallets fitted to suit individual tastes.

NAME stamped on wallet in gold, 1/- extra.
HOSPITAL ARMS engraved on clasp, 2/6 extra

LEN & HANBURY'S, Plough Court, Lombard Street, E.C., and 7, Vere Street, W., London.
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applied close above the pubis, flannels dipped in boiling water, wrung out, and sprinkled with laudanum were applied after the leeching. 220 grains S. C. every four hours, 2 grains Sulphat. ferr in a tablespoonful of milk every four hours, were given, these two alternating. The vagina was douched out with very hot water, containing corrosive sublimate and permanganate of potash, twice daily. She was ordered to have only ice and iced champagne at the first, and gradually as the stomach quieted down, milk, milk puddings, and raw meat juice. The chart gives a very good idea of the progress of the case. Suffice it to say, that at the end of ten days her temperature was little above normal, her pulse 80 though weak, and her tongue fairly moist, but she still complained of some pelvic pain and backache. She went for a change to her brother's farm out in the country, and I lost sight of her for a time, though she wrote to inform me that she was improving in her general health. She came again to consult me toward
the end of December (some three months afterwards) complaining of backache, bearing down, and pelvic pain. The periods were profuse and attended with much pain. Between the periods there was a viscid leucorrhreal discharge, with an occasional show of blood. On re-examination, I found the uterus still enlarged and somewhat tender to the touch. The ovary was soft and slightly open, with the leucorrhrea proceeding from it. I decided to dilate with the vulsellum, and this was easily accomplished by the method already explained. The uterine mucous membrane being in an unhealthy and granular condition, the curette was used. The debris was washed out, and a piece of wool in Carbolic Acid & Iodine (aci carbolic &, iodine É+.) was applied to the interior of the uterus, and also to the cervix. A glycerine plug was then introduced into the vagina, which she was told to remove on the following morning. She was advised to continue the hot vaginal douche twice daily. The leucorrhrea gradually lessened, the pelvic pains and backache almost entirely disappeared, and as time wore on, improvement in her general health was marked.