ERGOT: THE USE AND ABUSE OF THIS DANGEROUS DRUG.

BY GEORGE J. ENGELMANN, M. D.,

St. Louis.

Much is said in condemnation of meddlesome midwifery, as applied to early or injudicious operative interference, and especially to the use of the obstetric forceps; but meddlesome midwifery of a far more insidious and dangerous kind, because it is less evident and more common, has almost entirely escaped criticism.

It is the abuse of ergot in obstetric practice to which I would impute a great, if not the greater, part of the suffering to which women who have borne children are condemned. In labor and in abortion ergot is a universal and perpetual remedy in the hands of physician and midwife; it is the all-powerful and the only agent in use in the obstetric practice of too many. The injury done by this powerful drug is so great that I would condemn its use altogether; parturient women would be less prone to injury if ergot were stricken from the pharmacopœia. It is never absolutely necessary or irreplaceable, and, where it might prove really useful, can not be relied upon for immediate action, so that in these cases other means must, of necessity, be resorted to.

In obstetric practice it does good service, if given after the contents of the uterus have been expelled, to stimulate contraction when labor is completed, especially after the physician has left his patient.

In extreme cases, where it is urgently necessary that uterine contractions be excited, this drug, with which so much

damage is done, which is thought to be a necessity to the obstetrician, is powerless; other means must be resorted to.

Why, then, permit parturient women to be endangered in milder cases, and why toy with them in the more severe? Why not ostracize this dangerous drug, and at once resort to safe and reliable means—to such as are harmless and effective in all cases?

It has been my custom, when engaged to attend an obstetric case, to see that the patient is betimes supplied with what I supposed, and was taught by teachers and text-books, to be the necessary remedies—such as I could not do without in case of trouble. In my early practice, ergot, freshly powdered, as fluid extract, or as the aqueous extract for hypodermic injection, was always prominent among these; yet this proved to be the remedy I least used; if I gave it at all, it was always given after labor was completed, merely as a safeguard against hemorrhage.

Sad evidences of the popularity of the drug are the traces of its use which are everywhere found. When called upon to remedy a lacerated cervix or a ruptured perineum, the history is often that of a labor hastened by ergot; when summoned to deliver, by forceps or version, a child with, at best, feebly pulsating heart, from the iron grasp of a firmly contracted womb, you need but stop on your way at the family drug-store, and you will not fail to find that *one medicine* has been repeatedly called for—*the fluid extract of ergot!* In case of post-partum hemorrhage the most precious moments are wasted in awaiting the effect of this drug, which fails where most needed.

Results sadder still are scored to its use: rupture of the uterus, one of the most rare and dangerous of all the accidents attending parturition, is its most terrible sequent.

I myself have seen two such cases, where young, well-built women with healthy tissues and roomy pelvis, thus, together with the unborn child, fell victims to a dangerous practice.

Both had before borne children with ease; nor did the

post-mortem examination reveal abnormal conditions of pelvic wall or uterine muscle. In one the vertex presented, in the other the shoulder. In both, ergot was given by the impatient practitioner to hasten labor—given until the uterine fiber was strung in tonic contraction to its utmost, finally beyond endurance, and two lives were sacrificed at one stroke.

Such is the experience which has forced me to the position I now take. It is my firm conviction that the abuse of this dangerous drug must be checked—a powerful drug and valuable in its place, but worse than poison to women in labor, because so often at the time apparently useful, whilst the injuries consequent are masked and but slowly appear; because cause and effect are indistinct, unperceived by the sufferer, and it maims oftener than it kills. From this Society must issue the fiat; hence let us inquire into the abuse—the present use of ergot—and its action. What are its dangers, and where is its proper place? Last, but not least, how can we, with safety and certainty, attain what is supposed to be accomplished by ergot?

The uses of ergot to which I would call attention are in obstetric practice, in labor and abortion.

In labor, ergot is used in the earlier stages to hasten parturition—to increase the frequency and force of labor-pains—partially with the sincere wish of affording the best possible attention to the patient and giving more speedy relief, as often to relieve the impatience of the practitioner himself.

Should the pains lessen in force or frequency, or cease altogether for a time, ergot is given to bring them on again; it is given if labor progresses too slowly, if the os does not dilate, or the ovum descend with sufficient rapidity; later, in the second stage, if the head is slow in making its way through the utero-vaginal canal, or in sweeping the perineum, regardless of proper rotation or relaxation of the parts.

It is frequently given a short time before the expected delivery of the head; in the third stage, to further uterine action and the expulsion of the placenta; after delivery

is completed, to prevent too profuse a flow and secure proper contraction.

Should post-partum hemorrhage occur, ergot is always the first remedy resorted to—in almost every case the fluid extract per os, rarely by hypodermic injection—and much valuable time is lost in awaiting the effect which this magic drug is thought in duty bound to produce.

In abortion, it is given at all times in the beginning, when hemorrhage is profuse; or, should this not be the case, whatever the dilatation of the os may be, to expel the contents of the womb, whatever they may be. Ergot is at all times used, apparently without strict indications, and, unfortunately in this class of cases, when the physician is rarely called, by nurse or midwife.

That we may thoroughly appreciate the consequences to which this abuse must lead, I will briefly outline the action of ergot upon the uterus and its contents. The evil effects which I shall point out to you as resulting are not the deductions of scientific reasoning; unfortunately, not mere theoretical suppositions, but sad realities—facts—cause and effect.

In the first place, let us consider the physiological action of the drug upon the uterus and its contents.

In the main, it is a powerful stimulant to uterine contraction, and acts, during the continuance of the effect, persistently and uninterruptedly upon the involuntary non-striated muscular fiber of the womb; its effect upon the organ in labor—the continuous tonic contraction due to the drug plus the intermittent contractions of labor-pains—is to permanently increase the tension of the muscular fiber, to continuously augment the intra-uterine pressure; as the dose is repeated or increased, the contrast between labor-pains and the intervening period of relaxation is lessened more and more, the intervals are shortened, and, though the pains are more frequent, they are less marked; the powerfully acting muscle is artificially stimulated, until the intermittent contractions of natural labor become blended with the continu-

ous effect of ergot, and a tonic contraction results. Although ergot at first apparently serves to increase labor-pains, the tendency is toward tonic contraction, to diminish that interval of rest between the pains which is so important in the entire process of parturition, especially for the safety of mother and child. With the lessening in this alternation between relaxation and contraction the dilatability of the os is impaired, and, as the state of tonic contraction is approached, the outlet from this vise—the mouth of the womb —does not enlarge correspondingly, but becomes more firm and unyielding.

Another danger arising from the use of this drug is in the relaxation which it not infrequently produces. Whether this is an idiosyncrasy, or due to peculiar conditions, I am not prepared to say. I have seen it repeatedly when ergot was given to check menorrhagia or hemorrhage; perhaps profuse menstruation due to fibroids, and also when given in post-partum hemorrhge. In the latter case it has been ascribed to a relaxation of the system resulting from nausea or weakness of the stomach, due to the irritation from quantities of the unabsorbed material in the inactive stomach.

What, then, are the dangers which we may theoretically expect to arise from such a remedy?

Most evident is the injury which must result to the child: during a healthy, normal labor-pain the nutrition of the ovum is momentarily impaired, the beats of the fetal heart are enfeebled and diminished in number; to the auscultating ear they become weak and slow, almost inaudible at times; in the interval between the pains restoration rapidly takes place. Under the influence of ergot the permanent pressure is increased, and the effect upon the child during the pain is more severe, continuing, though in a less degree, in the interval; perfect restitution is prevented; as the pressure is increased, or the intervals diminished, asphyxia and death must inevitably result. The child may also suffer from being rapidly forced through unprepared parts.

The mother can not escape injury. The uterine muscle

is unduly exerted, labor is precipitated, and expulsion of the child through unprepared, unyielding parts must lead to ruptures of the utero-vaginal canal—first of all, rupture of the perineum; probably with almost equal frequency, laceration of the cervix, which may be due to the rigidity caused by ergot, as well as to hastened labor. Should this not occur, should the fibers of the os not yield and those of the fundus be drawn more firmly in tonic contraction, like bands of steel, about the ovum, already compressed to its utmost, they must burst, and rupture of the uterus result.

Such are the dangers to which the use of ergot exposes: laceration of the cervix, rupture of the perineum (more rarely, vesico- and recto-vaginal fistulæ), rupture of the uterus, death or asphyxia of the child. To prove this with positive certainty is almost impossible. The patient herself is entirely in the dark as to cause and effect, and the physician is equally innocent, or he would shrink from the use of this dangerous poison. As I have myself twice seen rupture of the uterus and the death of mother and child thus caused, I am convinced that the lesser injuries are but too numerous.

If given, as advocated by some, during or immediately before the passage of the head, at a time when the funis is so exposed to pressure, evil consequences may still ensue, especially asphyxia of the child—as it is not always possible to say just how long this state will last—the idea being that the drug should not take effect until *after* expulsion.

How often is ergot, however, given in the early stages, before a correct diagnosis is made, to hasten labor, in presentation of the breech or the shoulder, when the ovum will not descend and labor does not progress with sufficient rapidity! In breech presentations, where the first stage should be, if anything, retarded, the death of the child will result; should the shoulder present, version will become difficult or impossible, and rupture of the uterus may ensue.

In the third stage of labor, after delivery of the child, the efforts of nature are in every way aided by the action of ergot; contraction is furthered, the separation of the after-

birth is hastened, as well as its expulsion; the sinuses are contracted and closed, yet there is one objection—the possibility of an incarceration of the placenta. Labor completed, the uterus emptied, the giving of ergot insures permanent contraction, and relieves the physician of continued attendance. The idiosyncrasy alone is to be guarded against.

In post-partum hemorrhage, the internal administration of ergot should be avoided, as it is powerless; it is not even absorbed, and may seriously annoy the stomach, which should be carefully guarded. After the flow has been controlled, it may be used, best hypodermically, to prevent recurrence, and in aid of other more reliable measures.

In miscarriage and abortion, the danger is in tonic contraction of the uterus, by which hemorrhage is indeed checked, but the separation of the ovum retarded and incarceration made probable. The expulsion is often checked and delayed, but abortion is not prevented.

Of the lesser evils which result from the use of ergot we are rarely, if ever, informed, but they are many; they are not reported, not even recognized, so that the evil remains unabated. Extreme cases, even, are perhaps more frequent than generally supposed, as they are neither recognized nor published; rupture of the uterus alone, the most dangerous and fatal of the evils consequent upon the use of this drug, may occasionally be traced with certainty to its proper cause. In view of these facts, the only possible conclusion is that the use of this popular, powerful, and dangerous drug should be strictly prohibited in obstetric practice proper, and *restricted to the non-pregnant womb!*

The obstetrician can give it with safety only after the placenta has been expelled, bearing in mind its injurious effects, and the fact that in all those cases where this insidious poison is given, and thought to be necessary, we have other milder, more harmless, and more effective means to accomplish with safety the purposes which ergot is thought by so many to serve; these are external manipulations, massage and expression; hot antiseptic injections, vaginal and intra-uterine.

Such are the remedies by which we can, with certainty and without danger, secure uterine activity and contraction under all those conditions in which ergot might possibly be used, and even in all such as are usually supposed to indicate a resort to that drug.

Having these means, which are in their action more safe and certain, more rapid and precise, covering every indication which is met by ergot, and, in addition, useful in a much wider field, why discuss the possible merits of ergot, and mark out with care the utmost limits to its use?

Let us see how, by massage and expression, by injections, by external and internal manipulations, the desired result which ergot is supposed to further may actually be accomplished and the object attained without risk to the patient.

As we have seen, ergot is often given needlessly by the impatient attendant to hasten labor; or, more injudiciously still, in the early stages of breech and shoulder presentations —in both instances with most unfortunate result—and without the slightest reason or benefit, often under conditions where no interference whatsoever is indicated, certainly not of such a kind. All the injuries resulting from this very frequent manner of its abuse would be completely avoided by condemning the use of ergot in the gravid womb; no substitute is necessary.

When it seems desirable to regulate labor-pains, opium or quinine is to be recommended; to stimulate and excite the uterine muscle to action, a judicious massage, friction of the fundus, is harmless and successful; hot carbolized vaginal injections serve the same end, and are especially useful if labor is delayed by rigidity of the os; to aid in the expulsion of head or breech, massage and expression can not be too highly recommended.

Better by far than ergot, and without possible evil result, for the purpose of securing separation of the placenta, its expulsion, and contraction of the uterus in the third stage, are external manipulations, the following down of the fundus uteri with the hand—friction and kneading of the globe—

massage; to secure permanent contraction after expulsion of the placenta, the same manipulations should be resorted to, and these will be admirably furthered by the hot vaginal douche, in more severe cases by intra-uterine injections, to which a disinfectant should be added, such as carbolic acid or corrosive sublimate; this cleanses and disinfects, leaves the patient comfortable and safe; by removing clots and shreds it may even, if repeated, alleviate after-pains.

In case of bleeding or profuse hemorrhage, nothing can compare to this method; and, if safe and reliable in severe cases, why not resort to it in the more simple, where ergot is now supposed to be alone useful, even indispensable?

In abortion, the proper indications for the administration of ergot are so difficult to formulate, its use is so restricted, its injurious effects so frequent, that the foregoing axiom—that the gravid womb contra-indicates the use of ergot—need meet with no exception. Such remedies as meet immediate indications must, of course, be adopted, and beyond these the hand, the douche, and the scoop, sharp and dull, will answer all purposes. Massage and expression are not so simple and direct as in labor at term, but the uterus can be thoroughly and safely manipulated, as Schroeder suggests—the ovum even expressed—by supporting the organ by two fingers of one hand placed to the sides of the cervix, or in the anterior and posterior *culs-de-sac*, while pressure is made upon the fundus with the other hand.

Conclusion.—So much injury is done, so much suffering caused, by the indiscriminate and injudicious use of ergot, that it should be entirely abolished in labor, premature and at term. External manipulation, friction of the surface, massage and expression, and internal manipulations, by the hand, the scoop, and the douche, accomplish with safety and certainty the objects which it was supposed to serve, so that they will soon become popular, and ergot will only be given by the obstetrician for its one legitimate purpose—to insure contraction when labor is completed, and to act as a guard upon the treacherous fibers of the uterine muscle. To avoid

the danger arising from idiosyncrasies, he should observe its effect before leaving his patient, giving ergot after the expulsion of the placenta, *after* he has resorted to other means to stimulate uterine activity; and then, if satisfactory, the remedy should be left in the hands of the nurse—to be given occasionally during the first twenty-four hours—to guard against the possibility of relaxation and hemorrhage, to secure thorough, firm, and permanent contraction, to hasten involution.

This is the one condition under which ergot should be used. Later, in case of sepsis, it may be again given, to prevent absorption of putrid matter by contraction of the vessels, and to further the expulsion of such matter from the cavity.

I will add that the drug *might* be given during the third stage of labor, when, barring the danger of incarceration of the placenta, it thoroughly fulfills the existing indications. But let us not enter into possibilities. Let us adhere to the maxim that *ergot should only be given in the non-gravid uterus*. This is demanded by the exigencies of the case. We must deal with facts, not theories. We must decide what it is best to do, not under what conditions ergot *might* be used, or *how far* we may push this use.

Let its dangers be clearly demonstrated; let it be understood that ergot is nowhere indispensable; that we have more safe and direct means of attaining those ends for which it has been so indiscriminately administered; but that it *may* be given, as an additional guarantee of safety, to secure uterine contraction and guard against hemorrhage after the termination of labor.

The advantages of massage and expression, of posture, and the disinfectant douche will soon be appreciated, and it will no longer be necessary to insist on the axiom that *the use of ergot* must be confined to the non-gravid womb.

DISCUSSION.

Dr. Joseph Taber Johnson, of Washington.—I do not rise to discuss this subject, because I expressed my views upon it in a paper read before the Society last year, which embodied all the points which have been so well stated by Dr. Engelmann. The subject is an important one, and I drew attention to the great damage done by many in the administration of ergot in the lying-in room. The only point which I wish to make is that, in my study of the subject and in conversation with physicians at the time when I read an abstract of my paper before another society in my city, the fact was brought out, in the discussion which followed, that ergot was not used by physicians to the extent which I had supposed it was, and to the extent Dr. Engelmann says it is now used. It is more for the purpose of defending the profession against the statement that ergot is so universally used by physicians in *all stages* of labor and during abortion that I make these remarks. I think Dr. Engelmann has overstated the case, too, for the credit of the profession.

The doctor states that ergot should never be used at all during the gravid condition of the uterus. I made the same point, and stated that the human race would be much better off if ergot were banished from the lying-in chamber. But Dr. Barker at that time in his remarks drew attention to the fact that ergot did act well in cases where there was a tendency to hemorrhage, especially after having given the patient chloroform, and that in such cases ergot should be given to prevent hemorrhage. That is one of the conditions, perhaps, where it may be used with safety in the hands of a person who exactly understands what the dangers might be.

The doctor made one statement which I was a little surprised at, and which probably he will correct. He stated that he only gave ergot where the woman had bought it, and had it ready in the house. Now, the doctor is so well aware that very much trouble may be produced and such danger may follow the use of this drug that he certainly would not allow the patient to take the remedy simply to save her from the impression that she had spent her money for nothing. I have not

found physicians who use ergot in the first stage of labor, and I think it is an error to so state it. I should condemn such a practice as severely as Dr. Engelmann does.

Dr. Campbell, of Augusta, Ga.—I have handled ergot in every-day obstetrical practice, but I never give it until the mouth of the uterus is well dilated, and scarcely ever give it until after delivery, but invariably give it after the child is born, and for the purpose of aiding in the expulsion of the placenta as well as for the full contraction of the womb. I believe that this is important, and that almost always it should be used after the use of chloroform. Ergot lessens the amount of after-pains instead of increasing them. In the volumes of the *Southern Medical and Surgical Journal* for 1837, and perhaps for 1836, there will be found articles written by Milton Anthony, who was in our State the Nathan Smith of Connecticut, and as far back as that he wrote stringent articles, carefully defining how and when ergot should be given; that it should never be used before dilatation of the mouth of the uterus, and, if possible, not until after the expulsion of the child. He regarded it as a remedy of great power and value, and thought it often prevented the necessity of using the forceps. Now the forceps is used, and I never give ergot with a view to aid the expulsion of the head of the child; but I always give it after the expulsion of the child, and for the purpose of aiding in the removal of the placenta and securing contraction of the uterus, and preventing post-partum hemorrhage.

Dr. Albert H. Smith, of Philadelphia.—I do not know of any subject to which I could give a more hearty response than to what Dr. Engelmann has said against the use of ergot, which I consider as an unmitigated evil in the practice of obstetrics. I do not believe that it is ever needed under any circumstances, but that it is always capable of doing harm, and generally does do harm. Its action is contrary to the action of the law of nature. The more nearly we come to the natural process, the more surely, effectually, and safely shall we get our results. We know there is no law of nature more decided in the process of parturition, or more important for the safety of the mother and the child, than that which establishes the remarkable intermittent contraction of the uterine fiber. Ergot, on the other

hand, produces a persistent tonic contraction of the uterus, and therefore every practitioner who gives ergot to aid in the expulsion of the child outrages nature. In the first stage of labor it may be admissible in extreme inertia and uterine relaxation with dilatable os, if from previous experience we know positively that there is no obstruction to be met with within the pelvic canal, that there is no variation from a normal position or measurement of the fetus, and that its influence will be followed by immediate expulsion ; but I maintain that unless we know that these conditions are present, and that the child will be exempt from the continued and ineffectual grasp of the uterus in ergotic contraction, and the uterus from the dangers of rupture attendant upon its violent and fruitless effort to expel its contents, it may be a matter of homicide to give ergot in the first stage of labor. But it is very, very rarely that we can know the presence of these conditions with sufficient positiveness to guarantee us against death to the child, and death or serious injury to the mother.

In the second stage of labor we should never give erogt, because we then have the os dilated and the head engaged, and we have in the forceps an instrument which is absolutely safe, and with which the intermittent action of nature can be imitated. Ether, chloroform, and opium have no effect in destroying the contractions produced by ergot. These contractions, when fully developed, are persistent, and ergot should never be used when we can at all substitute the forceps. In the third stage of labor, while it may not be reprehensible to use it, certainly in but few cases can it be of benefit. Dr. Campbell states that it is useful for expelling the placenta. I have seen the very worst effects produced by ergot under such circumstances—viz. : a spasmodic contraction of the internal os with obstinate incarceration of the placenta, and I do not consider it a harmless remedy. I fully agree with Dr. Campbell that in post-partum hemorrhage it is an utterly worthless agent. There is one thing I must say, and that is, I must stand by one remedy—namely, chloroform. We have been led to believe, by the remarks made by Dr. Johnson and by Dr. Campbell, that one great advantage which ergot possesses is to counteract the effect produced by the use of chloroform. I have used chloro-

form for many years, and I have not seen such relaxation as has been spoken of, while with ether such relaxation does occur.

Dr. Campbell.—I have not given ether in labor, but I have thought it little disposed to produce relaxation. I have given chloroform.

Dr. Johnson.—In referring to the relaxation which occurs after the use of chloroform, I simply mentioned Dr. Barker's remarks in which he gave his experience concerning the beneficial influence of ergot after the use of anesthetics in labor.

Dr. Ellwood Wilson, of Philadelphia.—With regard to the use of chloroform, I formerly used it exclusively, and found that one of the tendencies was, without special relaxation of the uterus, to the occurrence of post-partum hemorrhage, which in many instances was alarming. I have found similar results to follow the long-continued and excessive use of ether.

I am astonished that Dr. Engelmann should say that ergot should be discarded from the lying-in chamber. I very much doubt whether any man present would be willing to approach a case of placenta previa without the use of ergot. I have seen thirty-two cases of placenta previa, and I have used ergot liberally and freely, and with excellent results. I have used it to get the tonic contraction which is necessary to be established. I am also surprised at hearing that ergot is of no use in post-partum hemorrhage. I consider it of immense use in post-partum hemorrhage. The difficulty is that the ergot is given too late and in too large quantities. In alarming post-partum hemorrhage from relaxation of the uterus, which is likely to occur after slow labor, from inertia of the uterus after the prolonged use of ether or chloroform, I have found that after giving ergot and slight nausea has been produced, perhaps the patient has exhibited a slight flushing of the face, showing a return in the activity of the circulation, and the uterus contracts and the hemorrhage ceases. I regard the use of ergot in the third stage of labor as very important, and I am in the habit of having it at my command in all cases. I give it in small doses—half a drachm of the fluid extract after the expulsion of the child—and this will result in the expulsion of the placenta with tonic contraction of the uterus.

With reference to the use of ergot for the expulsion of the

contents of the uterus in the early stages of abortion, I have been in the habit of using it, and I am free to say that I have not experienced any great difficulty in its use, and have never seen but one death in all my experience in abortion ; that patient I tamponed, and a fatal peritonitis followed.

Dr. Engelmann.—I think I have been somewhat misunderstood. I did not mean to discuss the possible limits for the use of ergot, or to give a scientific definition of the proper indications. I simply desired to emphasize that it was a dangerous drug, that it did a vast amount of mischief, certainly was a powerful factor in stimulating uterine contractions and bringing them about, but that we had other methods as good and better, safer and more reliable, to accomplish the same end. Dr. Johnson thinks, and formerly thought, that great damage is done by the use of ergot ; he took this position in his paper last year, but seems afraid to carry out the course of his reasoning thoroughly, and in his reply rather retracts some of his statements. I bring you nothing new, but merely intend to lay stress on the importance of abolishing the use of ergot in obstetric practice, and this can not be too often repeated. Every one would be of the same opinion if he were called to a shoulder presentation, and were to find that nothing had been done beyond the repeated administration of ergot, or if he were to meet with a case in which in the early stage of labor ergot had been given, and the child was found in the abdominal cavity by reason of rupture of the uterus, due to the tetanizing action of the drug. We are not very likely to hear the story from the physician, but are more likely to get it from the druggist. With regard to the effect of ergot in mitigating the injurious effects of chloroform, although we are not discussing that question, I will briefly say that if you apply the forceps in time and follow the uterine globe down properly with the hand, you will have no need of ergot. The gentlemen all agree that ergot is useless in post-partum hemorrhage, and there, after all, is the great test of its efficiency. But there we have better and safer means, that will soon, I hope, be more generally used in this country, as they are already abroad. If we follow down the uterine globe, manipulate it properly, and use the hot antiseptic douche internally, we shall have no need

of ergot. I have never given it in the gravid condition of the womb, but only after the uterine cavity has been emptied of its contents. If it is to be used in this condition, the proper time to employ it is when the uterine body is already contracting. It should always be used after the expulsion of the placenta, if used at all, but it is not much more than a safeguard, especially valuable in the absence of the physician. At one time it was acknowledged to be of use to increase the expulsive effort, but that has been abandoned. With regard to postpartum hemorrhage, I will reply that I do not use it, nor do I think it is as generally used, as the gentleman supposes, by progressive obstetricians. I have seen greater relaxation of the uterus after than before the administration of the drug, perhaps on account of an idiosyncrasy, but not by any means a very rare one.