TODD (S.S.)

ANESTHETICS IN LABOR.

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REPRINTED FROM THE TRANSACTIONS OF THE MEDICAL ASSOCIATION OF THE STATE OF MISSOURI FOR 1875.

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ON THE

USE OF ANESTHETICS IN LABOR.

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In the prosecution of the duty imposed on me by your committee I have sought to avail myself of nearly everything that has been written upon the subject during the past twenty-eight years. My success in this, however, has hardly equalled my expectations, for the field is so very broad, and covers such a lengthened period of patient trial and acrimonious debate, and further, is so void of statistics that I find myself in possession of a vast array of conflicting opinions and but few facts. That these opinions have much value and will not fail to make their impress on those who have given the subject but little attention, cannot be denied, however completely they may fail to satisfy the demands of scientific accuracy.

In order to make our information as complete as may be I have not restricted this paper to my own observations, or the observations of my immediate acquaintances, nor to the literature of the subject as we find it in our libraries; but have endeavored to avail myself also of the experience of a large number of silent, though generally competent observers distributed over a wide field of observation, as well as the most recent and matured views of those who have betimes contributed to the literature of the subject. To effect this the following list of queries was prepared:

1. Estimate the percentage of all cases of Normal Labor in which you administer Anesthetics. 2. Estimate the frequency

with which you employ anesthetics in turning, forceps delivery, and other painful obstetric operations. 3. At what period in normal labors do you begin with the use of anesthetics? 4. To what extent is the induction of anesthesia carried in normal labors? 5. What anesthetic is used and by what kind of appliance? 6. What bad results to the woman have you known to follow anesthesia? 7. What bad results to the child? 8. Have you ever known flooding, retention of the placenta, or rupture of the perineum to result from the use of anesthetics? 9. Can you cite any case of death to the woman directly traceable to the use of anesthetics during labor? 10. From your own experience would you counsel a more extended use of anesthetics in Normal Labor?

Over six hundred circular letters embodying these questions were prepared, four hundred of which were addressed to obstetrical writers and teachers, prominent obstetricians, leading surgeons and practitioners of medicine, both in this country and in Europe, embracing, among others less known, the greater part of those whose names have been in any way associated with the subject and whose present views were not otherwise known. About two hundred were addressed to country and village practitioners, resident of our own State and of Kansas. The result in replies, though not so great in point of numbers as might have been expected, ha been exceedingly gratifying in many respects. Two hundred and sixty-two replies have been received, though in some cases the writers have failed to answer all the questions asked. Many have not only answered the questions asked but have written long letters detailing their experience, giving history of cases, quotations from authors, citations of books, papers, etc. I may be permitted here to say, as a just tribute to the parties themselves and to the judgment of the masses of our profession whose award of distinction is seldom misplaced, that the most courteous and elaborate replies, in the main, have come from those who are esteemed the best, the bravest, and the *busiest* men in the profession!

ANESTHESIA IN PAINFUL, PROTRACTED AND DIFFICULT DELIVERIES.

The first announcements of painless surgery with ether, and subsequently by the use of chloroform, created the utmost amazement all over the civilized world. I well remember, being a student at the time, how the medical world was astonished with the startling news, and with what incredulity some received it. Nothing probably was more natural, and surely nothing was more certain, than that some made up their minds instantaneously—prejudice (prejudgment) you may call it,—saying to themselves, if not to others, "this will never do; assuredly God will not permit man to do these things and live!" Is this not true? It was even worse yet when that grand old man, Sir James Simpson—he whose sovereign made him a baronet, and whom God made a prince—it was, I say, even worse yet when Simpson proposed to introduce this *diablerie* into midwifery! Not into surgical obstetrics only

did he propose to carry it, but into the home of every lying-in woman, despite ancestral curses and contemporaneous execrations! That I may not appear to exaggerate the consternation thus awakened, I recall one instance in the language of Dr. Robert Lee. "Very soon after the discovery of its physiological effects," said Dr. Lee, speaking of chloroform," I was confounded by the announcement of its application to midwifery." [Med. Times and Gazette, Sep. 1854.]

Before studying this matter closely I was of opinion that the profession were so nearly of one mind with respect to the use of anesthetics in almost every form of departure from easy labor, that I had proposed dealing very briefly with this branch of the subject. I have learned, however, that there is much less unanimity than I had thought.

In Painful and Protracted Labors.—With few exceptions, still, it may be said, the most strenuous opposers of anesthesia in normal labor concede that in labor attended with excessive pain and mental disquietude, or which promises to be of long duration, moderate anesthesia is not only allowable but of positive benefit. Particularly is there great unanimity in this, if it shall seem that the excessive suffering and delay are caused by spasmodic or reflex rigidity of the os uteri, or perineum. Anesthetics cannot be too highly commended also in those cases rendered tedious by reason of inefficiency of the pains; the inefficiency being due to the want of co-ordination and concert of action on the part of the expulsive forces. This want of reciprocal action (misdirected nerve force), happens ordinarily in labors at term, but which are precipitated a few days, or a few hours, by a general hypersensibility of the patient, or some local irritation more or less well defined. With reference to arrest of labor under these circumstances, Dr. Robert Barnes, of London, uses the following language: "It is not a figure of speech to say that here chloroform acts like a charm. It may even save the necessity of resorting to instruments."—[Obstet. Operations, p. 70.]

Closely allied to this class are those cases of permature labor made tedious from want of development of uterine muscular fibre and the absence of other physiological and anatomical changes that pave the way to easy labor at term. Though in both of these classes chloroform would render excellent service, yet here it is, and particularly in the character of cases last mentioned, that sub cutaneous use of morphia and the chloral hydrate are especially beneficial. In these cases it is not expected that labor will terminate speedily; rest, and it may be sleep, is required, and the persistent effects both of morphia and the chloral hydrate render them exceedingly valuable agents, and preferable in many instances to all other anesthetics. Opposition to anesthesia in these cases springs from a variety of causes, some of which we shall consider hereafter, inasmuch as the objections to anesthesia in cases of extreme suffering, or unusual delay, apply with equal, even greater force to common labor.

In Difficult Delivery.—The question of anesthetic obstetricy acquires unusual importance, in some respects, where the labor involves manual or instrumental aid; such cases, necessitating more profound narcosis, approach more nearly the conditions present in ordinary surgery and demand the same precautions against danger. Now what does the profession throughout the civilized world to-day hold with respect to anesthesia in this class of labors? That sudden death from the anesthetic might take place sometimes in these cases of deeper anesthesia, as in ordinary surgery, is just what we might expect, but, curiously enough—a problem we shall again have occasion to advert to, there is not yet such a case of death on record, unless we except the one reported by Dr. Routh in a discussion before the London Obstetrical Society, May, 1863, and quoted by Sansom. [Chloroform: Its Action and Administration. p. 227]in which death took place during delivery by the forceps, chloroform being administered by the nurse. Two other cases are cited by Sansom in which death took place a short time after forceps delivery, one reported by Dr. Pomeroy, of New York, and the other by Dr. Faye in "Schmidt's Jarbuecher." But, as Sansom says, "such accidents have occurred aforetime independently of chloroform," and "the positive evidence of the preservation of life by anesthesia greatly outweighs these doubtful signs of its danger."

Concerning anesthesia in Embryotomy, and the Cæsarean Operation there is no difference of opinion. One would as soon think of discarding it in amputations of the leg, as to think of discarding it here. Objection, however, is sometimes made to its use in cases of Adherent Placenta, and by those who concede its value in obstetric surgery; an objection based upon a supposed liability to hemorrhage from paralysis of uterine muscular fibre induced by the anesthetic. That no such paralysis occurs unless under the most profound, and needless narcosis, will presently be shown. Its use in Turning is objected to by others, because, as they say, the act is easily and quickly accomplished, often without introducing the hand, and in a large proportion of cases causes little pain; that insensibility to pain and relaxation of the cervix sufficient to allow the easy introduction of the hand, cannot be had, without narcosis to the extent of endangering life, directly, or subsequently through post partum hemorrhage, and that therefore no adequate compensation is yielded for the risk incurred. Prof. Fordyce Barker, of New York, [Trans. New York Acad. of Med. 1861,] is undoubtedly correct when he says, "Its value in these cases is beyond controversy."

Again, objections are urged against anesthesia in Forceps cases. It is said that the operation is not necessarily painful; that if the instrument be carefully introduced, properly applied, and dexterously used, the entire operation may be completed with little pain and but trifling constitutional disturbance. I can but admit that this is true of many cases, especially in the hands of those who constantly use the forceps where there is even inconsiderable de-

lay of the head at the outlet, but I am sure it is far from being true of all, even of a majority. Whoever has labored for an hour to seize the head at the superior strait, or a disproportionate head in the pelvic cavity, or drag a like head and the shoulders of an overgrown fetus through the inferior strait of an irritable, not to say irascible primiparous woman, without an anesthetic, must have seen the need of some such agent, else he has studied his own comfort and the patient's welfare to little profit. The terror, too, inspired by the sight or thought of instruments probably contributes not a little to the untoward result that sometimes follows instrumental deliveries. It must not be forgotten also that a large number of forceps deliveries are hastened deliveries, as in asphyxia, eclampsia, concealed, and unavoidable hemorrhages, and that such rapid birth greatly endangers the perineum; but if a sufficient degree of narcotism be induced this risk is much lessened, by reason of relaxation of the soft parts, save in those exceptional cases where distension is hindered by the presence in the vagina or at the vulvar outlet of cicatrices or a superabundance of adipose tissue. The objection that anesthesia removes a valuable index to the extent of any injury likely to be inflicted by the instrument was well met, at the moment of its birth, by Prof. Simpson when he asked Prof. Meigs, "would it be right and moral in a surgeon to deny to his patients the advantages of anesthesia, in order that their sensations and sufferings should make up for his want of anatomical and operative knowledge?"; and further when he says in that same memorable "answer," speaking of the introduction of the forceps, "it enables you without any pain to the patient, to introduce your fingers for this purpose far more deeply between the head and maternal structures than you could do if the patient were awake, and in her usual sensitive state."—[Works of Sir James Y. Simpson, Bart. Vol. 2, p. 118.]

In considering the validity of objections to anesthesia in removal of adherent placenta, turning and extraction with the forceps, which objections reach me by letter from many excellent and unimpeachable sources, and which I find elsewhere, I cannot help half suspecting that in some instances, at least, the opposition should be imputed to an unsuspected and pre-conceived aversion to anesthesia *in toto*, save perhaps in the rarer cases of obstetric surgery, rather than to the results of experience. The remark will apply with equal propriety to some objections to anesthesia in normal labor.

No one, we presume, is rash enough to counsel the indiscriminate use of anesthetics in the cases we have been considering. The warmest advocates of anesthesia recognize and teach, to the contrary, the necessity of an adjudication in every individual case. While each must decide in a particular case for himself, what cases are in a general way suitable for its use, and what advantages are claimed for its employment in any case, the authority therefor, may now engage our notice.

"Pain," says Prof. Simpson, [loc. cit. p. 112.] "whenever it

is great in degree or great in duration, is in itself deleterious ; and by shielding our patients by anesthetic measures against the more severe portions of the pains of parturition, we not only preserve them from the agony of their more immediate sufferings, but we preserve their constitutions also from the effects and consequences of these sufferings." Again, [p. 25.] "When the state of anesthesia is adequately deep, it renders the patient quiet and unresisting during the required operative procedures ; it prevents, on her part, those sudden shrinkings and changes of position which the boldest and firmest woman cannot sometimes abstain from when her mind and body have been worn out, as happens in most operative cases, by a previous long and protracted endurance of exhausting but still ineffectual labor pains;—the introduction of the hand into the maternal passages, or of the hand to guide our instruments, is greatly facilitated both by the passiveness and apathetic state of the mother, and by that relaxation of the passages which deep anesthesia almost always induces ; and, lastly, this state of relaxation and dilatability renders the process of the artificial extraction of the infant through these passages alike more easy for the practitioner, less dangerous for the child, and more safe for the structures of the mother."

With regard to the value of anesthesia in forceps delivery, Prof. Fordyce Barker, of New York, says: "If all due precautions are taken in introducing and locking the blades, the danger of injury to the mother and child is greatly decreased, because the perfect quietude and tranquillity of the patient is secured, and the operation can be performed with the greatest deliberation and carefulness, which is often impossible when the patient is under great excitement. Especially is this the case with regard to the safety of the perineum." The same eminent authority, also, in a very brief and comprehensive way sums up its advantages thus, in turning : "There is much less resistance to the introduction of the hand ; as it is introduced without pain to the patient, it rarely requires to be withdrawn and re-introduced on account of the paralyzing effect of the uterine contraction ; the external and internal manipulations are much more safely and expeditiously accomplished, and there is less danger of injury to the internal surface of the uterus."—[Trans. N. Y. Acad. of Med. 1861.]

"In instrumental labor there can be no doubt that chloroform has tended to the presevation of life. Labors have thus been completed, the patient being in a state of insensibility, when other wise delivery would have been impossible, and death would have occurred. * * * * The value of chloroform in operative midwifery is that it renders the patient passive in the hands of the practitioner, favors relaxation of the rigid tissues, lessens the suffering of the patient, and promotes convalescence by reducing the effects of shock and exhaustion."—[Sansom, loc. cit. p. p. 226, 236.]

Prof. Byford, of Chicago, uses the following language: "In tedious, difficult, and operative cases of labor, I feel as much

under obligation to use the anesthetic, and make as profound an impression with it, as in the performance of any of the more painful surgical operations, and for all the same reasons."—[Theory and Prac. of Obstetrics, 1873, p. 227.]

"In all difficult, and especially in painful operations," says Dr. Karl Schroeder, of Erlangen," it is of immeasurable benefit to the patient; it also materially facilitates operations, and therefore deserves to be always used in such cases."—[Manual of Midwifery, 1873, p. 96.]

Prof. Leishman, of Glasgow, thus indorses anesthesia: "The question of anesthetics seems to stand thus. In eclampsia, in some cases of mania, and in all cases of operative midwifery, it is without exaggeration, invaluable."—[System of Midwifery, 1873, p. 693.]

From the letters of one hundred and thirty-three correspondents, resident of the United States, the kingdom of Great Britain and Ireland, and continental Europe, who give precise data from their own practice, I find that:

86, or 64 per cent. use anesthesia in all operative cases of midwifery except when forbidden by some peculiarity of the case.

12, or 9 per cent. use it in all operative procedures except forceps cases.

5, or 3.7 per cent. use it in all operative cases except in turning.

7, or 5 per cent. use it in all operative cases except in turning and forceps cases.

11, or 8 per cent. use it in 50 per cent. or less, of all operative cases.

121, or 90.9 per cent. use it in a greater or lesser number of operative cases.

12, or 9.01 per cent do not use it in any of these cases.

Among the 47 correspondents who discard anesthetics in operative midwifery, in whole (12) or in part (35), are the subjoined names. To the question: "Will you give the frequency with which you employ Anesthetics in Turning, Forceps Delivery, and other painful Obstetric Operations," the following replies were made:

Dr. W. H. Bryant, Savannah, Mo.—"I use chloroform in delayed labor from rigidity of the os uteri and perineum, and in version; during the last seven years I have used the forceps once in every eight cases of labor, and without anesthetics in a single case." Dr. J. P. Chesney, St. Joseph, Mo.—"Have never used them but once in version, and am entirely opposed to their use in instrumental interference." Dr. D. W. Stormont, Topeka, Kan.—"Always to complete anesthesia, in forceps delivery and other painful operations. For the last six years I have turned by postural, or 'breast and knee' position; and so easy and comparatively painless is the operation, in this position, that I am surprised that it has not received more consideration at the hands of the profession generally. The use of anesthetics would interfere with the position." Dr. F.

M. Johnson, Platte City, Mo.—"I always employ anesthetics in turning, but sparingly in forceps delivery." Prof. H. T. Cleaver, Keokuk, Iowa.—"In all cases where the hand has to be inserted (they are very rare)—but seldom in forceps cases." Dr. David Prince, Jacksonville, Ill.—"Always in turning, never in forceps cases." Dr. J. S. Cleveland, Cincinnati, Ohio.—"Probably 10 per cent. I prefer operating without anesthesis." Dr. C. D. Palmer, Cincinnati.—"Usually in turning ; very seldom in forceps delivery, unless demanding previous craniotomy." Prof. S. Loving, Columbus, Ohio.—"Never in using the forceps, which should not give pain. In turning, if the woman is very timid, or if the contractions of the womb are so strong as to interfere seriously with the operation, I consider it proper to use chloroform or ether, and maintain anesthesia till the foot is secured, not afterward." Prof. D. N. Kinsman, Columbus, Ohio.—"I never use anesthetics in forceps deliveries, and have never done so but once in turning." Dr. J. M. Toner, Washington, D. C.—"In about 20 per cent. of turning. Do not use them in ordinary forceps deliveries."

Of the 86 practitioners who resort to anesthesia in all operative cases where it is not specially forbidden, 12 are members of this association, though it is proper to say that reports have not been received from all of its members. From among these 86 the following are selected and their reports are given in their own language.

Says Dr. Bryant Grafton, Wyandotte, Kas.: "In all painful operations." Dr. J. A. Coons, Spring Hill, Kas.: "I administer them in all cases of turning, forceps, and painful operations of whatever nature." Dr. G. W. Haldeman, Paola, Kas.; "I never fail to use them under any of the aforementioned circumstances." Dr. W. W. Cochrane, Atchison, Kas.: "I use them in all of these cases." Dr. A. W. Reese, Warrensburg, Mo.: "I always use them." Prof. J. Adams Allen, Chicago: "Almost without exception." Prof. A. Sager, Ann Arbor, Mich.: "Always, except when hemorrhage from relaxation exists, or when the patient objects." Prof. A. B. Palmer, Ann Arbor, Mich.—"I always use them in such cases." Prof. R. N. Todd, Indianapolis—"I use them in all such cases." Prof. D. W. Yandell, Louisville, Ky.—"In every case, unless the woman objects." Res. Physician of Louisville Hospital—"Always." Dr. John S. Seaton, Louisville, Ky.—"In all cases if used at all. In 1640 cases of labor I have never used instruments of any kind, but have turned often." Dr. B. W. Avent, Memphis, Tenn.—"In all." Dr. Jerome Cochrane, Mobile, Ala.—"Always in turning and painful operations, and usually in forceps cases." Prof. W. H. Daughty, Univ. Ga.—"Almost invariably." Prof. M. Schuppert, New Orleans, who claims to be the discoverer of what is known as Nelaton's method of resuscitation in chloroform narcotism—"In every one of the named conditions." Prof. T. G. Simons, Charleston, S. C.—"Always, unless special contra-indications

exist." Prof. T. L. Latimer, Baltimore—"In all cases." Prof. T. R. Brown, Baltimore—"In all cases where considerable pain is to be inflicted." Prof. John Morris, Baltimore—"I always employ anesthetics in turning, and think it good practice to use them in all instrumental cases." Dr. W. Symington Brown, Stoneham, Mass.—"Invariably in all such cases." Dr. W. L. Atlee, Philadelphia (retired from the practice of midwifery)—"I employed anesthetics nearly always in turning, forceps delivery and painful obstetric operations." Dr. W. R. Gillette, New York, "I always use them in obstetric operations." Prof. Montrose A. Pallen, N. Y.—"Always when there are no cardiac or pulmonary contra-indications." Prof E. S Bunker, Brooklyn, N. Y—"In turning always, and for all painful operations; in forceps deliveries 90 per cent." Prof. Fordyce Barker, New York—"In all cases of the kind, except where there has been previously dangerous hemorrhage, as in placenta previa." Dr. Lombe Atthill, Dublin—"In turning always; in forceps delivery, about 50 per cent.—this refers solely to private practice. In other painful operations I use it (chloroform) nearly invariably." Dr. J. Matthews Duncan, Edinburg, Scotland—"In all." Mr. Lawson Tait, Birmingham, England—"Invariably." Dr. Arthur Steele, Liverpool, England—"In nearly all such cases I use anesthetics. In the tedious labors of irritable primiparæ they are invaluable. In all operations it wonderfully aids the accoucheur, but here, of course, anesthesia must be pushed to the surgical degree, and an assistant to watch the administration should be insisted on." Dr. J. Braxton Hicks, London—"In all cases of turning and other obstetric operations, though in some forceps cases I avoid their use unless full anesthesia is intended." Prof. B. S. Schultze, Univ. of Jena—"I always use chloroform, if not especially contra-indicated, in turning, forceps delivery, and other painful operations." Prof. Carl Braun-Fernwald, Univ. of Vienna—"In the above named operations, anesthetics have always been used (in the great Vienna Hospital) with the best results for the last twenty-five years, and in one hundred thousand cases."

For the last six years, I have myself resorted to anesthesia by chloroform in all protracted, painful and instrumental labors, unless some special reason existed for not doing so. The exceptional cases are now rare. I quite agree with Dr. Brown, of Stoneham, Mass., "that no patient has ever persistently objected under such circumstances." The number of exceptional cases would be still further reduced could I fully agree with the late Dr. Anstie, who says: "It is my firm persuasion that, with proper care, chloroform may be safely administered *to any patient who is fit to undergo an operation at all, whether there be any existing disease of heart, lungs or brain or not.* I have never allowed the existence of such disease to prevent my administering it, and I have never found any evil result."—[Stimulants and Narcotics, p. 330.]

During the ten years just passed, I have given chloroform in 34 cases requiring manual or instrumental aid; part of them oc-

curing in my own practice, and part of them seen by me in consultation. Twenty-one of these were forceps cases, of which two died, one from eclampsia, and one from inter-current dysentery. Eleven were cases requiring version, of which number one died from eclampsia; one was a case of adherent placenta, and the other was a case of placenta previa, both of whom recovered. The aggregate of recoveries is 31, with 3 deaths. There was laceration of the perineum to the sphincter ani in one of the forceps cases, but in no case did hemorrhage follow, or was there retention of the placenta, except the case of adherent placenta already referred to, and in no instance did the forceps seem to have been required as a result of the anesthetic. The results to the children were three still born, two of them being delivered by the forceps and one by turning. In no case was the fatal result, either to mother or child, imputed to the chloroform.

The degree of narcosis ordinarily induced in these cases, is, so far as I have been able to learn, determined by the character of the case and the effects witnessed. Adopting Dr. Sansom's division of narcosis into three stages—that of *sopor*, *stupor* and *stertor*, between which, of course, there is no definite line of demarcation—we may say that in cases of painful or protracted labor, not requiring operative interference, anesthesia to the *first* degree, in which pain is abolished without loss of consciousness, is deemed to be sufficient. In all operative measures it is enough if the *second* degree, that of stupor, be induced and maintained, in which stage there is entire loss of consciousness, and a state of perfect quietude. It is certainly not the accepted belief that narcosis to the extent of causing complete relaxation of the uterus is ever necessary in version, as Dr. Barnes [Obstetric Operations, p. 184,] seems to think. Indeed, when we remember that the functions of the sympathetic system, of which the uterine force is one, are ordinarily the very latest to be extinguished in fatal cases of chloroform-narcotism, it is difficult to see how the "perfect flaccidity," which he deems essential, can be reached short of the very verge of dissolution. This flaccid condition of the uterus is therefore practically unattainable, and, we believe, wholly unnecessary in any case.

ANESTHESIA IN NORMAL LABOR

What are the advantages claimed for anesthesia in Normal Labor? Several of my correspondents say to me that they have never used anesthetics and much prefer the "old fashioned way." This leads me to ask, "what benefits do the friends of anesthesia say are conferred on the parturient woman by its use, that any of us should seek to abandon the old way?" Briefly stated, they are these: The pains of child birth are abolished, and its dangers lessened. Is this true, and if so why is not the practice universal?

It is unsafe, say objectors, in this: (*a*) It may result in sudden death to the woman from drug poisoning. (*b*) It hazards the

life of both mother and child by retarding labor. (*c*) It increases the liability to hemorrhage. (*d*) It favors retention of the placenta. (*e*) It endangers laceration of the perineum. (*f*) It endangers the life or future welfare of the child by poisoning the blood of the mother.

It is an illegitimate use of drugs, again they say, in this—Normal labor is a physiological process; it cannot be aided, and should not be interfered with.

Is there any danger to the mother of sudden death from drug poisoning? The first feeling aroused by the discovery of modern anesthesia, was, as we have already indicated, one of most profound astonishment at the rashness, the temerity of the man who could propose such a thing, except as an idle experiment. The second feeling was one of terror, lest it should become the plaything of dentists and rash experimentalists—a very glove-handed demon of the retort, full of seductive blandishments and—death.

It was a long time before the gravest fear, death, was realized in the occurrence of a fatal case, in surgery; but chloroform, for the rest have never been popular, soon got into the best of society. Since the introduction of chloroform into obstetric practice by Prof. Simpson, Nov. 1847, nearly a generation of watchers have passed away without witnessing a single death, by narcosis, when the drug was administered by a physician. I am informed by Prof. Thomas S. Latimer, of Baltimore, that one such case is reported by Prof. Simpson in a number of the London Lancet, but I have not been able to find the report. The nearest approximation to such result that I have found is recorded in the *Medical Times and Gazette* for April 14, 1855, where a lady died in the course of a natural labor, from the effects of coloroform admistered to her by *the nurse*, on a handkerchief, without the sanction or knowledge of the doctor, who was in the house at the time. The quantity used in this case, with fatal effect, could not have exceeded five fluidrachms.—[Dublin Quarterly Journal of Medical Science, Aug. 1855.]

This exemption from fatality in childbed is something quite wonderful when it is known that anesthesia has thus been induced in, at least, *three million cases*,* and in view of the fact that the number of deaths from chloroform in surgery have by this time

* Statements from two hundred and forty sources, one-half being furnished by physicians of the cities and larger towns of the United States and the other half derived from country and village practitioners, together with an estimate that the latter bear to the former the relative proportion in number of four to one, furnish us with the following results, to-wit: that the mean per centage of cases in which anesthetics are now used throughout this country in normal labors is about *nine* per cent. Making due allowance however, for error, the present mean may be placed at *five* per cent., or an approximate mean of two and one-half per cent from the discovery of anesthesia to the present date. From June 1st, 1848 to June 1st, 1875, according to the United States census reports, about twenty-four million children have been born in the United States. Estimating the mean number of anesthetized patients at two and one-half per cent., and we have six hundred thousand as the total number of cases of anesthesia in normal labors during the past twenty-seven years in this country. Multiply this number by five and it will give, approximately, the entire number for that period in this country and in Europe, or three millions. This estimate is based on the supposition that anesthesia in midwifery is just as frequent throughout Europe as in this country. Countries not embraced in this calculation will doubtless more than make up for any over-estimate I may have made.

probably nearly reached two hundred, and in view also of another fact, that for the first few years anesthesia in midwifery, under the teaching of Simpson, was carried to the second, or surgical degree, that is, to loss of consciousness. The fact may find solution, possibly, in several ways. *First*, in this, that more males than females die from anesthetic poisoning. From data furnished by Drs. Snow, Scoutteten, Kidd and Sansom, the proportion is as 11.8 to 5, and, according to the Chloroform Committee of the Royal Medical and Chirurgical Society, in the proportion of 72 to 37. *Second*, anesthesia in ordinary labor is induced in the presence of pain; which in some way, it may be inferred, establishes a tolerance of the anesthetic. Experience shows that of the fatal cases of chloroform narcotism in surgery a large proportion have died before the operation was begun. From an analysis of fatal cases cited by Snow, Scoutteten and Kidd, aggregating 121, it would appear that in 44.6 per cent. death occurred before the commencement of the operation.—[Sansom, loc. cit. p. 101.] *Third*, immunity in obstetrical practice is favored by the recumbent posture. This results in two ways—cerebral anemia is less likely to occur, and it is probable, also, that a smaller quantity of the drug is sufficient to accomplish the object. Finally, and for this cause mainly, the amount required in all ordinary cases of midwifery is far below that necessary in surgery, and for the reason that the pains of labor are much more readily abolished than is common sensation. The woman will feel the prick of a lancet on the hand or surface of the abdomen, long after she has become oblivious to the pains of labor. Dr. Campbell, a well known obstetrician of Paris, in a memoir read before the Academie de Medecine reports his employment of chloroform in 942 cases without having to regret the slightest accident. He believes that the cause of such immunity is to be found in the cerebral hyperemia induced by the efforts rendered necessary for the expulsion of the child.* That death might occur from anesthesia in ordinary labor, through gross carelessness, is not to be questioned, but if exhibited with the care that governs the physician in giving other drugs, chloroform need not ever prove fatal in ordinary labor.

What other dangers to the mother are be apprehended from anesthesia? That it hinders the progress of labor is the most common, and I may say, most plausible objection made to anesthesia in ordinary labor. The objection is the legitimate

* Prof. W. W. Dawson, of Cincinnati, in a valuable paper on "Chloroform Deaths," published in the "Cincinnati Lancet and Observer" for January, 1871, gives two notable examples having a bearing on this question of immunity in labor. The first case was that of Mrs. Garris, reported by Dr. J. G. Wilson, Washington, Ohio. Mrs. G. had taken chloroform in all of her labors (several), and during her confinement *was kept under its positive influence for 12 hours*. Subsequently she visited a dentist for the purpose of having teeth extracted, and died in the operating chair. Her physician, Dr. W., administered the chloroform—about one drachm, which was afterward tested and found to be pure. The second case was that of a patient of Prof. M. B. Wright, of Cincinnati. The lady had taken chloroform in all her labors, and they had been many, and it had always acted admirably, producing no unpleasant symptoms of any kind, but "on several occasions, when she inhaled it at a dentist's office for the extraction of teeth, the symptoms were of the *most alarming character*."

outgrowth of the general fact that in narcosis induced by ether or chloroform paralysis and relaxation take place, by a gradual series of approaches, involving first the voluntary, and finally the involuntary muscles; and of the belief that a condition approximating complete relaxation of the involuntary muscles is rendered necessary before the pains of labor are abolished. To enumerate those who have opposed anesthesia in midwifery for this cause, is to name all who have ever opposed it for any reason. In 1854, Dr. Robert Lee, of London, (*loc. cit.*) wrote thus : "We are assured by many that the contractility of the womb is in no degree diminished by the action of chloroform. But of this important position, we have as yet received not a jot of proof; nay, there are innumerable proofs to the contrary. It is expected that we should be satisfied with bare assertion ; and, considering that it was made at a very early period, when not a score of women had yet been delivered under the influence of chloroform; and, moreover, that it is made by those who continue in the face of the most painful contradiction of facts, to affirm the perfect innocence of this poison, we may be permitted to set aside this evidence without further notice. But I rely not upon *a priori* reasoning, but on the direct testimony of my own senses, and maintain, with this unerring guide, that the action of chloroform does very materially impede the uterine contractions, and, in some cases, put a stop to them altogether."

The writer from whom we have just quoted, was one of the earliest, ablest and most bitter opponents of anesthesia. Chloroform was characterized by him as a "treacherous poison ;" its administration in labor "rashness," and its effects "deplorable." His mind was fully imbued with the spirit that women are "doomed," as he says, "to bring forth their offspring in pain and sor row," and, under the influence of such inspiration it is not difficult now to conceive of the facility with which disasters and pernicious results sprang into life, a host of evils, invisible to all save him whose fancy called them into being. It must, however, be said, to his credit, that while he contributed more than almost any other to retard the progress of anesthesia, he also did much to restrain its illegitimate use. Dr. Lee's arraignment of chloroform did not rest with the charge that it retarded labor, and we quote further from him for the purpose of showing the extent of hostility to the drug at this early period in the sweeping nature of other accusations made against it. The London Medical Times and Gazette, Sept. 1854, contains an account by Dr. Lee—from which we have already quoted—of seventeen cases of parturition in which chloroform was inhaled with "pernicious effects."

The following is a summary of these cases, as taken from the Amer. Jour. of Med. Sciences, Jan. 1855 :

"In the first and second of these cases, the contractions of the uterus were arrested by the chloroform, and delivery was completed by craniotomy. Insanity and great disturbance of the functions of the brain followed its use in cases 3, 4, 5, 10, 14, 15,

and 16. It became necessary to deliver with the forceps in cases 6, 8, 11, 12, and 13. Dangerous or fatal peritonitis, or phlebitis, ensued after the exhibition of chloroform in 7, 8, 11, and 13. Epilepsy followed its use in case 14, and dangerous fits of syncope in case 17."

The above summary gives insufficient data upon which to base a logical analysis that shall do impartial justice to the subject, ourselves, or the writer, and we shall not attempt it. We may be permitted to say, however, that the multiplied experience of the profession justifies us in denying every one of the propositions definitely, or inferentially put forth; as, that chloroform may cause epilepsy, phlebitis, peritonitis, or that it may render the forceps necessary, and still less, craniotomy. No intelligent accoucheur "out west" would for a moment think of resorting to craniotomy in any case where the only reason for doing so was that labor had been arrested by chloroform; at least, not so, unless he had become tired of turning and forceps trivialities and greatly wished to add another craniotomy "scalp" to his professional belt, or, shall I say it, desired to make out another case against chloroform.

Most objectors hold to a more moderate view of the evils of anesthesia than is expressed in the quotations above given. Cazeaux says: "Whatever the exact truth may be, in an unprejudiced mind, no doubt can exist of its being proved by numerous facts, that when chloroform is taken so moderately as to blunt and almost extinguish sensibility without entirely depriving the patient of the powers of motion or of self consciousness, it has, ordinarily, no influence over the contractile powers of the uterus; but that when carried to complete anesthesia, the contractions may be diminished both in frequency and intensity to the point of complete extinction."—[Treatise on Midwifery, p. 960.] The same authority, [p. 970.] after quoting from Drs. Duncan, Channing, and Montgomery, several cases in which hemorrhage took place after anesthesia, adds: "I am well aware that in all these instances the hemorrhage may have been due to various circumstances, and there is nothing to show that chloroform was necessarily the cause; still, it is well to be aware of them, were it only to excite prudence in the use of the agent; for, since by too large a dose the exercise of the organic contractility has sometimes been suspended, why may not the same dose diminish the contractility of the tissue?"

At a meeting of the Obstetrical Society of Philadelphia, Oct. 2d, 1873, Dr. Packard reported a case wherein labor being protracted from non-dilatation a speedy termination was had on giving ether. Dr. Smith remarked "that many cases present a condition of spasmodic contraction of the neck of the uterus, in which anesthetics have an admirable effect." In other cases he thought that ether retards labor by enfeebling the power of the patient. Ether, he held, retards labor by impairing the voluntary contractions which are so useful. Dr. F. M. Johnson, of Platte City,

Mo., sends the following statistics : "During a period of four years (prior to 1860) I attended 160 cases of natural labor, in 70 of which I gave chloroform, begining as soon as the second stage of labor was well established. The average duration of the second stage in the 90 who were not anesthetized was not quite *three hours*, and in the 70 who took the anesthetic, about *four hours and a half*." Dr. Lombe Atthill, of Dublin, who, as already quoted, uses anesthesia in all cases of turning, and in most cases of other obstetric operations, writes me as follows : " * * * Having been long since convinced that patients kept for any length of time under the influence of chloroform were specially liable to the occurrence of post-partum hemorrhage I discourage its use in natural labor. I am also of opinion that it has a marked influence in lessening the force of the uterine contractions. The only anesthetic I have ever employed in midwifery is chloroform, and I have never once seen, in labor cases, any injurious effects except those I have indicated, etc." Prof. W. S. Playfair, of King's College, London, in a recent clinical lecture, uses the following language : "I know not what may have been the experience of others, but my own certainly is that in a large number of cases it has a very marked effect in diminishing the strength of the pains, and thereby very materially lengthens the continuance of labor. Besides this I have no doubt that a very continuous use of chloroform during labor has a marked effect in predisposing to post-partum hemorrhage, inasmuch as the tendency to undue relaxation of the uterine fibres continues for a time after the birth of the child."

Dr. W. Tyler Smith believes that anesthesia sometimes occasions post-partum hemorrhage, and retention of the placenta, and that its use is contraindicated where there is deficient action of the womb, as in feeble and tardy labor from inertia. He is also of opinion that he has seen rupture of the perineum occasioned by chloroform. "The patients were relieved from pain, but volition was not suspended, and under these circumstances the violent and fearless straining efforts ploughed up the perineum by the fetal head in the expulsive pains"

Prof Leishman, speaking of vomiting as an effect of chloroform in midwifery—an effect seen all too frequently in deep anesthesia, and but very seldom, only, where this is moderate—admits that it is comparatively rare, but says : "Still it does occur ; and, more than that, it occasionally persists for a considerable time, to the manifest disturbance of the patient during the post-partum period. Partly on this account, and partly, it may be, in consequence of the effect which is produced on the nervous centers, it has been pretty clearly established that the indiscriminate use of chloroform, or other anesthetics, predisposes to hemorrhage after delivery."—[System of Midwifery, p. 693.]

Dr. Chas. C. Hildreth, Zanesville, Ohio, who favors anesthesia in all operative procedures, holds the following views with respect to chloroform in normal labors. "Chloroform," he says,

"most certainly predisposes our patients to post-partum hemorrhage. Theoretically, we are assured of the fact."—[Amer. Jour. Med. Sciences, April, 1866.] "After a long period of additional experience," writes Dr. Charles Clay, of Manchester, England, "I have never had any accident that could be traced to the exhibition of chloroform, and believe with the precautions laid down, no such are to be feared. I still continue to condemn its indiscriminate application in ordinary labors, believing it to be unjustifiable."—[Handbook of Obstetric Surgery, p. 15.]

The following personal communication from Dr. J. Matthews Duncan, the well-known Edinburg gynecologist, possesses much significance when it is known that the doctor employs chloroform in all operative cases, and in a majority of normal labors.

30 Charlotte Square,
EDINBURGH, February 17, 1874.

DEAR SIR:

I am of opinion that it would be good for lying-in women generally if the use of anesthetics in natural labours were further restricted than it is. Much evil was, I believe, done at first by the too early and too copious use of anethetics in labour, I mean an evil that could be proved by the mortality. Anesthesia is not so much used now as it was, and much less freely when it is employed. It is fashionable to have chloroform, and often the use of it is a mere farce in deference to fashion. The fashion was fostered by exaggerated pictures being drawn of the pains of natural labour. Ingenuous women sometimes wait till at last the child is born, always expecting the agonies they have been told about.

Anesthesia is an intoxication which in my opinion is never a trifling addition to the conditions of natural labour. It lulls pain and that is a great boon; its other influences are injurious, especially in weakening and prolonging labour.

I am, dear sir, yours faithfully,
J. MATTHEWS DUNCAN.

"Dr. Denham," says Sansom, "has recorded four cases in which suspension of action was proved to be due to chloroform. The number of chloroformed cases whence these were taken was fifty six; but it must be recollected that only fifteen were natural labors. It is most possible, therefore, that the suspension occurred generally in the cases in which deep narcosis was induced." Dr. Henry J. Bigelow, of Boston, recounting the physiological effects of anesthesia, says: "It is well known that the uterus contracts during partial and even complete unconsciousness; a diminution or cessation of its contractile action being the rare exception and not the rule."—[Trans. Amer. Med. Assoc., 1848.] "In a certain class of cases I am convinced that its effect is undoubtedly to prolong the labor. These cases constitute a minority, and even in them I have not been satisfied that this apparent objection was not more than counterbalanced by the advantages

obtained from its use. * * * * But in a large majority of cases my experience would lead me to the conviction that the use of chloroform shortens labor." [Prof. Fordyce Barker, Trans. N. Y. Acad. of Med., 1861.] The same authority further says: "I have repeatedly seen the chloroform act quite as efficiently as an oxytocic under analogous circumstances as I have seen the ergot. * * * * On the whole then, I am obliged to state my conviction that chloroform accelerates labor in a greater number of cases than it retards it." Prof. Barker thinks, also, with Prof. Simpson and others, that anesthesia is conservative of the strength of the patient, and so protective against hemorrhage: "The great security against post-partum hemorrhage lies in the efficient and permanent contraction of the uterus after delivery. What is termed inertia is but another name for uterine exhaustion, and this must certainly be much less likely to occur where the nerve force and vital powers have been saved by the use of an anesthetic."—[loc. cit.]*

Dr. Protheroe Smith, of London, thus writes to Prof. Simpson: "I have records in my own practice and that of my friends of upwards of 125 cases of anesthetic labor; and with one exception, all have done well. In several thus treated no hemorrhage has ensued, though in previous labors there was flooding. In nearly all the getting up has been more speedy, requiring no aid of opiates and purgatives; and it is my sincere conviction that chloroform lessens the chance of puerperal inflammation and fever." Mr. Stallard, also author of *Practical Observations on the Administration and Effects of Chloroform in Normal Labor*, writes to the same point as follows: "In the thirty cases I have attended I have not had a single case of flooding, and two individuals had never been free from it on former occasions."—[Works of Sir Jas. Y. Simpson, p.p. 233, 234.] "It is quite possible to afford immense relief, and render the pain quite bearable, by a dose which does not produce sleep or impair the mental condition of the patient; it is needless to add that under these conditions a patient is quite free from danger. * * * * * It does not prevent the subsequent contraction of the uterus, so as to render the female more liable to post-partum hemorrhage."—[Practical Midwifery, &c., by John Tanner, M. D. &c., &c.]

Speaking of the favorable effects of small doses of chloroform on parturition, Dr. Anstie says: "Used in the way above described, (Snow's inhaler, charged with fifteen minims.) I am satisfied, from very considerable experience, that it materially increases the force and regularity of the uterine contractions, and that its action by no means only or chiefly consists in the relaxation of the external passages. Again and again I have seen the contractions of the uterus, which had been weak and irregular, become strong and effective, at the same time their painfulness was greatly diminished

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* Dr. Barker in a recent personal communication says: "An additional experience of twelve years only confirms the views expressed." He has given chloroform in fully ninety-five per cent. of all natural labors for the past twenty-five years.

or removed, under the influence of minute doses of chloroform."—[Stimulants and Narcotics, p. 334.]

Dr. Charles Clay, (loc. cit.) writes thus: "It may be used in severe, short but ineffectual pains, which restrain bearing down efforts. In these, chloroform renders uterine contractions larger, stronger and more efficacious; and thus it accelerates the accomplishment of the process. Where the parts are rigid and unyielding, it assists in dilating the parts, relaxes the muscular fibre, and relieves the severity of pain arising from rigidity. In long, protracted cases, worn down and suffering from nervous debility, and also irrritability, it restores the physical powers, relieving both pain and anxiety."

To the same point is the testimony of Prof. Leishman, whose opinion that the *indiscriminate* use of chloroform leads often to hemorrhage after delivery, we have already quoted. Dr. Leishman says: "In ordinary cases it is always to be used with caution, but if employed in small quantities on a handkerchief at the approach of each pain, towards the termination of the second stage, it can never do harm. It thus allays pain and assuages nervous irritability; and, in the hand of the skilful practitioner, is a power for good and never for evil." Dr. Byford, referring to the closing act of the second stage under etherization, has the following language: "We not only thus save our patient from passing through the unspeakable agony connected with this crowning terror, but the tissues distend and relax better under the full influence of the anesthetic. They are relieved of all irritability and reflex tendency to contraction and rigidity, and consequently there is less danger of extensive rupture."—[loc. cit.]

At a meeting of the London Obstetrical Society, held June 3d, 1868, Dr. Sansom read a paper on *Pain in Parturition and Anesthesia in Obstetric Practice*, in which he took occasion to say that "the tendency of modern investigation has been to show that the abrogation of the pain of labor is a direct means of diminishing after-dangers, and so of conserving life." In the discussion which ensued on the reading of this paper, Dr. Martyn remarked, that in his experience of chloroform he had not found it predisposed to post-partum hemorrhage, but rather the contrary.

Prof. Thomas S. Latimer, of Baltimore, in a valuable paper published in the *Transactions of the Medical and Chirurgical Faculty of Maryland*, 1873, has the following language: "Investigations have not shown that the involuntary muscular fibres are affected invariably by the same agents which affect the voluntary fibres. On the contrary it has been positively shown that the involuntary fibres are not affected in the same degree, and it is quite possible to produce complete insensibility to pain with general muscular relaxation, without sensibly affecting the force of uterine contractions."

A vast number of opinions of the same tenor are before me, received through personal correspondence. Many of these are from persons of great experience, and distinguished in the profes-

sion. I shall content myself with two or three quotations. In a long and interesting communication from Prof. T. R. Brown, Baltimore, occurs this paragraph: "I have been struck with the calm, sweet sleep it has induced; of sufficient length to enable the already inert uterus to regain its vigor, and to subdue that painful restlessness as expressed in the countenance of the sufferer." Dr. E. R. Peaslee, New York, so well known in connection with the subject of ovariotomy, writes that he uses ether in all obstetric operations, and in ninety-nine per cent. (at least) of all natural labors. He has never known any bad results, either to mother or child, traceable to the anesthetic, "except that the contractions have been arrested for a time in a small proportion of cases, one per cent. perhaps, when I have given up the ether, returning to its use after the perineum was distended by the head."

Does Anesthesia endanger the life or future welfare of the child by poisoning the blood of the mother? One of the earliest objections to obstetric anesthesia was that it might compromise the safety of the child. It was asked, "How can we know or ascertain the possible consequences of the use of such an agent on the brain of the child? And how can we calculate what may be the ultimate consequences of the action in reference to the development of the mental faculties?" [Dr. Malen, in *Lancet*, for April, 1848, quoted by Simpson.] In an article, too, in the *London Med. Gazette*, for Sept. 1848, it was claimed that etherization so accelerated the action of the fetal heart that the pulsations could not be counted; that, after birth convulsions, and even idiocy were to be feared. Prof. Meigs declared his belief that he had lost two children during labor from the anesthetic (ether) used.

Dr. Zweifel, of the Obstetric Clinics in Strasburgh, has recently been making some investigations relating to the effects upon the fetus in utero of anesthetics administered to the woman in labor. His attention, he says, was first seriously directed to the matter by discovering in the breath of a new-born child the odor of chloroform, the mother having been delivered under the influence of that anesthetic. He also declares that he detected its presence in the urine of another newly born child, under like circumstances. It was found, too, in a recently delivered placenta, the woman having been under the influence of chloroform for fifteen minutes, only, during labor. By these means he claims to have established the fact of the influence of the anesthetic upon the fetus, and observes that, since the use of narcotics in general are contra-indicated in infants, it is an important question for obstetricians to decide to just what degree anesthesia may be carried in women in labor, with impunity to the fetus.—[Berliner Klinische Wochenschrift, May, 1874.]

Dr. Smith, in a discussion, already alluded to, before the Obstetrical Society of Philadelphia, averred that the prolonged use of ether will impair the vitality of the fetus; that he had rarely seen a case where the use of ether was prolonged in which the

child did not require some effort to revive it.—[Obstetrical Jour., Oct. 1874.]

Five out of my two hundred and sixty-two correspondents believe that anesthesia is liable to result in death to the child from asphyxia, and two of them declare that they have witnessed this result, once each, in their own practice.

On the other hand the testimony is overwhelming that the moderate anesthesia required in ordinary labors, and even anesthesia to the second degree, as required in obstetric operations, is without danger to the child, immediate or remote. It has not been shown that the infantile mortality has increased since the introduction of anesthesia, but, to the contrary, the few, meager statistics we have on the subject, as those of Prof. Simpson, and of Prof. Channing, of Boston, go to show that the death rate is reduced under the use of anesthetics. Prof. Simpson declares that the pulsations of the fetal heart are little, if at all, increased in rapidity when the mother is anesthetized. He quotes Prof. Siebold also as saying, that "The action of the child's heart was found to continue quite unaltered, not the slightest change in its frequency and regularity being detected."

M. Cazeaux, in his treatise on midwifery, uses the following strong language: "Whatever difference of opinion may still remain respecting the influence of chloroform upon the health of the mother, no one doubts its entire innocence as regards the fetus. In the immense majority of cases, the new-born child presents its usual appearance; its cries are neither weaker, nor heard less promptly, nor does its viability appear to be in any way injured." Dr. Tanner, (loc. cit.) says, speaking of chloroform: "In ordinary cases, its good effects can be produced by the smallest doses, without scarcely passing the first or second degree of narcotism, and without the slightest danger at the time, or ill effects to mother or child afterwards." Prof. Karl Schroeder, in his recent work, thus writes on this subject: "A few whiffs of chloroform at the commencement of a pain easily suffice to suppress the loud expressions of pain; the woman is still conscious, she replies in a drowsy way to loud questions, the abdominal muscles act powerfully, and yet the pain is suppressed. Anesthesia not continued any farther than this is never dangerous to the mother or the child. Although there is no doubt that profound anesthesia continued for many hours (as is sometimes necessary, for instance, in eclampsia), may be transferred to the child also and prove fatal to it, yet past experience has shown that complete anesthesia lasting for a short time has no influence whatever upon the child." Dr. F. M. Robertson, of Charleston, S. C., thus gives his experience: "In the professional experience of the writer, who was the first practitioner in the city of Charleston who used chloroform in obstetrical practice, not a case has occured in which he has witnessed the slightest injurious effects whatever upon the mother or child, from the inhalation of chloroform during labor; and the results of its use have been carefully watched and noted in a large

number of cases. On the contrary, he is convinced that still-births have been prevented, in many instances, by its salutary effects in regulating and accelerating the parturient action, when delay and continued pressure would have placed the life of the fetus in imminent peril."

The dictum of Dr. Zweifel, that infants bear narcotics badly, probably needs qualification with respect to ether and chloroform. "Children," says Dr. Sansom, "are the best of all subjects for the administration of chloroform." "The inherent irritability of the heart of infants," he again says, "is a resistance to the paralyzing power of chloroform." In seventy-nine cases of death from chloroform, the records of which were in the hands of Dr. Sansom, the youngest was five years old. Dr. Anstie's experiments on fifty children resulted in "demonstrating the comparatively small amount of danger to *children* from weakening of the heart's action under chloroform."—[loc. cit. p. 309.]

The writer has many times kept infants, from three weeks to six months old, under the influence of chloroform for half an hour, or more, while undergoing operation for hare-lip, strabismus, club foot, &c., and for the relief of convulsions; and in no instance ever saw any ill effect whatever from the practice.

It is fitting, perhaps, that I should give something of my own experience with anesthesia in normal labor. This experience embraces a period of twenty-five years, though my records cover only the last ten. During the latter period I have given anesthetics in one hundred and thirty-one cases of normal labor, at term, chloroform being the only agent used in all except three cases. In these three the chloral-hydrate was used—once by enema and twice by the mouth. It is my rule to begin anesthesia with the *opening of the second stage* of labor, and this rule was but seldom deviated from in these cases. My reasons for not beginning sooner are, that the administration of an anesthetic requires the immediate supervision of the accoucheur, who is thus compelled to remain with his patient from the beginning, it may be, to the close of labor—often a matter of great inconvenience and loss of time; again, the woman being led to associate the commencement of anesthesia with the beginning of labor, now thinks her labor shorter than it really is; whereas, if anesthesia be induced at an early period she is soon harrassed with the idea of delay, and her patience is in danger of being exhausted long before the close of labor. Another reason is, that the pains of the first stage are short, and not difficult to be borne if the patient is encouraged, as she should be in most cases, to walk about the floor.

It is my rule also, to apply the anesthetic on a crumpled handkerchief, which the nurse makes ready for the beginning of each pain, by inverting against it twice, with a rapid movement, the four-ounce, open-mouthed bottle containing the chloroform. It is then handed to the patient, who soon learns to hold it herself, and to demand it eagerly with each returning pain. It is

kept to the mouth and nose while the contraction lasts, and removed so soon as it is ended, the patient being conscious of parturient effort, but feeling little or no pain. When the head and shoulders are passing the vulva, anesthesia is deepened to unconsciousness. About one ounce to the hour is consumed. Thus administered, I have succeeded in giving the most marked relief from suffering in one hundred and twenty-eight cases, and without the least bad result that I could discover in any. In a few cases I have noticed at the outset a slight lengthening of interval, and abatement in force of contraction, occurring in those, who, so far as I can now say, were unaccustomed to anesthesia, and due probably to the emotion of fear which a first experience with anesthesia sometimes causes. In no case was anesthesia attended or followed by vomiting, other than that which frequently happens without anesthesia, towards the close of the first stage; in none was there any alarming hemorrhage, retention of the placenta, rupture of the perineum, phlebitis, or other inflammatory affection, save mammary inflammation in three or four cases, and phlegmasia dolens in two. Twenty-two of the cases were primiparous women. All of the mothers recovered except two, one of whom died on the third day after the birth of her child from an acute diarrhea, antedating labor; and the other within twenty-four hours after delivery, from small-pox. In all the others convalescence took place with the usual rapidity. Five of the children were still-born; one was asphyxiated from an unknown cause; one from the delay of the head, being a breech presentation; one was asphyxiated from delay of the shoulders (bis-acromial diameter 7½ inches); one of them was anencephalic, and in the fifth the mother was dying of small-pox. In none of these cases of still-birth could death be attributed to the chloroform.

The benefit derived from anesthesia in these cases is seen only with certainty in the relief from suffering. How often enclampsia, other diseases, and death, have been averted, it is impossible to say. No case of eclampsia has ever come under my observation where chloroform was being used at the time of attack.

The only cases of dangerous post-partum hemorrhage, at term, that have come under my observation within this period were two which I saw in consultation, and in which no anesthetic had been used. Only one case of extensive laceration of the perineum has happened to me within the period named. The case was a primipara, in which there was disproportion, and I had predicted the result before applying the forceps. Rupture took place while delivering with the forceps, under the influence of chloroform.

I feel constrained to say here, with reference to some of the arguments adverse to anesthesia, that the objection that it retards labor by suppressing uterine contraction, though pointless, as applied to ordinary labor, is not without force in some forms of difficult labor, as in cases of disproportion, in which instruments are not to be used, and in which labor is prolonged and the pain is so great as to demand deeper anesthesia than is ordinarily re-

quired. Even in such cases it is not necessary that the anesthetic be withheld, but the effect should be so graduated that the force and frequency of the uterine contractions shall not be lessened. If the forceps be used (and its use is demanded in these cases), of course the anesthesia must be carried to the degree usual in operative labor, that is to say, to the stage of stupor, or loss of consciousness The question whether in any given case anesthesia retards labor, favors the occurrence of hemorrhage after delivery, or retention of the placenta, must depend upon another point, to-wit: Has the anesthetic so paralyzed the womb as greatly to impair, or utterly to destroy its contractility? As this will depend upon the degree of narcotism, and is a matter of discretion only in most cases, censure for any such result should fall upon the administrator, and not upon the drug. We should remember, too, that the proneness of medical men in the early days of anesthesia to ascribe every accident to the chloroform—a practice that drew from Dr. Simpson some pretty lively criticisms—has not wholly passed away, and so difficult is it for us to separate in our minds the thing precedent from that which follows, even though there be not the slightest relationship in fact, that we are not sure that we shall ever be able to judge of these points correctly in all cases. The ignorant, in the profession and out of it, continually make this mistake, and in the name of humanity, common sense and religion, but really in the interest of falsehood, continually throw obstacles in the way of progress.

Of my correspondents, twenty-five believe that anesthesia retards labor; twenty-two believe that it promotes flooding; nineteen believe that it both retards labor and favors flooding; three are of opinion that it favors retention of the placenta, while two hundred and thirty-four are either silent on this point, or in positive terms disclaim any participation of anesthesia in the production of the casualties named.

Is it right to use drugs for the relief of the pains of ordinary labor? The answer to this question involves the validity of the last objection we have noted, which objection is founded upon the assumption that the process, from the beginning to the close, including the pain, is physiological; that a normal labor cannot be aided, and should not be interfered with. I believe I have not misstated the nature of the objection in thus formulating it. We need not dwell upon this objection; its fallacy should be apparent to all. It is more than doubtful if it can be said of any act associated with pain, that it is purely physiological. Nay, it is certain, abstractly viewed, that such a proposition is false. The term physiological, itself, in the sense here used is relative, and must ever be so while we retain our imperfect natures. If man were mentally, morally and physically perfect, there would be no need of schools and churches for the mind and morals, nor drugs for the body; but since he is not, and the power has been given him, and the privilege, to better his mind and his morals, it has not been denied to him, we infer, the power and the privilege to

ameliorate his physical condition, as well, in any and in all respects. Our right to relieve pain, from whatever cause, is not circumscribed by such narrow limits, and the wheels of public opinion, sure as inevitable fate, will grind to powder the logic of such as, wrapping themselves in this kind of sophistry, would obstruct the march of thought. The ultimate result of the trial now pending will rest alone upon the merits of the practice. It must not be forgotten, too, that the friends of anesthesia claim something more for it than the relief of pain; that by it not only are the pains of childbirth abolished, but, that which is of equal value, its dangers also are lessened.

Agents used, and mode of their Employment. Chloroform is the agent almost universally employed in ordinary labors wherever anesthesia is known, but in obstetric surgery, ether is sometimes substituted in a comparatively small number of cases, both in this country and in Europe. Of my two hundred and sixty-two correspondents, two hundred and eighteen, or eighty-three per cent. employ anesthesia more or less frequently in ordinary labors. Two hundred and seven of this number, or nearly ninety-five per cent. of those who employ anesthetics in ordinary labor, use chloroform; five use sulphuric ether, and six prefer a mixture of ether and chloroform, or alcohol, ether and chloroform. Three, though preferring chloroform, speak favorably of the chloral hydrate. Forty-four, or nearly seventeen per cent. do not employ anesthetics in any case, or confine their use to operative labors. Contrary to general belief, I think, in European countries, chloroform in preference to other anesthetics, is employed quite as frequently in obstetric practice here as there; and with regard to different sections of the United States, my inquiries lead me to think that, while anesthesia in *operative* midwifery is nearly universal in all sections, its employment in *ordinary* labors is most common in the eastern, next in the southern, and is least frequent in the western states. In all these sections its use in ordinary labors is mainly confined to the cities and larger towns. Especially does this appear to be true in the south and west. As already stated, three of my correspondents speak favorably of the chloral hydrate in ordinary labors, and the journals make frequent mention of its use in such cases. Dr. W. S. Playfair, Professor of Obstetric Medicine in King's college, London, in a recent clinical lecture before referred to, recommends its use in strong terms. He begins when the first stage is approaching completion, giving it in doses of fifteen grains, at intervals of twenty minutes, till two or three doses are taken, and afterwards keeps up the effect with smaller doses at longer intervals, if necessary. Thus used "the patient falls into a drowsy state," says Dr. Playfair, "not quite asleep but nearly so. She is roused when a pain begins, but suffers comparatively little; and experienced women, who have the recollection of former labors to guide them, bear strong witness to the immense relief thus obtained." My own experience has been too limited to enable me to express a reliable opinion on the subject, but I am inclined to

the belief that it would be of great value in certain painful and protracted labors, as already alluded to.

Chloroform and ether, in this country, are almost invariably given upon a handkerchief or napkin. Of eighty-five United States correspondents, who speak definitely as to this point, eighty-three thus give it, two only, using "inhalers" of English origin. I am led to believe that a very large majority of European practitioners also use the handkerchief, but many, as Dr. J. Braxton Hicks, of London, Dr. Lombe Atthill, of Dublin, and Professor Carl Braun-Fernwald, of Vienna, use apparatus devised for the purpose. The latter uses "Tricot's basket." Nothing, however, can be safer than the handkerchief, in the way we have advised, and its simplicity strongly recommends it to the timid woman. There is great unanimity of opinion that the proper time for commencing anesthesia in ordinary labors, is when the first stage of labor approaches completion ; sooner, if the suffering be very great, or dilatation be delayed.

Let me add a word or two of caution, partly for the benefit of the patient, and partly for the advantage of the physician : Never give an anesthetic in ordinary labor where the woman is greatly opposed to it, nor urge it strongly where there is great aversion to it on the part of interested friends, or relations.

In conclusion, gentlemen, I will say, that careful observations conducted through twenty-five years of professional experience, and a close analysis of the facts before me, lead me to regard modern anesthesia as one of nature's choicest gifts ; that in the hands of those who are competent to practice our art it is an agent of inconceivable value, both in operative and in ordinary labors , and that, whether for good or ill, and despite the persistent, nay bitter warfare sometimes waged against it, anesthesia in midwifery is slowly and steadily growing into favor. In the words of our distinguished brother, Oliver Wendell Holmes, Parkman Professor of Anatomy in Harvard : "The pains of surgical operation and disease have been divested of much, if not all, of their terror. The agony which seemed inseparable from maternity has been divorced from it, in the face of the ancestral curse resting upon womanhood. With the first painless birth, induced by an anesthetic agent, the reign of tradition was over, and humanity was ready to assert all its rights."