

as savoring of quackery. But I believe that now we have reached the opposite oscillation of the pendulum, and that we are too prone to give credence to the claims of every new drug, and to try every new appliance, surgical, obstetrical or gynecological. Leading drug houses have enriched themselves by reason of our credulity; leading instrument makers have amassed shekels upon the "fads" termed "the recent inventions in surgical appliances."

When put into the crucible of clinical experience some of the drugs put forward in the last quarter of a century have come to stay, whilst the great majority have fallen into deserved desuetude. Some surgical, obstetrical and gynecological instruments and appliances founded upon strict anatomical knowledge, and in accordance with the physical laws of Nature have been welcomed by the profession, while the majority live only by their number in the patent office.

As one of the inventions of late years destined to stay and to assist nature during the throes of child-birth, and thus prevent pathological conditions too frequently a sequel of parturition, I regard the atmospheric tractor. As this instrument has not been upon the market much longer than a year, it is possible that some of you may not have seen it. This instrument consists of a rubber disc intended for application to the presenting part of the child, and maintains its hold on the principle of atmospheric pressure.

We all remember that lesson taught us in our early readers, "How a fly walks on the ceiling." In that we learned that the pressure of our atmosphere, or air, is about fifteen pounds to the square inch. This pressure is equally in all directions. If through any means we can exhaust the air from any definite area, the outside air will press in the proportion of fifteen pounds to the square inch to fill the vacuum thus formed. This is the principle observed every day in our syringes and in our aspirators. This is the principle referred to above by the fly walking on the ceiling. This is the principle illustrated by various cephalopods and cuttle fishes clinging to the rocks and seizing upon their prey.

Over forty years ago, Sir John Y. Simpson referred to this principle and believed it could be made of practical use in obstetrics. He employed it successfully, though in a rude form, using a metallic speculum fitted with a piston.

The instrument I will show you to-day has five square inches of surface. If we could create a perfect vacuum the traction force of this instrument would be seventy-five pounds. But such a result is impossible, even with our finest air pumps. Taking in view these difficulties in apposition and exhaustion, we may safely say that the atmospheric tractor will exert a force equal to half of seventy-five pounds.

Such a force is amply sufficient to deliver any child, unless the head be abnormally large, the maternal passages unnaturally narrowed, or the bones of the pelvis distorted. But our obstetric forceps will fail in these cases. Because when we use the forceps we add, at the least estimate, about one-fourth of an inch to the width of the head, and the dreaded options are given us of craniotomy or Cæsarean section.

I will not claim for the atmospheric tractor that it will effect delivery in every case in which the for-

THE ATMOSPHERIC TRACTOR IN OBSTETRICS.

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BY T. J. SHUELL, M.D.,
OF PARNELL, IA.

There was a time, not many decades ago, when the regular profession was probably too conservative. There was a time when anything new whether in therapeutics or surgical appliances, was looked upon

ceps will deliver; because I believe there are cases in which the compressive power of the forceps will more than counterbalance the additional width that they add to the head. I do, however, believe that the atmospheric tractor will in the future, be the instrument to accelerate labors in that great class that are found between easy labors and dystocia.

I believe that I am no exception to the average class of physicians when I say that I dread the so-called "dry labors;" that I dread high forceps delivery; that I am reluctant to insist upon the use of forceps against the expressed opposition of relatives; that I am sometimes fearful that they may produce rupture of the perineum in primiparæ. How often do we see in our medical journals the statements of reputable physicians to the effect that they had attended a thousand or more cases of labor, and never had to resort to the forceps, and who tell you that labor is a physiological process, and advise you "to let nature alone."

On the other hand how often do we meet physicians who want to use the forceps in every second or third case in order to hurry up things and "show off!" Between these extremes we should draw the golden mean.

The majority of our best obstetricians nowadays, use the forceps twenty to fifty times in every 1,000 deliveries; and are candid enough to admit that there is an immediate or remote danger to mother or child in every case in which they are used.

I don't believe in the indiscriminate use of the forceps—it has contributed as much as any other cause to the specialty of the gynecologist. I don't believe in the "do nothing" plan; because I know that we can assist in parturient cases without doing injury to mother or child. I don't believe in heroic doses of ergot in the first and second stages of labor; nor in pushing chloroform to somnolency, or to a very opposite effect—wild intoxication.

Yet, I do believe in assisting labor. I believe that every second or third case of labor needs assistance, and I believe that such assistance can be given, without injury to mother or child, by the use of the atmospheric tractor.

I have used the atmospheric tractor for about a year, and have employed it in about twenty cases. It will do away with the tedious waiting of "dry labors"; it can be applied at the superior strait very readily when the first stage has been completed, and thus obviate the necessity of high forceps delivery.

It will revive the pains when they have grown feeble or altogether disappeared. It will prevent rupture of the perineum by assisting in enucleating the head during the interval between the pains. It does not act on the principle of an adhesive plaster applied to the scalp; the vacuum formed by the resiliency of the rubber, and by traction, holds it in close apposition to the bones of the cranium. Strange as it may appear its application, even without traction, will cause the head to descend. This point was illustrated in several of my cases; the head descending rapidly upon the application of the tractor without traction. I can explain it only on the principle that the atmospheric pressure was relieved from a part of the head, and the partial vacuum thus formed caused the head to move in the direction of the tractor.

The tractor can be used in breach presentations as well as in head presentations; I made a trial of it in

two such cases where it materially assisted. It can do no harm. It will not mark the child; it will not tear off the scalp; it will not suck out the child's brains.

Strict antiseptic precautions may be used with it as well as with any other surgical instrument. The only difficulty I have ever experienced was in its application; the traction force, if care be taken to secure apposition at the beginning of a pain and traction during the rest of the pain, was all that I could desire. Where the external passages are narrowed (as in the case of primipara), or where the os is only partially dilated, it is difficult of application. Care must be taken not to attach it to the anterior lip of the uterus during incomplete dilatation.

By doubling the disc between the forefinger and thumb these difficulties may be overcome.

There are two patents of this instrument by a physician in Philadelphia; in one, apposition is maintained by the resiliency of the rubber; in the other, by an exhaustive air pump. I prefer the former. There is still probably considerable room for improvement. The only object in presenting this paper is the good of humanity and of the medical profession at large, and to maintain that the principle of the atmospheric tractor is in accordance with the physical laws of Nature.