very decided active congestion, but this invariably within a few weeks gradually took on the dusky, turgid characteristics of passive congestion, and growth stopped, the uterus relaxed and became flabby and receded to nearly its original condition.

The means of inducing this congestion which I have used have, as I said above, not been new. They have been the intracervical application of impure carbolic acid, negative galvanism, and faradism, and these have been supplemented by prescribing for the patient's home use two quart, very hot douches each night.

Great care should be used in all manipulations in these cases to obtain especial cleanliness of all parts and of all instruments, as inflammation is never a factor at the beginning of these cases and is to be scrupulously avoided.

In obstinate cases in which the above produce no result dissection may be practised, and has proven almost invariably useful. It appears to induce growth, just as a laceration of the cervix produces overgrowth.

Any of these methods and many others will almost invariably stimulate a growth in the uterus if the case is properly chosen, and undoubtedly all of you have seen a growth begin only to a little later cease, and eventually recede, much to your own disgust and your patient's disappointment. This at least has many times been my own experience until recently, when I have been more fortunate.

The proper method of correcting this retrograde tendency was first suggested to me during the treatment of an entirely different condition. Probably all of you have noted that in performing operations in which hemorrhage, directly or indirectly, from the uterine artery is a factor nothing will more promptly control this arterial hemorrhage than traction on the uterus, downward if operating through the vagina, upward if through the abdomen. It was while operating to repair a lacerated cervix at the time that I was much exercised over one of these cases of faulty growth, that the application of this principle suggested itself. If uterine growth depended absolutely upon a free and abundant supply of arterial blood, and if even very moderate downward traction shut off or curtailed this supply, and at the same time favored passive, or venous, congestion, it seemed to account for all, or nearly all, past failures. This sagging is of course the inevitable result of an increase of weight in the uterus, with a weak, also undergrown, set of ligaments to support it. There is a very marked tendency to retroversion at this period. It is, therefore, at this point that the importance of the round ligaments, in fact, all the ligaments, comes into play.

After the uterus has begun to grow—not merely to swell—it of course must sag, and the tendency to retroversion is greatly increased if an intra-uterine electrode is used, as the uterus is more or less retroverted during treatment. As all of our efforts to cause the uterus to grow have operated by inducing a considerable increased

arterial circulation, and as the sagging shuts off this circulation, the inevitable result is to stop the growth.

This sagging and retroversion are to be accounted for in two ways, both of which are operative at the same time: (1) The stimulation used to induce growth acts directly upon the uterus and only indirectly upon the ligaments, thus rendering the early growth in the uterus much more rapid than in its supports; (2) muscular tissue is much quicker to take on growth, and being started progresses much more rapidly than the fibrous tissue of which the ligaments are composed. The indication, then, seems plain to properly support the uterus from the start.

Owing to the use of the small hot douches by the patient at home, packings cannot be used, and as a marked tendency to retroversion exists, a pessary becomes the only practical method of giving this support, and I have ordinarily used a small soft or hard rubber retroversion pessary, with or without a bulb, according as the ovaries showed a tendency to prolapse or not. The smallest pessary that will do the work should be used, and, as the patient is so frequently seen, there is no danger of its doing any harm.

By following the above treatment I have been most gratified by results, and patients have gained uteri which gave every evidence physically and functionally of being normal. They have all, moreover, in varying periods, acquired an ability to support themselves by their own ligaments. I have thus far never had occasion to perform any operation to aid the ligaments in their work.

A patient is never to be discharged until she is physically and functionally up to normal, and it has become my rule to require the patient to wear the pessary six months after the uterus becomes of normal depth and menstruation is regular. It is then removed tentatively and the patient seen once a week until after the next menstruation, to make sure that the ligaments are sufficiently strong.

One caution seems to me necessary, that is, that we should satisfy ourselves that the flows of blood patients achieve during this treatment are really catamenia, and that the increase in the uterus is actual growth, as shown by the uterine measurement, and not merely swelling due to inflammatory reaction. Bleeding from the uterus accompanied by swelling are easily induced, but that is not what is desired.

TREATMENT OF INVERSION OF UTERUS.¹

BY E. W. CUSHING, M.D., BOSTON,

Professor of Abdominal Surgery and Gynecology, Tufts University, Boston.

THE treatment of recent cases of inversion is a part of the obstetric art and is sufficiently settled and well understood, so that it requires no comment. With chronic cases, however, where the

¹ Read before the Suffolk District Medical Society, Section for Obstetrics and Diseases of Women, Nov. 27, 1901.

uterus has undergone involution and the cervix has contracted, while adhesions have presumably been formed within the funnel of the inverted uterus, the best mode of treatment is by no means so easy to determine.

Leaving out of consideration the ingenious methods of constant elastic pressure by suitable apparatus, which are frequently successful when used early and faithfully, there remain the inveterate cases where surgical relief is demanded, and where all other measures are futile and really dangerous. For such cases three procedures are applicable: (1). There is the method of Thomas, in which the abdomen is opened and the funnel dilated so that the uterus can be replaced in its proper position; (2) the vaginal amputation of the uterus, which is easy of performance, and which of course cures the malady but robs a woman of her uterus; (3) there is the method of Kuestner, by which the cul-de-sac of Douglas is opened from the vagina, the funnel dilated if possible, and the uterus replaced, or, if this cannot be accomplished, the uterus is incised on its posterior aspect, as far as may be necessary to accomplish its reposition, and then the incision in the uterine tissue is sewed up, and the opening in the posterior vaginal fornix is closed. As a modification of this operation the anterior fornix may be incised, the bladder separated from the uterus, and then the latter may be incised anteriorly as far as is necessary, when the fundus is replaced, its incision sutured, and the uterus fastened forward by the method of Mackelrodt.

The operation of Thomas, which at the time when it was devised by him certainly was a bold and ingenious procedure, has fallen into a desuetude which I believe is unmerited. As described and figured by him in 1872 it consisted in laparotomy, followed by dilatation of the funnel, guided by the sense of touch in the depths of the abdomen, and naturally it was both difficult and dangerous. His first case was successful, although the vagina was torn, presumably so as to open the peritoneal cavity from below. His second case died. Mundé attempted the operation in 1888, but could not reduce the uterus, and therefore contented himself with removal of the ovaries, afterwards amputating the body of the uterus with the elastic ligature. Kelly reported an attempt at Thomas' operation, with failure to reduce the uterus. As far as I can learn it has never been performed in this country except in the instances above mentioned, and all the cases recorded number 12, with 7 successes and 5 failures, of which 2 were fatal.

The weight of surgical authority, as evidenced by textbooks, seems to be against the operation; for instance, Pozzi does not approve of it; Martin considers Thomas' operation as a last resort in cases of irreponible uterus, but does not think it is safe, considering the possibility of adhesions in the funnel; he prefers amputation of the inverted corpus. Auvar, 1892, suggests that perhaps Thomas' method could be tried again, although one out of two cases was fatal. He appears to pre-

fer amputation by vaginal hysterectomy. Dudley, 1900, says only that Thomas' method has fallen into unmerited discredit. Other authors have very little to say as to what operation should be selected.

The vaginal methods seemed to offer various advantages, and, like vaginal hysterectomy and the vaginal operations for salpingitis, it was an improvement on former abdominal methods and a valuable procedure during the transition to modern and perfected abdominal procedure. It has the various disadvantages, however, of all vaginal operations in comparison with the corresponding abdominal procedures, which have caused the latter to be preferred lately, since abdominal technique has become so perfect.

Although, with others, I have formerly been satisfied to remove the inverted fundus by vaginal hysterectomy, yet in a case which recently came under my care I decided to use Thomas' method, for the following reasons:

This method has never been tried since the introduction of the Trendelenburg position, and there is reason to suppose that this posture will be as much of an advantage for cases of inversion as for cases of hysterectomy.

In case there be any adhesions, it is evident that they can be separated with more care and discrimination in operating from above, provided the Trendelenburg position is as useful as it may fairly be expected to be.

The uterus having been replaced, it is evident that the ligaments which are to support it will be elongated and weakened, and it will presumably be advantageous to fasten the fundus to the abdominal wall, thereby holding it in a proper position and averting any chance of a recurrence of the inversion.

The uterus having a great tendency to bleed and the patient being exsanguinated, it is clear that less blood will be lost if all the manipulation can be done from above, while the patient has the pelvis elevated and the ovarian and uterine arteries can be compressed.

The whole operation will be cleaner and with less chance of septic infection, if it is not necessary to open the cul-de-sac of Douglas, as must be done in Kuestner's operation. I am aware that in some cases a modification of the latter has been proposed, whereby the peritoneal cavity is not opened, but only the cervical portion of the uterus is divided in the vagina, and thus by pressure on the inverted fundus it may be reduced. In this method, however, we remain in ignorance of the presence and condition of adhesions in the funnel, and there is a chance of injuring or even perforating the fundus without knowing it, and if at the moment of reduction there is any tearing of the peritoneal surface of the uterus or injury to the blood vessels, there is no means of knowing it or of repairing the damage.

Mrs. X., age 25, was admitted to my service at the Woman's Charity Club Hospital, suffering with severe hemorrhage, with the following history: She was de-

livered of her first child 14 months previous to admission, and had severe shock and hemorrhage, but her condition was not recognized by her physician. She had a slow convalescence but finally got up and tried to resume her household duties, but could not perform them. At each monthly period she flooded profusely. Finally, after a year of suffering and weakness, she sought advice of another physician, who examined her and made the diagnosis of a uterine polyp. He gave her ether with the intention of removing it, when he discovered the nature of her trouble, and desisted. He advised her to enter a hospital, and in fact she did enter a large general hospital. Here it was proposed to remove the uterus *per vaginam*, but she did not feel satisfied to lose her uterus, and left the hospital and entered my service. On examination the vagina was found to be occupied by the inverted uterus, which bled freely on the slightest touch. It was about the normal size, or only slightly enlarged, felt hard and was quite irreducible. Its position was such, and it occupied the vagina so fully, that any attempt to remove it or reduce it by Kuestner's method would have been difficult in execution.

The patient was very anemic, and the flooding at the last period had been so severe that her life had been considered in great danger at that time. The next period was due in a few days, and it seemed best to do nothing until that was safely over. She was therefore put on generous diet with iron, etc., and when menstruation came on the vagina was kept firmly packed with gauze, and the foot of the bed was well elevated. In this way loss of blood was prevented almost entirely. At the operation, which was performed a week later, I had the efficient assistance of Dr. Elizabeth Riley.

When the abdomen was opened the patient was put in the Trendelenburg position, and the intestines being packed out of the way and covered with pads, the funnel of the inverted uterus could be seen at the bottom of the pelvis. I was much pleased to find that gentle traction on the round and broad ligaments brought the uterus up, and when to this was added moderate upward pressure by the hand of my assistant in the vagina, the top of the funnel, with the ovaries and tubes, could be easily brought outside the abdomen.

I now attempted to dilate the funnel with a Sims' dilator, and when it was somewhat enlarged I used a Goodell dilator. The tissues were exceedingly dense, and gave very little and very slowly. Still, something was gained, and moderate taxis in the vagina and moderate traction on the round ligaments kept all that was gained. It was slow work, but I knew that in the long run the steel dilator must overcome the resistance of the uterus, and I was more afraid of tearing than of delay. After about 20 minutes of dilatation and traction, with aid from the pressure through the vagina, the organ was all reduced except the fundus itself, and I was afraid that I should have to incise the resisting tissues, when suddenly out popped the fundus and the uterus was right side out again. At the moment of reduction the peritoneal surface of the fundus tore, not very deeply, but sufficiently so to require a catgut suture. There had not been many adhesions of the ligaments and tubes in the funnel, but now the whole organ had no support and would fall in any direction; so the fundus was stitched to the abdominal peritoneum, and the abdomen was closed.

Convalescence was uneventful. The cavity of the uterus was washed out repeatedly with an antiseptic solution. The patient went home well and has had no more hemorrhages.

My experience in this case was in entire conformity with what I expected *a priori*, and I think it justifies me in claiming that the use of the Trendelenburg position is of so great advantage in Thomas' operation for inversion of the uterus, that with this modification it becomes the operation of election, being easier, safer, cleaner

and more surgical and satisfactory than any other. Referring to the illustrations of the original operation, where the dilatation had to be done blindly in the depths of the pelvis, it is easy to see that the method would not be satisfactory today. In fact, I could never have succeeded in this case by the original method. It is very different, however, when the uterus is brought up to or outside of the abdominal wall, when the intestines are out of the way and well covered up, so that there need be no hesitation in taking plenty of time for the dilatation. If it is objected that not all cases would permit of thus lifting up the uterus, I would reply that, at any rate, by opening the abdomen we can find out whether the organ can be brought up and whether there are adhesions present, and as the ligaments are always relaxed and elongated there is every reason to suppose that they will in all cases permit of the substantial elevation of the uterus to a point where dilatation can be employed under the guidance of sight.

VARIOLA, OR SMALLPOX.¹

BY JOSEPH E. DUXBURY, M.D., LONSDALE, R. I.

THE subject I have chosen for my paper tonight is one which the general practitioner of today is necessarily unfamiliar with, and it is only through some unforeseen circumstance that we are enabled, in this country at least, to study this dreadful disease. It is only upon the advent of a local epidemic or an occasional isolated or sporadic case that we meet with it at all, and, consequently, the physician in general practice is seldom called upon to treat a case of smallpox. And although one of the great triumphs of modern medicine has been the stamping out of this terrible disease, it is still so frequently with us that we should be on our guard and, if possible, be able to diagnose it when it confronts us.

Therefore, I believe it to be the duty of a physician coming in contact with cases of this nature, to study them conscientiously, so that his observations may be of practical benefit, not only to himself but to the profession at large. It is for this reason, Mr. President and gentlemen, that I have chosen this as my subject tonight, and it is for this reason that I will try to confine myself to the cases I have actually seen rather than to a discussion of smallpox in general. I refer, of course, to the late epidemic in our own State in the town of Lincoln, and, as you know, I was appointed especially to handle the matter to the best of my ability, in the village of Manville, where the epidemic was in progress. The importance of diagnosis and the difficulty of diagnosis was well shown in this epidemic by several physicians of large practice, openly stating that it was not variola at all, but chickenpox, and I believe no one was able to positively diagnose

¹ Read at the Annual Meeting of the Pawtucket Medical Society.