On an average, he micturated at half-hourly intervals, day and night. Just previous to his admission here this interval was reduced to five minutes. This act was always productive of a varying amount of pain and straining. The pain always preceded micturition, and increased in intensity as his desire to micturate increased. This pain, which was cutting in character, always shot from his perineum to the end of his penis. He had had retention of urine several times. There was no history of gonorrhœa, or evidence of tuberculosis in any other organ, or in his relatives.

Dr. Robertson has seen him at odd times during this period; he never discovered anything that would lead him to suspect tuberculous disease of the testicles.

The patient has been married seven years, and his only child was born five years ago. Sexual excitement or coitus made no difference as regards his pain. Up to a year ago he had a more than usual number of erections. His urine used to be "thick and gravelly," but for the last twelve months—up to his admission here—it has been "clear." He has never seen any blood-stained semen, but on three occasions his urine has been blood stained.

Exposure to cold has, so the patient thinks, brought on these attacks. It has certainly aggravated them.

Condition on Admission.

The patient looked neurotic: at any rate he took a morbid delight in detailing his symptoms. He complained chiefly of pains in the perineum. At times these were constant, and lasted for two or three days; again they might be mere shooting pains. The pain was aggravated by micturition, and sometimes by defæcation, when violent rectal tenesmus followed. If the pain lasted long it was dull and boring, with shooting pains at intervals. He was obliged to micturate every half-hour. He had pain in the lumbar region, shooting down the outer side of the right leg. The right testicle was very slightly larger than the left; the enlargement was general. This, the patient said, had its origin in a kick on the testicle when a boy. The patient was very tender to a rectal examination. By this means an irregular nodular mass, firm to the touch, and hardly the size of the little finger, could be detected on the right side of the base of the bladder. The swelling commenced immediately above the prostate and extended upwards, backwards, and slightly outwards, keeping close to the bladder. The prostate was normal in size. The passage of a sound produced great spasm, and free bleeding after its use. The urine was blood-stained for three days. No evidence of stone in the bladder or kidneys could be detected. On microscopical examination the urine revealed pus cells, crystals of triple phosphates, and tubercle bacilli. The lungs were healthy. The patient was kept under observation for some time. There was no improvement in his condition, and as far as could be ascertained the disease had not infected any other part of the genital apparatus. It was then decided to excise the seminal vesicles.

Operation.

On March 21st, 1901, the patient was chloroformed and fixed in the lithotomy position. A sound was introduced into the bladder and the sphincter of the anus stretched. A semilunar incision, 3 inches in length, with its concavity forwards, was made across the perineum, an inch in front of the anus. The soft parts were retracted, and the dissection down to the vesiculæ seminales was mainly done with a blunt dissector and scissors. All the bleeding points were twisted. Both vesiculæ seminales were seen to be enlarged. The soft tissues around them receded so readily that some difficulty was experienced in getting a firm hold of them, in spite of the help given by the sound in the bladder and two fingers in the rectum. Ligatures were placed and both vesiculæ removed in their capsule. There was some oozing deep down in the wound; this was stopped by plugging with iodoform gauze. The edges of the skin incision were brought together with silkworm sutures, one being omitted to allow of a piece of the iodoform gauze to come through and act as a drain. A rubber tube was placed in the rectum to prevent any tension there, due to the accumulation of flatus.

March 22nd. The patient had passed a good night. The urine came naturally, and was deeply blood-stained. He complained of slight pain in the region of his bladder. A portion of the gauze was pulled out and the rectal tube removed.

March 23rd. The patient is quite easy. More of the packing was removed. The urine contains abundant stringy mucus, and a slight amount of pus.

March 24th. He has still a little hypogastric pain. On removing a further portion of the packing about 2 drachms of serous fluid escaped. The wound is healthy. He now retains his urine for from two to three hours.

March 25th. The patient is very well. The whole of the packing was removed, 2 ounces of serous fluid escaping. A small rubber drainage tube was inserted.

March 26th. The drainage tube was removed. There is scarcely any discharge. A probe cannot be passed into the wound. Some of the outer stitches were removed. A simple enema was given which cleared the bowels.

March 28th. The remaining stitches were causing slight irritation, so they were removed. Urine is passed every three or four hours. He is not inconvenienced any way, and has no pain.

April 2nd. A rectal examination was made; it was not painful. The vesiculæ seminales could not be detected.

April 7th. The patient was discharged. Wound soundly healed. There was perfect relief of all his symptoms. From the operation onwards his temperature has been normal.

Microscopical Examination.

The specimen was sent to the Pathological Department, Owens College. The following is the microscopical report: "The lesion is tuberculous. The following changes are to be seen in sections. The mucosa is in a condition of catarrhal inflammation, the submucosa is the seat of scattered early tubercles, the wall is much thickened, and in the lymphatics there are scattered tubercles, even in the peripheral part—that is, the subserous connective tissue."

The patient has reported himself on several occasions since his discharge. He says he never enjoyed better health. He looks well, and

has put on flesh. He passes urine every four or six hours during the daytime, and has not to get up at night.

On June 26th the right epididymis was found to be slightly enlarged. This would seem to be further proof that the lesion was primarily one of the vesiculæ seminales, for certainly this has only developed after the operation.

REFERENCES.

¹ *Lancet*, vol. ii, 1889, p. 1151; *BRITISH MEDICAL JOURNAL*, vol. i, 1890, p. 1509.

THE USE OF A BAG PERVIOUS TO AIR IN ETHER ANÆSTHESIA.

By W. MCGREGOR YOUNG, M.A., M.D.,
Leeds.

THE apparatus invented by Clover, and variously modified since, for the administration of ether is such an admirable one, that I do not know that one need ask for a better as a medium for ether giving save in one particular, and that a most important one, namely, the rubber bag. Although obviously possessed of some objectionable features, the rubber bag has been accepted as part and parcel of the necessity of things, and remains as an unclean but indispensable adjunct to the administration of ether in this country. Without doubt the open method of giving ether on a mask or cone is too slow in its effect to be of real practical use, and it is this slowness which has necessitated the use of the bag in question. The argument is, that to produce and maintain ether anæsthesia you must have the asphyxial element present; to this end you must exclude air and hence the rubber bag. I believe this to be a wrong and mistaken conclusion, as I shall afterwards show.

The objections I would make to the rubber bag are, first, that it is apt to produce more of the asphyxial element than is desirable—namely, cyanosis; and, secondly, that it is unclean. As regards the first, considering that the object of the rubber bag is to introduce the asphyxial element, it is not quite fair to charge it with producing a lividity which is so far intended; but it often does more. Even in the best of hands it occasionally produces cyanosis to a degree that cannot be otherwise than a strain on the right ventricle, and certainly begets a frothy condition, which is undesirable even if it do not lead to further trouble. If it were possible to remove this reproach of cyanosis and its consequent troubles from ether anæsthesia, nearly all the objections to it would be groundless, and this can be done by using, instead of the rubber bag, one made of linen, or other pervious fabric, such as I have devised and describe below. The second objection, that of uncleanness, has doubtless presented itself to every anesthetist who ever thought of the condition of his rubber bag, and yet I know of no way of avoiding it. It is no mere sentimental objection that the last patient who breathed into the bag was the subject of intestinal obstruction and had a foul fecal odour in his breath, or was a sufferer from carcinoma of the œsophagus or tonsils.

For the last two or three years I have been in the habit of meeting these objections by rinsing out the bag well with water, some antiseptic occasionally being added, after each operation, thus ensuring as much cleanliness as possible, and, so far as the avoiding of cyanosis is concerned, I have dispensed with the bag when I could, allowing the patient to breathe through the open inhaler, resorting only to it when this proved insufficient. On the whole, these means met the case fairly well, but, while modifying the objections, they did not entirely remove them.

In America, where ether is the anæsthetic mostly in use, a towel folded cone-shaped, and covered or not by a thin waterproof, is employed, and apparently does well, although it finds little favour in this country. This method has not, however, appealed to me, as it has seemed lacking in precision after having been used to measuring the ether given through a Clover apparatus. It occurred to me, however, to substitute a linen bag for the rubber one, and this has proved itself to be so well adapted for the purpose, and so completely meets the objections to the ordinary rubber bag that I should like to call the attention of the profession to it. I have tried it now in a sufficient number and variety of cases to enable me to pronounce it a success.

The bag is made of a fine linen known as "holland" and is

shaped somewhat like the ordinary bag, the body of the bag I have had made of three pieces accurately sewn together, a collar of the same material with a tape attached to be slipped over the ordinary Clover bag-mount and tied there.

As may be guessed this bag does not fill and empty as does the rubber one to the breathing of the patient, it is simply put on in a "bunched-out" condition and only a slight rise and fall tells of the expiration and inspiration. My experience with it is that the patient goes under very quietly, I may say with almost suspicious quietness, there is none of the usual noisy breathing, hardly any salivation and absolutely no lividity, abdominal heaving is less marked, the anaesthesia is as quiet as with chloroform. The time occupied to produce anaesthesia is of course longer than with the rubber bag, varying from seven to twelve minutes. The corneal reflex seems to be lost disproportionately soon. The amount of ether consumed is also considerably more—during the first fifteen minutes about twice as much being used—but in a prolonged anaesthesia the disproportion is not so great as will be seen in a note of the appended cases. There is another very great advantage in the use of the linen bag, in that the anaesthetist holds a trump card, so to speak, in the shape of his chloroform drop bottle; should the patient prove hard to anaesthetise or threaten to come round, he can sprinkle a little chloroform on the bag, selecting by preference the place where the linen shows the most marked rise and fall of the breathing. A freshly-washed and starched bag is used for each case; it can be slipped on to the ordinary Clover mount and tied in position in half a minute.

In practice I turn the Clover gradually, but, compared to the old mode, rapidly on to full, and keep it there or thereabout till sufficient anaesthesia is produced; later on a less concentrated vapour will be found enough. Perhaps one is usually inclined to over-value one's own discovery, but in this case I do not think that I make too much of it in saying that it ought to supersede the rubber bag completely. A fresh clean aseptic bag for each patient is a thing to be desired when it can be had at the cost of washing. The entire absence of even lividity will commend it to every anaesthetist, and the possible resort to chloroform in addition without change is a happy incident.

I may say that the bag has been used by several other men here with the same good results. The bags can be had from Messrs. Reynolds and Branson and Mr. Rauschke of this city. I might add that for further asepsis the Clover chamber can be boiled or immersed previous to operation in a 1 in 20 hot carbolic solution. The mask I have had made of thin nickelled brass, with a detachable red rubber facepad, so that the whole can be rendered as sterile as the operator's instruments.

The following is a summary of some of the cases in which the method has been employed:

Extract of Cases.

Date.	Name.	Operation.	Amount of Ether.	Time of Administration.	Average Time per Ounce.
July 1st..	Mrs. T.	Choledochotomy, etc.	11 ozs.	1 hr. 40 min.	1 oz. in 9 min.
July 1st..	Mrs. F.	Nephrotomy	5 ozs.	45 min.	1 oz. in 9 min.
July 2nd	Mr. D.	Appendectomy	4 ozs.	40 min.	1 oz. in 10 min.
July 3rd.	Mrs. B.	Ovariectomy	7 ozs.	48 min.	1 oz. in 7 min.
July 6th.	Miss M.	Gastro-enterostomy	4 ozs.	40 min.	1 oz. in 10 min.
July 10th	Mr. W.	Exploratory and colotomy	4 ozs.	35 min.	1 oz. in 8 min.
July 10th	Mrs. A.	Breast amputation	4 ozs.	45 min.	1 oz. in 11 min.

I have had in all some 100 cases similar to the above; the average time to produce anaesthesia being 10 minutes, and the average amount of ether being 1 oz. per 8 minutes.

At the Court of Assistants of the Worshipful Company of Dyers of the City of London on Wednesday, November 6th, Dr. George Flux and Sir Edward Montague Nelson, K.C.M.G., took their seats as Prime Warden and Renter Warden respectively, they having been previously elected at the last General Court held on October 9th.

METHOD OF PREPARING STERILISED CATGUT.

By C. ARTHUR BALL, M.B.,

House-Surgeon, Sir Patrick Dun's Hospital, Dublin.

THE impossibility of sterilising any except the finest catgut with reasonable certainty has led to the abandonment of this valuable form of suture and ligature material by a number of surgeons.

To render the inner layers of thick catgut sterile, it is necessary to subject it to heat, as an antiseptic cannot be relied on to act on more than the outer surface. Before starting to prepare any catgut it is advisable to test its strength, as occasionally a strand is found which looks all right, but is quite weak and useless for any method of preparation.

The following method of preparation has been employed with success for the last eight months on catgut up to No. 4

(Droncke). A glass reel is used, 1 inch in diameter and 3 in length, with a flange at each end, each flange being pierced with a hole (A and B). A reel of lignum vitæ or any wood that sinks in water answers the purpose equally well. One end of the gut is tied through the hole A, and the gut is wound firmly and evenly on the reel in a single layer; the other end is then passed through the hole B, and tied to the free end at A. The winding can easily be done with an ordinary bandage roller by placing a perforated cork in each end of the reel. The knots joining two strands together must be very carefully tied, else they will slip when boiled, and such an accident destroys the whole reel of gut by allowing it to untwist. The reel is now placed in a 5 per cent. solution of formalin, and left for about 24 hours; it is then thoroughly washed in cold water. It is next dropped into boiling water and left boiling for from 5 to 10 minutes, according to the thickness of the gut. Lastly, it is placed in the following solution:

Mercury perchloride	...	1 part
Boiled glycerine	...	250 parts
Methylated spirit	...	1,000 parts

The gut is now ready, and receives no handling after sterilisation until it is used.

The glycerine and spirit dehydrate the gut, the former rendering it pliable. The mercury perchloride impregnates the gut swollen by boiling with an antiseptic, and hardens it sufficiently to prevent it twisting when moistened by the tissues during the process of stitching, a difficulty with gut dehydrated by alcohol alone.

Catgut prepared in this way is undiminished in strength, and keeps well; it is pliable and knots nicely; it is absorbable (No. 0 is absorbed in about 6 days); and lastly, it is sterile.

MEDICAL STUDENTS IN AUSTRIA.—Statistics recently collected by the Vienna Medical Council show that the numbers of medical students in the Austrian universities during the last ten years were as follows: 1891-92, 5,275; 1892-93, 4,193; 1893-94, 4,985; 1894-95, 4,686; 1895-96, 4,297; 1896-97, 3,954; 1897-98, 3,604; 1898-99, 3,207; 1899-1900, 2,793; 1900-1901, 2,555, showing that in the ten years the number has fallen by 2,720, or 48 per cent. The number of degrees of Doctor given during the same years was as follows: 721, 716, 764, 857, 801, 724, 732, 675, 714, 603. Therefore the number of graduations has not fallen off very materially.