

oxide of mercury. Such washes may be applied two or three times a day, and diluted to suit each case. Zinc, lead and copper salts may do good.

However, whatever treatment is followed, that which is simplest, neatest, and gives the most comfort to the patient — is most in accordance with common-sense — is the ideal one, and should be selected in preference to putting into practice any pet theory by which nothing additional is gained.

NOTE ON THE BROMIDE OF ETHYL.¹

BY CHARLES GREENE CUMSTON, B.M.S., M.D.

BROMIDE of ethyl or hydro-bromic ether, was discovered in 1828 by Serullas, the formula being $C^2 H^5 Br$. It is most important not to employ the bromide of ethylene, a very toxic substance, only slightly volatile and a bad anesthetic. Bromide of ethyl is a very volatile liquid, its boiling-point being $40.7^{\circ} C$. It burns with difficulty. Its density is 1.40.

When fit for administration the liquid should have the following properties: (1) It must be extremely volatile; when poured on the hand, it should evaporate completely and rapidly without leaving any deposit. (2) It must be colorless; if it is yellowish, this signifies that it is decomposed and that a little bromine is set free, which would irritate the respiratory system. (3) Its odor must be sweet and ethereal.

The purity of the drug depends (1) on the manner of its preparation, and (2) on the manner of preservation. The only correct manner of preparing it is by decomposing alcohol of wine by sulphuric acid in presence of bromide of potassium, and afterwards rectifying it by distillation on oil of sweet almonds. Light, dampness, contact of air decompose it. It should be kept in tubes hermetically closed by a flame.

PHYSIOLOGICAL ACTION.

The studies of Dastre have proven that bromide of ethyl is adapted for use in the human subject. Narcosis by this drug is similar to that of chloroform. Both act on the brain, then on the medulla, and lastly on the bulb. Chloroform chemically irritates each centre before it paralyses them; bromide of ethyl acts directly, there being consequently no excitement and no laryngeal reflex to be feared. Still more, it is a vaso-dilator; it produces congestion of the head, and thus no syncope is to be feared; at the same time, this permits of the sitting posture of the patient, so necessary in certain operations on the throat.

MODE OF ADMINISTRATION.

The dose of bromide of ethyl varies according to the age of the patient. In children from two to ten years, I employ from 12 to 15 grammes; for children over twelve and adults, from 15 to 25 grammes is to be given, according to the constitution of the subject. The patient should be instructed emphatically to take nothing to eat, not even a glass of milk on the morning of the operation. The mask should cover the mouth and nose perfectly, and no air be allowed to enter; and on this point I insist. The entire dose should be given at once. Twenty to thirty seconds is sufficient to obtain sleep, and the operator should be in readiness to commence as soon as narcosis is com-

¹ Read, by invitation, before the Obstetrical Society of Boston, October 13, 1894.

plete. The insensibility lasts from two to three minutes, sometimes a little longer. When narcosis is complete, the mask is removed; and under no consideration should it be again applied. Patients coming out of the narcosis are usually calm. They slowly open their eyes and speak coherently, remembering nothing of what passed. The patients are up on their feet in a few minutes perfectly well.

I have given or have had bromide of ethyl given under my supervision some two hundred times. At the Boston Dispensary I employed it in the surgical service of Dr. E. O. Otis in some ten cases, and have given it in private practice at my office three times since my return to Boston. Some deaths have been reported; but if my methods of administration are followed, I feel sure that no accident can occur.

USES OF THE BROMIDE OF ETHYL.

It may be said at once, that all short minor operations can be done during narcosis with this drug. I have several times dilated the sphincter ani for fissure, with complete success. Superficial tubercular glands can be removed, abscesses opened, etc. In a case of mammary abscess of considerable extent, that I operated on a year ago, I was not only able to make a deep incision, but used the curette freely, the patient being entirely unconscious of the painful operation. Narcosis with this drug is particularly good when examination of the pelvic organs is to be made or a pessary introduced, for there is complete relaxation of the abdominal muscles, thus permitting an easy palpation. I could enumerate many other cases in which I have employed the bromide of ethyl but I think the above will suffice to show what may be accomplished with it.

In closing, let me add that no disagreeable odor remains in the room, and the patient is able to enjoy his breakfast without nausea or headache. I would formulate the following rules as to the administration of this useful anesthetic:

- (1) Bromide of ethyl should be carefully distinguished from the bromide of ethylene.
- (2) Only employ a pure, and, if possible, a freshly prepared bromide of ethyl.
- (3) Only give the drug *en masse*, as some patients have died by giving small and continued doses.
- (4) Do not prolong the administration over *one minute*.
- (5) Once the mask is removed and the operation begun, do not apply it again.
- (6) The contra-indications are dangerous lesions of the heart and lungs, as well as of the kidneys.

Clinical Department.

A REVIEW OF A SUMMER'S WORK IN THE GYNECOLOGICAL SERVICE OF THE BOSTON CITY HOSPITAL.

BY E. P. STARBIRD.

THIS paper is written as an adjunct to the cases reported by Dr. Blake. It is not intended to discuss any special lines of cases at length, my object being merely to outline in a very general way the material which has presented itself for treatment. Special cases of interest will be briefly mentioned.

Owing to the limited number of beds, and the de-

mands made upon the service, comparatively few cases of simple lacerations were admitted. Of these, two cases only are worthy of special mention. One is the case already reported by Dr. Blake. In the other complete rupture of the perineum had taken place, through the sphincter ani, extending one and a half inches up the bowel. The patient's condition at entrance was one of profound anemia, and the temperature was somewhat elevated. After two weeks of general tonic treatment the rupture was repaired, using fine silver wire and three catgut sutures. Owing to the extremely fragile condition of the perineal tissues the operation was quite difficult. Convalescence was normal. The bowels moved on the fourth day without disturbing stitches. On the tenth the stitches were removed, and excellent union found to have taken place. Nine days later the patient was discharged with complete control of sphincter.

In a general way the indications for repairing a lacerated cervix were considered to be eversion and erosion of the endocervical membrane with cystic degeneration, to an extent sufficient to cause symptoms demanding relief. No cases were operated on which showed the presence of inflammation of the appendages.

Alexander's operation was performed nine times during the summer. In all but one case (that reported by Dr. Blake) the operation was successful, completely relieving the symptoms which called for its performance, and restoring the uterus to its normal position. The ligaments were found without special difficulty. In one case the operation was preceded by dilating and curetting for endometritis and retroflexion, in another case by plastic operations on the cervix and perineum. A case entered the hospital this week on whom Dr. Blake performed an Alexander fourteen months ago. The uterus was found in normal position, and showed no tendency to prolapse when the patient was asked to bear down.

The indications for the performance of the operation were considered to be, briefly, retroversion of a freely movable uterus, without pelvic inflammation, where the cervix and perineum were practically intact, and where the symptoms were of sufficient severity to demand relief. The uterus was always replaced before the operation, and a pessary introduced. This was allowed to remain for two or three months. Curetting was considered one step of the operation in cases associated with endometritis.

As regards the operation of curetting there is little to be said. It has served an extremely useful purpose in the various conditions calling for its performance, such as endometritis, salpingitis, incomplete abortions and miscarriages, septicemia, flexions of the uterus, subinvolution, etc., in which conditions it has been repeatedly performed.

This operation was performed in one case where there was a large fibroid in the anterior wall of the uterus accompanied by slight anteflexion. Menstruation was irregular, and accompanied by extremely severe pain which had succeeded in producing a condition of marked neurasthenia. There was no menorrhagia or metrorrhagia. The uterus was dilated, curetted, and packed with gauze, in the hope that drainage might relieve the dysmenorrhœa. The patient was kept under observation during her next period and suffered little or no pain.

Forty-five cases of pelvic inflammation were ad-

mitted. The great majority of these cases recovered under rest and local palliative treatment, and left the hospital symptomatically, if not anatomically, well. In two cases pus was evacuated by vaginal incision and drainage, and recovery took place by granulation. Four cases only finally came to laparotomy. In one pus was evacuated by abdominal incision, and the wound healed by granulation. In three cases which were transferred to the surgical side the inflamed tubes and ovaries were removed. One case recovered. Two died; one on the fifth day after the operation, without obvious cause; the other of peritonitis and acute congestion of the lungs. In the latter case, which was a large tubo ovarian abscess firmly adherent in the pelvis, rupture of the abscess took place in removal.

A symptom which seemed to be of value in distinguishing tubal from other forms of pelvic inflammation was, that in the latter the pain complained of was of a gripping character, recurring several times a day, and lasting from ten to fifteen minutes, with intervals comparatively free from pain.

Four cases of malignant disease of the uterus were admitted for treatment. In one case the only local symptom was pain, in another hemorrhage, in a third foul discharge, while in the fourth these three symptoms were all present. In no case was a radical operation possible, as the disease had already extended beyond the limits of complete removal. One case left the ward without being treated. The other cases were treated by first curetting away the diseased portions as far as possible, and then applying cotton squeezed out of a fifty-per-cent. solution of chloride of zinc. The surrounding healthy tissue was protected by means of bicarbonate of soda and dry cotton. The sloughs thus produced were from one-eighth to one-sixth of an inch in thickness. These applications were repeated until healthy granulations appeared, and the cavity began to assume a healthy appearance. This treatment proved itself very efficient as a means of palliation, helping very materially in alleviating the three distressing symptoms, pain, hemorrhage and foul discharge.

A series of sixteen abortion and miscarriage cases would seem to show that, previous to two and a half months, the retention of a portion of the ovum with sepsis or hemorrhage was comparatively uncommon. It would seem from the curetting of certain cases that hemorrhage after abortions was not always dependent on retained material, but upon an endometritis. In the case of one patient, who had just had her ninth criminal abortion, who seemed capable of judging, and who declared that the ovum came away intact, a hemorrhage was started up two weeks later by a de-bauch. This hemorrhage was so severe that the patient was unable to sit up without being dizzy, and she became very pallid. Under rest in bed the hemorrhage ceased and did not reappear. In nearly all of these cases the operation of curetting was necessary.

In nearly all the abortion and miscarriage cases, septicemia was present to a greater or lesser extent, especially when the induction of labor was due to the passage of instruments into the uterus. By means of curetting, corrosive intrauterine douches, and iodoform pencils introduced into the uterus an immediate reduction of the temperature and other symptoms was obtained in nearly all the cases, and in comparatively few was it necessary to enter the uterus a second time. One case only resulted fatally. It was a case of criminal abortion, and was profoundly septic at entrance.

Of the cases not included in the above groupings, there are two which I have selected to report more in detail.

CASE I. Acute intestinal obstruction, the result of adhesions produced by chronic pelvic inflammation.

Admitted July 1st. Age twenty-six years, married, native of Ireland. Six months previous to entrance she gave birth to her first and only child, being delivered by means of instruments. Convalescence was prolonged. Never had any miscarriages. For about a month previous to entrance she had been feeling poorly, and was troubled with constipation at intervals. On entrance she complained of pain in the back and abdomen, painful micturition and defecation. Her temperature was normal, pulse 114. Vaginal examination, made the following day, showed the uterus to be fixed, and a mass in the posterior *cul-de-sac*, but nothing was found to account for the patient's acute symptoms.

Every effort was made during the next three days to open the bowels, but without success. The patient's condition grew steadily worse; she was unable to retain anything on her stomach, and flatulence became so intense that the intestinal coils could be plainly seen on the abdomen. A marked condition of shock. The vomitus was not intestinal.

Dr. Abner Post saw the case in consultation on the 3d of July, two days after entrance, and a diagnosis of intestinal obstruction was made. On the following day the patient was transferred to the surgical side in a semi-moribund condition, and Dr. Post performed a celiotomy.

An incision was made in the median line from the umbilicus to the symphysis, and a large quantity of sero-sanguineous fluid was evacuated. The small intestine was found dilated to about four times its normal size, and was purplish in color. The patient was then placed in the Trendelenberg position, and the uterus was seen to be enlarged but in normal position. The left tube was normal. The right was somewhat tortuous, running upward and backward in a curved line from the fundus of the uterus. Extending from the fundus of the uterus to the small intestine was a rather broad and firm adhesion. A similar but firmer adhesion extended from the right tube to the small intestine, drawing the latter into a decided knuckle. The large intestine was collapsed. Both extremities of these adhesions were ligated and the adhesions severed. When this was done the small intestine began to lose its purplish color, and the collapsed large intestine began to inflate. The small intestine apparently took on peristaltic action. The abdominal cavity was douched out with distilled water, the abdominal wound was sutured and a baked dressing applied.

On the day following the operation the patient passed some gas from the bowels, but no feces. On the 10th of July, no movement of the bowels having taken place, a high rectal tube was passed, and brought away a large amount of soft fecal matter. From this time to the 2d of August, the bowels were moved by enemata. Subsequently they were moved regularly by means of castor oil. On the 22d of August, the wound having healed the patient was discharged.

CASE II. Premature senility. This patient was twenty-seven years and eight months of age, married, no occupation. The family history was excellent.

She had typhoid fever nine years ago. Menstruation first appeared when the patient was between fourteen and fifteen years of age. Before menstruation commenced she suffered from leucorrhœa, and subsequently each period was preceded and accompanied by some leucorrhœa. Menstruation appeared about once in three weeks, lasted about ten days, and was associated with much headache, bearing-down pains, and drowsiness, but no sharp pains. The discharge was thick, clotted and almost black in color.

When she was eighteen years old she had an attack of typhoid fever, and was confined to bed for about six weeks, making a slow convalescence. During the four months preceding the attack of typhoid fever menstruation became irregular, diminished noticeably in amount, but would start up on the slightest exertion. She became very thin, much exhausted and would faint on the slightest provocation.

During the early part of her typhoid she menstruated, and since then has never seen a drop of blood. From that time until she was married five years later, about once a month she would feel as if she was about to be unwell, but nothing would appear. Since her marriage, which is now about five years, she has never been pregnant, and has suffered from painful coitus, which, however, is not accompanied by any disagreeable sensations.

On examination there was found a senile uterus and vagina, with a moderate retroversion, the same atrophic conditions as are found in elderly women who have passed the menopause. The ovaries were not felt. Her general development was excellent, and there was no impairment of the intellect.

Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

(Concluded from No. 24, p. 583.)

LOCAL TREATMENT OF DIPHThERIA.

At the same Congress mentioned previously, Löffler² states that he does not wish to undervalue in any way the serum treatment, still he thinks it proper to give his experience in the local treatment of diphtheria. He found that a solution of sesquichloride of iron in equal parts (or 1 to 2), as well as other preparations of iron, killed the diphtheria bacillus in ten seconds.

He also observed that such substances as benzol and toluol hindered the growth of this bacillus. He studied the action of these substances first on animals and later on man. In treating man he used a solution composed of alcohol 64, toluol 36, creoline or metacresol 1 to 2. As this solution produced a strong burning sensation in children, he added to it ten per cent. of menthol. The solution is prepared in the following way: 10 grammes of menthol are put into a graduated cylinder; then toluol is added until the contents reach the level of 36 c. c. (the menthol dissolves rapidly in the toluol); then 2 c. c. of creoline, or 1.5 c. c. of metacresol, or 4 c. c. of sesquichloride of iron, is added; and lastly alcohol enough to obtain a volume of 100 c. c.

The solution is applied twice in succession, for ten

² La Semaine Médicale.