lose another tooth, except I am prepared in a similar manner, so as to have no pain."

Feb. 1st, 1847.—The following cases were operated on to-day in the presence of fifteen gentlemen, most of them members of the profession. John C—, aged fifty-six, a labourer on the roads, residing at Charlton, of a strong plethoric habit of body. Whilst at work he met with an accident (three weeks back) to the middle finger of the right hand; mortification took place, the first joint sloughed away; still he would not consent to the loss of the finger, and the disease extended to the metacarpal bone. Having heard he could have it taken off without suffering any pain, he applied this morning to have the operation performed. The ether was inhaled, and the man under its effects in six minutes; he remained so for five more. The finger was taken off by a V-shaped incision, opening the metacarpal bone half way down with Liston's bone-nippers. The patient did not show the slightest sign of pain, and stated that he heard the bone cut, but positively asserted he felt no uneasiness of any kind, and grumbled much at the suffering we gave him when taking up the arteries afterwards. I allowed this case to remain for half an hour before I dressed it, as I am inclined to think secondary hæmorrhage will often occur after the effects of the ether has passed away; reaction does not until then become perfectly established; small arteries afterwards escape untied if we dress it immediately; and union will not take place so well, on account of extravasation of blood. The pulse in this case was before the operation 84, during the etherial process it varied from 60 to 70.

William G—, aged twenty-one, residing at No. 44, Duke-street; of a pale, exsanguineous habit of body; he has phymosis from syphilis for several months, and wishing to have the glans penis liberated, submitted to the operation. (The ether was inhaled and produced its effects in three minutes.) This was performed by dividing the skin down to the end of the gland without any sign of pain, and he states he did not feel anything of it; pulse, when in the etherial state, was 75, and soft, and before that time was 90.

A servant, aged thirty, had four stumps extracted, without giving her the slightest pain, by Mr. S. Tibbs, surgeon-dentist. The ether was inhaled from a modification of Dr. Snow's apparatus. She got under its influence in less than two minutes, and remained so nearly five. Positively states she felt no kind of pain.

Lot O—, aged thirty-six, residing in Grove-street, of a spare habit of body, has had a disease of the left elbow-joint for the last year or two, and would not consent to its being amputated before, but the general health becoming affected, he now consented. The ether was given with the same apparatus, and after its inhalation nearly four minutes, he appeared quite unconscious; the healthy arm, when raised, dropped involuntarily to the side, eyelids closed, and the usual signs of insensibility to pain. The circular incision was made through the skin; and he cried out most lustily, and continued doing so through the whole stage of the operation. After it was all over, he stated he felt the first cut, and also the bone sawed, but he was in a dream, and smoking a pipe, which some one tried to take from him.

I can only view this case as a failure: I think it right alike to report all, whether failures or not. The other cases were decidedly satisfactory.

I must state, that in the above operation the mouth-piece did not fit nicely to the mouth; and he appeared to have inhaled fresh air by its side.

Albion House, Cheltenham, Feb. 1847.

ROYAL CORNWALL INFIRMARY.

MALIGNANT DISEASE OF THE TESTICLE.—CASTRATION PERFORMED WITHOUT PAIN, DURING THE INHALATION OF ETHER.—REMARKS UPON INHALERS.

By J. GORRINGE, Esq., M.R.C.S.L., Assist.-Surg. to the Infirmary.

A TALL, well-built man, from Poldice Mine, came under my care at the Infirmary on the twenty-eighth of last month, complaining of a swelling in one of his testicles.

History.—Of a fair complexion, and sandy-coloured hair. Married, and has three children; always had sufficient food and clothing; abode very damp, and in a valley; lived regularly of late years; but about nine or ten years ago admits he was a great drunkard. No hereditary predisposition traceable; and, with the exception of stammering most annoyingly, he never admits having suffered from any other ailment than the present, the first attack of which he dates to about sixteen years since. Whilst walking to market, he suddenly felt a

pain in his right testicle; he put his hand to it, and was astonished to find it very much larger than natural, being about the size of a hen's egg. He made the best of his way home, and going to bed, had medical advice, in the shape of aperient medicine and cold lotions; the pain, however, increased, and the parts became very red. He was now bled from the arm, and ordered to persevere with the former medicine; and at the end of the fourth day he went to work again. He says he always considered it, from this time, a little harder than the other testicle; but never felt anything more about it, until two years ago, being a lapse of fourteen years. At this time, he was working in a mine; and feeling an inclination to void his urine, he put in his hand, and found that the same testicle was again swollen. It had not been painful in the least; but on looking at it, it was red on the surface. He showed it to the medical attendant belonging to the mine, who at first asked him if he had not the clap; but he strongly denied ever having had any venereal taint in his life. Leeches were applied, but still no abatement in its size; and being in no pain, he went to his work again, and so continued, until two weeks before Christmas; since which time it has increased in size rapidly, and occasionally been attended with severe pain in the inguinal region, shooting back to the loins, vomiting, constant inclination to go to stool, &c.

Present Symptoms.—The scrotum is now distended with a tumour about the size of a child's head at birth, of a pyramidal shape; smooth and uniform on its surface; very red, and the veins greatly injected. It is elastic, and yields readily to pressure, without pain being caused thereby. On the left side of the penis, and very high up, is situated the left testis, natural in size and to the touch. At the posterior inferior part of the swelling is a soft fluctuating place, about the size of a testis in its natural state. The tumour, when taken into the hand, feels very solid and heavy; no transparency evinced by the candle; harder in some parts than others. The only pain complained of is from its weight; and when he is in bed, with his knees elevated, he is "brave and easy." No enlargement of the inguinal glands, nor any inequality or knottiness to be felt in the spermatic cord. Two marks of the exploring needle are visible on the tumour, which the patient says were done a few days ago, nothing but a drop or so of blood following; they healed without any subsequent inflammation. I communicated the result of a consultation to the patient—that he was suffering from a malignant affection of the testicle in all probability, and that nothing but an early removal, if such were the case, would relieve him—not holding it out to him as a *certain* means of cure, but at the same time explained the chances of a return of the disease. He very readily consented to the operation for its removal; and thinking it a favourable case to try the inhalation of ether, I persuaded him to this also with very little trouble. My next object was to procure an inhaler. A medical friend, resident in this town, very kindly offered me the use of one that had been made under his directions—a very compact little apparatus—consisting of a receiver made of glass, and large enough to hold about a quart of fluid. At the top of this were two openings; in one was fixed an inverted globe of glass, filled with sponge, saturated with ether, and having at its top a very small opening for the admission of a stream of air; and in the other opening was fitted a flexible tube, with a mouth-piece. About two inches from the mouth-piece was a well-constructed valve for the expired air to escape; and still further down the tube was a stop-cock, to prevent the escape of the ether when not in use. An apparatus precisely similar in principle (excepting the expiratory valve) had been tried a week previously at the Infirmary, but without success; fearful, then, lest the present should offer a similar instance of disappointment, I determined upon having at hand a second inhaler, made on another principle. Remembering that whilst an apprentice at the University College Hospital, I had on several occasions inhaled sulphuric ether from a common bladder, until marked intoxicating effects were produced—(indeed, it used to be a great source of fun with us)—and in the chemical lecture-room at the college, I had a distinct remembrance of two cases of insensibility being produced by the inhalation of ether from a bladder—the students falling flat upon their backs; this was in the session of '38-39—while others were merely intensely excited, I determined upon trying the same means, and accordingly procured a bladder, into the neck of which I fixed a metallic tube about four inches in length and three quarters of an inch in diameter; to this was made an admirably shaped mouth-piece of the same material, made after the fashion of the speaking-trumpet used at sea; no valves of any description.

Feb. 5th.—This being the day fixed upon for the operation, I determined upon trying first the virtues of the inhalers upon

another patient, who volunteered on the occasion. The medical staff of the Infirmary, and most of the medical men of Truro, were present upon the occasion.

The more complicated of the inhalers described was first given to the patient, and after ten minutes' trial, symptoms of intoxication alone were produced; he laughed incessantly, but nothing like insensibility was produced. I now exchanged this for the bladder, and in less than one minute he was insensible. The patient to be operated upon was now brought, and placed upon the table, and the bladder given him, containing about three drachms of ether, the bladder being previously immersed in hot water. Silence was kept, and the man's countenance anxiously watched by all present. In one minute, his pupils were observed to dilate, his pulse dropped, and his face assumed a bluish colour. I thought this the best time to commence the operation, and accordingly pierced the diseased mass with a grooved needle, to the extent of about three inches; not the slightest movement was caused by this, the man continuing to inhale lustily. The needle was now exchanged for a sharp-pointed knife, and the parts incised from above the abdominal ring to the bottom of the scrotum. The nature of the disease now became apparent, for I had cut into the encephaloid looking mass—the part which felt the softest, at the bottom, emitted some thick matter; the cord was then exposed, and, previously to dividing it, I passed a ligature very tightly round the whole of it, in order to see whether even this would cause any sensation, for in "Cooper's First Lines" the following passage occurs:—"Castration is one of the most simple, and yet one of the most painful, operations in surgery, especially when practised according to the old method, in which it was the custom to include in the ligature all the vessels and nerves of the spermatic cord. At the moment of doing this, the patient was put to excruciating torture; such suffering, indeed, as few could endure without complaint, however great their fortitude." This produced not the slightest pain, and after being kept on perhaps a minute, the forefinger and thumb of an assistant replaced it, and gently compressed the cord to prevent retraction; two vessels were pulled out and secured. The dissection was then continued, and, in a few minutes, I removed the diseased part, consisting of a mass of medullary looking matter, softer in some parts than others, but generally firmer than the medullary matter of the brain, and intersected by fibrous bands—its weight was one pound and a half. During the whole of this time, the patient betrayed not the slightest evidence of pain, and not a feature altered. The inhaler was now removed from his mouth, and in a short time he became sensible, expressing his gratitude that it was all over, and saying that he would not mind undergoing the same again. That although he was conscious of every step of the operation, and could distinctly see my movements, he felt not the slightest pain. After sponging out the scrotum, and making the parts clean from blood, the cut surface of the cord was minutely examined, and thought to contain some extraneous matter, feeling harder and bulbous about a quarter of an inch from its cut surface, and it was thought proper, by the surgeons present, to remove it a little higher up; this I did at once, and the patient, not being under the influence of the vapour, called out most lustily, and says it was the only part of the operation which he felt. The vessels in the cord being once more secured, and nothing but venous hæmorrhage coming from the scrotum, lint wetted with cold water was applied, and the patient carried to his bed.

As soon as this patient had left the operating room, another entered, having heard of the success which had attended the inhalation, and requested to have his tooth drawn. He was placed in a chair, one drachm of ether put into the bladder, and before he had taken six whiffs, his eyes closed, and he fell back in the chair; the bladder was removed from him, and, after a little difficulty in opening his mouth, I extracted the last molar tooth of the under jaw, on the right side. His eyes still remained closed, and it was about a minute before he came sensible again. I asked him if his tooth was out? He said, yes; he knew that it had been drawn, and recollected every part of the operation, but never felt the slightest pain. He now attempted to walk away, but felt so intoxicated that he was obliged to resume his seat for a short time.

AMPUTATION OF THE TOE.

By R. L. BAKER, of Birmingham, late House-Surgeon to the Essex and Colchester Hospital.

My patient, M. A. J., a female of thirty years of age, had been a great sufferer for fourteen months with scrofulous disease in the second joint of the second toe of the left foot, for

which I had, months since, recommended amputation, to which operation she had not moral courage to submit, her only objection being the fear of the pain of the operation. She having, however, read of the wonderful effects of the æthereal vapour, expressed a wish that the remedy should be applied to her own case—i. e., if I thought it advisable. Not perceiving in her case any contra-indications of its use, I consented; and on Monday, the 1st of February, I made an experimental trial of the ether, with the view of performing the operation some future day. This trial proved quite satisfactory, for with four minutes' inhalation she became perfectly insensible, and lay quite quiet, as if in a sound sleep. Having removed the mouth-piece of the apparatus, she in about five minutes recovered from the effects of the inhalation, expressing herself highly delighted with the sensations she had experienced, which, she said, were those of indescribable pleasure. Its use being followed by no unpleasant symptoms, I appointed the 3rd instant for the amputation, which she now anticipated with pleasure rather than dread. At one o'clock P.M. of the 3rd, I proceeded, in company with my friend and neighbour, Mr. W. S. Partridge, to perform the operation: on this occasion we found it much more difficult to procure the full influence of the remedy than on the former, which, I believe, arose from the mouth-piece of the apparatus not fitting so closely as it should have done. By persevering, however, for twenty minutes, we procured the desired effect, at which moment I commenced the operation. The toe was removed and the necessary dressing applied before her consciousness returned. When she had recovered her reason, (to use her own words,) she said she had been millions and billions of miles, and she had seen she did not know who. She then asked if the toe had been removed. When replied to in the affirmative, she would not believe it until she had seen it, and even then seemed almost incredulous. During the operation, she evinced no signs of pain; after consciousness was restored, she remained under considerable mental excitement for about an hour, which then subsided. She has since been doing well, the wound having already healed by the first intention.

ETHERIZATION.

(FROM A CORRESPONDENT.)

Some observations on the general effect of the inhalation of the vapour of ether in preventing the severe pain attending the performance of surgical operations, (the dread of which has often prevented operations that would have saved lives,) and in alleviating the great distress of body and mind which patients always suffer on such occasions.

THE following case of amputation of the thigh proves the insensibility by ether to be of a peculiar kind, and to vary considerably, in different individuals, in the nature and extent of its physiological effects, just as wine, spirits, tobacco, opium, &c., produce sometimes various effects from those ordinarily found to follow their use, so, as might be expected, is also the case with the vapour of ether. It may, it appears, in some cases, act as an excitant, and in others produce coma, or it may be attended with effects strongly resembling the nitreous oxide, or laughing gas. It is probable that the variation of the symptoms observed in this case may in some degree depend upon the quality and quantity of the ether, rather than on the difference of constitution, or peculiarity of temperament, two ounces of unwashed ether, instead of one ounce, as has been previously employed. Mr. Squire has observed the marked difference in the effects produced on the same person in the same evening, the first inhalation of the washed ether producing pleasurable sensations, and the ordinary rectified ether, those of an unpleasant character; and shortly after the pleasant sensations being recovered by inhaling the unwashed ether. Dr. Fairbrother has tried both the washed and the unwashed, and no dreams have followed. The washed ether has, however, several advantages. For instance, its taste is not so disagreeable, which removes the objections of some persons to inhale it; it does not leave such an unpleasant flavour on the palate for a long time, and is less likely to induce coughing, irritation, or inflammation of the lungs, small quantities of sulphurous acid and of alcohol being contained in the common ether, while the inhalation of vapour of alcohol might induce a prolonged state of insensibility, and a degree of reaction which might prove inconvenient, if not dangerous, to the patient. Mr. Hooper has observed that the result of the inhalation of ether was less speedy when the patient was given to drinking, and the effects took place earlier in young people than in old. Velpeau mentions, that healthy patients are affected more rapidly than diseased subjects, strong consti-