temperature fell more decidedly). In the latter stages, they were omitted whenever the temperature was below 100°. At the same date (May 28), two drachms of brandy every three hours were prescribed.

May 30th. Subcutaneous injections of atropia each night were commenced— $\frac{1}{16}$ of a grain, gradually increased to $\frac{1}{8}$. Half a dozen times during the course of the illness, a dose of ten grains of quinine was given when the temperature tended to be high, which was generally in the afternoon or evening; and occasionally the body was sponged with iced vinegar and water.

June 10th. The patient looked and felt very well, though weak and thin. The tongue was moist, and only slightly coated with a white fur. The appetite was much improved. There had been no movement of the bowels for four days. The perspirations were still considerable, but only in the mornings. Pulse 80, of fair strength; respirations 24; pulse-respiration ratio $3\frac{1}{2} : 1$. The temperature during the last twenty-four hours never rose to 100°, the highest being 99.8°; and, during the previous twenty-four hours, it only reached 100° on three occasions, and twice was normal. The cough was less troublesome than on admission; expectoration was very scanty, and consisted of clear mucus. The physical signs were improved to this extent, that the very coarse *râles* at the left base had disappeared, being replaced by *râles* which were partly musical and partly moist. The effect of the digitalis on the secretion of urine was well marked; for, on the four days preceding the administration of the pills, the amount discharged was 32, 30, 26, and 23 ounces; and, on the following four days, 60, 72, 90, and 73 ounces.

It is unnecessary to give the whole of the reports, which were taken from time to time, but the following are sufficient to illustrate the progress towards recovery.

June 17th. There was decided improvement in the physical signs, the *râles* having almost disappeared from the chest, except at the left base, where, however, they were much less distinct than formerly. The temperature for the last few days had been normal, or nearly so, and there had been very little perspiration. The digestion was fair, and the bowels regular, though the motions were still inclined to be pale and loose. Three moderate meals daily were now allowed, and the atropia was stopped. On the 22nd, the pills were likewise omitted; but, on the 25th, as the perspirations had slightly returned, the atropia injections were resumed.

July 2nd. There was still slight expectoration, which was yellower than formerly; respirations 22; pulse-respiration ratio normal, the pulse being 86, and of good strength. All *râles* had disappeared from the left side of the chest, with the exception of occasional musical rhonchi posteriorly. The signs of effusion at the right base were diminishing. The temperature was normal, and the digestion natural; but the motions were still occasionally inclined to looseness. He was having good diet, including beef-steaks, etc.; and on the 1st, cod-liver oil in small doses was commenced, but was omitted on July 3rd on account of looseness, which recurred when the oil was resumed on the 8th. For this, a mixture of morphia and bismuth was given.

August 1st. He was going on favourably in every respect, and was rapidly gaining flesh and strength. The diarrhoea and perspirations had completely disappeared. Pulse 84, regular, of good strength; respirations 18. The expectoration was almost gone. The *râles* had disappeared from the chest altogether, and the dulness on percussion was much less pronounced than formerly, though there were still signs of moderate effusion at the right base. He was now taking six drachms of cod-liver oil daily, which was gradually to be increased to an ounce and a half. The morphia and bismuth mixture, from which he had derived much benefit, was continued, as also two ounces of brandy; and the atropia injections were ordered to be given every second night, or when necessary. He now walked out in the grounds occasionally.

August 14th. There was steady improvement. All the symptoms mentioned in the last report were less pronounced; in particular, there was distinct diminution in the dulness all over the chest. He was much fatter, and there was now a good deal of colour in his cheeks.

August 29th. He was now practically convalescent. There were no general symptoms whatever. His colour was excellent, and he had gained three-quarters of a pound within the last week. He had neither cough nor expectoration. Respirations 16 per minute. There was no trace of *râle* in any part of the chest, and the signs of pleuritic effusion at the right base were steadily diminishing. At the left base, the respiratory murmur was still somewhat feeble; and at the infraclavicular region there remained flattening, defective resonance, and harsh breathing. There was also dulness in the suprascapular region.

October 10th. As the patient was continuing to improve steadily, and as Dr. McVail, who was acting for me, was able to corroborate the statements in the last report, he was sent to Lenzie Convalescent Home.

This patient was readmitted at my request for a few days on November 27th, and was examined, with the following result, on the 30th. At the left apex, there was slight flattening with defective expansion, and slight dulness on percussion; the breathing was a little jerky, and the heart-sounds very loud. The heart had been drawn up, the apex being nearly at the nipple. At the left base, there was still some dulness remaining, but the breathing was almost natural; and, at the right base, where the effusion had been, there was also some dulness, and the breathing was slightly feeble. There were no chest symptoms, and he felt in perfect health.

The following note shows his progressive increase in weight:

	St. Lbs.
August 18th.....	9 1
„ 25th.....	9 1 $\frac{3}{4}$
September 1st.....	9 4 $\frac{1}{2}$
„ 10th.....	9 5
„ 15th.....	9 7 $\frac{1}{4}$
„ 29th.....	9 9
October 6th.....	9 9 $\frac{1}{2}$
December 11th.....	9 11 $\frac{3}{4}$

Those who are specially interested in the subject will find the reports of the three other cases in the volume previously referred to.

ETHER *v.* CHLOROFORM.

By J. C. S. JENNINGS, F.R.C.S.Eng.

A DISCUSSION having been carried on in the pages of the BRITISH MEDICAL JOURNAL, during the month of November, upon the very important topic of "Ether *v.* Chloroform", by many who are competent to judge of, and endorse the very clear, and, to my mind, convincing statements and arguments of Mr. Jonathan Hutchinson, published on November 6th, I have thought it well to make a few remarks upon the subject; because it has been my practice, for many years, with very few exceptions, to use ether, instead of chloroform, in all cases where there are no pulmonary or bronchial affections, which appear to render it inadmissible—more especially in dislocations of the important joints, or in severe fractures, whether simple, compound, or comminuted. And it certainly is the duty, as it is to the comfort, of every surgeon engaged in provincial practice, who is liable to be called on at any moment, alone and unassisted, to have at his command an agent, safe and trustworthy, which does not require the help of any skilled assistant; and which, besides being reliable, is available in most cases of sudden emergency, also in many of the minor operations—such as those simply involving sections of the skin, removal of subcutaneous tumours, or dentistry. The question frequently is forced on my mind, whether recourse is not recklessly had to both the above named anæsthetics when local anæsthesia can be readily produced either by freezing mixtures, or by Richardson's ether spray.

A few years since, a paper was read at one of our meetings of the Bath and Bristol Branch, recording a death, after the administration of chloroform in a case of herniotomy. I took part in the discussion; and was then urged, by some of the members of the Branch, to give the results of my practice, with regard to herniotomy, without the administration of chloroform, and under circumstances generally considered adverse to its probable success. I read a paper at a meeting of that Branch of the Association, to show that it was frequently administered without any actual or urgent necessity for its use; and I endeavoured to prove the correctness of the views I held by reference to the eight subjoined cases of strangulated hernia, in which I had easily performed herniotomy without the aid of that or any other anæsthetic; and in all cases, excepting one in which gangrene of the bowel had commenced, with satisfactory results and speedy recovery.

CASE 1. *Strangulated Femoral Hernia*.—On July 24th, 1851, I was hastily called on, at 10 P.M., to visit, at a distance of six miles, Maria K., aged 45. She had had diseased hip-joint since a girl, which had retarded the growth of the lower extremity. The thigh was flexed on the abdomen, and the knee crossed over the other thigh, so that she was not aware of the existence of the hernia in the deep sulcus thus formed in the femoral region. For some days she had bilious, followed by faecal, vomiting. After having in vain tried the taxis, I operated by the flickering light of a dip-candle, held by an old woman. I found great difficulty in introducing the finger-nail beneath the tense ligament, owing to the rigid and flexed condition of the thigh, and almost required a hernia-knife with double the usual curve. After dividing the falciform process and fibres of the fascia propria, the bowel was returned without opening the sac. A dose of liquor opii was then given, and vomiting did not return. On August 19th, I found her quite well.

CASE II.—On August 31st, 1853, I was met on my rounds, and requested to see immediately Elizabeth H., aged 80. I found she had been ill four days, and was vomiting faecal matter. Being nine miles from home, I resolved not to return, but, having my pocket-case, to operate immediately. The hernia was large, and very tightly constricted, but, after division of the ligament, was returned without opening the sac. She made a rapid recovery; and, seven years afterwards, became deranged in intellect, and shortly died.

CASE III.—James S., aged 48, had a large inguinal hernia, and had faecal vomiting. On June 9th, 1856, I performed herniotomy, and returned the intestine and omentum without opening the sac. On June 17th, he was convalescent.

CASE IV.—William S., aged 80, on October 10th, 1860, had had constipation of the bowels for six days, from a large inguinal hernia; he had faecal vomiting for two days; then constant hiccough. Herniotomy was performed without opening the sac. He had an opiate; and, next day, beef-tea and wine. The vomiting ceased, and he made a good recovery.

CASE V.—Catherine L., aged 45, had a large omental femoral hernia. On opening the sac on November 30th, 1860, I found the omentum angrinous. A large handful was cut away, followed by deep venous hæmorrhage. The wound was closed with interrupted sutures, and an opiate given. On December 2nd, the bowels had not been relieved for six days, but were relieved after two enemata. The wound was dressed every other day till the 15th, when recovery was complete.

CASE VI.—Joseph J., on June 9th, 1866, had strangulated inguinal hernia; he had had faecal vomiting for three days, with great prostration, wavy pulse; he was cold and clammy. Herniotomy was performed; the sac was opened; the bowel was gangrenous. On the 13th, he died.

CASE VII.—Mrs. W., aged 70, who had a femoral hernia of some years' standing, on October 27th, 1864, was unable to reduce it. On going to her, I was able to do so, with steady perseverance with the taxis, in a few minutes; and she had no further inconvenience till February 21st, 1866, when, after repeated attempts during the day without avail, she sent for me in the night, and I was again able to return it without much difficulty. On January 30th, 1867, after failing for two days to return it, I was again called to her at 3 A.M. I found her in great pain, with all the symptoms of strangulation. There was a severe frost, and the road was covered with ice. As plenty of ice could be obtained, I applied a freezing mixture of that, with salt; but, after patient attempts, found it impossible to return the bowel, which was distended with flatus, and rolling under pressure. Local anæsthesia having been fully produced, I at once performed herniotomy, by the light of a candle held by her son. On the 22nd, the bowels not having been relieved for four days, an enema was administered, and her recovery was rapid. The wound healed by the first intention; and, on the 26th, she was convalescent.

CASE VIII.—Jane F., aged 55, had strangulated femoral hernia and bronchitis. Frequent attempts to reduce it had been made. From October 8th to 13th, she had frequent distressing vomiting. I performed herniotomy, and returned the bowel without opening the sac. The bowels were relieved on the 15th. The wound healed by adhesive process. On the 20th, she was convalescent; her cough was troublesome.

Since the record of the foregoing cases, chloroform has been more generally resorted to in this class, especially when there has been a fair prospect that resistance of the tissues involved would be overcome by its use; that the hernia would be more readily returned under the taxis; and I know that many assert that, if it were always carried in the pocket, and used in all such cases, herniotomy would become a rare operation. Although my experience does not bear out this assertion, nevertheless the employment of ether or chloroform, or both combined, possesses great advantage in the early stage of such cases, although it does also frequently fail; but, with this view, I had recourse to its administration in three of the four following cases.

CASE IX.—J. G., an hotel-keeper, aged 45, had been subject for some years to reducible hernia; but, on January 10th, 1871, when lifting the carcass of a heavy fat pig, he felt a violent pain in the inguinal region. Shortly afterwards, he found himself unable to return the hernia, which had descended. A neighbouring surgeon, who happened to call at his house, was also unable to reduce it, but was sent for during the following night; and, after using the usual means, failed. About noon, the next day, I went to him; and, there being plenty of snow and ice at hand, applied a freezing mixture, but without avail. Then, hoping that the muscular tension would be overcome by chloroform, about three drachms were administered, thirty drops at intervals; but, after anæsthesia had been induced, the taxis failed to produce reduction. I therefore at once performed herniotomy, without administering more chloroform. The sac was not opened, the bowel readily returned, and the man made a rapid recovery.

CASE X.—Blucher B., aged 65, an epileptic; and subject to frequent bronchial attacks, had an old irreducible hernia of great size. After vainly attempting to reduce it for two days, violent symptoms of strangulation commenced. He sought the assistance of my partner, Dr. E. A. White; who was passing his house, and who employed the taxis without avail. Upon going to him shortly afterwards, I found he had had an epileptic attack early in the morning; but, with the assistance of Mr. Ernest White and my son, we decided to administer chloroform cautiously; and, should we then fail to return it, to perform herniotomy immediately. The tumour was very painful on manipulation. The pain was referred to the umbilicus. There were tympanites, a dry brown tongue, a frequent irritable pulse, great distress of countenance, and a febrile condition generally. There was as yet no actual vomiting; but the bowels had not been relieved for many hours. A small quantity of chloroform was administered; and, on taxis again proving unsuccessful, herniotomy was at once performed in the usual way, the point of resistance being at the internal abdominal ring. The sac was not opened, but the bowel and a large mass of omentum was returned. The wound was afterwards closed with interrupted sutures, and carbolic dressings applied. The patient made a rapid recovery.

CASE XI.—J. C., aged 60, a builder, about three years since, when rearing a long heavy plank of timber, was nearly overbalanced, and, during the necessary and sudden exertion, felt something give way in the left groin. Some time afterwards, he noticed a small swelling; and, about two years since, had symptoms of strangulation. On being sent for, I detected a small femoral hernia, but was able to reduce it in a few minutes. It afterwards gave him little inconvenience till the evening of November 29th, when he had great pain, and found himself unable to return it. After frequent attempts, and the employment of hot fomentations and poultices, a neighbouring surgeon was called in the following day, who applied ice and had recourse to the usual means without avail; and there was great tenderness on the least touch. In the evening of December 1st, after producing local anæsthesia by the application of ice and salt in a bladder, I performed herniotomy. After dividing the falciform process, the bowel could not be returned; for the stricture was caused, as indeed it usually is, by a few tense fibres of the fascia propria passing across the neck of the sac, producing great tension thereof, the bowel being distended with flatus. These being carefully divided with the hernia-knife, the bowel was easily returned without opening the sac. The wound was closed with interrupted sutures, and carbolic dressings applied. Thirty drops of nepochine were given, but only an hour's sleep was obtained during the night, from intense pain at the pit of the stomach. The urine also was scanty, acid, and of a brick-dust appearance; but, after the bowels had been relieved, there were no untoward symptoms. The wound rapidly healed by the first intention, the adhesive action not being interfered with by the formation of pus. Chloroform was not administered: first, because the freezing system produced complete anæsthesia of the skin; and, secondly, because the patient suffered from feeble action of the heart.

CASE XII.—Thomas B., aged 58, had for some years an omental inguinal hernia, which, after sudden exertion and neglect to return it, had been strangulated thirty-eight hours, with intense pain and vomiting. I put him under chloroform, in the hope of being then able to reduce it; but, failing to do so, at once performed herniotomy. He rapidly recovered, without an untoward symptom, and at the end of a week was able to walk about as usual; shortly after to resume work; and is now in good health.

NERVE-STRETCHING IN ANÆSTHETIC LEPROSY.—Dr. James R. Wallace reports (*Indian Medical Gazette*, No. 1) two cases of advanced anæsthetic leprosy, both greatly benefited by this operation. The first case was of the arm, and a well marked case: the recovery of sensation was perfect, and the patches of discoloured anæsthetic skin recovered their colour and sensation, pain and numbness, etc., disappeared, and, at the end of two months, the improvement seemed confirmed and complete. Dr. Wallace observes that—"The application of Nussbaum's principle in the treatment of anæsthetic leprosy was first advocated by Professor McLeod of Calcutta, as a means of freeing the axis-cylinders of the nerves from the compression and constriction they undergo by a thickening of their connective tissue elements, or by a deposit within their sheaths, stated by Dr. Vandyke Carter to occur in anæsthetic leprosy. The success of this excellent mode of treating so distressing a condition has not yet had a sufficiently extended trial, the only recorded cases being those of Professors McLeod of Calcutta and Lawrie of Lahore. The perfect freedom of the operation from any dangerous complications when effected under antiseptic precautions, and the very salutary results that attend its application, ought to render its adoption more extensive in the relief of so prevalent a disorder."