an accident wound, or washing an operation cut, with carbolic acid lotion has been the rule; whilst, over the immediate dressing of lint charged with carbolic oil, a covering of cotton-wool has served the purpose of protection and warmth-giving; but it is doubtful if it has assisted much in preventing contamination, as most of the cases of compound fracture have convalesced without its use. With these measures, my antiseptic treatment ends; and I have the strongest belief that success in the management of operation and other wounds is chiefly, if not entirely, ensured by extreme care and gentleness in the manipulation of the parts, by rigid maintenance of rest, and by providing free exit for all kinds of discharge. Thus, I hold that results quite as favourable as the best which are claimed for antiseptic treatment, can be obtained by a plan of management which is so simple, that the means for carrying it out are always at hand, and are thus available for any emergency.

f. Finally, I state that, with the exercise of proper care and supervision, patients do as well in a large hospital as anywhere else, and, in proof of this, I refer to the table which accompanies this communication.

SOME PARTICULARS OF TREATMENT IN A CASE OF PNEUMOTHORAX.*

By DANIEL NOBLE, M.D., F.R.C.P.

MR. THOMAS W. is about forty years of age. From youth up to the age of thirty, he had exercised his powers, both mental and bodily, far beyond the limits of prudence; and, about the age in question, he naturally became the subject of nervous exhaustion, impaired digestion, and other cognate derangements of the system. After trying, for two or three years, relaxation of business-efforts and various changes of air and scene, with only transient advantage, he finally resolved to give up business altogether, to leave Manchester (where he had resided all his life), and to live in Blackpool, as the place from which he considered that he had always derived the greatest benefit.

Dwelling in that locality, and amusing himself with a garden, and with the management of his property, which, in no respect, gave him either trouble or anxiety, he, for some half-dozen years preceding last December, had had very fair and enjoyable health. He was unmarried, but had a sister with him as his companion and housekeeper. Once or twice a year, he was in the habit of calling upon me in Manchester to consult me for some trifling ailment; never, however, for any mischief involving the chest.

It was soon after midnight in the morning of the 16th of last December, that he awoke with an acute and violent pain in the right side, which continued for several hours. He had previously had symptoms of but a slight catarrhal affection, which he attributed to over-occupation in his garden. There had, by his own account, however, been no disturbance of the general health nor any failure in flesh or strength. By daybreak, the severity of the pain had abated, but there remained a dry troublesome cough, with some difficulty of breathing; thereupon, the aid of a respectable local practitioner was summoned, but with this gentleman he, for some reason or other, became dissatisfied, and gave him his dismissal.

It was on the 18th of the month, two or three days after the commencement of the attack, that I was telegraphed for early in the morning; it was evening, however, before I could go. On arrival at the patient's house in Blackpool, a little before seven, I found that he could not be prevailed upon to recall his previous medical attendant; but he urgently expressed the wish that I should myself take charge of him altogether. I let him see that this was impossible; and that, on account of the gravity of the case, he must have some one on the spot; telling him that, if required, I would come over again, and see him in consultation. Upon this representation, he named Dr. Hardman, of the place—a gentleman of whom I had already heard, as a young practitioner both of judgment and of skill. He was accordingly sent for; and, on his coming to the patient's house, we investigated the case and came to the conclusion that, with pleuritis, there was associated severe bronchitis, especially on the right side, in which region there was hardly any appreciable murmur of respiration; whilst, on the left, there was one that was dry and unusually loud. The percussion-sound was everywhere clear, and not strikingly abnormal in any part. Nauseating doses of antimony were prescribed; and, as I could not return home the same evening, I promised, on leaving him, to call early the following morning on my way to the railway station. I did so, and again met Dr. Hardman. Although we found the symptoms in some respects relieved, they were not so to the extent that I had anticipated; the ex-

pectoration was but scanty; the cough was almost continuous; and the respiration, though a little relieved, was hurried, short, and embarrassed. I may state here that the pulse was only about 90, and that throughout the case the variations were but slight. The temperature was never more than 102; more frequently, however, below that point. But I had to leave somewhat hastily, so as to catch the train, and went away alike dissatisfied with the case and with the diagnosis that had been made.

Four days afterwards, on the 23rd December, I was again sent for, and went in the evening as before. On meeting my associate in the case, he at once observed: "I think you will find something more the matter than we thought;" whereupon, having given much consideration to the subject in the interval, I said: "Do you think there is pneumothorax?" (for this had occurred to me); he answered "Yes." And, certainly, on completing a re-examination, no other conclusion was admissible. The embarrassment of breathing had much increased; there was unintermittingly a dry irritating cough; no respiratory murmur whatever could be detected on the right side, yet there was an undue resonance on percussion; whilst the left afforded a loud so-called *puerile* murmur of respiration. To complete the evidence, it was obvious, on applying the stethoscope to the right infrascapular region, that there was "metallic tinkling," and also the sound denominated "amphoric."

Dr. Hardman told me that, since my previous visit, whenever, in consequence of symptoms of exhaustion, nutrients and stimulants had been pushed and antimony coincidentally withdrawn, he had found the dyspnoea sensibly aggravated—a result which he attributed, rightly I think, to the increased force with which, under these circumstances, the column of blood was thrown from the right side of the heart upon the restricted lung-space. Of course, as things stood, we were led to take a very grave view of the case. However, we agreed, in accordance with the view just expressed, to limit the food-supplies to fluids and simple diluents, and to maintain the administration of antimony in doses slightly nauseating. The patient, on the following morning, was again seen; and, probably, there was some slight relief to the more urgent symptoms.

My next visit was on the 30th of the same month, but I had had letters in the interval giving me a very gloomy view of the case; the dyspnoea, with all but sleepless nights from the irritating cough, continuing on the whole to increase. On arriving in the evening of the date just given, I found the patient literally in both bodily and mental anguish—almost gasping for breath in a state of hysteric excitement. There was immense pressure on the left lung, and considerable displacement of the heart, which had its systolic impulse enormously increased, thereby creating a distress that was simply intolerable. Indeed, the patient was plainly on the verge of suffocation, unless something were done to avert it. It was in these circumstances that I proposed to Dr. Hardman that we should liberate the air from the right pleural cavity, as it was obviously threatening life by its mechanical effects. In fact, at this time an unmistakable expansion of the thoracic parietes on the affected side showed itself; and this we verified by careful measurement. I was glad to find that my colleague had possession of instruments suitable for our purpose, and that he was quite confident of his manual dexterity in the use of them. Accordingly, after explaining matters to the patient and relatives about him, we got into order the so-called "aspirator;" and a trocar, with cannula of small bore, was pushed through the intercostal space between (I think) the fourth and fifth ribs; hereupon, the trocar being withdrawn, air at once rushed out, and, to expedite the process and to render it more complete, the aspirator was affixed, and a continuous pumping was kept up for many minutes. The relief was very speedy and unmistakable. There issued no serous fluid—only air. After withdrawal of the instrumental apparatus, the patient breathed with some comfort, the violent pulsation of the heart abated, and, after administration of an opiate, he became calm, and, during the night, had some refreshing sleep. On calling as usual in the morning on my way to the train, I experienced a great sense of relief when I found that he was alive.

As a result apparently of the benefit thus obtained, the patient's confidence in the resources of our art became unlimited; and he supplicated that I would, for a-while, come every evening; I agreed to repeat my visits as often as practicable, and, two days later, again went over to see him; to find, however, that the more serious symptoms were gradually returning. I will not unduly extend this paper by adducing details that have no special or peculiar interest. I will just state that, after seeing him two or three days consecutively, only to find matters worse, I proposed, on being unable to attend so continuously, that the aid of Dr. Hammond, of Preston, should be solicited; saying that I would introduce this gentleman to the case, and that, being nearer, he would be well able to come over in the intervals of my own attendance. This proposal was accepted; and, on the 6th of January of the present

* Read before the Lancashire and Cheshire Branch.

year, Dr. Hammond joined me at the Preston Station, and we went on to Blackpool together. On our way, I purposely avoided speaking of the case, telling him that I wished for his independent judgment concerning it. On our arrival, Dr. Hardman was in attendance as usual; and our new colleague proceeded to the investigation, readily establishing the diagnosis. I would here just observe that, in the interval between this visit and the period of the operative proceeding, there had been no sensible abatement of the physical signs as revealed by percussion and auscultation. In this state of things, our anxious discussion had regard purely to the question of what should be done for the patient's immediate relief; the symptoms having become almost as severe as they had been a week previously, when the mechanical appliance had been so successfully used. We all agreed that only some such procedure as that employed on the former occasion could by possibility avert the speedy extinction of life.

Having thought much of the case in the interval, I now proposed a certain modification of what we had done before—in this way: that a larger trocar and cannula should be introduced, and that, on withdrawal of the former, to the latter should be attached a long flexible tube, whose inferior extremity should be placed, and for a considerable time be maintained, in a bowl of water. This was agreed to; and Dr. Hardman is entitled to all praise for the patience and the skill with which he overcame the difficulties of carrying out the scheme. And now to avoid any undue repetition, and any material extension of this account beyond the assigned limits, I will say simply that the entire process realised our best anticipations. Air, and air only, bubbled from the water, which, of course, prevented regress. An opiate was administered, and Dr. Hardman remained with him through the night; the mechanical appliance being maintained *in situ* for some hours, so that greater probability might be afforded of some cohesive union taking place between the costal pleura and that of the collapsed lung. On seeing the patient the following morning, we found that a comparatively good night had been experienced, that the breathing was greatly improved, and that there was corresponding alleviation of all the other symptoms.

After this period the improvement went on continuously, with only slight drawbacks, in no respect distinguishing the case from others of a like nature. I saw him at intervals for two months after the later operation, and Dr. Hammond several times; Dr. Hardman, of course, being in constant attendance. I will only so far speak of the sequel as to say that, after this second *paracentesis*, the metallic tinkling and amphoric resonance progressively ceased, and that a dull percussion sound gradually displayed itself in the region wherein the former had previously been evidenced. All the other symptoms now abated, strength, however, was but very slowly regained, and I am informed that, at the time when I write, he is still but weak, though he remains quite free from the old and more distressing symptoms.

I have thought it right to bring this case before the profession, as I am not myself aware that there is much, if any, recorded experience precisely corresponding. Mechanically to relieve the chest in cases of pneumothorax is mentioned by several writers as a feasible practice; and I have an impression that I have somewhere read of its being done, with temporary relief, a few hours before death in cases of confirmed phthisis.

Referring to the practice in question, Dr. Copland, in his article on Pneumothorax, says:—"I am aware that the propriety of resorting to this mode of relief has been questioned; but an instantly impending fatal result has to be averted; and in some instances it may be averted for a considerable time, almost always for a short time, and possibly for months, or even years, by resorting to this operation. I believe that recourse to this operation should not be delayed when pneumothorax has occurred at an early period of phthisis, or when the patient is young, not greatly reduced, or whilst he has not advanced very nearly to a probable termination of a disease, which would certainly end fatally, even if perforation of the pleura had not taken place. The pain and risk of the operation are nothing in comparison with the continued distress experienced during the pneumothorax; and, although relief may be only temporary, the operation may be repeated several times without incurring the risk of life, but, on the contrary, greatly diminishing it." Thus much from Copland, who to the foregoing passage appends a note as under:—

"In 1833, a case of pneumothorax occurred in my practice, at an early stage of phthisis; the patient being young and robust, and not having lost flesh or strength. The nature of the mischief was prominently characterised; the heart was pushed remarkably far to the right side; and the rational and physical signs were all marked and extreme; the dyspnoea and distress. I advised that an opening should be made for the exit of the air; and the friends of the patient desired that Sir A. Cooper should make it. We met a few hours afterwards;

he admitted his ignorance of the nature of the lesion. I fully explained the cause of the symptoms, and of their extreme urgency; but he refused to perform the operation; and stated that he had never performed it with the view of letting out air, and that he would not now do anything so novel, although he would have been ready to undertake it when he was a younger man. Having heard Sir Astley's determination, the patient's friends would not allow the operation to be resorted to by anyone else; and the patient died asphyxiated a few hours afterwards. The operation, if it had been resorted to in this case, might have prolonged life for a very considerable period."

MEDIAN LITHOTOMY.*

By WILLIAM CADGE, F.R.C.S.,

Surgeon to the Norfolk and Norwich Hospital.

FOR some years after its introduction to English practice, it must be admitted that median lithotomy received abundant discussion and a good welcome; many surgeons of distinction wrote and spoke highly in its favour; cases from all possible sources were anxiously sought for and garnered up, and a rich harvest of success was confidently predicted. For the last ten years, however—I may say since the publication of the last edition of Mr. Allarton's work on *Median Lithotomy*—much less has been said and written on the subject; enthusiasm has cooled; experience has grown; and it will not be considered out of place now to inquire, what is the tale told by this matured experience? Does median lithotomy still find favour with practical surgeons, and how will it now compare with the old time-honoured lateral operation?

As a contribution helping to decide these points, I desire to report, briefly and without going into minute details of cases, the results of my own personal observation and experience of median lithotomy, together with the impressions left on my mind by that experience. I may say that, when the operation was first introduced, I received it doubtfully and with hesitation, chiefly on the anatomical ground that insufficient room would be found for the removal, by fair means, of any but very small calculi. Having adopted it, and finding it suitable in these cases, I gave it a more extended trial. Stones have been removed, weighing from ten grains up to nearly five ounces, from patients of all ages—from 18 months up to 78 years.

Ninety persons have undergone median lithotomy; 54 by myself, and 36 by my colleagues and friends in operations at almost all of which I have been present and assisted. Of these 90 patients, 16 died: 26 were under 20 years, with 1 death; 5 from 20 to 40 years, with no death; 5 from 40 to 50 years, with no death; 13 from 50 to 60 years, with 3 deaths; 36 from 60 to 70 years, with 12 deaths; 5 from 70 to 80, with no death. This gives a mortality of 1 in $5\frac{2}{3}$; whereas, in the total of cases in the Norwich Hospital, amounting now to nearly 1,000, the mortality is about 1 in $7\frac{1}{2}$; but the average age of the median patients is considerably above that of the general list. If we take the cases of adult lithotomy, or those, say, of over 40 years, we find that the mortality of the median cases is 1 in 4, and of the large hospital total it is the same, or very nearly the same.

But I prefer to take my own fifty-four cases. I have fuller notes of, and more precise information concerning them, and can compare them more accurately with the same number of cases of lateral lithotomy and of lithotripsy; and although these numbers are too small and insignificant from which to draw statistical deductions of real value, they still may convey useful information, seeing that the three sets of cases have all been done by one hand, with the same amount of care, and without any principle of selection other than what was thought proper for each case. I will merely premise that at first, and again of late, the larger stones were reserved for lateral lithotomy; but for some years nearly all the cases of both large and small stones were treated by the median method: thus, the average weight of stone in 54 median cases was five drachms and five grains; and in 54 lateral cases, one ounce and two grains.

Now, as we know, speaking roughly, that the danger of lithotomy increases in direct ratio to the size of the stone, we should expect that the mortality would be less after the median than after the lateral cases; but it was not, for I find that, of 54 median cases, ten died; of 54 lateral cases, eight died. On the other hand, it is equally true, still speaking roughly, that the danger of lithotomy increases with increasing age; but I find that the average age of 54 median cases was $48\frac{1}{2}$ years, and the average age of 54 lateral cases was barely 46 years. Separating them still further, so as to ascertain the result of the adult cases, it appears that, of 54 median cases, 40 were over 40 years, with

* Read before the Surgical Section at the Annual Meeting of the British Medical Association in London, August 1873.