agent; but it was also productive of evil, as it gave rise to the abuse of the system in a manner precisely analogous to that in which various systems of charlatanism have been carried out in modern times.

12. The state of medical matters at which we are now arrived shows four influences at work, directly or indirectly, on the science of medicine. These are, (*a*) the empirical knowledge of the Æsculapian priests, and their study of disease *per se* in regard to its diagnosis, as at Cnidos, and in regard to its semeiology and prognosis, as at Cos; (*b*) the introduction of hypothesis by the philosophers; (*c*) the introduction of anatomy and physiology; (*d*) the application, more closely and extensively than hitherto, of a system of hygiene, consisting principally in dietetics and gymnastics.

Original Communications.

CASES OF IDIOPATHIC PNEUMOTHORAX, WITH REMARKABLE ABSENCE OF BAD SYMPTOMS: RECOVERY.

By JOHN THORBURN, M.D., Manchester.

THE first of the following two cases was read before the Medical Section of the Royal Manchester Institution, on February 1st, 1860, and the members expressed a wish that it should be published, on account of its remarkable character and of its bearings on the diagnosis and prognosis of a malady so commonly fatal. The second case was alluded to in the ensuing conversation by Dr. Noble, and was kindly communicated to me from memory by Mr. Walsh.

Pneumothorax is very properly held to be one of the gravest forms of affection to which the chest is liable, producing most violent symptoms at its onset, and ending, sooner or later, in a fatal result. We consider our patient's case as nearly hopeless from the outset; and even in those few instances where recovery ensues, we almost invariably see some other organic lesion which must independently lead to the same fatal termination. The following case is in every way exceptional.

CASE I. Mr. J. C., aged 22, was in perfect health up to the date of the present attack; that is to say, he was not himself conscious of any ailment, bodily weakness, or wasting; he had had no cough, hæmoptysis, pain, or other recognisable symptom of internal disease, and, being an intimate personal acquaintance of my own, I had every reason to consider him up to that time as of sound constitution. My reason for thus insisting on this point must be evident. His only previous illness had been a severe fever about ten years ago. He was on the eve of a voyage to America, and had consequently for some days had rather more exertion than usual. He had also, three days previously, indulged freely in rowing, to which he was not recently accustomed, though in former years he had been; he felt, however, little or no inconvenience at the time.

July 19th, 1859. Early in the morning he was awakened from a sound sleep by a sharp pain in the right side, accompanied by dyspnœa. It continued thus for two or three hours, and then, becoming less severe, he rose, dressed, and went to business in the City. In the afternoon, he first called upon me, and stated that he still felt considerable pain in the right breast and shoulder. It was experienced chiefly on deep inspiration. He had no cough, nor, when sitting in my consulting-room, any apparent dyspnœa, though he had rather a feeling of breathlessness. The pulse was quiet and regular (76). The skin was cool and moist; the tongue very slightly furred. As there seemed to be no evidence whatever of any acute inflammatory disease, I merely auscultated the top of the chest anteriorly. The percussion was fair on both sides; the respiration rather weak on the right, but without other alteration of quality or rhythm. Everything pointed to a simple attack of pleurodynia, consequent perhaps on the heat and exercise of rowing three days before. I prescribed a saline aperient, and a sinapism to the seat of pain.

July 20th. He called again, and expressed himself as a good deal better. The pain had moved about, and was now felt somewhat on the left side.

July 21st. I called on him in the morning, and found him almost quite free from pain, and considering himself well again. He had just come down stairs however, and his breathing seemed to me to be much too hurried. Bearing in mind the comparatively feeble respiration at the right apex, which might possibly be of tubercular origin, though a pleurodynic pain in the side could equally account for it, and knowing of his intended voyage, I desired him to allow me carefully to examine his chest. On doing so, I found to my intense surprise the following conditions. The left side was perfectly normal, except that the respiratory sounds were rather exaggerated. On the right side the percussion-sound in front was at the apex comparatively, though not to a marked degree, more resonant; lower down, it was very evidently so, and the increased resonance extended quite to the border of the false ribs. Behind and laterally the percussion note was quite tympanitic, and the tympanicity completely obscured the natural dulness of the hepatic region. On auscultation, the vesicular breathing was completely lost over the whole side, and was replaced at the apex by a clear hollow tone, with an equality of the inspiratory and expiratory periods; lower down, it gradually merged into a clear amphoric ring. The same loud amphoric sound was evident over the whole back and side. In addition there was audible with almost every inspiration a clear ringing click, as of water dropping into a deep well—the most beautifully marked *tintement métallique* imaginable. The impulse of the heart was also occasionally accompanied by the same sound, audible chiefly at the right back. The vocal resonance was perfectly amphoric, both spoken and whispering. Change of posture made no difference either in the percussion or auscultation. It was clear that he was labouring under complete pneumothorax of the right side, although, nevertheless, the pulse was not above 76, either now or at any other time; the tongue was clean and moist; the skin cool; there was no apparent dyspnœa when in bed; not a trace of cough; and hardly the slightest personal discomfort. I at once advised a second opinion; and Sir James Bardsley saw him with me in the afternoon. In spite of his long experience, he was equally astonished with myself at the great clearness of the physical signs and the total absence of concomitant bad symptoms.

The subsequent history may be given very briefly. Any active treatment was out of the question; and the only and self-evident measure consisted in preventing all unnecessary action of the part. This was done, and slight counterirritation was applied by means of iodine.

For a day or two the signs continued much the same, and the chest became a little bulged, as if the accumulation of air in the pleural cavity was increasing. In ten days, however, the metallic tinkling had quite disappeared, the percussion note also becoming less tympanitic gradually, commencing *from above*. The respiration and vocal resonance became *pari passu* less amphoric. He had never during this time one bad general symptom; and I may state again, that he was not aware of having once coughed during his whole illness.

August 31st. It was deemed advisable for him to go down to Scotland, having been going about a little for a fortnight without injury. At this time, the tympanitic percussion was quite confined to the lower and lateral part of the side. The rest was still rather comparatively over-resonant, and the breathing was nowhere yet quite normal. At some points it was faint and distant, though vesicular; at others it had still rather a blowing character. He came now under Dr. W. T. Gairdner's care, at Edinburgh, who kindly informed me from time to time of his straightforward progress. By

Nov. 8th. Dr. Gairdner became convinced that the lung was almost everywhere again in contact with the chest-wall, except perhaps at the extreme base; and that, in spite of the improbability, there was no perceptible evidence of tubercle whatsoever.

Jan. 20th, 1860. He had come back to Manchester, and I examined him very carefully. I must say that, if unaware of his previous history, I should have set his chest down as a very healthy one, rather better than the average. As it is, I can discern nothing more than a slight faintness of respiration at the base, and a rather too low extension of the thoracic resonance when in the recumbent position. He is strong and well, has gained flesh, can go through a long day's shooting without resting or fatigue, and may therefore, I think, safely be set down as perfectly recovered.

REMARKS. There are several points of interest in this case to which I may briefly allude. In every way it is a remarkable one, whether we consider its origin, symptoms, or termination. The usual cause of pneumothorax, setting aside traumatic cases, is undoubtedly the rupture of a tubercular softening;

more than 90 per cent. of the recorded cases arose in this way; and if we consider that those arising from other causes are, for that very reason, more frequently recorded, the true per centage will be much greater. In a very few instances does it arise from pulmonary abscess, cancerous softening, or gangrene; in the present, it is almost impossible to believe that any of these causes existed. The only imaginable one is phthisical softening; but if stethoscopic evidence, together with the undoubted absence of any phthisical symptoms, is worth anything, we must believe it to have been absent. The attack came on during sleep, without any known exertion, the only conceivable lacerating force being the rowing three days before. The hypothesis of a slight superficial emphysema, which had given way, were quite gratuitous. The spontaneous generation of air in the pleural cavity has not yet, in my opinion, been ever satisfactorily proved; and it would, at any rate, presuppose the presence of some inflammatory products in the pleura to be decomposed; moreover, I think, we have here almost positive evidence, from the physical signs, of a communication between the air in the lungs and that in the pleura. If compelled to hazard an opinion, I should suppose that, during the exercise of rowing, there had been some stress on the surface of the lung, giving rise to a minute extravasation of blood there, and that this had by disintegration ruptured into the pleural cavity three days afterwards. It is evident, from some points of the case, that some old adhesions exist, probably contracted in early youth; and this would easily account for an unequal tension on the surface during powerful exertion, or even for an inequality in its strength. Whatever be the precise *modus operandi*, it is extremely rare to meet with a case where the usual causes are so apparently absent, and still more unusual to be enabled by recovery to examine into their continued absence.

Another strange feature of the case, perhaps the most so of all, is the course of the general symptoms. We are all acquainted with the existence of latent pneumonia during the course of other diseases, and, without doubt, idiopathically also. That absolutely latent *acute* pleurisy, too, may occur, I have no doubt; for I remember watching a case under Dr. J. H. Bennett, in which we traced most accurately the steps of friction, effusion, reabsorption, and redux friction, although there were no febrile symptoms, and we could hardly persuade the patient that there was anything wrong with him. But for a state of pneumothorax suddenly to supervene on a healthy man, without a particle of fever or systemic disturbance, is, so far as I am aware, a complete novelty. There was certainly a pretty severe pain in the side at first, but not more than we usually find complained of in a sharp pleurodynic attack; and its speedy removal by a sinapism, with its shifting character, rendered it quite undiagnostic. The characteristic dyspnœa, too, of pneumothorax was quite absent. Certainly his short breathing caught the eye when he had just come down stairs; but during the time he lay in bed, and while the effusion of air was increasing, the number of respirations did not exceed 17 per minute—the standard of health—and which is usually exceeded in a simple catarrh. These are remarkable circumstances; and, taken in conjunction with the entire absence of cough throughout, with an unimpaired digestion, an unmoved pulse, and the absence of every other sign of chest-disease, they warrant us in asserting that there may exist such a thing as pneumothorax which, for all practical purposes, is absolutely latent; and that, not in a patient when the gravity of coexisting disease may mask its rise and progress, but in an otherwise strong and healthy man.

The pathological progress also and result of the case are by no means unworthy of notice; for, though there are cases on record, there are certainly very few where in nontraumatic pneumothorax the fistulous opening has closed, and all traces of air or fluid have disappeared from the pleura. Walshe mentions having seen only two such; and he recommends that when the rupture may have arisen from violent exertion, as in hooping-cough, the chest-wall should be punctured. In this case, it would certainly have been most injudicious. The presence of air in the pleura seems to have been quite innocuous; for neither at the commencement nor since have we any physical evidence of an appreciable amount of serum or pus. The tympanic percussion extended to the lowest possible limits, and the presence of metallic tinkling on inspiration necessitates but a mere film of fluid. In fact, the presence of this sound at all, taken with the absence of other signs of fluid, leads me to believe that the rupture must have been seated at the very base of the lung.

One marked peculiarity in the physical signs is worthy of notice, viz., the more evident presence of air at the base of the side, contrary to the natural tendency to seek the surface, and its persistence below after it had disappeared above. This can only be explained by the existence of old adhesions. If, as I suppose, the escape took place at the base, and if the air were thus restained downwards by a band of old false membrane, which stretched as the pressure increased, and allowed the upper lobe to collapse, it would fully account for my not finding more distinct evidence of the disease when listening, the first day, cursorily at the apex.

I cannot avoid remarking that this case eminently illustrates the necessity of making use of the stethoscope whenever it is practicable. With no history of any chronic chest disease, no cough, no febrile symptoms, and the speedy abatement of pain, how likely was it that no thorough chest examination should have been made; and yet there can be no doubt that the patient owes his life to its having been done, for the exposure of a sea voyage, with probable vomiting and discomfort, would have destroyed the possibility of the same favourable result.

Dr. W. T. Gairdner favoured me with some valuable observations on pneumothorax, and stated that he had gradually been arriving at the conclusion that, in a limited form, it is far from uncommon, and not nearly so dangerous to life as is usually supposed. He mentioned several cases where he suspected its partial occurrence and recovery, but always complicated with other fatal disease. This case is an undoubted one, and occurring under other circumstances. I have been unable to find another on record where the same conditions have been fulfilled of arising without assignable cause, of giving rise to no systemic disturbance whatsoever, and of disappearing in a few months, leaving the patient, as far as can be ascertained, in perfectly sound health. For this reason, I have thought it worthy of being somewhat fully detailed.

CASE II. In the conversation on the preceding case, Dr. Noble mentioned having met some years ago with a somewhat similar one, in consultation with Mr. Walsh. The latter gentleman kindly favoured me, from memory, with its leading details. They are these:—

Mr. C. J., aged 37, had for many years enjoyed good health, with the exception of occasional dyspeptic attacks, up to April 18th, 1856. On that day he had a very unusual amount of exertion in his garden, though he felt no bad effect at the time. Next morning, while breakfasting hurriedly, he was seized with a severe pain in the right shoulder, and some shortness of breathing. Believing it to arise from flatulence, he walked into town, and, feeling worse rather than better, afterwards to Mr. Walsh's house. He prescribed a carminative draught, and advised him to keep quiet for the day. In the evening he grew worse, and the pain and dyspnœa increased. The physical signs of pneumothorax were now ascertained to be present, just as in the former case. He became very livid and prostrate, and for a few days was in a critical state. He then began to improve, and was soon able to go to the sea side. In two months all signs of air in the pleura had disappeared, and in six months the chest sounds were alike, and perfectly normal on both sides. He has since enjoyed capital health, and is now (four years after the attack) better than he was ever in his life previously, nor can Mr. Walsh detect a trace of stethoscopic abnormality on either side of his chest.

REMARKS. Although this case did not present the same curious entire absence of dangerous and severe systemic disturbance as the former, it is nevertheless very interesting as confirmatory of some other points. There was the same lack of appreciable preceding organic lesion, and the subsequent four years have confirmed what might otherwise have been doubtful on this head. There was the same circumstance of a lapse of time between the only possible cause of disruption and the appearance of any symptom of its occurrence; and there was the same speedy and perfect recovery. It adds very greatly to my belief in a continued favourable prognosis for my own patient. I believe that such cases occur oftener than our medical literature would lead us to suppose, and if this could be satisfactorily proved, it might tend to save others from the same amount of absolute uncertainty which I confess to have felt as to the prognosis of my own case. I believe that Sir James Bardsley experienced exactly the same feeling as myself, that we had no precedent to guide us in giving an opinion upon the probable result of an undoubted case of pneumothorax where the patient had had no previous illness of any sort, and where he seemed, while in bed, to enjoy as perfect health and spirits, in every other respect, as ourselves.