LECTURES ON SOME POINTS IN THE NATURAL HISTORY OF PRIMITIVE DRY PLEURISIES.

Delivered at the Royal College of Physicians of London.

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LECTURE I.

I PURPOSE in this and in the following lectures, to consider some points in the natural history of primitive dry pleurisies. Upon secondary pleurisies, upon pleurisies provoked by pneumonia, pyemic blocks, tubercle and neoplasms of every sort, it is not at present my intention to dwell. By a dry pleurisy, I mean such an inflammation of the pleura as issues in an exudation of lymph into the substance and upon the surface of the membrane, unaccompanied by an amount of serous effusion sufficient to yield physical signs conclusive of its presence.

Entering upon this inquiry, we are met by the question, Do such pleurisies exist? And on the side of affirmation, as well as on the side of denial, are ranged some of the highest authorities in medicine; and even when it has been admitted by the weight of evidence that dry pleurisies are pathological as well as clinical entities, their influence in originating secondary disease of the lung has been hotly contested. From the days of Laennec until now, the most opposite opinions upon this subject have been advanced; and whilst one leader has declared primitive dry pleurisies to be mere clinical curiosities, another has asserted that they invade the lung, and produce secondary and serious changes therein.

The study of this controversy is at once sad and edifying; for, whilst it shows us, even in the highest order of minds, how difficult it is, in the search for knowledge, to be, in the philosophic sense, impersonal, it makes plain to us the puerility as well as the peril of dogmatism and of finality in scientific statements.

The scope of my inquiry is narrow, and the results of it are but few and imperfect. Nevertheless, I indulge the hope that they will not be found entirely useless, since, whatever may be thought of the inferences drawn from the cases forming the subject of this inquiry, the cases themselves will remain for future study; and, touching one of the most important questions of the age in which we live, may excite to fresh investigation others more qualified than I am to pursue it with profit. Furthermore, it will be to many disappointing to find that the direction of my inquiry will make it more interesting to the student of clinical medicine than to the student of pathological histology. But herein may lie the justification of my small endeavours; for, whilst I remember that the traditions of this College make it sacred to the advancement of knowledge for its own sake, I cannot forget that they make it also sacred to the forcing of that knowledge into fruit for the uses of men.

In the present lecture, I shall set forth the grounds which have led to the institution of this inquiry. In the second lecture, I shall consider the anatomical constitution of dry pleurisies, their varieties, the changes which they undergo, and the influence which they exert on the evolution of pathological changes in the lung. In the third and last lecture, I shall relate, in as far as they are known to me, the clinical peculiarities of the chief affections of the lung originating from dry pleurisies; and I shall conclude with a series of propositions which appear to be justified by the facts collected in the course of this inquiry.

In proceeding to set forth the grounds of this investigation, I find myself embarrassed by the number and variety of materials at my command. A critical examination, however, soon makes it plain that they fall naturally into groups, that the groups may be arranged in the order of an increasing complexity and importance, and that a single instance selected from each group will fairly represent the whole.

Now the grounds of this inquiry are, in the first instance, cases;

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and I have collected and related them in abstract with as much care as I could command. Nevertheless, they are all of them in varying degrees incomplete, and in some few particulars they may be even inaccurate. For a literal and sustained accuracy in narrative is one of the rarest gifts granted to men; and the difficulties encountered in relating a case, and in recording its progress with minuteness and exactitude over a period of years, are so great, that I cannot understand how, unless exceptionally, they are so commonly and easily overcome.

Furthermore, after long study of a case, the sum of our knowledge of it comes to be made up partly of bare facts capable of literal record, partly of complex facts, into the account of which our own subjectivity more or less largely enters, and partly of subjective impressions which, if they do not actually combine with the naked facts, so colour them that sometimes they are practically transfigured. I recognise this peril, from which I suspect no one is wholly privileged, and I have endeavoured, in the narration of my cases, to purge them of subjective adulterations, and to present them in their baldest objective forms; but to say that I have been entirely successful, would be to assume that I am more than entirely human.

Lastly, the cases are not related in chronological order; but they are related in such an order as seems best calculated to set forth the progress of primitive dry pleurisies, and the way in which they invade, alter, and destroy the lungs.

CASE I.—In 1866, I was consulted by a gentleman, 35 years of age, married, a traveller, and of somewhat irregular habits. He was fair and moderately nourished, but looked pale and ill. His family history was good; and of his personal history, he said that he remembered having suffered from no special complaint, but that latterly he had been often ailing and sometimes rheumatic. He consulted me on account of an odd feeling which he had in his left side, and described it as "resembling the movement of something out of joint."

On examination, I found a grating pleural friction round the whole base of the left lung; but neither in the upper part of that lung, nor in any part of the right lung, could other indications of disease be discovered. Except in the region of pleural friction, the breath-sounds, the vocal resonances, and the percussion, were normal. There was neither cough nor expectoration, but deep breathing produced general discomfort in the left side; there was no constitutional disturbance; and beyond a slight gastro-hepatic catarrh, no signs of disorder elsewhere. Two months later, the pleural friction had extended to the whole lower half of the left lung, but no material change had occurred in the local or general condition of the patient.

Twelve months after the first examination, the patient had failed in general health, and suffered from a little cough, mucoid expectoration, and breathlessness on exertion. Pleural friction and creaking were heard at places throughout the lower third of the left lung. A superficial crackling or crepitation could be evoked by deep breathing or coughing; vocal resonance was diminished; there was dulness to percussion, and the tactile vocal fremitus was feeble. The lower part of the side appeared to be slightly contracted; the cardiac impulse was visible under the left nipple; the right ventricle was slightly dilated; the pulse was 76; the temperature was normal; and there was no evening fever.

I did not see this case again; but a year afterwards I heard that he had been for a few months insane; that his chest had given no signs of trouble, and that he had just emigrated to New Zealand.

CASE II. (See Appendix, Note 1.)—In February, 1874, Mr. Hutchinson requested me to examine, in his wards, a man who had somewhat suddenly developed pulmonary symptoms of an obscure kind. The patient was 34 years of age, tall, well built, and well nourished. He complained merely of urgent dyspnoea. His face was dusky, and expressive of great anxiety. He breathed with great difficulty and labour; the thorax appeared to be inflated and incapable of complete recoil on expiration; the veins of the neck were distended; the skin was of a bluish tint; and the extremities were cold and damp. Examination of the chest yielded few definite results. There was nowhere dulness to percussion, or any recognisable change in the tactile vocal fremitus. Everywhere the breath-sounds were loud harsh blowing, and here and there accompanied by a fine and moist or a rustling and dry crepitation. Throughout the axillary region of the right side, and over the lower two-thirds of the back, there was heard a superficial moist crackle or large crepitation, sometimes replaced by friction. Like sounds were heard in disseminated circumscribed patches in corresponding regions of the opposite side.

The action of the heart was rapid and irregular; epigastric pulsation was strongly marked; the pulse was small and running; the temperature was under 100°. The tongue was swollen, furred, and

bluish; the abdomen was distended; the bowels were confined; the scanty urine was loaded with purple lithates, and free from albumen. The patient was restless, had slept little, and was occasionally delirious. On the day following my examination, he died.

After death, both lungs were found to be emphysematous. The greater part of the right pulmonary pleura was coated with a thickish layer of loose, soft, reticularly arranged lymph, more or less adherent to the subjacent membrane, and containing in its meshes a turbid yellowish glutinous fluid. Both the lymph and the subpleural areolar tissue were studded with small extravasations of blood. In the lung immediately beneath the pleura, were narrow, irregular, and interrupted tracts of pneumonic consolidation. Similar appearances, to a much less extent, were found on the pleura and in the lung of the opposite side. The heart was dilated and somewhat soft. The valves and their corresponding orifices were free. In a few of the smallest branches of the pulmonary artery, plugs were found.

CASE III.—In January 1873, Dr. Stephen Mackenzie called my attention to a patient in Harrison Ward of the London Hospital. He was about thirty years of age, tall, florid, thin, and healthy-looking. He had been admitted for bronchitis and gastric catarrh. As the bronchial attack subsided and its attendant *râles* disappeared, there was noticed all over the right side a very superficial crackling and crepitation. It was just recognisable by the hand placed lightly over the side; it was little influenced by deep breathing or by coughing; and, when listening with the stethoscope, the impression made upon the mind was that the crackling was produced either in the walls of the chest or in the parts immediately subjacent. After a few weeks, the patient was discharged from the hospital at his own request. He was in all respects well, except that the superficial crackling and crepitation remained unaltered.

A year afterwards, this patient was readmitted into the hospital. I did not myself see him on that occasion; but I was told that he had had a slight bronchial attack; that, after its subsidence, the right lung was found in the same state as before; and that the left lung was unaffected.

In 1876, I had an opportunity of re-examining the patient. Except for a slight cough, mucous expectoration, and shortness of breath on exertion, he was fairly well, and able to follow his work. The left lung was quite free from any signs of disease. The right side moved less freely in breathing, looked slightly flattened and contracted, and the cardiac impulse was near the sternum, below the cartilage of the fourth rib. Over the lower third, from the front of the axillary region to the spine, there were marked dulness, diminution of tactile vocal fremitus, feeble breath-sounds, and impaired vocal resonance. During forced inspiration, practised after coughing, there could be heard, in places, creaking or obscure friction and some deeper sounding coarse moist crepitation. There was no notable change in the condition of the heart. The pulse was under 80. The temperature was slightly subnormal.

CASE IV.—In June 1875, I was consulted by a young man for cough, expectoration, and pain in the right side. He was eighteen years of age, tall, fair, and moderately nourished. The family-history was good. Fourteen months before his visits, he contracted a right pleurisy, and since then his chest had not been well. Nothing abnormal was discovered in the digestive, circulatory, genito-urinary, or nervous systems. On examining the chest, it was found that the cardiac impulse fell between the fifth and sixth ribs, two inches in front of the nipple. The heart's action was strong and regular; the pulse was 68. The temperature was normal. The left side was normal in form and movement. The right side was slightly flattened, moved less freely on inspiration, and, except at the upper fourth, was dull to percussion. The tactile vocal fremitus was unaltered. Auscultation revealed, in the dull region, superficial creaking leather-sounds, bronchial breathing, increased vocal resonance, superficial clicking, and large moist crepitation.

This patient went to South Africa. I saw him two years afterwards, on his return to England, and he declared himself to be quite well. A careful examination brought to light no evidence of disease, except in the right side of the thorax, which was flattened, contracted, and a little twisted. The corresponding shoulder was depressed, whilst the lower angle of the scapula projected outwards from the ribs. Over the lower four-fifths of the right lung, there was complete dulness to percussion, diminished tactile vocal fremitus, feeble breath-sounds, no *râles*, and much impaired vocal resonance. During forced inspiration, creaking, and sometimes little grating sounds, were heard. I have not seen the patient again. (See Appendix, Note 2.)

CASE V.—This was the case of an unmarried American gentleman, 52 years of age, a patient of Professor Pepper of Philadelphia, who

had recommended him to go to England for the benefit of change. He complained of general ill-health, of a nearly dry teasing cough, of shortness of breath, weakness, and indigestion. He was pale, thin, anxious-looking, depressed, and supposed to have had syphilis at a date not recorded. The illness for which I was consulted, began in 1877 with an obstinate and incoercible right dry pleurisy. He went to Colorado, Florida, and the Sandwich Islands, with no resulting benefit. Subsequently he visited Toronto, and there began to improve.

At the time of examination, the patient was suffering from gastric catarrh, and had a suspicious-looking ragged ulcer, about the size of a sixpence, on the posterior wall of the rectum, within an inch of the anus. The urine was of fair density and slightly albuminous. The heart was beating feebly, a little to the right of its normal situation; there were no murmurs; the pulse was 84, small and compressible; temperature normal. The left lung on examination yielded no signs of disease. The right side of the thorax was a little flattened, and on inspiration moved much less freely than the left. Over the lower two-thirds, and chiefly from the anterior border of the axillary region to the spine, there were almost complete dulness to percussion, diminished tactile vocal fremitus, feeble and irregular breath-sounds, slightly increased vocal resonance, and no *râles*. Deep forcible inspirations brought out superficial rustling crepitation, creaking leather-sounds, and at one or two parts grating friction. The patient complained of general pains which disturbed his sleep, and of stiffness and aching of the joints.

Nine months afterwards, I re-examined the patient. His general health was much improved, but the condition of the right lung was unaltered, and there was still a trace of albumen in the urine.

CASE VI.—For this case I am indebted to the kindness of Dr. Goodhart. Unfortunately, no dates are given in the record. Nine years before death, the patient was admitted into Guy's Hospital, for chronic interstitial nephritis. Soon afterwards, he had an attack of right dry pleurisy, followed by hæmaturia. Four years, and again two years before death, the patient had hæmoptysis. The physical signs were reported to be those of bronchitis and of phthisis. The patient died unexpectedly and suddenly, with signs of failing action of the kidneys.

On inspection after death, it was found that the right lung was surrounded by a greatly thickened pleura, at some parts a third of an inch in thickness; that the whole upper lobe was converted into a mass of fibroid tissue, traversed by slightly dilated bronchial tubes; and that it seemed as if the fibroid invasion had arisen in and extended from the inflamed pleura. Part of the lower lobe was simply collapsed, and penetrated by tracts or bands of fibroid tissue, which, starting from the pleura, were lost in the lung. A similar, but less advanced condition, existed in the summit of the left lung. The heart weighed 11½ ounces; two of the aortic valves had fused into one, and the third was enlarged. The kidneys were slightly granular on the surface, but there was no marked cortical wasting. There were, however, some recent epithelial changes and intertubular congestion.

CASE VII.—This case occurred in a gentleman, 76 years of age, whose family was reported to be free from any taint of phthisis. Summoned, in 1870, to see him on account of a small recurring hæmoptysis, I was informed that at about 18 he had had a right pleurisy, which "persisted in a curious way" for many months; that almost ever since that time he had suffered from his chest; that he had had several attacks of hæmoptysis; that he was liable to frequent and severe colds; and that, notwithstanding these facts, his general health had been fairly good, and he had been, between his attacks, equal to the ordinary duties and enjoyments of life.

The attack of hæmoptysis having ceased in a few days, I was able to examine the chest with some care. The heart was found to be beating against the cartilage of the third rib on the right side. This was flattened and irregularly retracted; the shoulder was depressed; the scapula at its lower part projected outwards from the ribs; the neck was swollen, and its superficial veins were distended and tortuous; and here, as well as in the face, the skin was of a pale dull leaden hue.

The whole side, front and back, except at the apex, was dull to percussion; the tactile vocal fremitus was rather increased; the breath-sounds were of the hollow bronchial variety, loud, harsh, and blowing; there was no vesicular breathing, but, instead of it, there were large, moist, gurgling rhonchi; and the vocal resonance along the course of the bronchial tubes was bronchophonic and almost pectoriloquous. At the base of the lung, the physical signs were of a similar character, but much less advanced. Over the summit of the lung, the tactile vocal resonance was diminished; the breath-sounds, though feeble and harsh, were of the normal type; and the vocal resonance, except at the inner end of the clavicle, was diminished. The per-

cussion-note over the summit of the lung was of a tubular character, and resembled the sound which, in children, one can elicit by tapping the upper part of a lung, the lower part of which is surrounded by fluid. The left side was enlarged, rounded, and moved fully and freely on inspiration. Tactile vocal fremitus was everywhere distinct; the percussion-note was more than naturally clear and resonant; the breath-sounds, the vocal resonance, the respiratory rhythm, and the pleural movements were everywhere normal.

Six weeks after the first, I made a second examination of the patient, when he had returned to his normal state. I found that he suffered from a slight catarrhal dyspepsia; that the urine, of low density, contained always a little albumen; that he had a habitual slight cough, with muco-purulent expectoration; that, when he was struck with a severe bronchial attack, the cough became paroxysmal, and ended in vomiting; and that he suffered from time to time with pains about the right shoulder and side. During this examination, I heard but few *râles*, but a creaking leather-sound—a sound as of the creaking of a new saddle—was clearly audible during deep inspiration.

I did not again see this gentleman, who subsequently died of bronchitis, under the care of Drs. Huxley and Nankivell, at Torquay.

Since these notes were written, I have learned from Dr. Toogood many interesting particulars of this patient's case. Chief among them is the circumstance that the patient suffered occasionally from attacks of dry pleurisy on the right side.

CASE VIII.—In the early part of 1870, I was summoned to see a gentleman, complaining of pain in the lower part of the left side, which he considered to be an attack of internal gout. The patient was 60 years of age, tall, thin, and somewhat infirm, but vivacious. He had suffered from regular attacks of gout for many years, until the last five years, when the attacks became irregular, and when, as the patient alleged, instead of occurring in the foot or hand, they occurred in the lower and back part of the left side.

On examining the chest, I found slight dullness over the lower and back part of the left side, increased tactile vocal fremitus, harsh grating friction, feeble breath-sounds, and slightly modified vocal resonance. The patient was himself conscious of the pleural friction, and it could be felt by the hand laid lightly on the chest. Nothing abnormal was discovered in the right lung. There were uneasiness in the left side and shoulder, pain and slight cough on deep inspiration, some slight difficulty of breathing on exertion, and a little viscid frothy expectoration, discharged with difficulty. The heart was large, weak, irregular, and murmurish in the mitral area; the arteries were slightly thick.

The patient suffered a good deal from indigestion. The bowels were sluggish. The urine had a density of 1018, frequently deposited showers of uric acid, and contained traces of albumen. There were no signs of disease in the nervous system. The skin was for the most part harsh and dry; but now and then there were partial sweatings. The hands and feet were deformed by repeated attacks of gout.

The patient was a generous liver, and dined almost daily *à la mode* in the company of his friends.

The patient continued in much the same condition until June, when he went to the south of England, and I lost sight of him for two years. During his absence, it was said that his chest was quite well, but that he had had repeated attacks of ordinary gout.

Towards the close of 1872, I was again summoned to see this gentleman in London, and I found him in every way worse. He had frequent paroxysms of cough, ending partly by cough, partly by vomiting, with expectoration of a foetid muco-purulent matter often stained with blood. He was breathless on exertion, and he had pain, aggravated by coughing, round the base of the right lung. The sputum contained areolæ of elastic tissue, and made sure the diagnosis of an excavation in the lung.

The whole base of the left lung was now completely dull to percussion; the tactile vocal fremitus was diminished, and, except at one point about to be noticed, the breath-sounds were feeble, and the vocal resonance diminished. At the point excepted, in the middle of the posterior base, and a little way above the upper limit of hepatic dullness, the breath-sounds were cavernous, and the voice bronchophonic. Occasionally, either no cavernous breathing was heard in this locality, or else there were bubbling or gurgling *râles*. Immediately after free expectoration, the breath-sounds were hollow; some hours afterwards, and before the occurrence of a paroxysm of coughing, auscultation gave no evidence of the presence of a cavity. The right lung was entirely free from any sign of disease.

The heart, drawn a little upwards, was weak, irregular, and indistinctly felt. The pulse, frequent and quick, beat over 100 times a minute. There was not only no elevation of temperature, but the temperature,

unless on exceptional occasions, varied from one to two and a half degrees below the standard of health.

The digestion was much disturbed; the bowels were obstinately confined, and the patient was troubled with hæmorrhoids. The urine was now abundant and pale; it contained habitually traces of albumen, but there were no casts.

The patient was thin, weak, ailing. The face, and particularly the eyelids, were puffy. The finger-ends were swollen. The superficial cervical veins were distended. The skin was yellowish and dry. There had been no serious attack of external gout for many months. The nervous system was unstrung, and the temper had become irritable. The nights were restless, and vaso-motor storms were frequent. On this occasion, I saw the patient only twice or thrice. He did not improve much; and, thinking that he needed more frequent relays of food and more ample supplies of wine than my regulations for management permitted, he sought the advice of another physician, who understood his constitution better than I, and who held more liberal views respecting its management.

In 1875, the patient again came under my care. He was thin, weak, and worn; his feet and legs were cedematous; he was depressed in spirits and irritable in temper; his nights were sleepless, and his days distressed by frequent paroxysms of exhausting cough. The expectoration was abundant, muco-purulent, and sometimes almost unbearably foetid. On occasions, the factor disappeared for days, and the expectoration consisted only of a frothy viscid or watery mucus, dotted with tiny pellets of pus or of blood. His breathing, always short and shallow, turned into distressing breathlessness when he ascended a flight of stairs. The digestive organs were greatly disordered; flatulent attacks, with palpitations, were frequent; the bowels were irregular; and the urine, having a density of 1012, contained about 5 per cent. of albumen, but no casts. The skin, harsh and dry, had a pale bluish or leaden tint. The eyelids were cedematous; and the right side of the neck and chest, as well as the right upper arm, were traversed by gorged and tortuous veins. The heart, drawn upwards and outwards, lay behind the third rib; its action was weak and irregular; and in addition to a low pitched murmur in the mitral area, there was a loud roaring systolic close to the cartilage of the third rib at its junction with the sternum, and thence along the course of the aorta.

About this time, Mr. G. W. Mackenzie was associated with me in the charge of the case; and to his skill, judgment, and firmness was due the improvement which subsequently occurred in the patient's condition. By careful management, chiefly hygienic, the patient improved greatly in general health; but the signs of local lung-disease, although quiet, persisted. Returning to the duties and pleasures of society, and continuing therein, the patient in autumn caught a severe cold. This was followed by small attacks of generalised gout, an increase of albumen in the urine, cedema of both lower extremities, and failure of general health.

Again, after a time, the general condition of the patient improved; but as the bronchial catarrh persisted, and as there were evidences in the sputum of advancing lung-disease, the patient was sent to Torquay, and placed under the care of Dr. Usher Huxley. There, for some months, the condition of the patient's chest improved; and with the exception of daily paroxysms of cough ending in vomiting, habitual but scarcely felt breathlessness, and occasional attacks of irregular and tumultuous action of the heart, the patient suffered little, and enjoyed his limited life.

On a certain day, however, the patient having got chilled, he began to have irregular accessions of fever. The appetite failed, the albumen in the urine increased, a pleuritic effusion appeared in the right side, the breathing became oppressed, the heart slowly failed, and the patient, falling into a state of stupor, died.

To Dr. Usher Huxley I am indebted for an account of the necropsy, and for that part of the affected lung which included the naked-eye evidences of disease. The base of the left lung was surrounded by several layers of adventitious pleural membranes, varying in consistence and character. The innermost of these layers appeared to extend through the interlobular fissures, and along the blood-vessels into the substance of the lungs, which was hard, tough, dark, and cut with difficulty. Within an inch of the posterior surface of the lung, and near its base, were two irregular cavities containing a blood-stained purulent matter. The walls of both cavities were shaggy, and in the immediate neighbourhood of one of them were a few small knots of fibroid tissue about the size of hemp-seed. There were no bronchial dilations. The blood-vessels were everywhere thickened. The lymphatics of the interlobular fissures were here and there swollen, knotted, or saccular, and contained at some parts small clots, and at others masses of a cheesy consistence and aspect. The upper part of

the lung contained no deposits of any kind; the free margins and isolated central portions of lung were emphysematous; the pleura investing the summit was much thickened; except for patches of pleural thickening, the right lung was apparently unaffected by disease. The heart was dilated and soft, the valves were roughened, and the aorta was atheromatous and slightly dilated. The kidneys were congested, the capsules adherent, and the cortex granular. Nothing of the nature of tubercle as ordinarily understood was anywhere found.

CASE IX.—In 1866, a man was admitted into the London Hospital, and placed under my care, complaining of severe pain in the lower part of the right side, passing upwards as high as the nipple, and downwards as far as the umbilicus. He was 23 years of age, tall, dark, thin, and by occupation a costermonger. There was no family history of phthisis, and the patient himself had enjoyed good health until the appearance of the illness for which he had been admitted. He confessed, however, to the habitual and free use of alcoholic beverages. A week before admission, the patient had a rigor, followed by severe pain in the right side, cough, fever, and considerable prostration. The whole facts of this case were carefully studied and recorded by my colleague, then my clinical clerk, Mr. J. McCarthy. From his notes I have extracted all that seemed to bear directly upon my present purpose.

The patient complained of dry cough, of pain in the right side made atrocious by coughing or by deep inspiration, of loss of appetite, and of great prostration. The lower part of the right side moved imperfectly on inspiration. The tactile vocal fremitus was slightly diminished. There was no marked dulness to percussion. Over the whole base one heard with the stethoscope pleural friction, superficial moist crackling, and, at scattered circumscribed places, bronchial breathing with increased vocal resonance. Between those places, the respiratory sounds were rather feebly heard through the crackling and friction. Examination of the upper part of the lung yielded no signs of disease beyond a few mucous râles. The left lung was apparently healthy. The heart's action, unaccompanied by any abnormal sound, was frequent and weak. The pulse, small and compressible, was 110; the temperature was 103°; the tongue was loaded; the bowels were confined; the urine was scanty, and deposited purple lithates. The patient looked and felt very ill.

After a week, the patient had frequent distressing cough, with muco-purulent expectoration and occasional attacks of dyspnoea, with severe pain in the right side. The physical signs remained practically unaltered. Fever continued, and the patient took little food, had restless nights, and was extremely prostrate.

At the end of a month, the patient was much worse. The physical signs, still of the same general character, had extended to the whole lower third of the right side, and there was extreme tenderness over the hepatic region. Coarse moist crepitation, with mucous râles, were heard throughout both lungs. There were harassing cough, thin muco-purulent expectoration, and occasional attacks of breathlessness in the midst of shallow and painful respirations. The pulse was 120; the temperature at night was 104°; there were occasional chills during the day, and sometimes profuse sweats at night. The patient lay upon his back, took little food, and expressed himself as very ill. The tongue was loaded, and the breath fetid. Constipation alternated with diarrhoea, and light with dark fæces. The urine, more abundant in quantity, contained a little albumen. Exploration of the right side with a fine trocar showed that there was no free fluid in the pleural sac. Several physicians, who at this time examined the case, suspected it to be one of acute tuberculosis, with secondary pleuropneumonia of the base of the right lung.

Before the patient's death, about two months after admission, new physical signs arose in the base of the right lung, two inches below the nipple. Over a circumscribed space, dull to percussion, there were heard cavernous breathing, pectoriloquy, and, on coughing, a hollow, gurgling rhonchus.

After death, it was found that the structural evidences of disease were confined almost entirely to the lower third of the right lung and the upper surface of the liver. The base of the lung was surrounded by a thick layer of loose, yellowish, soft, and almost diffuent lymph, infiltrated at parts by a fluid resembling pus, but composed of degenerating cells of various forms, with granular debris. The old membranous exudations in contact with the pleura were quite firm, and could be traced throughout the lower part of the lung in two forms, as white tough intersecting bands, and as a dense, hard, almost formless, fibroid infiltration. At the lower part of the base, near the anterior surface, there were found pyriform bronchial dilatation, and one or two minute cavities.

Throughout the intercurrent portions of lung two different structural changes were visible. The first consisted of disseminated

rounded caseous lumps, for the most part confined within the limits of the pulmonary lobules, but sometimes extending beyond them. Histologically, the lumps resembled the consolidations begotten in caseous pneumonia, and were, at one or two points, melting into excavations. The second kind of structural change was due to the presence, in small numbers, of spheroidal greyish or yellowish bodies, about the size of hemp-seed, and resembling tubercles. They had not, however, the arrangement of parts and structural characters of veritable tubercle. They were divisible into two groups; the members of one group were mere knots of fibroid tissue; the members of the other appeared to consist of choked and distended lymphatic spaces, traversed by an adenoid reticulum.

In the abundant soft lymph lying between the under surface of the lung and the diaphragm there was found an abscess, about the size of a large walnut, and this abscess could be followed through the diaphragm into the liver, where there existed another abscess of a like size and character. Round about this abscess, and within the space of an inch from it, were several spheroidal masses, each about the size of a very small cherry, of a yellowish colour, and not unlike the caseous lumps in the lung.

In the pleura of the under surface of the lung, in contact with the soft diffuent lymph, I observed, and recorded with illustrations in my workbook, the presence of cup-shaped depressions, bordered and lined with flattened nucleated epithelial cells. I did not, at the time of examination, understand the nature of these bodies, and was disposed to regard them as mere alveoli of mechanical production. The researches of Recklinghausen, Ludwig, and Klein make it now probable that those bodies were temporary or permanent stomata. Besides these stomata communicating with lymphatic spaces, there were found other minute openings leading by tortuous channels into the pulmonary parenchyma.

Nothing of importance was found in any of the other organs or tissues of the body.

CASE X.—In May, 1878, a gentleman consulted me for severe pain in the left side, teasing cough, slight breathlessness on exertion, and recurring irregularity of the heart. The patient was 61 years of age, spare, florid, dark haired, light eyed, and although disposed to stoop a little, well preserved. He was regular in his habits, fairly moderate in the use of alcohol, active, and a considerable smoker. The family history was characterised by rheumatism, gout, heart-disease, and asthma.

In the past personal history of the patient, the most notable events were indigestion, often recurring, rheumatism, some stray visitations of gout, and two or three attacks of pleurisy of short duration.

The attack for which the patient consulted me was of a week's duration, and was ascribed by him to having got chilled whilst driving late in an open cab. The lower half of the left side was slightly contracted, and expanded imperfectly on inspiration. The tactile vocal fremitus was, at most parts, greatly diminished. There was complete dulness to percussion; grating friction and a superficial rustling crepitation obscured the normal breath-sounds; the pitch of the vocal resonances was lowered and curiously uneven. A few mucous rhonchi, with sparse coarse moist crepitations, were heard over the upper part of the same side. A few sibilous and sonorous rhonchi, with large moist crepitations, were heard throughout various parts of the right lung. The heart, drawn a little outwards, was weak and irregular; a systolic bruit was heard within both the mitral and the aortic areas. Nothing special was noted in the condition of the digestive, urinary, or nervous systems. Both hands, the knees, and certain parts of the spine exhibited osteo-arthritis changes.

I had no opportunity of seeing this patient again until July, 1883, when, in conjunction with Mr. Gifford Ransford, I had charge of him until his sudden and unexpected death in March, 1884.

In the early part of June, at Aix-les-Bains, the patient was seized with a sharp attack of pleurisy, and was placed under the care of Dr. Berthier. It is probable that the character of the thoracic signs led to a suspicion of fluid effusion, for I understood that an exploratory needle was used, and that no fluid was found.

At the time of examination, the patient complained of frequently recurring paroxysmal cough, ending in vomiting of muco-purulent, sometimes fetid, expectoration; of severe pain in the left side; of breathlessness on exertion, of night-sweats, of slight fever, and of great prostration. The left side of the chest was irregularly contracted and flattened, and rose feebly on inspiration. Over the lower two-thirds there were diminished tactile vocal fremitus, and complete dulness to percussion. The breath-sounds generally were feeble, hollow, distant, and, at most parts, the vocal resonance was lowered in pitch and diminished in tone. At two places, one below the lower angle of the scapula, and the other about an inch external to it, the breath-sounds were cavernous; the large moist râles had a

metallic quality, and there was loud bronchophony. Throughout the upper two-thirds the percussion-note was superresonant; the respiratory murmur, of normal type, was loud, harsh, and accompanied by medium sized moist crepitations; the vocal resonance was increased. Nothing abnormal was discovered in the right lung.

The muco-purulent expectoration, of ordinary histological characters, contained areolæ of elastic tissue from the lung; but, although several times sought for, no tubercular bacilli were found. When the sputa were fetid, micrococci were abundant. The heart, drawn upwards and outwards, was enlarged, weak, and irregular; at the place of impulse, a loud systolic *bruit* was heard; and, in the pulmonary area, there existed another *bruit*, louder in pitch and fuller in tone. The temperature, falling in the morning, rose in the afternoon to 101°. There were slight chills and sweats.

The digestive organs were much disordered; the tongue was loaded, and the breath unpleasant. With anorexia and thirst, there was much flatulence; the bowels were irregular. The urine, at one time loaded with urates or depositing uric acid, was at other times limpid and slightly albuminous. Nothing worthy of notice was found in the condition of the nervous system.

For months, the patient steadily improved, and the condition of the left lung became quite passive. There were, it is true, occasional bouts of paroxysmal coughing, some morning expectorations of the usual kind, and breathlessness or palpitation on exertion, but they did not materially interfere with the patient's comfort in life, and he did not himself give them any consideration.

Curiously enough, however, as the condition of the lung and of the general health improved, the osteo-arthritic trouble returned, became slowly worse, attacked the neck, shoulders, back, hips, and hands, and was the cause of much suffering.

In February 1884, the patient began to improve, and, in the early part of March, he had gained flesh, and become in every way much better. But, on the 10th of this month, being in his usual condition, and exceptionally free from trouble, he suddenly began to cough up blood, and in a few minutes expired.

The necropsy was made by Mr. John Morgan and Mr. Gifford Ransford. The whole left lung was united by layers of thick, dense, hard pleural lymph to the walls of the chest, and was removed with great difficulty. The lung was much diminished in size, dense and leathery to the touch, and invested by several layers of adventitious pleural membranes, varying in thickness and character at different parts. About the middle of the lung, where these membranes were thickest and most closely connected, they had, when cut, much of the aspect of a fibrous growth, and, seen apart from their visceral connections, could have been easily mistaken for one.

When laid fully open, the lung appeared, for the most part, of a dark red colour, and was found to be dense, hard, tough, and cut with difficulty. Fibrous bands passing from the pleura, and intersecting at various angles, traversed the middle portions of the lung, and compressed small bronchial tubes and blood-vessels. In the base of the upper lobe, and nearer the posterior than the anterior surface, there were two ragged irregular cavities. One, about the size of a walnut, contained curdy matter and blood; the other, rather smaller, was empty. Several bronchi in the neighbourhood contained clots of blood. The summit of the lung was encased in a thick capsule of laminated and indurated lymph; but the lung-substance itself was substantially free from disease. Except at its anterior and inferior free margins, where there was much vascular emphysema, the immediate base of the lung, although greatly congested and traversed by intersecting fibrous bands, was pervious to air, and free from any marked consolidation. The bronchial tubes were nowhere dilated. The right lung, beyond some pleural thickenings, exhibited no sign of disease. The bronchial glands were enlarged, but not caseous. The heart was enlarged, soft, dilated, fatty. The mitral valve was rough, irregularly and finely nodulated, and incompetent. The aortic valves were atheromatous and incompetent; and the aortic lining was irregular, rough, and studded with patches and streaks of atheromatous deposits. In the sputum, many times examined during life, no tubercular bacilli could be found.

CASE XI.—In 1851, the patient, then a tall, stout, healthy brick-layer, 42 years of age, with a good family history, fell from a scaffolding, and, having injured his right side, was admitted into the London Hospital, under the care of Mr. Luke. There it was found that he had fractured two of his right ribs, and was severely bruised. After two months, the patient was discharged from the hospital, and, although declaring himself well, had frequent cough, with blood-stained expectoration.

In 1857, the patient came under my care for hæmoptysis. He was still stout and healthy looking, and declared himself to be quite well,

except for pain in the right side, a troublesome cough, and spitting* of blood. A careful examination of the patient elicited no signs of disease, except in the right side of the thorax. There, in the mammary and mid-axillary regions, were slight dullness to percussion, increased tactile vocal fremitus, pleural grating, large moist crepitation, and moderately heightened vocal resonance. Coughing and deep inspiration produced sharp pain about the nipple. The pulse was 76, and the temperature 98.2°.

In 1860, the patient again fell under my observation, and had altered much for the worse. He had become bald; his face, pasty and oedematous, wore an expression of suffering; his abdomen was loaded with fat; and he moved about with difficulty on account of shortness of breath. He still declared that there was nothing the matter with him but cough, profuse expectoration, pain in the right side, and dyspnoea on exertion.

Inspection of the chest showed that the disease had considerably advanced since 1857. The right side of the thorax, between the clavicle and nipple, was retracted, and rose feebly on inspiration. The corresponding side of the neck was swollen, and the superficial veins, distended with blood, were not emptied during inspiration. In the retracted region, there were found dullness to percussion, slightly diminished tactile vocal fremitus, pleural grating or creaking, bronchial breathing with coarse moist crepitation, and some increase of vocal resonance. These signs in more or less degree were found in the mid-axillary and scapular regions. In the summit of the lung, the respiratory sounds were harsh, and accompanied by crepitation; in the base, no evidences of disease were found. The left lung appeared to be normal. The expectoration, which was abundant and gelatinous, or muco-purulent, consisted of a mucoid stroma having imbedded in it leucocytes, blood-discs, granule-cells, and epithelium.

The heart was large, somewhat feeble, and beating at the junction of the cartilage of the fifth rib with the sternum. The pulse was 80; the temperature 98.8°. No notable signs of disease were found in any other part of the body.

In 1866, the patient had lost flesh, strength, and colour, and his whole appearance suggested the existence of malignant disease. The face had a leaden tint; the features were full, and the under eyelids baggy with serum; the neck was swollen; the right arm was oedematous; and the right side of the thorax, greatly retracted, was covered by the ramifications of overdistended veins. The movements of inspiration were shallow, laboured, and frequent; the heart was seen beating to the right of the sternum at its junction with the fourth rib; and periodical paroxysms of cough, making the face livid, and sometimes ending in vomiting, discharged quantities of muco-purulent phlegm. In this phlegm were found, from time to time, areolæ of elastic tissue from the pulmonary alveoli. Beyond some fine moist crepitations near the summit in front, nothing of moment was found in the left lung. Examination of the right lung yielded the results which follow. In the supraclavicular region, there were found superresonant percussion-note, increased tactile vocal fremitus, hollow bronchial breathing, prolonged expiration, crackling, clicking, and crepitating rhonchi and bronchophonic vocal resonance. In the infraclavicular and mammary regions, there were found great retraction of the thoracic walls, scarcely visible expansion on inspiration, diminished tactile vocal fremitus, blowing, and at some parts cavernous breathing, clicking, crackling, and crepitating rhonchi, and bronchophonic or pectoriloquous voice. In this region, also, the expiratory sounds were greatly prolonged, the rhonchi had a metallic quality, and pleural creaking or grating was sometimes audible. In the lung below these regions, the respiratory sounds were jerking and harsh; the expiration was prolonged; and with both movements of breathing, fine moist crepitations were heard. Percussion and the resonances were unaltered.

The action of the heart, drawn, as already mentioned, to the right, was feeble and frequent. A low pitched systolic murmur was heard at the base. The pulse, small and compressible, beat about eighty times in the minute. No unsoundness was detected in the arteries. The extremities were cold, and the feet slightly oedematous.

The tongue was loaded; appetite impaired; thirst considerable. The liver was enlarged, and descended more than an inch below the free margins of the lower ribs. The bowels were irregular, and external hæmorrhoids sometimes distressed the patient.

The urine was abundant, and low in density. It contained about 5 per cent. of albumen, but deposited no casts. The skin was acting well, but there were neither night-sweats nor chills. The evening temperature was 97.8°.

About this time, the patient was examined by most of my colleagues, and there was much discussion amongst us as to the nature of his malady; but the balance of opinion turned in favour of malignant disease.

The patient remained for many months in the hospital. The physical signs of disease of the right lung continued, after seven months, substantially unchanged; but in all other ways—in appetite, flesh, strength, colour, and sense of well being, the patient had become, to use his own phrase, "another man." Feeling thus much better, and anxious to get into some sort of work, the patient was, at his own request, discharged from the hospital.

At the end of eighteen months, the patient was found to be in extreme poverty, and becoming rapidly worse in health; and on October 1st, 1868, he was readmitted into the London Hospital. At this time, the condition of the chest was much the same as when last examined; but in one or two places, about the middle of the upper lobe of the left lung, there were signs of fresh disease: slight circumscribed dulness, moist crepitations, jerking inspiration, increased resonances. The heart was still displaced to the right; there were systolic murmurs at the base; the pulse at the wrist was small, feeble, and under 80. The temperature was, about midday, 97.4°.

It was, however, in his general condition that the patient had relapsed, and become worse than at any previous time. With pallid and dusky hue of face; with greatly swollen neck, traversed by gorged and tortuous veins; with wasted body and cedematous legs; with short and laboured breathing, interrupted almost to suffocation by paroxysms of cough; unable to move about without sweats and tremors, he looked the picture of suffering and weakness. The tongue, of a bluish hue, was thickly coated with a yellow fur. Only fluid food could be taken; there was much flatulence; attacks of diarrhoea were frequent. The urine was of low density, moderately albuminous, and deposited granular and hyaline casts. The extremities were cold and blue. The skin acted freely, and fell often into profuse sweatings. No notable sign of disease was discovered in the examination of the nervous system. Nothing done for the patient gave him relief. He became slowly weaker; and at length, after seventeen years' conflict with his malady, he succumbed.

The thorax and abdomen alone were examined after death. The heart and great vessels lay beneath and a little to the right of the sternum, corresponding to the third, fourth, and fifth intercostal spaces. The heart was large, soft, and loaded externally with fat; there was no demonstrable valvular imperfection; the lining membrane of the aorta and small portions of the pulmonary artery were atheromatous. The veins at the root of the neck were partially compressed by adhesions connecting the upper lobe of the right lung to the neighbouring parts. It was only by the free use of the knife that the right lung could be removed from the chest. Greatly diminished in size and irregular in form, surrounded by a tough fibrous capsule, at some parts over an inch and a half in thickness, and having disposed along its inner surface, from the apex to near the base, a flattened mass of lobulated yellow fat, the organ, on superficial inspection, looked more like a tumour than a lung.

A longitudinal section having been made, it was seen that the fibrous capsule investing the lung consisted of several closely superimposed layers of different character and thickness; that, where uncut, the outer surface was rough, uneven, and obscurely warty; that, from the inner layers, fibrous bands of unequal breadth penetrated the lung, and, passing along the interlobular septa, or accompanying the vessels, or surrounding the smaller bronchi intersected in various directions, produced areolæ of varying size and form; and that, chiefly at the intersections, but also occasionally elsewhere, the fibrous bands exhibited small, hard, tough, nodular swellings. Corresponding to the place where the ribs had been fractured, the adventitious pleural membranes were infiltrated with flakes and particles of calcareous matter.

The upper two-thirds of the lung were intensely congested, and riddled with small, ragged, irregularly shaped cavities. Here and there were small consolidations, due to the presence in the alveola of an amorpho-granular obscurely fibroid matter. The pulmonary arteries, and at some parts the pulmonary veins, were thickened. Once, in a lobular branch of the artery, a nodule was seen, almost entirely obliterating the lumen of the vessel, and growing from its inner wall. Almost everywhere the adventitia was thickened, not apparently by cell-proliferation, but by a nearly homogeneous infiltration. In several instances in which small branches of the pulmonary artery were apparently much compressed or thickened, the alveolar territory to which it was distributed was in a condition either of fatty usure or of atrophic emphysema. This relation between the state of the vessel and the state of the lung was so frequent, that one was disposed to regard it as causal. Some of the larger bronchial tubes in the upper part of the lung were dilated, whilst their walls had become thin and soft, but tough. At these parts, the ciliated epithe-

lium was replaced by a subspheroidal one, the cartilages were wasted, and inelastic, and the muscles had apparently undergone fibroid degeneration. Here and there, an early division of the interlobular bronchi was found almost obliterated, and the alveoli connected therewith were collapsed.

Immediately beneath the pleura, throughout the whole extent of its diseased portions, the lung exhibited uninterrupted lines or patches of pneumonic consolidation. In the worst part the consolidation was of the croupous sort, but at several points, where the consolidation was larger, and in immediate relations with lymphatic spaces or vessels, it was caseous. At some parts in the midst of the fibroid induration, the alveolar walls were greatly altered in structure, and the alveoli contained a matter composed of free nuclei, leucocytes, epithelioid cells and pigment globules. The alteration of the alveolar walls was considerable; they were thickened, the epithelium lining them was subspheroidal, and arranged sometimes in a single and sometimes in a double or even triple layer. Some of the alveolar capillaries were obliterated, others were dilated, almost saccular, all of them appeared to be thickened. The intervascular spaces, much larger than in health, had a fibrillated appearance, and were crowded with oval nuclei irregularly disposed. Once or twice an alveolar wall was seen to be nodulated; and both in structure and arrangement the nodule resembled a minute fragment of a nucleated fibroma. The lower third of the lung was intensely congested, and yielded, on pressure, an abundant frothy, blood-stained, muco-purulent matter. On its surface, and particularly at its free margins, the lung was emphysematous; but emphysematous patches were found also about the centre of the lung, close to, and sometimes in the midst of, the fibroid induration. The left lung, of large size and a greenish red colour, was connected by loose adhesions to the costal pleura. The whole lung was greatly congested, and yielded, on pressure, an abundant frothy sanguinolent serum. In the middle of the upper lobe there was a group of bodies which, in their naked-eye characters, could not be distinguished from what are called veritable tubercles or grey granulations, about the size of hemp-seed, spheroidal, and projecting above the level of the cut surface of the lung; they were greyish, semi-transparent, dense, hard, tough, and free from every trace of caseous change. Each body, composed for the most part, of fibro-corpuseular elements interspersed with epithelial-like cells and short nucleated fusiform fibres, might have been regarded, according to the subjective attitude of the observer, either as a mere fibrous knot, or as a true tubercle.

The irregular layers of new membrane constituting the capsule of the lung were of two kinds, but not alternately arranged. The one kind was hard, close, and similar to a lamellar fibroma; the other resembled a loose areolar tissue, in the trabeculae of which were branched connective tissue corpuscles, and in the meshes thereof decaying leucocytes and epithelial-like cells. The bronchial glands were enlarged and loaded with pigment, but not caseous. The juice, in addition to the normal lymph-corpuscles, contained, in enormous numbers, spheroidal multinucleated cells in a state of active endogenous proliferation. The liver and spleen were enlarged and congested. The capsules of both organs were greatly, but irregularly, thickened; in the former, cirrhotic changes were beginning. Both kidneys were enlarged, and much congested; their capsules were opaque, thickened, and adherent. The capsular surface of each kidney was obscurely granular and mottled; but there was little wasting of the cortical substance. In many of the arteries, however, there was thickening of their outer and inner coats.

I have, in this case, described some of the pathological changes found, after death, at greater length than the scope of these lectures will fairly warrant; but I excuse myself on the ground that they affect questions of fundamental importance, and that, having followed the case throughout its whole course, I may venture, with less hesitation than will be necessary in the other cases, to deal with the conclusions which the study of the case seems to justify one in drawing from it.

CASE XII.—I now proceed to relate briefly the history of a case which, in the group of advanced and complex cases, represents that section of it composed of patients who have continued to live. This case is the last which I have chosen for the illustration of my subject, and at the close of the lecture it will be submitted to your own examination.

The patient is unmarried, and a potman, but, as is alleged, of temperate habits. The father died some years ago of consumption; the mother, with a brother and sister, are in good health. The patient himself never had any illness until September, 1875. About that time he had a chill, from which he speedily recovered. On October 28th, whilst walking in the street, he became

suddenly cold, giddy, faint, powerless, and fell to the ground. Consciousness was retained throughout. Carried home and put to bed, he was seized with a sharp cutting pain in the left side, shortness of breath, dry cough, and recurring chills.

On the 29th, the patient recovered power; but after this time losing ground in other ways, he was received into the London Hospital on November 2nd. On examination after admission, the following facts were recorded. The left side of the thorax moved, on inspiration, less freely than the right; over the lower three-fourths, the tactile vocal fremitus was increased; and in the same region there were dulness to percussion, large moist crepitations, bronchial breathing, increased vocal resonance, and scattered patches of grating pleural friction. Examination of the right lung yielded no evidence of disease therein. The heart's action was weak and frequent; pulse, 94, small and incompressible; temperature, 101°; respiration, 28. The tongue was furred and dry; the breath was fetid; there was complete anorexia; the bowels were confined; and the urine was scanty, high coloured, and loaded with purple lithates. The skin was dry and harsh, and the face flushed; the eyes were bright, and the pupils dilated. The patient complained of headache, general pains, a sharp stitch in the left side, dry cough, and *malaise*.

A week after admission, an effusion of serum had occurred in the left pleura, the heart was pushed to the right of the sternum, and the patient's breathing had become rapid. Within a month, all signs of fluid in the left pleura had disappeared; the heart had returned to its normal position; and, but for an uneasy sensation throughout the lower part of the left side, the patient said that he would be well. The pulse, respiration, and temperature were almost natural. Round the base of the lung, however, there were loud grating pleural frictions, and deep inspiration or cough produced pain.

When the patient was dismissed, some months afterwards, the pleural frictions were still present, but he expressed himself as being in other respects well.

During the following year, the patient was readmitted into the hospital with dry pleurisy of the right side. The patient was in poor general health, looked pale and ill, suffered from gastro-hepatic catarrh, and had scanty high coloured urine, slightly albuminous, and free from sugar, but loaded with purple urates. The heart occupied its natural place in the thorax, was free from signs of disease, and beat about 80 times a minute. Throughout the mammary and axillary regions of the right side, there were grating or rubbing pleural frictions, and pain on inspiration or coughing. The respiratory murmur was feeble and interrupted, and the resonances were diminished; but, in as far as it could be ascertained, there were no pulmonary *râles*.

The left side of the thorax moved less freely than the right, and it was irregularly flattened. There was dulness to percussion in the infraclavicular, mammary, axillary, and mid-scapular regions; the tactile vocal fremitus was slightly diminished; the breathing throughout was feeble and hollow; coarse moist crepitations accompanying both respiratory movements were heard in several places; and the vocal resonance, varying at parts, was, on the whole, increased. An inch below the outer end of the clavicle there was a patch of dulness, equal in size to a florin, where there were heard bronchial, almost tubular breathing, a few small moist *râles* of metallic quality, and bronchophony. Here and there intermittently pleural creaking or grating was heard. The patient had a short hacking cough, a moderate amount of muco-purulent expectoration, and breathlessness on exertion. The sputum consisted of a mucoid stroma, having embedded in it leucocytes, young epithelium, pus-globules, granule-cells, and much amorpho-granular matter in little masses or streaks. No elastic areolæ were found. A systolic *bruit* was heard in the pulmonary area; the pulse was 84; the temperature was 99°.

The patient remained in the hospital until June, 1877. During all those months he improved in general health. The condition of the left lung remained without material change until the time of his discharge. And although on the right side the pleural frictions were often absent for weeks, they always returned for longer or shorter periods, and appeared to be causally connected with changes slowly advancing in the middle and lower part of the lung. In these regions, the intercostal spaces were deeply retracted; there was diminished movement on inspiration; dulness to percussion had become considerable; the respiratory murmurs, feeble, hollow, and distant, resembled those heard in moderate pleural effusion, and vocal resonance was muffled. There was no displacement of organs, and various alterations of the position of the patient produced no perceptible change in the outlines of the area of dulness.

On readmission to the hospital in 1882, the patient was found to be much worse than when he left it in 1877. Pale, thin, weak, breath-

less, he complained of troublesome cough, with a good deal of muco-purulent expectoration, and of acid and flatulent disorders of digestion. Furthermore, he had a small strumous-looking abscess over the second lumbar vertebra, and chronic enlargement of both testicles, unconnected with any venereal affection.

On examination of the chest, it was seen to be retracted, chiefly on the right side. Its movements during respiration were shallow, frequent, and irregular, and the intercostal spaces were everywhere deepened. Over the upper half of the left lung there were dulness to percussion, slightly increased tactile vocal fremitus, pleural creaking, moist metallic crepitations, bronchial breathing, and increased vocal resonance. An inch below the outer end of the clavicle, and over a space of the size and form of a florin, there were to be heard cavernous breathing, large moist *râles*, and loud bronchophony. In the supraclavicular region, the respiratory sounds were merely feeble and hollow.

In the upper third of the right lung, no evidences of disease were discovered. The lower two-thirds were retracted, and rose little on inspiration. There was complete dulness to percussion; the tactile vocal fremitus was much diminished; the respiratory murmur was feeble; no *râles* were heard, but there were distinct pleural rustlings, creaking, and friction; the vocal resonance was muffled and distant.

The state of the digestive organs was unsatisfactory; the tongue was coated, and the breath fetid; the tonsils were enlarged and stuffed with cheesy lumps; acidity, flatulence, and sensations of burning accompanied the digestive processes; the liver, rather small, was pulled upwards by the contracted lung; the bowels were irregularly and inadequately relieved. The urine, turbid from a little mucus, had a density of 1.016, contained about a twentieth of its bulk of albumen, and, according to West's process, yielded, with an average daily discharge, two per cent. of urea. The heart, occupying its normal position, was slightly enlarged; at its base, within the pulmonary and aortic areas, a systolic *bruit* was heard; the pulse was 84, of moderate volume and strength; the arteries were soft. The evening temperature stood at 98.4°, the morning at 97.2°. The skin was rather harsh, dry, and indisposed to sweating. Nothing of moment was discovered in the examination of the nervous system. The morning sputum, not exceeding two drachms of muco-purulent matter, contained elastic areolæ from the pulmonary alveoli. The areolæ had become so changed as to admit of being broken by proper manipulation. In the sputum of the drier cough of the afternoon and evening, moulds or casts of the tonsillar crypts were occasionally present. They resembled, but with ordinary care could be easily distinguished from, the elastic areolæ of the pulmonary alveoli.

On leaving the hospital in 1883, the patient had greatly improved in flesh, colour, and strength. The digestion had become good; albumen was found only occasionally in the urine, and the percentage of urea had risen. The condition of the lungs had also improved; it is true that the physical signs of structural disease remained practically unaltered, but cough and expectoration had ceased, breathlessness was less, and the patient declared that he had no discomforts in his chest.

When, in February 1884, the patient again came under my professional care, he had again fallen into deplorable health, and was in every way worse than he had been at any former time; thin and pale, bent and breathless, showing an uncertain gait and oedematous legs, it seemed as if his malady had greatly advanced, and as if life must be drawing to an end. Nevertheless, a careful examination was sufficient to show that, although there were cough, expectoration, and breathlessness, there was no material change in the actual physical condition of the respiratory organs. The patient's relapse was plainly due to failure in other parts of the organism, brought about by a bad hygienic management, and by recurring bronchial and gastric catarrhs.

The tongue was thickly furred; there were little appetite and much thirst; acidity, flatulence, weight, and pain frequently distressed the patient; the bowels were irregularly and inadequately relieved, and the fæces were deficient in bile. The urine, having a daily discharge of over fifty ounces, was pale, turbid with mucus, acid, of a density of 1.014, and contained, according to the old tests, about a tenth of its bulk of albumen.

The signs of a cavity under the outer end of the left clavicle had become much less marked; and the sputum, carefully and repeatedly examined, contained no elastic areolæ from the lung, and no tubercular bacilli. The heart's sounds were muffled, seemingly from the development, since last examination, of some alveolar emphysema; the pulse was 104, small and compressible; the extremities were bluish and cold. The thermometer recorded an evening temperature of 98°.

Once more, under hospital care, the patient rapidly recovered, and, when discharged in August 1884, he expressed himself well. No signs of active disease were to be discovered in the lungs; the digestion was good; albumen had disappeared from the urine; flesh, strength, and colour had been recovered; and, beyond breathlessness on slight exertion, the patient felt nothing of which he could much complain.

On the 13th of March of the present year, I examined, for the last time, the subject of this case. As usual, after leaving the hospital, he had failed in health, and become pale, thin, weak, and nervous. He complained of morning retching, of an occasional choking sensation in his chest, relieved by the "breaking of phlegm which he could never get up;" of a slight, dry, hacking cough; of breathlessness on much exertion, and of epigastric cramp when he was hurried. He said, however, that he would be well, but for the morning retching; and, being closely examined with respect to this, he would not allow that it could be in any way connected with his manner of life.

The tongue was furred, the breath foul, and the appetite capricious. Various discomforts were felt in the course of digestion, particularly a churning and burning, relieved by vomiting. The bowels acted daily; there were no hemorrhoids. The urine, turbid when voided, was acid, phosphatic, moderately albuminous, and deposited after standing a flocculent sediment, consisting of phosphates, epithelium, pus-cells, and some mucus. The head of the epididymis of each testicle was enlarged, nodulated, and tender. The thorax was irregularly flattened, from before backwards, and from above downwards. The left side was more rounded, larger, and more movable than the right. The left clavicle was higher, and less prominent than its fellow; the shoulders were depressed; the breathing was shallow, laboured, abdominal, and very frequent; during inspiration, the supraclavicular spaces retracted; there was no venous engorgement of the neck. In the upper part of the left side in front, and in the greater part of the right side, the intercostal spaces in breathing were moved in the same manner as the abdominal muscles.

Over the upper fourth of the left lung there were found diminished expansion; dulness, of tympanic tone, to percussion; generally increased, but at some spots diminished, tactile vocal fremitus; hollow bronchial breathing; at some parts, a just audible vesicular murmur, and almost everywhere loud bronchophony. There were no *râles*; but, in the lower and outer part of this region, a superficial rustling, rubbing, or creaking, could be occasionally heard.

Between the third and sixth ribs, there were found slight dulness of tympanic type, moderate tactile vocal fremitus, broncho-vesicular breathing, distant inspiratory crepitations, diminished voice-resonance. At the lower border of the sixth rib, the gastric percussion-note was heard. Over the summit of the right lung, there were found diminished expansion, tympanic dulness to percussion, increased tactile vocal fremitus, hollow breath-sounds, increased voice-resonance, and no *râles*.

From the middle part of the lung to its base, especially in the axillary region, there were found decreasing expansion, diminished tactile vocal fremitus, feeble bronchial breath-sounds, pleural rustling or creaking, and muffled voice-resonance. No *râles* were heard anywhere throughout this lung.

The area of superficial cardiac dulness was increased; the impulse of the heart could be seen in the fourth intercostal space, just below and about an inch outside the nipple. In the second intercostal space, within an inch of the sternum, the auricular contractions were visible.¹ The first sound was muffled and murmurous, the second loud and reduplicated. The pulse was 94, small and compressible. The evening temperature was 98°. Except at the extremities, which were cold and damp, the skin was thin, rough, and dry. No sign of disease was discovered in the examination of the nervous systems.

I have brought the patient here to-day, and he may be seen in one of the rooms below.

The justice of introducing this case as one of primitive dry pleurisy may be, I confess it, fairly questioned. Sprung from a phthisical father, and the subject of strumous tonsils and testicles, some might plausibly contend, with the fashion of the time in their favour, that the primitive disease was tubercular, that the dry pleuritis were only its secondary manifestations, and that, arrested by fibroid evolution, substitution,² or invasion, the case was one of ordinary tubercular phthisis, which, in the felicitous diction of Dr. Moxon, was "writ old." But, more than this, it might be contended that, as some of the lymphatic vessels arising in the deeper parts of the lungs empty

themselves into the subpleural lymphatic spaces, tubercular changes among the lymphatic rootlets, too far from the surface to be discovered by physical signs, would manifest the earlier of their secondary consequences in subpleural adenitis or plastic exudations. And furthermore, it might be asserted that, in the beginning of this case, tubercles did exist in the lung beyond the reach of physical exploration; that they excited secondary structural changes in the adjacent tissues; and that those changes, through the medium of the lymphatics, begot the dry pleuritis herein alleged to be primitive. All this, it is true, may be justly said. But it is also true that there is much to be said on the opposite side, and more than it would be proper for me to say on this occasion. Nevertheless, in passing, I may be permitted to remark that phthisical predecessors do not necessarily beget more than pulmonary vulnerability; that analogical arguments are not conclusive evidence; that facts ascertained upon evidence ordinarily considered adequate are not to be rejected upon merely theoretical grounds; that radical departures from all the several characters which collectively constitute a given type of disease demand, even if conditional, either a conclusive proof of unity, or a separate recognition of anatomy; that the true criterion of the nature of a case lies less in the pathological changes which it exhibits after death, than in the completed history of its origin, course, and issues during life; and that, if the case just recorded were made one with every other form of pulmonary phthisis, through the causal agency of a bacillus, loyalty to knowledge, and service to society, would alike require some more rational explanation than has yet been given; why, within the limits of an unity, real or imagined, forms of disease widely differing in their symptoms, signs, course, complications, duration, and issues should be refused a distinctive, although still dependent, recognition. I do not know whether, through this refusal, the loss to science or to society is the greater; but I am sure that the loss to both is great, and I shall advert to it again.

Here I must bring to an end this narration of cases. Every one of them represents but inadequately the group to which it belongs, and from none of them can be obtained a connected, and, as far as our present knowledge extends, a complete view of the subject-matter of our inquiry. But when all these cases are collated, compared, and otherwise critically considered, one case will be found to illustrate or explain another; the more complete will in some measure supplement the less complete; and from the pathological changes found in those cases in which necropsies were made, we may fairly form probable judgments of the pathological changes which would have been found in other cases in which necropsies were forbidden. In this way, it may happen that we shall at length succeed in getting a larger and better knowledge than now we possess of the origin, course, and issues of dry pleuritis. And, although it must be that this knowledge shall prove in many ways defective, and in some even inaccurate, it will at least suffice to provoke inquiry, and to make plainer and easier the way for those who follow in the search for what remains to be corrected and discovered therein.

PRESENTATION.—Mr. Josiah J. Sarjant, the Senior Medical Officer of the Worcester Amalgamated Friendly Societies Medical Association, numbering 5,626 members, has been presented with a massive black marble and gold dining-room clock, a piece of plate, and two porcelain figures, upon the occasion of his marriage, accompanied by an illuminated address.

DONATIONS AND BEQUESTS.—Mr. Benyon, of Englefield House (the President), has given £1000, and Mr. M. H. Sutton, of Reading, £100, to the Royal Berkshire Hospital, Reading.—The Duke of Westminster has given £500, and Mr. William Brander £100 (being the first instalment of £500), to the Building fund of the new Great Northern Central Hospital.—Mr. John Penny, of Chetnole, and Bath, formerly proprietor of the *Sherborne Journal*, bequeathed £200 to the Yeatman Hospital at Sherborne, and £200 to the Dorset County Hospital at Dorchester.—Mr. Henry Skynner, of Temple Chambers, Fleet Street, bequeathed £552 10s. to St. Bartholomew's Hospital, *i.e.*, £500 for a "Robert Charles Skynner" annual prize for the best examination in human anatomy, and the best treatment in scarlet and rheumatic fevers, in memory of his Brother, and fifty guineas to the general funds; and fifty guineas each to the Seamen's Hospital Society, St. Mark's Hospital for Fistula, St. Mary's Hospital, the London Hospital, the Cancer Hospital, and the Hospital for Consumption and Diseases of the Chest; and certain freehold and leasehold properties at Richmond, Hackney, and Kingston, to the Seamen's Hospital Society.—Mr. George Trist, of Old Broad Street, and Sydenham Hill, bequeathed £200 to the Sussex County Hospital at Brighton, £50 to the Charlewood Dispensary, and £50 to the Sydenham Home for Sick Children.

¹ Perhaps these movements were really due to a retracted lung and a dilated pulmonary artery.

² Cruveilhier, Boudet, Blase, Bricheteau, and perhaps Pollock and Moxon.