fell presently into a condition of shock, but reaction occurred satisfactorily, and on the ninth day the patient was out-of-doors. He had no pain or other symptom to indicate that any vital organ had been injured. On the eleventh day he walked about a while in the morning; later he took a short ride in an easy carriage, and, on his return, said that he felt better than at any time since the shot was received. During the rest of the day he was quiet. Immediately after eating a light supper he complained of a severe pain and pressure in the cardiac region, and in a few minutes was dead.

At the autopsy the pericardium was found filled with blood, and there was a "considerable quantity" of blood in the left pleural cavity. The ball had struck the upper border of the fifth rib, perforated the pericardium, struck the left ventricle on its anterior wall, passed into and through the ventricular cavity, and lodged in the posterior wall, penetrating nearly to the external surface. At this point in the posterior wall there was a stellate rupture at the apex of a slight elevation whose wall was very thin. It is possible that this wall was rendered thinner by the action of the roughened surface of the bullet after its lodgment. One of the pillars of the columnæ carneæ was directly over the point where the ball entered the left ventricle, and may have prevented or helped to prevent the flow of blood through the anterior wound.

Hospital Practice and Clinical Memoranda.

CASES OF PNEUMONIA.¹

BY WILLIAM P. BOLLES, M. D.

CASE I. I was called, July 13th, to see a delicate little girl of about five years, who had been as well as usual since having scarlatina the year before, excepting a cough lingering after pertussis in the winter. The day before my visit she seemed as well as usual, and had been playing out in the hot sun, as she also had on previous days. When attacked she vomited, and lay still and listless upon the lounge, complaining of headache. She was flushed and hot, but gave no indication of any local trouble. The attack being regarded as one of mild heat fever, ordinary refrigerants and quiet were directed. She rapidly recovered, and was not seen by her attendant again for a week, when a prominence of the right clavicle attracted the mother's attention. She had been nearly but not quite well in the mean time, and had become a little emaciated. There was a considerable swelling of the upper part of the right chest, chiefly due to the sternal end of the clavicle, which was pushed forward. There was no redness or œdema over it, and it was but slightly tender. The veins around and over it were large and blue. A flaxseed poultice was applied, and in a few days more a suppurating gland (?) rose from behind the inner end of the right clavicle, and was opened. In eight or ten days more — August 2d — she went with her parents to Swampscott, but while about house and even out-of-doors for a few days before, on the day of starting she was not quite so well, and wanted her father to carry her the short distance they had to walk to the cars. She had had some cough, which had been worse for a

few days. During the first day at Swampscott she became worse, and on the second and third days still more sick, when I went down to see her. She had scarcely been up since her arrival, and for the last two days had lain abed all the time, hot, dry, and dull, with a hard, frequent cough, and little or no expectoration. Temperature 103° F., pulse 120 to 140. The appetite was gone, and she looked somewhat more emaciated. The granulations in the neck, about half an inch deep, were a little œdematous; the blue veins on the body and limbs seemed to show plainer.

There were dullness and bronchial respiration, with bronchophony and fine râles in the upper five centimeters of the right lung; other parts of both lungs clear.

On being brought home from the shore she immediately began to improve, and in about three weeks was entirely well. An examination made three months later shows that the recovery is perfect. There is a little harshness of respiration, probably of a cicatricial character, at the right apex.

This was a case likely to awaken the gravest apprehension in regard to its result. The delicate habit of the child, the dullness and râles at the apex, the cough, wasting, and fever, the blue veins and abscess, with phthisis hereditary, certainly excused her attendant at Swampscott, especially if the fingers were clubbed and the two sides of the chest different, as they seemed to him to be, in considering it a case of that disease. I relied upon the sudden indisposition of July 13th, which was undoubtedly the beginning of the abscess, upon her fair health up to that time, in spite of the cough, and upon the very rapid course of her sickness during the three or four days of her stay at the beach, to consider it an acute inflammation set up by the abscess and secondary to it, passing across the pleura by contiguity, and the result has confirmed my diagnosis.

CASE II. Of the following case I have lost my notes, but as it was deeply impressed upon my memory, and I had already reported it before another society, I think by the aid of dates of visits, etc., I can give a reasonably accurate account of it in a narrative form. The patient was a store-house keeper, twenty-nine years old, and married. There was no consumptive taint in his family that I could discover, and up to a certain date he was perfectly well. That date was the 17th of June, 1875. Either on this day or evening, after watching the procession, he became very chilly, and had what he described as a terrible cold, with hard cough, pain in the left side, and a good deal of fever. He had no physician then, however; was, I think, laid up for a few days, but did not go to bed, and afterwards resumed his work. As the cough did not abate, he got some transient medical advice of an unknown physician, but had no examination of the chest. When he came to me, nine or ten weeks later, he had lost flesh, was sweating at night, had a loud and hard cough, and felt weak, but still had had no thought of giving up business. His appetite and courage were good, and he protested that there was nothing the matter with him but a cold.

I was surprised to find his temperature 102° F. (his pulse was about 100, but that was to be expected), and still more so to find, upon examining his chest the signs of pneumonia in the lower lobe of the left lung, — in the stage of resolution, — dullness and coarse râles; no trouble elsewhere. His night-sweats disap-

¹ Read before the Boston Society for Medical Improvement, January 24, 1881.

peared under the use of ergot. He improved for a year, worked at his business most of the winter, went to the mountains in the summer, was better the next fall, failed the next spring, and died about two years from the time when I first saw him, after breaking down in both lungs and frightful hæmorrhages.

This would have been far more conclusive as an instance of lobar pneumonia eventuating in a chronic form, had I or some one seen him at the start and properly examined his lungs; but the history of previous health and sudden invasion after exposure, without predisposition to tuberculosis, was so positive that I am inclined to regard it as such. On the other hand, the extreme rarity of an inflammation of one entire lobe existing as an acute attack and allowing the patient to continue out of bed bears strongly against it, and it is not impossible that a catarrhal form existed from the first. Its origin in the lower lobe would be remarkable even in this case.

CASE III. A young married grocer first sent for me June 20th, having a day or two before had chills followed by very quick pulse and moderately elevated temperature. He had some cough, the cheeks were flushed as in pneumonia, the urine was diminished and dark, but his respirations were not more than 20 per minute, full and deep; the chest expanded and contracted perfectly, gave an exaggerated and tympanitic resonance everywhere, and the respiratory murmurs were everywhere full, — a little puerile, — perhaps, but if he had appeared well I should have declared the lungs to be sound. He was far from well, though, and when I was first called had fallen into a state of collapse, which had alarmed his family and previous attendant into the belief that he was dying. From this gentleman I learned that he had had a cough, regarded by him as bronchitis, for six or eight weeks, but he had been always to his business, and never had any elevation of temperature. He had examined the lungs on the day before with the same negative result as myself and also examined them with me. It seemed to us both that the patient would die in a day or two, and that he probably had miliary tubercles.

On the fifth day, the third of my attendance, I wrote that "the patient was restless, groaning and tossing on account of flatulence and distress in the stomach" (he was always dyspeptic, and had more or less trouble of this kind, and it followed him through his sickness, requiring frequent medical interference). "There is a spot of bronchial respiration and bronchophony, not very well marked, at the inner border of the left scapula." In the afternoon he was less troubled with flatulence, slept comfortably, and seemed better.

Next day there was slight dullness at the affected spot, and the signs above noted were more marked. And again, on the day following, râles could be heard over most of this side, behind, with slight dullness and some degree of bronchial respiration and bronchophony; not enough to hide, however, the spot first attacked, which presented evidence of complete solidification in the most typical manner. Occasional râles were heard upon the right.

On the third day after his chills (my first day) his temperature was about 103° F., and rose on the fifth to 103.5° F.; then it began to drop, and on the twelfth day reached 99° F. The pulse, starting at the same time at 136, reached 80 on the ninth day, and then began to rise again. The respirations were remarkable. When the pulse was 136 and the temperature 103° F.

they were only 20; gradually rose in five days to an average of 30, and reached 20 again on the nineteenth day. He improved, as if getting over a lung fever, and had the appearance of convalescence at about this time.

On the twelfth day the following record was made: "There is slight dullness of the left front, with exaggerated respiratory murmur; no râles in front. Respiration and resonance of right side normal;" the tympanitic resonance noticed at first has disappeared. Râles and dullness in the middle left scapular region, as before; dullness doubtful below.

Fourteenth day. Back clearing; a little spot of solidification, with a few râles around left nipple (corresponding to the one in the back).

Then a little more trouble invaded the left base and left it again. On the whole, the lung seemed to be clearing, but the spot which first appeared never disappeared, now becoming larger, and again smaller, but always solid. On the thirty-sixth day, for instance, "a spot as large as the palm of the hand around the left nipple and a corresponding space behind were solidified; the apex was clear, and but few râles, with moderate dullness, were left below; nothing upon the right." The temperature and pulse were each about 100; the respirations not above 25, generally below. He got better, and out in the fall. The temperature kept most of the time below 100° F. The cough and greenish and thick expectoration continued. He gained some flesh, at one time, but the lungs never cleared any more, nor changed much, while I saw him. The winter was spent in Georgia, from whence he returned the next June to die.

This case I do not regard as one of ordinary pneumonia, resulting in the chronic form, but rather as chronic pneumonia from the first, beginning long before he was taken to bed; quiet at first, but developed by an intercurrent acute attack. I had neglected to say that there was a moderate phthisical tendency in the family. The previous history of cough, however, was not prominent, nor was the cough the warning hacking of tuberculosis. A well-developed cold, resulting from exposure in the spring, was regarded as its origin. The irregular manner in which the pneumonia advanced, the disproportion between the amount of lung involved and the symptoms, together with its peculiar position at all times, prevented a favorable prognosis; yet at the end of ten days the only suspicious sign was the slowness of the respirations, and their rise in frequency as the pulse and temperature fell.

CASE IV. Mr. M., a young man of twenty years, of excellent general health, by occupation a clerk, took cold a week before sending for me, but continued up and about, and went to church, even, two days before; in the afternoon, after returning from church, he walked out without an overcoat. On the next day he had chilly feelings, but no decided chill, followed by pain in the left side, for which he took a "rum sweat" in the evening, in vain.

When I first saw him he was up and dressed, but feverish, with flushed face and steady cough. He complained moderately of the pain in his side, which was a dull ache; the expectoration was rusty and not abundant; the pulse was high, but not recorded; the temperature 104° F. Dullness and bronchial respiration were to be heard over the lower lobe of the left lung. (Quinine.) The patient was an only son of indulgent parents, unaccustomed to self-restraint, nervous, excit-

able, and willful, — on the whole, the most uncomfortable and unreconciled person of adult years that I have ever seen; but the disease seemed perfectly simple. I wrote that evening in my memorandum book, "I have seen to-day a case of pneumonia remarkable for being exactly typical [having previously had a number of irregular and very serious cases, this seemed to me worth noting]: every symptom is present in about its proper intensity; there is nothing absent which would be expected in a model case, and nothing present which would not be."

For the next two or three days he seemed moderately sick, very restless and uneasy, with bronchial respiration, dullness, and bronchophony, rusty expectoration and pain, much as at first; râles few and not prominent, — at first, none. Temperature 104° F., pulse 120, respiration 30.

On the sixth day from the chill, when all seemed to be going on well, he had a sharp attack of pleuritic pain, lasting all the following night and into the next day, accompanied with a slight rise in the temperature and pulse, which had gone down several numbers, and a great rise in respiration to 40 per minute. So far during his sickness he had been so cross and impatient, so restless and obstinate in throwing off the clothes and stripping himself generally, that, although three persons were in constant attendance upon him, we all thought that he had taken cold from exposure. He was not still a minute, but panted, coughed, tossed, and scolded the entire time.

Next day, the eighth, he became quieter, and slept considerable; could lie upon the right side previously only upon the back.

On the ninth day there was pain in the lower part of the right side. Examination showed roughened respiratory sounds throughout the right lung, with occasional coarse râles; broncho-vesicular respiration, friction sound, and slight dullness at the base, back, and side. Râles abundant everywhere in the left side, back, and front, excepting at the apex. They were coarse and clearing below; finer, with bronchophony in the middle portion of the back, where the dullness was most marked. Below there was more resonance than at time of previous examinations; moderately dull in front. Thus, as was to be expected, the lobe first attacked was already in process of resolution; but the trouble had advanced into the upper lobe on the left, which was partly solidified, and made a slight attack upon the lower part of the right. There had been local inflammations of both pleuræ, but no evidence of effusion into either.

On the tenth and eleventh days defervescence took place, and, in spite of the active condition of the disease in the middle of the left lung, the temperature dropped on the eleventh day to 98.4° F., the pulse to 92. The respiration kept up above 40. Although uncomfortable and nervous, he appeared to be convalescent.

On the twelfth day he was examined, the result confirming entirely that of the ninth; but as this state of the lung lasted a considerable time and was a source of great anxiety before the end of the case, I will read it once more: There is dullness of the entire left back; clearing below, with broncho-vesicular respiration; in the lower scapular region intensely dull; bronchial respiration with fine râles marked; above less dull; respiration partly vesicular; the abnormal sounds of the right side have partly disappeared.

For several days there was very little change; he

had a little pain all the time in the left side, sweat considerably at times, and was, as usual, restless and irritable. The cough was not, after the first five or six days, excessive; after the first week it diminished notably, and by the end of the second there was very little; the expectoration, too, was scant, or none.

Twentieth day. Short, dry, irritating cough.

Twenty-first. Comfortable; vomited.

On the twenty-second day there was no change in the sounds of the left back from those of the twelfth. The front was becoming more dull; there were a few râles again at the extreme base of the right. He appeared somewhat better, and the tongue, which at first had been heavily coated, was quite clean; his appetite (for milk and liquids) had so far been very good. The urine, which had been high colored and scanty at first, but later quite normal, suddenly became very bloody, with disseminated corpuscles and albumen; it was so red as to be opaque in a four-ounce phial. There is and has been at times pain in the lower part of the right side; expectoration streaked with blood, not abundant; sputa mucous, very tenacious, clear, white.

Twenty-fifth day. Almost no change in the left lung; slight friction at base of right. (Dr. Edes in consultation.) The left front is becoming duller; tubular respiration and râles have advanced almost to the very top; scarcely any sounds can be heard in the middle of this lung, either in front or behind, in consequence of the almost complete absence of respiratory movement on this side. The scapular region is almost flat, and the voice sound approaches ægophony; right base still dull, with diminished respiration. The appetite has completely disappeared; he feels full and bloated; vomits. Urine still red. Dyspeptic, dull, and depressed.

Twenty-seventh day. Vomited. (Dr. Edes again.) The most intense dullness and bronchial respiration now are from the apex down along the sternal half of the chest; in front and the middle of the back coarse and gurgling sounds; elsewhere in front lower, and median regions behind clearer. The patient, who had begun to sit up ten days ago in a chair, has not been up for a week, is pale and cachectic, takes no solid food, and strenuously objects to liquids.

Twenty-eighth day. Urine becoming clearer. Ate a little breakfast.

Upon the thirtieth day pain appeared near the right saphenous opening, increasing by the next day to a high degree of severity, extending down to the calf, which is about as tender as the groin, and up along the right side. The leg was drawn up, and the slightest motion caused excruciating agony; when perfectly quiet it was sometimes comparatively comfortable. The tongue became dry on account of his panting and groaning, and the respiration rose to 48 per minute from the same cause. The leg was becoming œdematous. Vomited. There was still no sign of clearing in the middle part of the lung, which had been solidified nearly a month. The breath was offensive. The urine, which had cleared itself nearly of blood, then (thirty-fifth day) suddenly became red again, with increase of vomiting and complete absence of appetite. (Gallic acid given and discontinued). Patient very nervous, restless, and thirsty.

The fortieth day arrived, with no improvement, and all medicines and food by the stomach were given up, and he was to have nothing but egg and milk

injections, varied at times by brandy and beef tea; and this mode of feeding was continued for several days.

For nearly a month there had been very little expectoration. His cough, after the first week, with a few exceptions, was never excessive, and much of the time he would raise only half a dozen mucous sputa in the course of the day; but suddenly, on the night of the forty-first day, he began to cough violently, and continued for several hours, raising during this time fully four ounces of pure pus, creamy yellow and not tenacious. During the day following half as much more came up, and on successive days a still further quantity. The leg continued swollen and unmanageable, but less painful.

He was as savage as ever, and at one time refused to take anything in any way for a day, quarreled with his mother, and was so sullen that I doubted his entire sanity for a moment. Still, he appeared better, and on the forty-fifth day began to eat a little; on the next raised more pus, ate a fair supper, and went without injections; was bright and talkative.

I recorded an examination of his chest on the forty-eighth day. The right side was nearly normal. Left front, bronchial respiration at apex four fingers' breadth; broncho-vesicular with râles in the middle of the chest; very little sound below the nipple; resonance dull above and below, good in the middle, a little tympanic if anything under the third rib; behind the respiration was vesicular, with râles below, bronchial, and very much diminished beneath the scapula, with œgophony fairly marked above the middle; bronchial above. He coughed a good deal, and raised much pus during the night; urine but little bloody; appetite very good.

From this time forth it is hardly necessary to follow his improvement by daily records. He gained slowly and doubtfully for a while. There was another attack of bloody urine, with diminution of appetite, and a coughing spell upon the sixty-first day, during which he raised half a pint of pus; but in general he ate and slept well, gained every day a little, became cheerful and tractable, began to sit up about the fifty-fifth day, walked a little a week later, in which he was much hindered by his greatly swollen leg, and got out-of-doors in about three months. The left side is almost passive in respiration, has shrunk considerably, and the sounds therein are very much diminished. I made a number of careful examinations of the exact position and character of the abnormal sounds, which, if the case had proved fatal, would have made an autopsy exceedingly interesting, but as it is have no prospect of being tested. I visited him this morning, however, to make one further observation upon him. He is rapidly improving; walked a mile and back yesterday without fatigue; "could have walked five miles, only that his leg pained him a little." The whole leg is still slightly swollen; can run without getting much out of breath. Has had but very little cough for a fortnight. Feels well enough to return to business.

EXAMINATION: MEASUREMENTS.

Under the arm	78 to 82½	cc.
Each side right	42	"
" left	39	"
Expansion, right	3	"
" left	0.5	"
At ensiform level	75.5 to 79.5	"
Expansion, right	2	"
" left	1	"
Each side right	42	"
" left	37	"

There are no râles to be heard anywhere. The respiratory sounds are not loud, and are rather sluggish, but not otherwise abnormal in the right side; in the left they are still more faint, and in the scapular region are scarcely to be heard above the general muffled roaring everywhere in the chest. The voice sound and resonance are good everywhere except in this space; the front has cleared remarkably.

This case, if I am not mistaken, began as a simple pneumonia, involving the lower lobe of the right lung, and following, so far as that lobe was concerned, at first the ordinary course, resolution beginning and the fever abating on the ninth or tenth day. Before this took place, however, an invasion of a slower and more destructive type of the disease had attacked the middle of the lung and ruined it; the left pleurisy was coincident with this advance, and probably a part of it, as the pain was referred to this location; from this point as a centre and source of irritation inflammation extended in all directions, gradually working up until the apex was reached, down in front to the base again, outward and inward as far as it could go, but not quite reaching the bottom of the back, then gradually receding a little as the active stage of the abscess passed by. The rupture of the abscess, its evacuation, and the collapse of the side were evident enough to need no comment. The repeated attacks of hæmaturia were undoubtedly due to successive infarctions in the kidney, resulting from thrombosis in the lung, and the thrombus in the femoral or iliac vein was a part of the same trouble. It is well worth considering whether the inflammation of the middle of the lung (or rather the lower part of the upper lobe), with all its consequences, was not due to the uncontrollable restlessness of the patient; if he had had a cellulitis of the leg, and had kept it constantly turning from side to side, or kicking in the air, he could not have treated it worse than he did his inflamed lung by the panting, grunting, scolding, and tossing of the first weeks of his illness.

There is, on the other hand, good reason for believing that there may have been a local empyæma, which broke into the lung; yet it must have been strictly confined, since before it broke there were resonance and respiratory sounds to be heard both above and below it. He spit up frequently streaks of blood during the few weeks previous to the discharges, and his breath was at times offensive, but the pus when it came was pretty pure at first, afterwards tenacious and mixed with sputa.

A chief point of interest in these last three cases to the writer, but one which can hardly be presented on paper, was the fact that at an early stage there was a very strong resemblance in the condition and appearance of the patients and the physical signs, although there were certainly two and perhaps three quite distinct diseases.

— (Scene: office in Dublin Life Insurance.) Surgeon of the company: Heart and liver sound as a bell. Be Garge, ye've the finest life I iver saw, sor! What's your business or profession now?" Applicant: "I have n't got any." Surgeon: Fwhat! ye don't mean to say ye've got land?" Applicant: "A few acres." Surgeon: "Faith, thin, I'm sorry for ye, but ye won't do for us!" (Certificate refused.) — *Punch*.