A CASE OF ABSCESS OF THE LUNG CURED BY INCISION AND DRAINAGE.

BY
C. H. CATTLE, and J. R. EDWARD,
M.D., M.R.C.P., M.B., B.Ch.,
HONORARY PHYSICIAN TO THE SENIOR RESIDENT MEDICAL
GENERAL HOSPITAL, NOTTINGHAM. OFFICER.

THE difficulties which may be experienced in locating an abscess deeply placed within the chest, and the comparative rarity of complete success in the treatment of this condition, seem to us sufficient reasons for placing the following case on record.

W. S., aged 36, previously strong and healthy, was taken ill in July, 1907. He was engaged on night duty in a brewery, and besides having very hard work was exposed to sudden changes of temperature. There was no evidence of excessive indulgence in alcohol. His illness commenced gradually with cough and weakness. Afterwards he had several shivering attacks, with pain in the back, shortness of breath, and cough. He was now attended by Dr. Hill of Old Basford, who informs us he detected signs of pleuro-pneumonia, followed by effusion into the left pleura. This disappeared, but, after the patient had been laid up seven weeks, he began to expectorate large quantities of pinkish tenacious sputum, which afterwards assumed the appearance of ordinary pus. Notwithstanding this, he attempted to get about, but suffered from pain, with swelling of the legs and feet, also from cough and shortness of breath.

He was admitted into the Nottingham General Hospital on September 18th, having been ill over two months. He was pale and wasted; mucous membranes of good colour. Weight 8 st., which speedily declined to 7 st. 11 lb., at which it remained with slight variations until December 14th. Pulse 124, regular, low tension. Respirations 28. The temperature was hectic, ranging from 98° to 101° or 102°. The sputum continued copious until the date of the operation (December 14th), consisting of inodorous, thin, frothy pus, the quantity varying from 4 to 18 oz. An examination for tubercle bacilli was negative. The patient always expressed himself as feeling comfortable, but was obliged to lie in a very constrained position—namely, on the right side, with the head near the edge of the bed. Doubtless this facilitated drainage of the cavity, since any attempt to lie on the back or left side caused uncontrollable cough.

Physical Signs.

Heart: The apex beat could not be seen or felt. The sounds were normal, and the organ was not displaced. *Lungs (left side):* Movement impaired; deficient resonance over the whole of the left lung, most marked at the lower part of the axilla, and near the angle of the scapula. Breath sounds everywhere weak, especially below the angle of the scapula, although vocal resonance was present in this position. At the apex; below the nipple; and near the angle of the scapula, the breath sounds were distant and bronchial. There were scattered, small crepitations all over the left side, which were of somewhat amphoric quality, though distant, at the lower anterior region. *Right Lung:* Slight dullness over the apex, and a few crepitations, these signs not being nearly so marked as at the corresponding region on the left side. [It was thought at one time that general pyogenic infection of both lungs had occurred, but the subsequent progress of the case makes it probable that the signs in the right side were caused by pus conveyed from the left side, partly in consequence of the peculiar decubitus adopted, and partly by aspiration.]

An exploring needle was inserted into the dull area near the left base, soon after the man's admission, with negative result. No further attempt to reach the pus was made for three months. In the meantime the patient was treated by tonics, sedatives, and antiseptics, both by ingestion and inhalation. From these he derived no benefit, and was obviously getting worse when, on December 10th, the exploring needle was again used, and a syringeful of pus obtained.

Operation.

On December 14th the patient was placed under the influence of chloroform, and after several fruitless attempts pus was again found by the needle, inserted deeply a little below the angle of the left scapula. After making a free skin incision in this region, a piece of the eighth rib was excised. The pleural cavity was found to be obliterated, and the finger came upon indurated lung covered by thickened pleura. Renewed difficulty now arose in finding the pus, as the needle had been removed during the resection of the rib. After searching in various directions it was suggested that the needle should be passed downwards and forwards, and this resulted in success just when we had almost decided to give up the attempt, pus being found at a depth of 2½ in. from the surface. A pair of dressing forceps was now passed along the track of the needle, and the blades separated with the utmost difficulty, owing to the toughness of the lung tissue. The track thus formed was enlarged by using the rib forceps in the same manner, it being thought unsafe to use a

knife under the circumstances. Pus now welled up from the bottom of the wound. The above manipulations excited a violent fit of coughing, and, if any proof were needed that we were really working in the lung, this was afforded by the expectoration of blood, mixed with pus, and by the free passage of air through the wound. The tip of the forefinger inserted into the wound just entered a small cavity, probably communicating with a larger one, for on turning the patient on to his back about half a pint of blood-stained pus escaped. A rubber tube, of ½ in. bore and long enough to reach the bottom of the wound, was inserted, and a wool-wool dressing applied.

The after-history of the patient was very satisfactory. On the afternoon of the operation day he felt comfortable, and had coughed up traces of blood in the sputum. During the next few days the expectoration rapidly diminished to an ounce or two, and the pulmonary fistula gradually closed, although the to and fro passage of air during respiration was very free at first. The wound healed rapidly. On January 5th, 1908, gauze packing was substituted for the tube, and by the 20th healing was completed by the formation of a sound scar, parallel with the ribs, about 2½ in. long. By this date also cough and expectoration had quite ceased. Resonance was good over both lungs, except at the base of the left lung behind and in the lower part of the axilla. In the same regions the breath sounds were feeble and accompanied by fine dry pleural crepitations. Over the rest of both lungs the breath sounds were normal, and the movement good. The man's aspect and physique had greatly altered for the better. He was discharged quite well on January 25th, 1908, and sent to a convalescent home, his weight being 9 st. 5½ lb., having put on 22½ lb. since December 14th. When seen on February 19th, the patient expressed himself as feeling very well, having gained a further 10 lb.

The opinion is very generally held that uncomplicated crepus pneumonia occasionally ends in abscess of the lung. It is probable, however, that this is a rarer occurrence than is commonly supposed. This is the opinion of Dr. Pye-Smith, and also of the great Laënnec, whom he quotes as follows: "Il n'a pas de lésion organique plus rare qu'une véritable collection de pus dans le tissu pulmonaire." Although this patient presented the signs of abscess of the lung when he came under our notice, it does not follow that the cavity was formed by the actual solution of hepatized lung. While this may be, not improbably, the partial explanation, there may also have been a localized empyema, which by discharging through the lung may have increased the amount of purulent discharge. The pus was not fetid, hence there is no reason to suspect gangrene of the lung or bronchiectasis. The daily amount of pus expectorated (10 ounces or more) left little doubt in our minds that it came from a cavity of considerable size. Yet signs of cavity were for the most part wanting. Instead of loud gurgling and amphoric sounds, as might have been expected, we could only find distant crepitations, and weak tubular breathing. The fibroid thickening of the tissues and the depth of the abscess doubtless accounted for the obscurity of the signs.

We would draw attention to the inability of the abscess to heal, notwithstanding free exit to the pus by expectoration, and to the rapidity of healing after drainage through a dependent opening. The sound cicatrization of the tissues and closing of the bronchial fistula are also worthy of note. A fistula in such circumstances is apt to remain permanent—especially in tuberculous and bronchiectatic cases.²

REFERENCES.

¹ Allbutt's System, vol. v, p. 112. ² West, Diseases of the Organs of Respiration, p. 645.

A CASE OF PHLEGMONOUS GASTRITIS.

BY

ARTHUR J. HALL, and GRAHAM SIMPSON,
M.A., M.D. Cantab., F.R.C.P., F.R.C.S.,
LECTURER ON PRACTICAL SURGICAL TUTOR, UNIVERSITY OF
MEDICINE, UNIVERSITY OF SHEFFIELD; ASSISTANT
SHEFFIELD; PHYSICIAN, SHEFFIELD SURGEON, SHEFFIELD ROYAL
ROYAL HOSPITAL. HOSPITAL.

PHLEGMONOUS gastritis is happily one of the rarer diseases affecting the stomach; its exact diagnosis is difficult and its prognosis grave. In recording this case we add one to the list of published cases in which a short history of symptoms is followed by an account of the *post mortem* findings.

There are two features of this case to which we would call attention, first, that the probable source of infection was the mouth, and that it followed the extraction of many teeth; secondly, the presence of an erythematous

rash. This rash was of the "toxic erythema" type. It was first noticed about two days before death, and was still visible an hour before death. It preceded the first enema given, so that we may eliminate that as a cause; the only drugs being taken at the time of its appearance were sodium salicylate and potassium citrate, and they had only been given the day before. So far as we have been able to refer to the hitherto published cases, we have been unable to find any mention of a similar rash having occurred in any of them. In one case there was what is termed a "dermatomyositis" affecting one leg.

We are indebted to Mr. H. H. Jamieson, of Sheffield, under whose care the patient had been before admission, for the valuable history of the case, to Mr. R. J. Pye-Smith, who performed the operation, and to Professor J. S. MacDonald, not only for much assistance to one of us (G. S.) in preparing the photomicrographs, but also for the full use of the valuable photomicrographic apparatus in the Physiological Laboratories of Sheffield University.

HISTORY.

The following history was kindly furnished by Mr. H. H. Jamieson, the patient's medical attendant:

A post-office clerk, aged 35, for a period of about eight years, between the ages of 22 to 30, had been very unsteady, indulging chiefly in beer. On getting married five years ago he much improved in his habits, though not foregoing an occasional drinking bout; the last occasion on which he had indulged himself was August 7th, 1905.

The first time I saw him was on July 14th, 1905, when he suffered from pain at the "pit of his stomach" and vomiting, generally a short time after food. On examination by percussion I found his stomach enlarged, and I could get a succussion splash. I advised lavage, but this frightened him away, and I did not see him again till August 28th, 1905. Between these dates he was attended by some one else for acute indigestion, but did not get any better. When I saw him on August 28th, 1905, he complained of sickness as before; the pyloric pain was not relieved by vomiting. On examining him I found the signs as before, but his pain was increased on pressure. Once more I recommended lavage. He wished me to suggest some other form of treatment first, so I examined his teeth, and found most of them in a very bad state, the gums being red and swollen, and around more than one tooth pus could be pressed out. I told him to try what effect the removal of his teeth would have.

On August 30th he had eighteen teeth extracted without an anaesthetic, and on September 2nd his wife came to me and told me her husband had had his teeth removed, and that his mouth was in "an awful state." I ordered an alkaline bismuth mixture, and tincture of myrrh, in water, for rinsing the mouth.

On September 4th he came to me himself, saying he was

much better, but very constipated. On September 8th I was called to him at 8 p.m. He was in bed looking very ill, complaining of intense pain in the pyloric region, which was worse on pressure. He had vomited twice in the last hour, and felt very sick; he had brought up milk curd and yellowish fluid, but got no relief from vomiting. Headache was intense; the temperature was 100.5° , and the pulse 100. He was constipated, and the urine was loaded with urates. I thought he had caught a chill, for he had been out in the rain, and had been "doing about the house" till 7 p.m., when his acute illness commenced.

On September 9th I was called at 8 a.m. The pain in the pyloric region was very severe; he was constantly retching, but only brought up a little yellow-ochre coloured fluid; but since 4 a.m. severe watery diarrhoea, normal colour, had set in, and a great deal of straining. His body was covered with a red rash, so like scarlet fever that I examined his throat and tongue for further evidence of this disease, but there were no signs in these regions, and the arms up to the axillae and legs to the groins were quite free from rash. I ordered a common enema, and he passed a soft motion of proper colour; this arrested the diarrhoea and relieved his retching. The pain in the pyloric region still remained. The temperature in the axilla was 100.2° F., and the pulse 88. His wife tells me that he took plenty of fluid food all day, also the next day until he collapsed. He passed a very fair day, but had an increase of pain during the night. Vomiting of the same yellow fluid commenced on September 10th, at 4 a.m.; this was relieved by an enema; there was no diarrhoea. I saw him at 11 a.m.; the temperature was 100° , the pulse 88; he was in fairly good condition for a man who had not slept for three nights and had been in constant pain. The pyloric pain was still present and he was tender. The rash had partially disappeared. I gave him a hypodermic injection of morphine grain $\frac{1}{4}$, and strychnine grain $\frac{1}{16}$. I saw him at 3 p.m., when he seemed relieved of pain and better. The rash had disappeared. I saw him again at 11 p.m., when I learnt that the old pain had come on him more intensely than ever at 7 p.m. with severe retching. He had brought up only a little brown fluid, and complained of feeling very cold.

The patient was seen at his home (in consultation with Mr. Jamieson) by one of us (A. J. H.) at 11.30 p.m. on September 10th. He was extremely collapsed, the face was pinched and hollowed. He was sweating profusely; the pulse was 160, and was hardly felt at the wrist. The extremities were cold. Respiration shallow and frequent. Abdominal respiration was diminished, but not absolutely lost. There was no cough. The tongue was coated, and there was some slight distension of the abdomen, with tenderness chiefly just above the umbilicus. Liver dullness was present. There was no distinct swelling; no evidence of rupture. The knees were drawn up. All over

Fig. 1.—Part of mucous and submucous coat of stomach. (1) Glands separated by round-celled infiltration; (2) focus of same; (3) muscularis mucosae broken up by similar infiltration. ($\times 250$.)

Fig. 2.—Muscular coat of stomach, showing muscle fibres broken up by round-cell infiltration. ($\times 750$.)

the trunk, and very marked over the gluteal region, there was a mottled purplish erythematous rash, almost punctate on the trunk, more diffuse elsewhere. The striking character of it was its purplish colour (though not purpuric). The patient was admitted immediately into the Royal Hospital under the care of the surgeon on duty, Mr. Pye-Smith.

The condition found on admission was practically the same as above, but the following points were noted:

The abdominal wall was not rigid, nor was palpation painful, but light rubbing, as in the preparation of the skin for operation, caused some pain at, and above, the umbilicus. Firm pressure over the epigastrium made him feel sick.

A diagnosis of perforated gastric ulcer was made, though acute haemorrhagic pancreatitis was also discussed.

As it was the opinion of all who saw the patient that his one hope lay in an operation, he was at once infused, 3 pints of saline fluid being injected intravenously; his pulse now improved so that it could be felt at the wrist, and slowed down to 130; the patient said that he felt much better.

OPERATION.

At 2.30 a.m., about two hours after admission, a vertical incision was made through the left rectus muscle, and the abdominal cavity was opened; neither gas nor fluid escaped, and there were no signs of peritonitis; later on, whilst handling the upper border of the pylorus, some turbid, inoffensive, reddish-brown serum escaped, and some lymph was noticed between the stomach and the liver.

The stomach was now examined; it was rather above the average size, and was paler than usual. The most striking feature about it, however, was that it both looked and felt unusually tight and distended; at first it was thought that the interior might be filled with blood; later, it was thought that a growth could be felt at the pylorus.

The question of opening and draining the organ was settled by the condition of the patient, who, in spite of infusion, strychnine, artificial respiration, and heart massage, died about half an hour after the commencement of the operation.

Before suturing the incision, the stomach was again examined, and we could now make out that the tight, distended feeling was due to a thickening of its walls; a piece of the whole thickness of the stomach was cut out, part being sent for bacteriological, and part kept for microscopical, examination. A naked-eye examination of the part excised showed that the stomach wall was greatly thickened, measuring fully 1 in. in diameter; most of this thickening consisted of a whitish infiltration of the submucous layer; the muscular coats

could be recognised externally, and did not appear to be much altered; except for some injection, the mucous membrane also seemed normal. At the spot where the section was made, the infiltration was just breaking down to form pus. Owing to the thickness of the walls of the stomach, its cavity was almost obliterated, and the relative size of wall and cavity bore a striking resemblance to that of the uterus. The peritoneal coat, except over the upper surface of the pylorus, was not affected.

NECROPSY.

Necropsy was performed the same day.

The nervous system was not examined; there was some atheroma of the aorta. The abdomen showed some lymph between the stomach and the liver, but no general peritonitis.

The stomach weighed 25 oz., walls much thickened; this thickening was universal, but was most marked at the pylorus, and diminished towards the cardiac end. There was no ulceration of the mucous membrane. (The specimen has been added to the Pathological Museum of the Sheffield University.) The liver was enlarged, and weighed 74 oz. The spleen weighed 10½ oz., normal. There were some enlarged glands in

the abdomen; they were not caseating.

MICROSCOPICAL EXAMINATION.

Sections were cut and stained of the stomach wall, kidney, liver, pancreas, and spleen.

The Stomach Wall.—A section stained with haematoxylin and eosin showed a thin

layer of fibrinous exudation on the surface of the mucous membrane. The gastric glands were separated from one another in places by a number of small round cells. Between them and amongst these cells were a number of thin-walled dilated vessels. On the whole, the glandular portion of the mucous membrane showed little change. The cells of the glands stained more deeply than usual. The muscularis mucosae could be seen; its fibres, which stained well, were much broken up by small-celled infiltration. Beneath this was a very thick layer of the same small-celled infiltration; the cells had a single relatively large nucleus, and appeared to be lymphocytes; a few looked like polymorphonuclear leucocytes; there were many red corpuscles scattered amongst this infiltration, and occasionally distinct haemorrhages.

The whole of this infiltration was supported by a framework of fibrin. There were very few vessels to be seen in this submucous layer. The muscular coat of the stomach was very distinct and stained clearly; the fibres were separated and broken up by the same masses of round cells. Finally, there was a layer of small cells just under the peritoneum. A section stained by Gram's method showed enormous numbers of cocci arranged in various

Fig. 3.—Branch of portal vein in liver substance, showing leucocytosis in vein and early infiltration of liver tissue by leucocytes. ($\times 250$.)

Fig. 4.—Liver. (1) Thickened capsule; (2) large subcapsular haemorrhage; (3) liver cells separated by engorged capillaries. ($\times 250$.)

ways; in some places they were obviously forming into lines; they seemed to occur everywhere where there was the inflammatory change.

The *kidney* showed dilatation of the blood vessels, with here and there haemorrhages. There were no changes in the renal epithelium.

The *liver* showed dilatation of the vessels which ran between the columns of cells forming a lobule. The portal veins were full of blood, and showed a marked leucocytosis, there being nearly as many white corpuscles as red; in places the leucocytes were seen outside the veins in the portal areas. The liver cells were pushed aside by the dilated capillaries; they showed marked vacuolation; there was an extensive subcapsular haemorrhage.

The *Pancreas*.—The blood vessels were dilated and full of blood, and there was some inflammatory exudation on the surface.

The *spleen* was normal except for some perisplenitis.

BACTERIOLOGICAL REPORT.

(By DR. CHARLES PORTER, formerly Lecturer on Bacteriology, University of Sheffield.)

A small piece of the greatly-thickened stomach wall from this case was received on September 19th, 1905.

The portion sent was found to be thickly coated on its inner aspect with a dirty-grey membrane, and from this films were made and stained by Gram's method. With the exception of a few clusters of staphylococci, the only organisms detected were streptococci.

Sections of the stomach wall, including the membrane, showed the same organisms in considerable numbers situated exclusively in the membrane.

The organisms isolated by cultivation were again streptococci and staphylococci, the colonies of the former far outnumbering the latter. The cultural characteristics of the cocci were those of *Streptococcus pyogenes* and *Staphylococcus pyogenes aureus* respectively.

The streptococcus was regarded as the organism chiefly concerned, and an attempt was made to estimate its virulence. For this purpose two small guinea-pigs weighing 120 grams each were employed. One was inoculated subcutaneously in the right groin with 1 c.cm. of a twenty-four hours broth culture of the isolated streptococcus, the other receiving 0.5 c.cm. intraperitoneally.

The animal inoculated intraperitoneally seemed to be little affected by the injection. Within twenty-four hours, in the guinea-pig inoculated in the right groin, the tissues in that region were found to be swollen and tender. Twenty-four hours later the swelling had extended along the side of the abdomen, as high as the edge of the ribs, and towards the middle line. At the end of three days the tissues over the lower part of the chest were also involved. During this time the animal was greatly out of sorts, but soon afterwards began to improve. The swelling gradually subsided, and at the end of eight days, with the exception of a small abscess in the middle line near the edge of the ribs, nothing was to be detected.

At the end of a fortnight both animals were killed. In the guinea-pig inoculated intraperitoneally nothing abnormal was found. In the other the abscess already mentioned was found to contain a small quantity of cream-coloured pus. Elsewhere there was nothing. The pus when examined was found to contain a considerable number of staphylococci, which were probably the cause of the abscess formation.

In the abscess cavity a few streptococci were found, but none elsewhere. The virulence of the *Streptococcus pyogenes* being notoriously variable, the organism found in the membrane was probably much more virulent than those tests would indicate, and it is almost certain that the conditions found in the stomach were produced by this organism.

REMARKS.

The total number of recorded cases (under 100) of this disease sufficiently indicates its rarity.

Excellent tabulated lists of the cases to be found in medical literature have from time to time been published both in this country and elsewhere. During the last decade the following three have appeared. As reference to these is easy it is unnecessary to do more than mention them here. At the same time it may be a saving of time and trouble to others if we mention how the cases recorded in these three tables stand in relation to one another.

In 1896 Leith¹ was able to collect 51 undoubted cases of the diffuse form of the disease, including 1 under his own observation. These are tabulated, and a brief description of the sex, age, occupation, symptoms, and *post-mortem* findings is added in each case. This paper is well worth perusal, as the whole subject is fully dealt with, and in addition a valuable bibliography is appended.

In 1900 Jacoby² collected 64 cases from literature and added 2 more from Elsenberg's clinic, making a total of 66 cases up to that date. Many of these cases are not included in Leith's list, but in those that are there is little or no difference as regards the details.

In 1903 Moynihan³ tabulated 81 cases. This is the largest complete list of the three, and contains all of those to be found in Leith's list and all but 4 in Jacoby's. Moreover, the chronological order of publication of the cases is followed more closely than in either of the others. In order to complete this list we will add here the 4 cases above referred to, and such others as we have been able to find references to in the literature published since the last case recorded in Moynihan's table, which is dated 1902.

APPENDIX.

Further Cases not included in Moynihan's List.

- Case 82. Chanutin. *Wratsch*, 1893 (quoted by Jacoby).
- Case 83. Derbeck. *Wratsch*, 1895 (quoted by Jacoby).
- *Case 84. Jacoby. *Inaug. Diss. Königsberg*, 1900.
- *Case 85. Jacoby. *Ibid.*
- Case 86. Schultz, H. *New York Path. Society*, November, 1901.
- Case 87. Berka. *Centralbl. für allgem. Path. und Path. Anat.*, Bd. xiv, 1903.
- *Case 88. Huguenin. *Rev. Méd. de Suisse Romande*, xxii, 1903.
- *Case 89. Simmonds, *Münch. med. Woch.*, 1903, p. 1445.
- *Case 90. Klenneberger. *Ibid.*, 1903, p. 1338.
- *Case 91. Hueter. *Ibid.*, 1904, p. 85.
- Case 92. Hopkins and Welr. *BRITISH MEDICAL JOURNAL*, 1904, vol. ii, p. 1406.
- *Case 93. Cotterill. *Scottish Med. and Surg. Journal*, 1905, xvi.
- *Case 94. Merkel. *Centralbl. f. inner. Med.*, 1905, xxvi, 257-262.
- *Case 95. Schwarz. *Wien. med. Woch.*, 1905, iv, 904.
- Case 96. Perrin and Blum. *Rev. Méd. de l'Est*, Nancy, 1905, xxxvii. (In this case the patient recovered.)

* References verified by us.—A. H. and G. S.

REFERENCES.

¹ Leith, *Edinburgh Hospital Reports*, vol. iv, 1896. ² Max. Jacoby, *Inaugur. Dissertation*, Königsberg, 1900. ³ Moynihan, *The Medical Chronicle*, November, 1903.

A SUCCESSFUL CASE OF THORACOPLASTY FOR THE RELIEF OF CHRONIC EMPYEMA.

By JOHN R. LUNN, F.R.C.S. EDIN.

RESIDENT MEDICAL SUPERINTENDENT, ST. MARYLEBONE INFIRMARY.

HAVING read the account of some most interesting cases of thoracoplasty in the *BRITISH MEDICAL JOURNAL*, December 10th, 1904, by Mr. Hamilton Ballance, I determined to try the operation on some of my chronic cases of empyema, in which the sinus had persisted for many months.

Edward A., aged 34, a labourer, first admitted in November, 1899, with phthisis, having been obliged to give up work on account of shortness of breath and cough. No family history could be obtained. Some weeks after admission he developed empyema on the left side; this was aspirated and about one pint of offensive pus withdrawn. The side soon refilled and the patient became very ill and hectic, with a high temperature. A piece of the ninth rib on the left side, about 1 in. long, was removed in the axillary line, and the empyema drained. The patient lived in the open air day and night; the wound healed rapidly and he gained weight. He was discharged in April, 1900. The man was readmitted in August of the same year, with signs of pus again in his chest on the left side; the old wound was reopened and several ounces of greenish offensive pus were let out. He again had outdoor treatment, his general health improved, and he was discharged February 1st, 1901, the wound in his chest having quite healed. Towards the end of March he tried to work, but the old wound reopened, and he was once again admitted in April. A tube was inserted into his chest; he took his own