Suppurative pylephlebitis / by J.H. Bryant.

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SUPPURATIVE PYLEPHLEBITIS.

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I have performed necropsies on two cases of this obscure disease during the last six months. Both presented many curious features and points of interest, and neither was correctly diagnosed before death. I looked up our records for similar cases, and was so much impressed by the comparative rarity of its occurrence, viz., eleven cases during the last twenty years, that it must serve as my apology for writing this paper.

This paper is based on twenty cases, nine of which were reported by Dr. Carrington, in the year 1883, in the Guy's Hospital Reports, in a paper entitled Multiple Abscess in the Liver, and eleven cases which have been examined in the post-mortem room during the last twenty years. I am much indebted to Mr. J. A. Butler for his help in looking up the reports, and to my colleagues for allowing me to use their cases.

Ætiology.—Suppurative pylephlebitis is nearly always caused by a lesion in one of the organs drained by the portal system, *e.g.*:—

1. Appendicitis in eight out of the twenty cases, or 40 per cent.
2. Gastric ulcer, 1.
3. Duodenal ulcer, 1.
4. Ulcer of the rectum, 1.
5. Dysenteric ulceration of the colon, 1.
6. Gall-stones and suppurating gall-bladder, 2.
7. Pyosalpinx and suppurating ovary, 1.
8. Abortion, 1.
9. Cause doubtful in 2.

[1] Davidson mentions—

10. Sloughing of the cæcum.
11. Abscess of the spleen.
12. Ulceration of common bile-duct extending to the portal vein.
13. Ulceration originating in the mesenteric vein involving the vena portæ.
14. Dysentery (rare).
15. Inflammation of the umbilical vein in infants.

[2] Pepper mentions—

16. Thrombosis and suppuration following operations for hæmorrhoids.

[3] Fagge mentions—

17. Suppurating mesenteric glands.

[4] Frerich reports a case of—

18. Fish-bone perforating the mesenteric vein.

[5] Wilks mentions—

19. Submucous abscesses of the rectum implicating the hæmorrhoidal veins.

Sex appears to have very little influence—eleven of the cases were males and nine females.

Age.—The ages varied from fifteen to sixty-two.

8	occurred	in the	2nd	decade.
5	"	"	3rd	"
2	"	"	4th	"
4	"	"	5th	"
0	"	"	6th	"
1	"	"	7th	"

The average age worked out at twenty-nine.

It is interesting to note that the onset in two of the cases (2 and 6) was ushered in by a chill.

Morbid anatomy.—The body was noted as being wasted in eleven, *i.e.* in 55 per cent. of the cases.

The Portal vein.—The main vessel may contain thick, sanious pus and broken up blood-clot. The clot is very rarely adherent to the intima, and is usually of a greyish or pinkish-yellow colour. In some cases the main vessel does not contain clot or pus, but

[1] System of Medicine. Allbutt, vol. iv., p. 128.
[2] System of Medicine. Pepper, vol. ii., p. 1098.
[3 and 4] Fagge's Principles and Practice of Medicine. Vol. ii., p. 498.
[5] Pathological Anatomy. Wilks and Moxon, p. 462.

both pus and septic thrombi may be found in its branches in the liver; in other cases septic thrombi may be found in all three, viz., the portal vein, its radicles and its branches.

In case 1.—Pus and septic thrombi were found in the main vessel and its branches.

2.—The portal vein was filled with a soft septic thrombus. The splenic vein was full of thick greenish-coloured pus, and the small veins forming it were nearly all filled with a soft septic thrombus.

3.—A recent thrombus partially obliterated the lumen of the lower branch to the left lobe.

4.—The terminal branches were thrombosed.

5.—Partially decolorised, softening clot in the main trunk of the portal vein.

6.—Septic thrombosis of the superior mesenteric vein extending into the portal vein and its main branches.

7.—Portal canals full of foul pus.

8.—Pus in the smaller branches of the portal vein only.

9.—A suppurating thrombus in the superior mesenteric vein which could be traced into a mass of purulent material around it. The branches of the portal vein were filled with pus, and the main trunk was obliterated by a firm thrombus.

10.—Two drachms of pus were found just beyond the bifurcation of the portal vein, and the intima of the vein was shaggy from adherent lymph.

11.—Portal vein completely blocked by a soft clot which contained yellow pus in its centre. The splenic vein was plugged and full of pus.

12. (Carrington 1.)—"Pus in the portal vein and its branches. The portal veins were extremely diseased throughout, being in a state of intense suppurative inflammation. They were much dilated, quite distended with a pure pus of a yellowish colour. Nearly the whole of the liver was thus affected. A section in any part which cut through the portal vessels showed a purulent fluid running from the vein. Not merely did they contain pus but their coats had been subject to a severe inflammation. Thus the walls were softened and thick, and in parts detached from the

hepatic tissue around. In the large trunks there were distinct patches of lymph adherent to the coats, and in the trunk itself of the vena portæ there was a firm layer of pink-coloured lymph closely adherent to the wall.

13. (Carrington 2.)—In some parts of the right lobe the suppuration had advanced as far as the capillaries and the secretory system, so that a section of the organ displayed the lobules distinctly mapped out, the lobules themselves being of a yellowish colour from the suppuration going on within them, and the hepatic vein still visible as a red spot in the middle. In some few places the suppurating lobules had run together, and having become much softened would in a very short time have formed distinct abscesses. A most remarkable fact was that one of the larger trunks of the portal vein was quite unaffected, yet when traced upwards its branches were found distended with pus. It appeared from this that the inflammatory process had been primarily and mainly in Glisson's capsule, and that the tubes had been afterwards involved, and perhaps from the periphery towards the trunks.

14. (Carrington 3.)—"The main branches of the right lobe were partially plugged by breaking down blood-clot. This state extended to the second and third sub-divisions; then stopped; and the remainder of the vein was healthy for some distance till the more terminal part was approached."

15. (Carrington 4.)—Pus in the branches of the portal vein.

16. (Carrington 5.)—Diffuse phlebitis of the mesenteric veins, which were full of pus. Portal vein plugged with a firm cylindrical clot, smoothly channelled in its centre, which had been probably formed by lamination on the vein wall. The main branches were full of grumous pus and blood-clot, and the smaller branches contained pus.

17. (Carrington 6.)—Large branches of the portal vein filled with pus.

18. (Carrington 7.)—Suppuration along a small portal canal.

19. (Carrington 8.)—Portal vein as thick as one's little finger and distended with thick puriform thrombus. The branches of the vein were also full of pus.

20. (Carrington 9.)—The main trunks were not affected.

The liver is usually slightly and uniformly enlarged. The greatest weight recorded was ninety-eight ounces, and the lowest forty-two ounces, the average worked out at sixty-six ounces. The enlargement was sufficient in 60 per cent. of the cases to allow of the liver being detected below the costal margin by palpation. In ten of the cases the liver is noted as being adherent to the diaphragm; no mention is made of adhesions in eight, and there were no adhesions in two. It is quite the usual thing for the inflammatory process to spread to the surface of the organ and to set up a local or even general perihepatitis, followed by fibrous adhesions, fixing the organ to the under surface of the diaphragm. Case 1 was remarkable in this way, the liver was double its normal weight, was much larger than normal, was firmly adherent to the diaphragm, and yet did not extend beneath the costal margin. The probable explanation is, that the lower part of the organ, before it commenced to enlarge, became adherent to the lower and inner border of the thorax, and so when it commenced to enlarge, the adhesions prevented it from increasing in size in a downward direction. The surface of the organ is usually smooth except for the patches of perihepatitis. Rarely the abscesses project and form small rounded yellow nodules covered by recent lymph. In all the cases abscesses were found in the liver; these abscesses vary somewhat in size and distribution; the whole organ may be studded with points of suppuration much smaller than a pea; the points of suppuration may run together and form larger abscesses, which may get as large as a walnut or even larger; one lobe may be much more affected than the others, and finally, the abscesses may be confined to the area supplied by quite a small portal vessel. Dr. Goodhart has recorded one case (No. 10) in which a good deal of healing had taken place.

It is common for the inflammatory process to spread through the diaphragm and to set up pleurisy at the right base; it was noted in eleven of the cases; effusion was present in five of the eleven cases, and the effusion was purulent in three.

The spleen may or may not be enlarged; it was stated to have been enlarged in six of the cases; the highest weight recorded

was twenty-three ounces, and the lowest four ounces; it was described as normal, soft, and pulpy; abscesses in its substance were noted in two of the cases (7 and 11), and it was lardaceous in one (11). Old or recent capsulitis is common. Infarcts were found in one of the cases (20, *i.e.*, Carrington 9).

The pancreas was generally found to be healthy; multiple abscesses were found in one case (5), and an abscess posterior to it in one case (12, *i.e.*, Carrington 1).

Peritonitis was common, viz., in 50 per cent. of the cases, and could generally be traced to the primary condition, *e.g.*, four to appendicitis, one to pyosalpinx, one to abortion, and one to post pancreatic abscess.

Pathology.—The condition is due to an invasion of the portal vein by pyogenetic micro-organisms. This may be caused by some ulcerative or suppurative lesion in one of the organs drained by the portal system, and may be brought about in a variety of ways, or may be caused by direct implication of the portal vein or one of its branches.

1. A small vein may be injured from adjacent ulceration or suppuration, thrombosis follows, the thrombus becomes infected with pyogenetic micro-organisms, it then spreads to a larger vein and then to the portal vein and its branches in the liver; at this stage the portal vein, its branches, and certain of its radicles would be full of pus and soft breaking-down thrombus.

2. The thrombus in the vein primarily involved may break down, and the fragments containing pyogenetic micro-organisms may be carried to the smaller branches of the portal vein and the portal capillaries in the liver, colonies of the micro-organisms develop, give rise to inflammation, and the formation of septic thrombi which may spread in both directions and may be followed by necrosis of the hepatic cells and suppuration.

3. Masses of pyogenetic micro-organisms may be carried from the primary lesion and give rise to capillary emboli, followed by thrombosis, which may spread backwards, until fairly large branches of the portal vein are involved. This offers an explanation for those cases in which only the branches of the portal vein in a certain part of the liver are affected.

4. The portal vein or one of its branches may be directly involved, *e.g.*, in cases of gastric ulcer and suppurating gall-bladder. In the former case the ulcer may become adherent to the liver, cause the formation of a local abscess, which may open up a branch of the portal vein, and so infect it and lead to a spread of the infection along its branches in the liver and back along its main trunk to the portal vein itself. A suppurating gall-bladder may act in much the same way. I remember performing a necropsy on such a case at the St. George's Union Infirmary. The gall-bladder contained gall-stones and was suppurating, the anterior wall attached to the liver had given way, an abscess about three-quarters of an inch in diameter had formed in the adjacent liver substance, and the portal canals in the immediate neighbourhood were full of pus on account of the abscess directly invading a portal canal. There were multiple abscesses throughout the liver, especially in the right lobe in the neighbourhood of the gall-bladder.

5. When disease of the pelvic organs is the primary cause, pelvic peritonitis is usually present, and this may lead to septic thrombosis of the inferior hæmorrhoidal veins or other branches of the inferior mesenteric vein.

6. Occasionally no cause can be found. In case 2 there was no lesion of any organ drained by the portal circulation, the primary disease was an empyema, which had opened into the lung, and at the time of the autopsy I suggested two possibilities to explain the condition.

(1) That a considerable amount of the pus coughed up from the empyema may have been swallowed, and the pyogenetic micro-organisms have entered the portal system by absorption from the stomach and intestine.

(2) That the exploratory punctures which perforated the diaphragm, may have punctured the liver and inoculated some of the portal canals directly from the empyema.

In case 12 (Carrington 1), the first case described in Dr. Carrington's paper, the abscess behind the pancreas might well

have been the primary cause of the suppurative pylephlebitis by first of all causing phlebitis and then thrombosis.

One of the most extraordinary facts in connection with this disease is its absence as a complication of typhoid fever, which is by far the most common form of ulceration of the intestine met with in this country. I have not been able to find one single case in our records.

Bacteriology.—The bacillus coli communis in pure culture was found in case 2; streptococci and a bacillus not identified in case 1; a diplococcus (not identified) from case 3. Staphylococci have been found, and in cases complicating dysentery the amœba coli.

Histology.—Multiple abscesses in the liver. The portal capillaries and branches of the portal vein are filled with pus. In specimens stained for micro-organisms large colonies of bacilli are found in the capillaries and veins, in some places spreading into the hepatic tissues, where necrosis of the hepatic cells and small-celled infiltration can be seen.

Symptoms and physical signs.—The *onset*, as far as can be judged from a careful analysis of the histories of the cases, is often acute, for 60 per cent. of the cases began in this manner.

A striking example is case 1; the boy is stated to have been at work in his usual health on the day before the illness, which commenced suddenly at 1 a.m. with vomiting and pain in the right side. The initial symptom in five of the cases was vomiting; in three, a rigor; in two, pain in the right side; in two, abdominal pain; in one, pain in the back; in one, pain in the loins; in one, diarrhœa; and in one, acute pain in the loins. It appears from the above analysis that many of the cases have a very definite onset.

The prominent symptoms for which admission was sought were: two for pain in the right side of the chest and pyrexia, three for abdominal pain, two for pain in the right hypochondriac region and jaundice, for vomiting and pyrexia, for biliary colic, for diarrhœa and abdominal pain, for jaundice, for pyrexia, and for discharging sinus in the groin. In six of the cases no mention was made.

Vomiting is one of the most marked and constant symptoms, it was mentioned as occurring in 60 per cent. of the cases. The vomit does not show any particular characteristic.

Diarrhœa is another common symptom, it occurred in 45 per cent. of the cases.

Constipation, however, is sometimes present, it was noted in 35 per cent. of the cases.

Pain is a very important symptom and is more constant than any other with the exception of pyrexia. Pain was noted in all the cases with the exception of two, in which no mention of its presence or absence was recorded. It is usually situated in the right hypochondriac region; it may also be in the epigastrium, in the right side of the chest, in the umbilical region, and may even be felt across the lower part of the abdomen.

Sweating was noticed in only 35 per cent. of the cases, and is not such a characteristic symptom as the text-books would lead one to suppose.

Rigors were noted in 50 per cent. of the cases, and they were definitely stated not to have occurred in 40 per cent. of the cases.

Jaundice is also a variable symptom, it occurred in 40 per cent. of the cases, and in 55 per cent. a definite note is made of the absence of this symptom. Pepper states that it occurs in 75 per cent. of the cases, and Fagge writes that it accompanies pylephlebitis oftener than single abscess.

Delirium may occur and is mentioned as being present in three of the cases. It is not usually an early symptom.

Collapse was noted in four of the cases.

The temperature.—The highest temperature recorded was 107° and the lowest 96°. It does not run any particular course and may be continuous in character—*vide* chart, case 1, which is almost identical with the typical pneumonia chart depicted in Taylor's Medicine; it may be somewhat typhoidal in character —*vide* chart, case 2. It may be intermittent or remittent—*vide* charts 8 and 9.

The pulse is generally rapid, from 100 to 140, well above the usual physiological ratio to the temperature, and is soft and compressible.

The respiration rate is also increased, and it is high, chiefly on account of the frequency with which the right pleura is affected.

The aspect of the patient.—The patient lies on his back and is weak, wasted and anæmic, looks very ill, has sunken eyes and a pinched and anxious expression, is sometimes jaundiced, may be restless and complain of pain over the hepatic area, and the cheeks may be flushed. Osler describes the complexion as being muddy. The *skin* may be moist or hot and dry. It was, for example, always hot and dry in case 1; it may be jaundiced.

There are often sordes on the lips and teeth.

The abdomen may or may not be distended. Distension when present may be associated with the condition which causes the disease. A slight fulness or even a marked swelling may be noticed in the right hypochondriac and epigastric regions. On palpating the abdomen an increased sense of resistance, or even marked rigidity may be appreciated in the right hypochondriac and epigastric regions.

The liver can usually be felt to be enlarged and its edge may be palpated just below the costal margin, or even as low as the level of the umbilicus. The edge is often sharp and well-defined. The surface is nearly always smooth and regular, occasionally, however, small soft and even fluctuating nodules may be felt, when the abscesses are large enough to project from the surface of the organ. The liver could be palpated in 60 per cent. of the cases.

Pain and tenderness in the right hypochondriac region is present in the majority of the cases.

The *Spleen* may or may not be felt. If enlarged, it is in most instances due to the toxic condition of the blood and not to a passive congestion, as the portal vein is hardly ever, if ever, completely obstructed by a thrombus in this disease. When an abscess in the spleen is the primary cause of the disease, the organ is tender, a fluctuating swelling may be felt, and on auscultation a rub may be heard over it.

If there is a history of an attack or attacks of appendicitis, on palpation, an indefinite tumour or sense of resistance may be felt in the right iliac region, due to thickening and matting of the parts.

The Thorax.—The lower part of the thorax on the right side may show distinct bulging. It was described in three of the cases. In case 1 it was extremely well marked and noticeable: the intercostal spaces were also filled out when compared with the spaces on the left side. In the above mentioned case it was a most misleading sign on account of the liver not being felt below the costal margin. The bulging was general, and it did not suggest any local enlargement of the liver.

In one of the cases a "falling in" of the affected side of the thorax was noted.

Pleurisy affecting the right lower lobe is common. It may be a simple dry pleurisy causing pain, impairment of movement and a pleuritic rub at the right base, or, there may be serous or purulent effusion, causing impairment of movement, displacement of the cardiac impulse, diminished tactile vocal fremitus, dulness, deficient entry of air, distant bronchial breathing at the level of the fluid, and diminished voice-sounds or ægophony.

The cardiac impulse, dulness, and sounds are usually normal.

The urine may be normal. The specific gravity may vary from 1010-1030, the reaction is acid, albuminuria may be present, it was noted in four of the cases, the chlorides were stated to have been diminished in one of the cases, and bile pigment was noted in the cases in which jaundice was a symptom.

The fæces were described as steel-grey-coloured and well formed (8); well formed and typhoid in character (9); light clay-coloured (12, Carrington 1); dirty-white (19, Carrington 8). Dr. Goodhart made an interesting statement in connection with case 8, viz., "That bile in the motions without diminished jaundice pointed to a collection of small abscesses in the liver."

The duration is very variable. As far as could be judged from an estimate of the symptoms and history, the shortest was $5\frac{1}{8}$ days and the longest 296. The average works out at 56 days. Excluding the exceptional case which lasted 296 days the longest was 88 days, and if the average is taken of these 19 cases it is 43 days.

Case 2, the duration of which was 296 days, is extraordinary on account of the morbid changes found in the liver, there being

very marked signs of a healing and cicatrizing process having occurred. I have not been able to find any similar case recorded.

The prognosis is extremely bad, a correct diagnosis is, practically speaking, a death warrant. I have not been able to discover a single authentic case of recovery from this disease.

The diagnosis is difficult. A correct one is rarely made. Out of the twenty cases only two were accurately diagnosed before death. Diagnoses of gastro-enteritis, pneumonia, empyema, septic pneumonia, gall-stones, biliary colic, enterica, appendicitis and hepatic abscess, spinal caries, rupture of a reduced hernia, and subdiaphragmatic abscess were made.

Pyrexia, rigors, sweating, rapid pulse, abdominal pain, and tenderness in the right hypochondriac or the epigastric region together with uniform enlargement of the liver and tenderness of that organ, especially if associated with or following any ulcerative lesion of the alimentary tract below the œsophagus, should suggest the possibility of suppurative pylephlebitis. *If pleurisy or pleurisy with effusion* happens to be a complication it may be considered to be the primary disease, and suppurative pylephlebitis may be overlooked. If the thorax is bulged, and the liver tender and enlarged; if there is a history of rigors and sweating; if there is jaundice, vomiting and diarrhœa; then suppurative pylephlebitis must be seriously taken into consideration.

Case 1 was diagnosed pneumonia: the acute onset, the short duration of the disease, the absence of sweating, the hot dry skin, the continuous temperature which was almost identical in character with the typical temperature chart of lobar pneumonia depicted in Dr. Taylor's book on Medicine, the sudden drop to 96° on the eighth day which simulated a crisis, the dulness and bronchial breathing at the right base, all pointed to pneumonia as the most likely diagnosis. Against pneumonia, however, was the absence of cough and expectoration, the wasting, the sunken eyes, the general aspect of the patient, and the bulging of the lower part of the thorax on the right side. The fact also that the liver could not be felt was much against a primary disease of the liver or subdiaphragmatic suppuration.

The fact that vomiting and diarrhœa were so marked during the first few days of the illness in case 1 was the origin of the diagnosis of gastro-enteritis.

Enterica must be distinguished by the pulse, temperature, and respiration ratio which is so characteristic of this disease, *e.g.*—

	Temperature.	Pulse.	Respiration.
Physiological ratio ...	104°	125	33
Typhoid fever	104°	80	28
Pneumonia	104°	100	40–50
Pylephlebitis (case 1)...	104°	140	44

From the above comparison the extraordinary low ratio of the pulse in typhoid fever is brought out—this ratio is more or less well marked in the greater number of cases of enterica.

The spleen may be enlarged and the abdomen distended in both diseases. Jaundice is very rare in typhoid fever, and sweating is another symptom which rarely occurs in this disease. The presence of the characteristic rash would point to typhoid fever. The examination of the blood is of the greatest importance: a positive Widal reaction would point to typhoid fever or a previous attack of this disease.

The *treatment* unfortunately is only symptomatic. Pain may be relieved by local applications, such as fomentations, poultices, &c., and by the internal administration of opium and by subcutaneous injections of morphia. The general condition of the patient should, if possible, be improved by a nourishing diet, by stimulants, and by drugs, such as quinine, strychnine, iron, &c. The only possible hope of permanent cure in the present condition of our knowledge would be an early diagnosis not only of pylephlebitis but also of its cause, and an immediate eradication of that cause by operation, should it be practicable.

LIST OF CASES.

CASE 1.—SUPPURATIVE PYLEPHLEBITIS.—PYÆMIC ABSCESSES IN THE LIVER OLD APPENDICITIS. PLEURISY WITH EFFUSION.

Clinical, No. 444. 1899. (Refers to the number of the Report.)

A. E. F., æt. 15, admitted under the care of Dr Bryant into Clinical ward on August 30th, 1899, for vomiting and pyrexia. On August the 22nd he went to work and seemed in his usual health. At 1 a.m. on the 23rd he vomited and complained of pain in the right side. He felt feverish, but had no rigors. He had eaten some green apples before going to bed. He did not remain in bed, but as he did not improve he was taken to see a doctor, who diagnosed gastro-enteritis and ordered him to be kept in bed on a milk diet. He was very sick again on the 28th, and as the sickness continued, and he seemed worse, he was admitted on August 30th. The bowels throughout have been freely opened and the motions were loose. There has been no cough and no expectoration.

Several years ago he was treated in King's College Hospital for a tuberculous ankle, and was kept in bed for some months. He was also treated at the same hospital for some disease of the left eye, for which iridectomy was performed. Two years ago he was treated for "appendicitis" by the same doctor, who sent him up for admission.

Condition on admission.—Temperature 101·6°, respiration 48, pulse 120. A fairly well-developed boy. He seemed rather collapsed. His face was flushed, his eyes sunken, his lips cyanosed, and his skin hot and dry.

Respiratory System.—Respirations shallow, regular, 48. The lower part of the chest on the right side was bulged, the intercostal spaces were filled out, and this side of the chest did not move well on respiration. The T. V. F. was increased over the right lower lobe behind. There was absolute dulness on the right side, from the fourth space in front, and it extended round the chest in practically a straight line, being a little lower behind than in front. On auscultation the vesicular murmur was found to be absent over the dull area, and over the lower part behind, *i.e.*, below the ninth rib; along this there was well-marked bronchial breathing (*vide* Diagram at the end of this Paper), and the voice-sounds were rather ægophonic in character. Above the upper limit of dulness a few medium-sized non-consonating râles were audible. There was no cough and no expectoration.

Circulatory system.—Pulse 120, low tension, and running in character. The cardiac impulse was in the fifth space in the nipple line. Cardiac dulness normal. Sounds normal.

Alimentary system.—Tongue dry and coated with brown fur. Sordes on the lips and teeth. The abdomen moved well on respiration. It was a little rigid in the upper part, and there was slight tenderness on palpation below the right costal margin. The liver and spleen could not be felt. There was no abnormal area of dulness. There was no tenderness and no tumour to be felt in the right iliac region.

Urine 1023, dark coloured, acid. No albumen, chlorides not diminished.

He was thought to be suffering from lobar pneumonia of the right lower lobe, complicated by some obscure hepatic or subdiaphragmatic condition, to account for the curious conformation of the right side of the thorax.

Progress.—At 9 p.m. on the day of admission his temperature reached 104·6°, and he was sponged.

August 31st. At 10.30 p.m. he commenced to vomit, and the vomiting continued until 4 a.m.

September 1st. He was given minim doses of Tinct. Iodi every half hour and the vomiting ceased. At 7 a.m. he collapsed, and became cyanosed and almost pulseless. At 10 a.m. his temperature was 96°. On account of the bulging of the thorax on the right side, and the filling out of the intercostal spaces, the question of empyema, subdiaphragmatic abscess, or hepatic abscess all along had been considered, and it was deemed advisable to explore. No pus was found. Oxygen was administered, also musk and brandy, after which his condition improved for a time. About 12 p.m. vomiting came on again but was checked by Tinct. Iodi. The temperature rose to 103·6° and patient sank and died at 10 a.m.

Necropsy (performed by Dr. Bryant), *No. 308. 1899.* Body wasted. In the right pleural cavity about a pint of clear serous fluid was found. The base of the right lung and the upper surface of the diaphragm were covered with recent lymph. The right lower lobe was quite airless from compression. There was no pneumonia. The heart weighed six ounces. It was healthy.

The liver was firmly adherent to the diaphragm and to the parts which were in relation to it. The adhesions were firm and fibrous. It was much enlarged and its upper level reached as high as the third rib. The lower edge did not project below the costal margin. It weighed seventy-two ounces, that is, just double what it should have weighed. *In situ* it looked as if it had been dragged upwards by means of its adhesions to the diaphragm, and possibly by actual permanent contraction of the diaphragm. It felt softer than normal. The capsule was a good deal thickened. On section, multiple small foci of suppuration were seen, more particularly in the upper part of the right lobe, where they had run together in places. Throughout the right lobe little abscesses and collections of abscesses were seen. The left lobe was comparatively free. The portal vein and its branches contained sanious pus and ante-mortem thrombus. It was nowhere completely obstructed.

The spleen weighed four ounces and was firmly adherent to the under surface of the diaphragm. The cause of the portal pyæmia was found in the appendix. The cæcum and appendix were bound down by firm, thick, connective tissue. On making a careful dissection the appendix was found curled up in the form of the letter O, and lying in the centre of the coil was an oval concretion, which had ulcerated through the appendix, the hole in which was found. Another opening was found in the centre of the coil communicating with the cæcum, and, I take it, through the latter opening the pus of the appendicitic abscess had discharged itself into the cæcum. The other abdominal viscera were healthy.

Bacteriology.—A specimen of pus was obtained from the liver for bacteriological examination, every precaution being taken to prevent the possibility of accidental contamination. Microscopical examination showed the presence

of a few short bacilli. Cultures showed the presence of the bacillus coli communis. No other organism was found (*vide* also Chart I. at end of Paper).

CASE 2.—SUPPURATIVE PYLEPHLEBITIS.—MULTIPLE ABSCESSES IN THE LIVER FOLLOWING EMPYEMA.

DR. HALE WHITE, NO. 11. 1899.

J. R., æt. 44, a publican, was admitted under the care of Dr. Hale White on November 9th, 1898, for pain in the right side and pyrexia. About a month before admission he had been swimming in the sea at Margate when he suddenly lost consciousness and sank. He was rescued, but did not recover consciousness for about half an hour. A week later he suffered from slight shortness of breath, and a cough which caused pain on the right side of his chest. His sputum was occasionally of an unpleasant taste. His breathing, cough, and the pain gradually became worse, and on November the 7th he called in a doctor. On the 7th and 8th he coughed up nearly a pint of yellow sputum tinged with blood, and the right side of his chest became extremely painful. Since November 6th his voice had been hoarse. He was advised to come into the hospital for treatment.

The family history was good. He had been rather a heavy drinker, and had occasionally suffered from quinsy, but otherwise had always had good health. He was married and had two healthy children.

Condition on admission.—Pulse 100, respiration 32, temperature 103°. He appeared healthy and well nourished; his breath smelt foul, he was very hoarse, and he occasionally coughed up yellowish sputum of a very foul odour. He was able to lie upon his back or right side, but not upon his left side.

Respiratory system.—The left side of his chest moved better than the right, and there was some falling-in noticed on the right side from the sixth rib to the costal margin. The T. V. F. was diminished on the right side both in front and behind, and in front was completely absent below the fifth rib. Slight impairment of resonance was noticed on the right side above the fourth rib, and below it an area of complete dulness which extended behind below the angle of the scapula a little beyond the scapular-line, but did not reach the spines. It was difficult to make out the limits of the dull area accurately because of the pain which palpation and percussion caused. The breath-sounds were harsh on the left side, and on the right side both voice and breath sounds were absent over the dull area, while above the fourth rib in front there were small consonating râles, and along the right axillary border "sticky" râles were heard with inspiration.

Circulatory system.—The cardiac dulness and sounds were normal, and the impulse was felt in the fifth space half an inch internal to the nipple-line.

Abdomen.—The liver could be felt about one inch below the costal margin, and palpation caused pain. The spleen could not be felt.

Urine.—Sp. gr. 1030, acid, no albumen, no sugar, no blood. Carbolic acid was present.

Progress and treatment.—The treatment ordered was Capsulæ Creosoti ♏ii. t.d.s. M. Scillæ Ammon. ℥j. t.d.s.* Steam kettle with Tinct. Benzoini Co. ʒj and Pil. Col. et Hyosc. gr. viii. h.n.

The free expectoration of the very foul-smelling yellowish sputum was slightly diminished and the tenderness was less. On November 12th Dr. Hale White

* For the composition of the Mixtures, etc., mentioned, *vide* The Guy's Hospital Pharmacopœia.

discussed empyema and subdiaphragmatic abscess. On the 14th the cough was very troublesome, and in about half an hour a cupful of yellowish foul-smelling sputum was coughed up. The tenderness over the liver continued, but there was no pain. The other physical signs were unaltered. On the 15th a decrease in the dulness was noticed, and the voice-sounds were faintly heard over the dull area. From this date to the 22nd there was thought to be a further gradual improvement, the expectoration was less and the dyspnœa less marked. On the 20th an extension of the dulness behind towards the spines was noted, with distant tubular breathing and somewhat ægophonic voice-sounds. On the 27th there was more dyspnœa and much pain in the right side, which was relieved by linseed meal poultices. On the 28th the following treatment was ordered: Vin. Ipecac. ℿx., Syr. Tolu. ʒi., Quin. Sulph. gr. ii., Acid Sulph Dil. ℿv., Aq. Menth. Pip. ad ℥j., 6tis horis, Guiacol Carb. gr. v., 6tis horis. The physical signs continued much the same and the sputum was still very foul.

On the 12th December the expectoration had become less, though still foul, and there was little or no alteration in the physical signs, and on the 13th the patient was allowed to get up after tea.

On the 23rd there was much dyspnœa and coughing, but very little expectoration. In the evening there was a rigor. Temperature 103°.

On the 24th the right side of the chest was explored in two places with a needle, but only blood was drawn off, which was sent up for bacteriological examination. The report received on the 27th was, "Coverslip preparation direct from the fluid show it to be practically pure blood, with perhaps a slight excess of leucocytes. A very few diplococci were found, which closely resembled the pneumococcus, but we were unable to demonstrate the presence of a capsule. Cultivations on agar and in broth remained sterile."

At this date the sputum was less in amount, but blood-stained and extremely foul. In addition to the physical signs previously noted there was a small patch of bronchial breathing high up on the right axilla, and loud bronchial breathing on the right side behind, over the lower part of the scapula, with ægophony and pectoriloquy.

On the evening of the 28th there was another rigor. Temperature 103·2°. On the 29th loud sonorous rhonchi were heard over the whole chest, and there was extreme tenderness for about an inch below the right costal margin and the inner half of the left costal margin. There was another rigor in the evening, and the temperature rose to 103°. He was a little delirious.

On the 31st Mr. Lane saw the patient and explored the chest with an exploring-needle in two places, but was unable to draw anything off. He noticed a feeling of hardness where the needle was inserted.

The tenderness over the liver still continued, and bronchial breathing with consonating râles was heard over the dull area on the right side. Rhonchi were heard all over the chest. Dr. Washbourn thought there was septic pneumonia.

During the remainder of his illness there was no marked alteration in the physical signs. The sputum was less in amount, but blood-stained. There were no rigors, and the tenderness over the liver became less marked. He gradually got weaker, and died on January 7th.

During the last week of his illness there was some diarrhœa, but previously to this he had been rather constipated.

Post-mortem (performed by Dr. Bryant), *No. 9. 1899.*—Sixteen hours after death.—Rigor mortis well marked. Considerable hypostasis. Body wasted. Brain not examined. About twenty ounces of thick greenish-coloured pus, mixed with blood, was found in the right pleural cavity and it was confined to the posterior part of the thorax. The posterior surface of the base of the right lower lobe was covered with a thick layer of ragged-looking, greyish-coloured lymph. An irregular-shaped opening was found in the posterior and lower portion of the right middle lobe communicating with the pleural cavity and with a good-sized cavity in the lung, the walls of which were irregular and ragged in appearance. This was evidently the tract along which the pus was evacuated during life. The posterior half of the left lower lobe was compressed and airless. The middle lobe was fibroid, the bronchial tubes were dilated, and it contained the above mentioned cavity which was filled with very foul-smelling pus. On the upper surface of the diaphragm on the right side a blood-clot about two inches in diameter was found; it appeared to have been caused by one of the explorations during life. Two exploration marks were also visible on the posterior surface of the right lung.

The heart weighed thirteen ounces. There was no pericarditis or endocarditis.

The stomach and intestine presented a normal appearance. The appendix vermiformis was normal. Some slightly turbid serous fluid was found in the peritoneal cavity between the diaphragm and the right lobe of the liver. The splenic vein was found to be full of thick greenish-coloured pus, the small veins forming it were nearly all filled with ante-mortem thrombi. The portal vein was filled with a soft, septic thrombus.

The liver weighed seventy-eight ounces. It was paler in colour than normal, and several small yellow slightly projecting areas could be seen on the upper and anterior surfaces of the right lobe, which on section proved to be a number of small abscesses. Throughout the liver the branches of the portal vein contained pus, and there were a large number of small pyæmic abscesses also.

Pancreas normal. Spleen ten ounces, normal. There was no lesion of any of the organs drained by the portal system to account for the portal pyæmia. At the time of the autopsy I suggested:—

(1). That a considerable amount of the pus coughed up from the empyema may have been swallowed, and that the pyogenic micro-organisms might have entered the portal system by absorption from the stomach and intestine.

(2). That the exploratory puncture which perforated the diaphragm might have inoculated the liver from the empyema.

Bacteriological examination.—A portion of the subdiaphragmatic fluid was obtained for bacteriological examination, all precautions been taken to prevent the possibility of any accidental contamination. No micro-organisms could be found by culture or by histological examination. A cover-glass preparation of some of the pus from the liver showed a large number of rod-shaped bacilli and some streptococci. Two distinct varieties were noticed, one short with rather pointed ends, the other long and thick with square end. Aerobic and anaerobic cultivations were taken. Long chains

of a long thick bacillus which appeared to be in pure culture were found in the aerobic broth culture at 37° C. No spores were seen. They did not retain the stain after being treated by Gram's method. In the anaerobic culture this same bacillus was found and also some streptococci (*vide* also Chart 2 at end of Paper).

CASE 3.—GALL-STONES.—SUPPURATIVE PYLEPHLEBITIS.—ABSCESSES IN THE LIVER (LEFT LOBE).

Clinical, No. 562. 1896.

K. S., æt. 32, married woman, admitted into Clinical ward under the care of Dr. Taylor on October 29th, 1896, for pain in right hypochondrium and right shoulder, and for jaundice. There was a history of influenza six years ago and gastric ulcer three years ago. In March, 1895, she had an attack of pain in right side of abdomen and shoulder, without jaundice, which lasted a week. There were three succeeding similar attacks at intervals of six to eight weeks, and during the last a small stone was passed. About six weeks prior to admission she had another attack, but this time with jaundice.

The present attack commenced October 24th, with severe pain, which was treated with frequent injections of morphia. These had a dangerous effect, and patient nearly died. On October 28th she became jaundiced, and on October 29th she passed some blood.

Condition on admission.—Temperature 104·6°, respiration 32, pulse 140. She was thin, had an anxious expression, and was somewhat jaundiced. There are blisters produced by water bottles on both feet, and similar places on both hips.

Respiratory system.—A few râles at bases, otherwise normal.

Alimentary system.—Teeth covered with sordes. Tongue dry and covered with brown fur. Bowels opened on the day before admission. Liver somewhat enlarged. Gall-bladder not felt.

Eyes.—Conjunctivæ yellow. Pupils moderately dilated.

Progress.—On October 30th she had a good deal of pain and was more jaundiced. She was kept under morphia. On November the 1st and 2nd the motions were clay-coloured and the jaundice was very deep.

On November 3rd it was noticed that the spleen was easily palpable, and there was some apthous ulceration of the posterior part of the hard palate and uvula. On November 4th blisters on right foot and left buttock showed signs of sloughing, and all the places were treated with creolin fomentations. Rigor at 6.30 p.m. On November 5th the patient was steadily getting worse, and there were some ulcers on the tongue in addition to those on the hard palate. Jaundice intense. Boracic fomentations applied. The slough on left foot is separating and exposing the tendon of the peroneus longus. On November 6th Mr. Symonds operated and found the gall-bladder empty, the cystic duct enormously dilated, and a large stone in it which was removed with some difficulty. Three other smaller stones were also removed. The fundus of the gall-bladder was fixed to a Paul's tube. Patient seemed a little better after the operation, and her pulse was good. On November 7th very little bile had come through the tube and she was unable to take her food because of the sores in her mouth. The urine contained less bile-pigment and the jaundice was slightly less intense (the condition of the urine is not mentioned before). Patient was put on nutrient enemata, 6tis horis. On November 8th she returned them and was fed by the œsophageal tube on beef-juice and milk.

November 9th. Patient died at 12 mid-day.

Autopsy (performed by Dr. Pitt), *No. 463. 1896.*—The body was emaciated and the skin jaundiced. There was lymph over the posterior surface of the right lung and at the apex. The lungs were œdematous and there was an early stage of pneumonia posteriorly in the left upper lobe with a definite line of demarcation. Some capsulated diplococci and other cocci were found in the lung-juice.

There was some early peritonitis with lymph on the surface of the spleen and liver.

The gall-bladder was securely attached to the edges of the abdominal wound and contained blood-clot. It was not distended, but the common and cystic ducts were much distended and the wall of the latter lacerated. A small pigmentary stone was found in the common duct. The main trunk of the portal vein was normal, but on slitting up the branches a recent thrombus was found partially obliterating the lumen of the lower branch to the left lobe. There was an abscess to the left of the gall-bladder containing greenish pus, and there were numerous small disseminated abscesses (none over 1 mm. diameter) in the portal areas of both lobes and apparently associated with the smaller bile-ducts. The liver was adherent to the diaphragm. The pancreas and spleen were normal, and the rest of the abdominal viscera were healthy (*vide* also Chart 3 at end of Paper).

Case 4.—Suppurating Gall-Bladder.—Thrombosis of the Smaller Branches of the Portal Vein.

R. Lane, No. 75. 1896.

E. W., æt. 60, married woman, formerly a laundress, was admitted under the care of Mr. Lane on March 1st, 1896, for biliary colic, with a view to operation. She had suffered from attacks of biliary colic for thirteen years, and stated that the first attack occurred after severe sea-sickness caused by a trip round the Isle of Wight. The attacks had increased in violence and frequency, and there had been (she said) forty or fifty attacks within the last year. (No description of an attack is given.) There was no pain between the attacks.

She had had eight children and several bad confinements, but no other illness. Her father was said to have died from a "tumour on the liver."

Condition on admission.—Pulse 100, respiration 24, temperature ?. She was well nourished and slightly jaundiced. No distension of the gall-bladder was detected on palpation, but there was tenderness on pressure in that region.

Urine.—1020 acid, trace of albumen, no sugar.

Progress.—March 2nd, operation 10 a.m.—An incision five inches long was made extending from the tip of the ninth rib vertically downwards on the right side. The gall-bladder was found firmly adherent to the transverse colon except at a point on the anterior surface towards the fundus. The bladder was opened, and several small stones the size of a pea, and one the size of a hazel-nut, were removed. No stones could be found in the ducts. The edges of the gall-bladder were sewn to the abdominal parietes, and a glass tube was tied in. The rest of the wound was then closed with deep sutures of salmon gut, and superficial sutures of horsehair.

A quarter of a grain of Morphine was given towards the end of the operation. Peptonised Milk, Nutrient Enemata, and Brandy were ordered.

Patient was sick at 2 p.m., 3.30 and 9.10 a.m. The vomit was greenish, and she complained of abdominal pain when she vomited. She was also sick six times during the night following. She had no pain except when sick. On March 3rd, the following day, at 10.15 a.m., she had a severe attack of abdominal pain, with flatulence, which she described as exactly similar to her previous attacks. There was a great deal of discharge from the wound, which was re-opened and again explored and found apparently healthy. She was sick again at 2 p.m., and had retching and flatulence at 4.15 p.m. At 7.45 p.m. she was in great pain, and at 9 p.m. another hypodermic injection was given. Her temperature, respiration and pulse-rates began to rise rapidly. At 1 a.m , March 4th, she was unconscious, and she died at 4.30 a.m. Shortly before death the temperature was 105·2°, pulse 150, respiration 36.

Autopsy (performed by Dr. Fawcett), *No. 74. 1896.*—The wound was perfectly healthy, and the gall-bladder firmly adherent to the incision in the abdominal wall.

The lower lobe of the right lung was compressed and airless, having apparently been rendered so by compression from below. There were old adhesions over left lung with a patch of collapse along the inner and posterior borders.

The heart weighed eleven and a half ounces and was healthy. There was no pericarditis, but there was about half a fluid ounce of clear fluid in the pericardial cavity.

The vessels generally were slightly atheromatous. The stomach and other parts of the alimentary canal were healthy.

The liver weighed forty-two ounces. The terminal branches of the portal vein lying in Glisson's capsule were found to be thrombosed, but no thrombi were found in the main trunk or larger divisions of the vein. The gall-bladder was one and a half inches long, and contained four small stones. It was firmly adherent to the lower surface of the liver and to the transverse colon, and on separating the adhesions a cavity containing about eight fluid ounces of pus was opened. The neck of the gall-bladder was much constricted, but below this constriction the duct was dilated and contained four small stones, and there was also a stone impacted in one of the branches of the hepatic duct. The spleen weighed six and a half ounces and was healthy. The kidneys weighed eight ounces and were granular. The cortex was thinner than normal.

There was an ovarian cyst the size of an orange attached to the broad ligament by a long pedicle.

Microscopic examination of the liver showed great increase of the interlobular connective tissue and small-celled infiltration (*vide* also Chart 4 at end of Paper).

CASE 5.--SUPPURATIVE PYLEPHLEBITIS.—MULTIPLE ABSCESSES IN THE LIVER.—APPENDICITIS.—EMPYEMA.

Clinical, No. 480. 1895.

K. M., æt. 20, admitted into Clinical ward under the care of Dr. Pitt on September 16th, 1895, for pain in abdomen. About August 26th she had a sudden onset of pain in the abdomen, with vomiting and diarrhœa, causing much prostration. The vomiting ceased but the diarrhœa continued for three

days, and the temperature rose to between 101° to 103° in the evenings, falling to 99° in the mornings. The pain was referred to the umbilicus, with some tenderness in the right groin. Her medical attendant (Dr. Marshall) diagnosed the case as one of enterica. After about ten days' illness she began to have rigors and night sweating. About the eighteenth day her night temperature was 106°, and the rigors were severe. Dr. Pitt was called into consultation, and found signs of pleurisy, without effusion, in the right axilla, rigidity of the abdominal wall on the right side, and diagnosed appendicitis, with possibly hepatic abscess or general pyæmia.

Condition on admission.—Temperature 103·4°, respiration 28, pulse 144. Patient was much wasted, with an "abdominal expression" on her face. The tenderness of the abdomen was not marked, owing to a recent injection of morphia, but there was rigidity on the right side, from the groin to a line just above the umbilicus, with some impaired percussion resonance over the rigid area. No tumour could be felt, and there was no rigidity in the right loin. A rub could be heard in the right axilla. The diarrhœa had commenced again. There was a large bed-sore over the sacrum.

Mr. Symonds was called in, and operated at midnight. An incision was made in the right nipple line about opposite the umbilicus, and the liver and right kidney explored and found apparently healthy except that the edge of the liver reached an inch below the costal margin. The incision was continued to the groin, and the cæcum and appendix explored. The appendix was found firmly adherent to the cæcum, and the adhesions bled freely on attempting to separate them. The appendix was removed and a small quantity of pus, not more than ɱxxx., found at its distal end. Iodoform was powdered on, and the wound packed with gauze. The patient bore the operation, which lasted ninety minutes, well. She was given morphine, gr. $\frac{1}{6}$, hypodermically, and ordered hot water to drink. Nutrient enemata 4tis horis. Rectum to be washed out with warm water twice in the twenty-four hours. On September the 19th and 20th she was taking fluid diet well, but pus was coming from the wound and patient was clamorous for morphia.

(No entries in report from September 21st to October 3rd.)

On October 3rd a rib was resected and a quantity of foul pus removed from the right pleural cavity, a puncture having been made previously and pus found. A finger was inserted and a small cavity felt above the liver. This was washed out with weak boric acid lotion and tubes were inserted. Patient was collapsed after the operation and a hot enema was given. She died on October 5th, at 6.30 a.m.

(The temperature varied between 99° and 100° in the mornings, and 101° to 102° in the evenings, rising on several occasions to 103° and once to 104°.)

Autopsy (performed by Dr. Pitt), *No. 380. 1895.*—The body was wasted and profoundly anæmic and there was a bed-sore over sacrum.

There was an empyema on the right side, extending from the third to the tenth rib, but limited to the region of the spine, and only three and a half inches across. This had not been reached by the axillary exploration. A portion of the ninth rib had been removed and there was an aperture in the diaphragm leading to an hepatic abscess. The posterior parts of both right lobes, especially the lower, were compressed. The lungs on the left side were mottled and there were a few ecchymoses on the posterior surface and two or three early patches of broncho-pneumonia.

There was lymph on both the upper and lower surfaces of the diaphragm on the right side.

A sinus in the right iliac fossa led to the stump of the appendix surrounded by a small collection of pus. The ligatures had slipped off the stump of the appendix, leaving the aperture patent.

The whole peritoneal cavity was bathed in turbid watery fluid, but there was no large collection, and infection appeared to have started from the surface of the liver.

There were several small abscesses on the surface of the liver and innumerable abscesses, mostly small, were exposed on section. An abscess one inch across was found in the duct, near the gall-bladder, which together with the bile-ducts contained pus.

There was a partially decolorized softening clot in the main trunk of the portal vein.

The pancreas contained numerous abscesses of considerable size, chiefly in the head, with brownish turbid contents.

The mucous membrane of stomach was ecchymosed and bile-stained (*vide* also Chart 5 at end of Paper).

CASE 6.—SUPPURATIVE PYLEPHLEBITIS.—PYÆMIC ABSCESSES IN THE LIVER.—APPENDICITIS.—PERFORATION OF THE APPENDIX.

Dr. Hale White, No. 201. 1894.

C. W. A., æt. 19, cabinet maker, was admitted into Stephen ward under the care of Dr. Hale White on 31st May, 1894, for pain in the right hypochondrium and pyrexia. On May 14th he was on the river at Oxford and got wet. On the following day he played tennis and went to the theatre. On the 16th he became suddenly ill with a rigor; he went to bed and vomited a quantity of bile and had great pain in the epigastric and hypochrondriac regions.

From that date until admission he had rigors, as many as three a day, and there was always pain over the liver and occasionally in the right iliac fossa. No jaundice, no constipation, and no diarrhœa. He had lost flesh. Ten years ago patient had diphtheria and his throat has not felt quite right since. During his illness it has been very painful and sore.

Condition on admission.—Temperature 103·6°, respiration 26, pulse 80. A well-developed man. Has an anxious expression and looks extremely ill, anæmic, and collapsed.

Alimentary system.—Tongue dark and medicine stained. Slight erythematous rash over lower part of chest and abdomen. The abdomen moves slightly with respiration. There is fulness over the right hypochondrium and part of the epigastrium, and this area is painful and very tender, and the skin is hot and dry. There is a sense of resistance. The liver dulness reaches about half an inch below the costal margin, and above is limited by the sixth rib in front, angle of scapula and tenth rib behind. The dull area extends somewhat farther to the left than normal, encroaching on stomach resonance. There is tenderness and a feeling of resistance in the right iliac fossa, and some crepitation over an area the size of half-a-crown, but there is no loss of resonance.

Circulatory system.—Cardiac dulness normal. Reduplicated second sound at apex, otherwise normal. Pulse small, dicrotic and running.

Respiratory system.—There is bulging on the right side of the chest below, with dulness and impaired entry of air. Above, the right side of the chest moves better than the left.

A diagnosis of abscess below the liver connected probably with old gastric trouble was made. Mr. Dunn was called in. June 1st. Rigor at 11.45 p.m. last night, and temperature 107°. Another rigor 10.30 this morning, temperature 99°.

Operation.—An incision two and a half inches long was made in the middle line above the umbilicus and abdomen explored. At first nothing abnormal was found, no fluid could be felt in chest through the diaphragm, but later, some foul-smelling pus welled up between the stomach and left lobe of liver. The cavity was irrigated, a drainage tube put in and the wound closed. There was another rigor after the operation, temperature 104°, and on the following morning there was a well-marked erythematous rash over the forehead, trunk, arms and legs.

June 2nd. An ounce of thick fæcal-smelling pus was drawn up with a syringe last night, and about the same quantity this morning. Several rigors; rash almost gone. Urine acid, dark, 1024, no albumen and no sugar.

June 3rd. More pus from wound; no rigors.

June 4th. Patient much worse. Rash has appeared again and there is more foul pus from the wound. Pulse very rapid and thready. Patient died 7.45 p.m. Just before death a quantity of brownish fluid containing "coffee ground" material was vomited.

Autopsy (performed by Dr. Bryant), *No. 220. 1894.*—The body was well nourished, and there was no anasarca. There was an incision in the median abdominal line three inches long, commencing two inches below tip of ensiform, sutured with gut, and with an opening left in which was a drainage tube.

There were a number of sub-pleural petechiæ on the surface of both lungs, and about five to six fluid ounces of turbid fluid were found in the right pleural cavity. There was a little compression of the right base, and the lungs were injected.

The heart weighed nine ounces. There was some P.M. staining of the endocardium and aorta.

There were about thirty fluid ounces of turbid sero-purulent fluid in the peritoneal cavity, and the peritoneum had flakes of yellow lymph adhering to it.

There was a tract leading from the incision to the hepatic flexure of the colon where the drainage tube had rested.

The end of the vermiform appendix was found extending upwards under the lower border of the third part of the duodenum. It was the seat of an abscess cavity (1¼ inch by ¾ inch by ½ inch) containing foul-smelling pus. There were two small communications with the peritoneal cavity, and also a direct communication with the mesenteric vein which was filled with a septic thrombus extending into the portal vein and its larger branches.

There were a large number of abscesses in the liver, the left lobe was most affected, and the branches of the portal vein contained septic thrombus. The liver was not weighed. Behind the cæcum was a small abscess which had been caused by a perforation of that viscus. The kidneys weighed ten ounces and were healthy. The spleen weighed eight ounces and was soft. The other abdominal viscera were healthy (*vide* also Chart 6 at end of Paper).

CASE 7.—SUPPURATIVE PYLEPHLEBITIS.—GASTRIC ULCERS.—PYÆMIC ABSCESSES IN THE LIVER.

Dr. Goodhart, No. 272. 1891.

A. M., æt. 19, a carman, was admitted into Philip ward under the care of Dr. Goodhart on July 28th, 1891, for diarrhœa and abdominal pain. On July the 19th he had eaten some haddock. Afterwards while sitting down he suddenly felt acute pain in the pit of his stomach and a sensation as if something had given way. He was assisted home and put to bed. The pain continued till the following morning, and was intense and accompanied by vomiting, the vomit being bile-stained and containing a little blood. In the evening the pain recommenced. On July 21st an enema was given and a motion passed, being the first since the onset of his illness. From the 21st until admission he had continuous pain and diarrhœa, the pain being slightly relieved by the passage of motions. There has been no blood noticed in the stools. He has been feverish and slept little, but had no delirium. His abdomen has been much distended and he has passed a large quantity of flatus. No spots on the abdomen.

Condition on admission.—Temperature 99·8°, pulse 92.

Alimentary system.—Lips dry—covered with sordes. Mouth dry. Tongue red at the edges and the tip, furred on the dorsum; abdomen tense—extremely tender, tension most marked in flanks and between umbilicus and pubes, flaccid and incurved between umbilicus and sternum. There is dulness where the tension is most marked, viz., hypogastric, right and left inguinal and left lumbar and left hypochondriac regions. In the right lumbar region the resonance is diminished but there is not absolute dulness. Patient lies on his back with his legs fully extended. Abdomen is twenty-eight and a half inches in circumference at the umbilicus, thirty-one and a half at anterior superior spines. Liver dulness extends from fifth rib in nipple line to just below costal margin.

A motion was passed consisting of some well-formed light-coloured fæces and a fluid portion containing mucus and a few clots of red blood. The pain was relieved by defæcation and the act itself was painless.

Respiratory system.—Breathing chiefly thoracic but the upper part of the abdomen moved slightly. T. V. F. impaired below sixth rib on each side. A few râles heard at the left base.

Circulatory system.—Impulse in fourth left space, half an inch internal to the nipple. First sound accentuated.

Urine.—Sp. gr. 1018, acid, no albumen, no sugar, no blood.

July 30th. Patient has had little sleep owing to great pain. Two motions passed with no blood.

July 31st. Pain less; abdomen smaller and less tense.

August 1st. Rhonchi on left side of chest in front, well marked at apex. Pain and tenderness diminishing. Right inguinal region most tender.

August 4th. Tenderness only found now just below the umbilicus and in the right inguinal region. Motions loose and bloodless.

August 5th. Three rigors, with temperature between 104° and 105°.

August 6th. Patient exhausted. Pulse and respiration rapid and weak.

August 8th. Patient vomited eight times during the night, the vomit being greenish in colour. Profuse sweating; loose motions; another rigor.

August 10th. Patient very collapsed. Mr. Lucas saw the patient and it was decided to operate. An incision was made between the umbilicus and pubes and a condition of general suppurative peritonitis found. About eight ounces of fœtid pus were let out and a drainage tube put in. The patient was very exhausted and died soon after the operation.

Autopsy (performed by Dr. Bryant), *No. 307. 1891.*—The body was much emaciated.

The lungs and heart were healthy.

The stomach was distended and adherent to the under surface of the liver. There was a longitudinal ulcer two and three-quarters by three-eighths of an inch along the middle of the lesser curvature, and anterior to and to the right of this ulcer two smaller ulcers, one the size of a sixpence the other the size of a threepenny-piece. Both of the smaller ulcers had perforated but had become adherent to the under surface of the left lobe. Between the large longitudinal ulcer and the lesser, and also burrowing into the under-surface of the left lobe of the liver, was an abscess containing about two fluid ounces of foul pus.

The intestines were covered with lymph and pus and were matted together.

There was a considerable amount of pus in the peritoneal cavity.

The liver weighed sixty-eight ounces. There were several small abscesses in the right lobe, some of them superficial, and there was pus between the diaphragm and the liver. There was also the large abscess on the under-surface of the left lobe mentioned above.

The portal canals were full of foul pus.

The spleen weighed seven ounces. On the middle of the upper surface there was an abscess containing about one ounce of pus with several smaller abscesses around. There was lymph and pus on the capsule (*vide* also Chart 7 at end of Paper).

CASE 8.—MULTIPLE HEPATIC ABSCESSES.—SUPPURATIVE PYLEPHLEBITIS.—ULCERATION OF THE RECTUM.

Dr. Goodhart, No. 322. 1890.

E. D., æt. 49, married woman, was admitted into Mary ward under the care of Dr. Goodhart on the 13th of September, 1890, for jaundice. She had been married twenty-nine years and had had three or four miscarriages, no children living. She had always lived well, drank beer but no spirits, and had enjoyed good health, except for habitual constipation and bilious attacks, during which, however, she had not hitherto been jaundiced. The family history was good. Her present illness began two months ago, with an attack of vomiting in the morning. The vomited matter was green, and she had a rigor and felt like "ice." She went to bed and remained there till admission. A second attack came on while in bed, and she turned yellow. Her urine has been very dark in colour, and her motions at first were white and then yellow. On admission, her bowels had not been opened for two days. Latterly she had not been sick.

Condition on admission.—Temperature ?, pulse ?, respiration ?. Patient seemed very weak; skin yellow, lips pale, sclerotics jaundiced.

Alimentary system.—Tongue red and clean, mouth dry, and patient complained of thirst. Abdomen rather resistant. Liver dulness reached just below costal margin. Spleen felt with difficulty. A sharp aching pain across abdomen.

Circulatory system.—Cardiac dulness and sounds normal.

Respiratory system normal.

Patient said to have lost flesh a great deal lately.

Urine 1016, acid, dark coloured, no albumen, gives Gmelin's test for bile pigment.

Progress and treatment.—Patient was given M.M. cum M.S. ʒj. t.d.s., Acid. Hydrocyan. dil. miij., M. Effervescent. ad ʒj., and ordered a diet of fluids.

September 16th. Not quite so yellow, no pain, only a slight uneasiness. Conf. Sennæ et Sulph. ʒj. statim.

" 18th. Slight diarrhœa, with pain across abdomen.

" 20th. Slight diarrhœa. Takes food badly.

" 21st. Bowels opened twice. Second motion a steel-grey colour but well formed.

" 25th. Was sick after eating an egg for breakfast. No pain.

" 27th. Much retching but no vomiting. Cannot take food.

" 29th. Sickness and diarrhœa. *Marked bulging noticed on right side of chest.* Morning temperature 96·8°, evening temperature 98°.

October 2nd. Diarrhœa continues. Continual retching. Occasional vomiting. Morning temperature 96·8°, pulse 120, respiration 30; evening temperature 100·8°, pulse 120, respiration 24.

" 6th. A large clot of blood passed per rectum.

" 7th. Urine, sp. gr. 1020, dark brown, gives Gmelin's and Pettenkofer's tests. Slight œdema of legs.

" 8th. A few small clots of blood passed. Morning temperature 96·2°, pulse 128, respiration 24; evening temperature 99·0°, pulse 120, respiration 28.

" 9th. Dr. Goodhart observed that bile in the motions, without diminished jaundice, pointed to a collection of small abscesses in the liver.

" 10th. Motions tested for bile. Gmelin's reaction obtained. More clots per rectum. The rectum was examined and a small cavity, half an inch in depth, with smooth walls, not everted, and a hard smooth base was found. The examination was not painful. Morning temperature 97°, pulse 128, respiration 24; evening temperature 98·4°, pulse 120, respiration 28.

" 13th. Motions greenish yellow, with small blood clots present. Another rectal examination made and another ulcer discovered on the anterior wall of the rectum.

Drs. Goodhart and Shaw thought they were not malignant. Intestinal obstruction and pylephlebitis were diagnosed. More distinct resistance in the right hypochondrium and a lump felt on deep pressure.

October 14th. Patient died at 2 p.m.

(N.B.—Highest temperatures after September 28th were: September 30th, 99·8°, October 2nd, 100·8°, October 5th, 100·2°. Temperature after September 28th was generally subnormal.)

Autopsy (performed by Dr. Pitt), *385. 1890.*—The body was very thin and deeply jaundiced as to the skin and conjunctivæ.

The lungs were jaundiced and there was slight œdema of the right base but they were otherwise normal.

The heart weighed seven and a half ounces and was healthy.

The stomach was healthy, and the duodenum normal as far as the biliary papilla, which was surrounded by a villous growth about the size of a walnut, that may have somewhat obstructed it. The growth appeared to be innocent, for there was no thickening, and apparently no secondary deposits.

The remainder of the small bowel was healthy and so was the large intestine as far as the rectum. Three inches above the anus were two circular ulcers, one on the posterior wall and the other on the right lateral wall, each about the size of a half-crown piece. Their edges were undermined and their bases, formed by the muscular coats, were sloughy.

No thrombi could be seen in the mesenteric veins.

The liver weighed forty-nine ounces. It was deeply jaundiced and very soft. On section, pus exuded from the various points, apparently from the smaller branches of the portal vein, and there were also actual collections of pus in the liver-substance.

No thrombi could be found in the main branches of the portal and hepatic veins.

Microscopically the liver tissue was extremely fatty. There were several collections of small round cells replacing the liver cells, but no connection could be made out between these collections and the branches of the portal vein.

The gall-bladder was healthy.

The spleen weighed five ounces, and was soft.

The kidneys weighed eleven and a half ounces, and were soft, but otherwise healthy.

The external os uteri was stenosed from cicatrization, but would admit the end of a probe. The cervical canal was small and full of glairy fluid.

The ovaries were small and fibrous, and about the left tube and ovary there were old adhesions (*vide* also Chart 8 at end of Paper).

Case 9.—Suppurative Pylephlebitis.—Multiple Hepatic Abscesses.—Appendicitis.

Clinical, No. 355. 1890.

M. H., æt. 16, domestic servant, was admitted into Clinical ward under the care of Dr. Goodhart on March 15th, 1890, for pyrexia. Her illness commenced on March 7th with bilous vomiting and constipation, and she was ordered M.M. cum M.S. by her doctor, which relieved her. On the 9th the vomiting returned, and she was again constipated. Calomel gr. iii. followed by M.M. cum M.S. was prescribed, and at midnight she had acute abdominal pain.

On the 10th she had much pain over the ileo-cæcal region, increased by pressure. There was some tympanites, and a dry, furred tongue. Temperature 104°, pulse 126, small and feeble. In the evening the symptoms were more marked, temperature 104·4°, pulse 128. The treatment ordered was Pulv. Opii. gr. ½, Ext. Belladon. gr. ¼, 4tis. horis, with Mist. Pot. Cit. and Tinct. Aconiti. ♏iii. On the 11th she was very restless and delirious, and there was retention of the urine for which a catheter was passed. On the 12th there was much tympanites, and the bowels were opened for the first time since

the 9th. A single scybalous mass was passed, followed by dark, watery, offensive evacuations containing undigested milk. The treatment was changed for Mist. Pot. Cit. with Liq. Bismuthi ɱxx. 4tis. horis. On the 13th there were several liquid motions and the other symptoms were better; there was much pain and tenderness over the transverse colon. On the 14th, four liquid motions, no tympanites. She had influenza about one month before the commencement of present illness.

Condition on admission (March 15th).—Temperature 102·4°, pulse 112, respiration 36. Abdomen full and resistant. Pain and tenderness, chiefly across the upper part of the abdomen, complained of, also pain in the back. Spleen not felt, and no increase of splenic dulness. No rash. Tongue covered with white fur. No headache, and no history of headache.

Respiratory System.—Normal.

Circulatory system.—Heart normal, face flushed, pulse full and bounding,

Urine.—Sp. gr. 1025 acid, no albumen; urates present.

On the 17th an enema was given, and a motion of well-formed normal fæces passed. At night her temperature rose to 105°, and she was sponged.

On the 18th temperature was down and patient comfortable. In the evening her temperature rose to 103.8°, and she was again sponged.

On the 19th the temperature was down to 99°, pulse 112, dicrotic: a formed motion not typhoid in character was passed. Two (?) typhoid spots on abdomen.

On the 22nd abdomen was about the same, tenderness chiefly in the right hypochondrium. No more spots seen, but a motion somewhat typhoid in character passed. Temperature low in the morning and up in the evening; marked rigor lasting some time when the temperature is high.

On the 24th an indurated lump was felt in the right iliac region. More rigors.

On the 27th Dr. Horrocks examined patient and reported the hymen perforated. The uterus felt undeveloped and was to the left side. No effusion into the broad ligaments. No tenderness.

On the 28th Mr. Lane operated under an anæsthetic ($CHCl_3$). A well-defined oval tumour was felt in the right iliac fossa. An abscess containing very foul pus was found extending along the outer side of the cæcum for about an inch and a half, surrounded by adhesions. The appendix was separated and removed, the cavity washed out with Lot. Hyd. Perchlor. (1 in 2000) and a drainage tube inserted.

After the operation patient was kept under Morphia and fed on nutrient enemata; nothing was given by mouth. There was a good deal of foul discharge following the operation.

March 30th. There was a pleuritic rub on each side.

" 31st. There was a rigor. Temperature 102° rising next morning to 103°.

April 1st. Pain over lower part of abdomen.

" 2nd. Rigor. Temperature 102°.

" 3rd. Rigor. Temperature 103°. Tenderness in right hypochondriac and right lumbar regions, also in right iliac region. Slight redness over right hypochondrium.

" 4th. No rub heard now. Patient sleeps well. Wound looks healthy. Motions normal. Temperature 98·4° to 101·8°, pulse 120 to 130, respiration 26 to 28

April 7th. A small abscess over the base of the sacrum was opened. Still pain in right iliac region. Free discharge from wound.
" 8th. Rigor. Temperature 104°.
" 10th. Slight tenderness over liver.
" 17th. Vomiting and retching several times. Abdomen full and tender in the right iliac fossa.
" 20th. Tympanites.
" 21st. Purpuric eruption in the epigastric region. Temperature 102°, pulse 130. No change in the wound.
" 23rd. Some fresh purpuric spots in the umbilical region. Tympanites not so marked. Diarrhœa.
" 24th and 25th. Diarrhœa.
" 26th to 28th. Patient sank gradually and died at 10 p.m. on April 28th.

Autopsy (performed by Dr. Pitt), *No. 149. 1890.*—The body was much emaciated. There were loose flocculent adhesions over right pleura, but none of very recent date.

In the posterior-inferior part of the right lung there was a wedge-shaped area containing scattered abscesses with surrounding imperfect pneumonia, but the tissue was not solid, and the limits were ill-defined.

The heart was very small.

There was an old sinus in the right iliac region which was dry and free from pus.

On opening the abdomen some adhesions were found, and on cutting through the omentum about one ounce of foul watery pus was let out. There was a collection of about the same quantity in the pelvis.

The cæcum looked healthy, and the stump of the vermiform appendix was closed.

There was a suppurating thrombus in the superior mesenteric vein which could be traced into a mass of purulent material around it. The branches of the portal vein were filled with pus, and the main trunk was obliterated by a firm thrombus.

In the right lobe of the liver were numerous abscesses, most of them small and collected into groups. There were only a few abscesses in the left lobe. In one or two of the abscesses there was communication with a bile-duct.

There were flocculent adhesions over the liver and spleen. The rest of the viscera were healthy (*vide* also Chart 9 at end of Paper).

CASE 10.—SUPPURATIVE PYLEPHLEBITIS.—MULTIPLE ABSCESSES IN LIVER.—PYOSALPINX.—SUPPURATING OVARY AND PELVIC ABSCESSES.

Mr. Howse, No. 117. 1886.

A. E. H., æt. 20, a teacher, was admitted into Charity ward under the care of Mr. Howse on February 4th, 1886, for abdominal tumour. On January 15th, she had some pain in the abdomen and took some castor oil, which made her sick. The pain continued on and off, and on January 22nd she took some more castor oil after which she again vomited. In the evening of the same day she noticed a swelling in her abdomen.

Her previous illnesses had been measles and whooping cough in childhood, and she was said to have had inflammation of the ascending colon eighteen

months ago, which confined her to her bed for a month. She had another similar attack in October last. She was not married. The family history was good.

Condition on admission.—Pulse ?, respiration ?, temperature ?. She appeared healthy-looking with a slight flush on her cheeks, but felt weak from lying in bed. A tumour, one and three-quarter inches in diameter, was seen on the right side of the abdomen in the line of the right rectus muscle and about midway between the costal margin and the umbilicus. The tumour was tender and fluctuating and was felt to extend obliquely upwards and to the left.

Progress and treatment.—Milk, beef-tea, and farinaceous diet were ordered. On February 8th the tumour was slightly larger and more raised, and the patient had been in pain all night. The urine was examined and found slightly acid, sp. gr. 1026, no albumen, no blood. A few pus corpuscles were seen microscopically.

On February 10th the skin was reddened over the tumour. It was increasing in size towards the right hypochondriac region and measured three and a half inches in diameter.

On February 14th chloroform was given and the tumour incised. About ʒvj. of pus escaped which had a strong fæcal odour, and it was therefore thought to come from the transverse colon. There was a good deal of venous hæmorrhage after the pus had come away. A drainage tube was put in and the wound dressed with carbolic gauze. There was some sickness after the operation, and the temperature was 98° and pulse 88.

Mist. Bism. et Morphinæ 6tis horis was ordered, and milk, ice and soda water.

On the 16th the urine was dark brown in colour, acid reaction, sp. gr. 1028, pink deposit of urates; no albumen, no blood, no bile-pigment, no indican.

On the 19th chops were ordered.

March 1st. Stout.

„ 3rd. Chicken.

„ 7th. Liq. Hyd. Perchlor ɱlxxx.
Mist. Ac. Hydrochlor. ʒi. t.d.s.

The wound was being dressed every few days. It continued to discharge, but no symptoms are mentioned.

On March 24th, 28th and 30th. Tannic Acid was sprinkled on to repress exuberant granulations.

On April 1st, Dr. Hale White examined the patient and found slight dulness at the right apex, with bronchophony, prolonged expiration, and almost tubular breathing. He thought there was phthisis at the right apex.

On April 10th she was sick during the night and again in the morning. On the 11th and 12th the sickness continued, and there was great abdominal pain felt, especially when breathing. Her face was very white and drawn and her lips dry. Urine acid, sp. gr. 1025, no albumen, no sugar, much deposit. She continued very restless, but the pain was easier, and there was no more vomiting. She died on April 14th at 8.30 a.m. No rigors are mentioned throughout.

Autopsy (performed by Dr. Goodhart), *127. 1886.*—The body was very spare.

There was a partly healed wound in the epigastrium, with a drainage tube inserted.

There was acute pleurisy on the right side of the chest, with much yellow lymph.

There was some collapse at the base of the right lung, but the lungs were otherwise healthy.

The heart weighed six and a quarter ounces and was healthy.

There was a caseous gland in the mediastinum.

There was a large quantity of pus in the peritoneal cavity, but this had no connection with the superficial abscess opened and drained externally.

The liver was adherent to the diaphragm, beneath the superficial abscess, and at this point (between the gall-bladder and the round ligament), was a cluster of small points of pus having the distribution of a small branch of the portal vein.

Just beyond the bifurcation of the portal vein about ʒii. of pus were found, and the wall of the vein was shaggy from adherent lymph. The gall-bladder and other parts of the liver were healthy.

The pelvis was for the most part filled with a globular mass, which was fixed by tough inflammatory adhesions to the pelvic wall, and to which the intestines were adherent. This proved to be the right ovary, which on section showed many caseous or suppurating points, and which was surrounded by a sinuous abscess, which burrowed about among the adherent coils of intestine and finally opened near the cæcum, simulating perityphlitis. The left ovary was enclosed in a tough coat of fibrous tissue.

The Fallopian tubes were both adherent and full of pus.

The uterus and vagina were healthy.

The cæcum and appendix were themselves quite healthy.

There was a caseous lumbar gland on the right side.

The pelvis of one kidney was dilated.

The other viscera appeared healthy (*vide* also Chart 10 at end of Paper).

* Case 11.—Suppurative Pylephlebitis.—Multiple Hepatic Abscesses.—Appendicitis.—Pelvic Abscess.—Ulceration of the Colon.

Mr. Howse, No. 180. 1880.

W. G. H., æt. 18, brushmaker's assistant, was admitted into Naaman ward under the care of Mr. Howse on September 17th, 1880, for discharging sinuses in left side and left groin. About 20th May he had pain above the left groin, and hard lumps appeared both in the groin and in his left side. Linseed poultices were applied and the lumps in the side burst two days later by two small openings. Five days later the abscesses in the groin burst.

About the middle of June he had shooting pains in his left side. He had jaundice three or four times during his illness, the last time being about the middle of July. Family history good. No previous illness.

Condition on admission.—Temperature 100°. Thin, pale, anæmic; face has a yellowish pallor; pearly conjunctivæ. On the left side, an inch and a half above the middle of the iliac crest is a swelling four and a half inches by two and a half inches, with a small opening discharging foul green pus very freely. About half-way between this swelling and the left anterior superior spine there is another fluctuating swelling about the same size with surrounding œdema. In the left groin there is a triangular opening discharging greenish pus. *Urine* acid, no albumen.

September 18th. Morning temperature 99·8°; evening temperature 98·8°. Both the swellings in the side were opened under $CHCl_3$. There was a free

* This case is also reported by Dr. Carrington in his paper.

discharge of pus from both wounds and they were found to communicate. A probe could be passed forward in the direction of the opening in the groin. No communication with the spine could be positively made out. A large drainage tube was inserted. There was a great deal of discharge following the operation, and patient was much easier.

September 28th. Patient complained of stiffness in his back on sitting up, and the lower dorsal region was tender.

October 4th. Shooting pains in left side. Unable to lie on his back because of the pain so caused.

" 8th. No discharge from the wound, and the drainage tube was removed.

" 10th. Wound dressed with resin dust.

" 18th & 19th. Large quantity of urates present in urine; no albumen.

" 20th. Fluctuation above the crest of the ilium.

" 23rd. Urine, sp. gr. 1032; sugar present.

" 24th. The abscess above the iliac crest was opened and a large quantity of pus evacuated. A probe could be pushed down almost to the groin.

" 28th. Urine tested every day since 23rd, but no more sugar found.

" 29th.
November 2nd. } Albumen present in urine.
" 3rd.

" 6th. Shooting pain in the left side on breathing.

" 9th. Pain has disappeared. Not much discharge from the sinuses.

" 29th. A large quantity of albumen in the urine.

December 29th. Patient complains of a feeling of fulness and tension in the left (? right) groin.

January 5th. Mr. Howse examined the swelling in the right groin and diagnosed abscess. He said this confirmed the diagnosis of disease of the spine.

" 15th. The abscess in the right groin was opened under chloroform and a large quantity of blood and pus evacuated.

" 22nd. Patient complains of shivering in the morning and subsequent sweating. The bowels have not acted for six days.

" 23rd. A double Bryant splint was applied from the feet to the axillæ. Patient feels pain in the muscles of his knee, which had remained flexed for a long time. Morning temperature 98°; evening temperature 98°.

February 5th. The patient is used to the splint after suffering at first great pain. Evening temperature 99°.

" 20th. A large abscess appeared on the left side, near the iliac crest, but was not opened, by request of patient's mother. Morning temperature 100·3°.

" 24th. An abscess opened on left side, just below ribs, from which fæcal matter escaped. Patient in great agony and never at rest except when under morphia.

Morning temperature 100°. Morphine gr. ¼, hypodermically. Urine 1015, neutral; no albumen or sugar.

March 3rd. Much pain in the back. Morning temperature 99°; evening temperature 101°.

„ 10th. Abdomen slightly distended and tense, tender on palpation. The patient lies with his legs drawn up. Flattening, diminished resonance and tubular breathing noticed over the right apex. The back and centre of the tongue was coated with brown fur, the sides were clean. Morning temperature 102·4°, pulse 140, respiration 35.

„ 12th. Died 4 p.m.

There is no temperature chart in the report. The temperature had been taken and reported occasionally. The highest records are, March 7th, morning temperature 104·8°; March 9th, morning temperature 104°; evening temperature 103°; March 11th, morning temperature 102°; evening temperature 103·6°. Most of the other temperatures recorded vary between 98° and 100°. The pulse and respiration rates have not been recorded.

Autopsy (performed by Dr. Goodhart) *No. 75. 1881.*—The body was much emaciated, and there was slight œdema about the ankles.

There was a sinus in the right groin which ran inwards and opened into an abscess behind the pubes, and three sinuses in the left groin. Two had all but closed and the third opened into the descending colon.

There was about half an ounce of pus in the right pleural cavity and the pleura was covered with yellow lymph.

The greater part of the lower lobe of the right lung was solid, and at the hinder part of its lower border was a brownish patch of softening.

There were several small infarctions in this lobe, and it was noticed that the lymphatic vessels were much distended, some with pus and others with inflammatory material, and that the lymphatic glands on this side of the chest were much enlarged.

The diaphragm was adherent to the lung above and to the liver below.

The heart weighed seven ounces, and the wall of the left ventricle was disproportionately thick. It was otherwise healthy.

The vena azygos was unusually large and distended.

In the abdomen there were many adhesions of a somewhat chronic kind, those between the liver and diaphragm being especially tough, with pus imprisoned in the loculi formed by the adhesions.

In the lower part of the abdomen behind the pubes and between it and the coils of small intestine was an abscess cavity with thickened and much discoloured walls. This abscess extended to and surrounded the cæcal appendix, and had burrowed down into Douglas' pouch and opened into the rectum some two inches from the anus. It also extended to the left side of the abdomen and had burrowed up beside the descending colon.

The sinus in the right groin communicated with it behind the pubes.

The intestines were found to be lardaceous in places, and two small openings were found in the ileum about two inches from the ileo-cæcal valve and were thought to be due to extension from without inwards of the pelvic abscess.

The appendix was long, and a small opening was found near its end, into which a probe passed for about 2 mm. but no communication was found with the canal of the appendix.

The mucous surface was puckered and discoloured, but no perforation was found. The colon was healthy as far as the splenic flexure, and here was a sinus leading to the groin and several ulcers opening into thickened and discoloured mesentery and in close proximity to the upward extension of the pelvic abscess. There were also the scars of healed ulcers.

The liver weighed fifty-nine ounces. Several adhesions were seen on the surface which on section proved to be the scars of old abscesses, with in some instances a small yellow central deposit. One abscess was in the caseous state without any scar tissue. There were also numerous points of gray cirrhotic-looking material with two or three central specks of yellow which looked like early caseous degeneration of fibroid matter. From some of the points pus was coming, and they were all in the portal canals.

The portal vein in the portal fissure was completely blocked by a soft clot which contained yellow pus in its centre. Some large veins were found in the portal fissure in front of the portal vein, which probably communicated with the inferior vena cava and so relieved the circulation.

This plexus of veins was afterwards partially dissected out and some were found to run forwards into the round ligament, and others backwards to the diaphragmatic opening of the vena cava, where they became lost.

The œsophageal veins were not dilated. It was impossible to make out clearly the whole of the collateral circulation; but in addition to what has been noted, the left spermatic vein was found unduly large.

The main bile-ducts were healthy and the gall-bladder contained healthy bile, but a further examination showed that the bile-ducts in various parts of the liver were implicated, and also that the fibrous tissue round the portal vein had caused pressure upon the ducts, which were dilated, and in some of the smaller ones the bile was inspissated.

The spleen was a good specimen of the sago spleen of lardaceous disease. Its vein was plugged and full of pus, and there was an abscess in the splenic tissue.

Microscopical examination of the liver showed an immense amount of new fibrous tissue in the scar-like patches,—an advanced form of cirrhosis.

The case was thought to be one of primary ulceration of appendix giving rise to obstruction of the portal vein and pylephlebitis and ulceration of colon.

Remarks on the above case in the Path. Soc. Trans., 1881, Vol. xxxii., p. 137, by J. F. Goodhart, M.D.

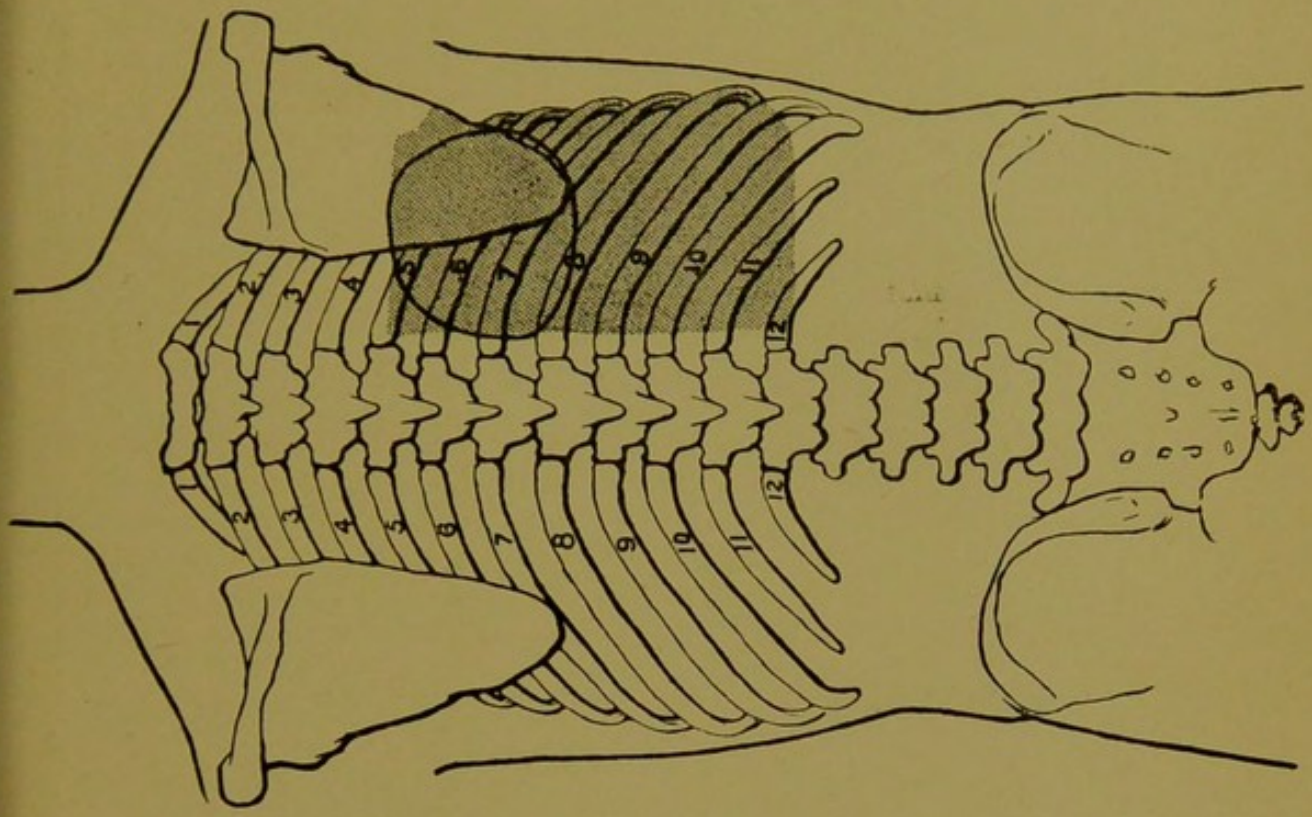
The patient was a boy, æt. 18, who was admitted into Guy's Hospital under my colleague, Mr. Howse, for an abscess of obscure origin in the left groin. This abscess communicated with the descending colon. He was ill about ten months in all, and died worn out by emaciation, suppuration, and lardaceous disease of the viscera.

At the inspection a pelvic abscess was found, which had burrowed about in various directions forming sinuses in each groin and also in the left loin, the latter opening also into the colon. The abscess had opened also into the general peritoneal cavity and set up suppurative peritonitis. The colon was ulcerated and there were appearances in the cæcal appendix which looked like the scar of an old ulcer. For this reason, because no other probable source of abscess was to be found, I concluded that typhlitis had possibly

been the cause of all the mischief. The left pleura was the seat of a local empyema; there were infarctions in the lung and a lardaceous spleen and intestines. The state of the liver is also particularly worthy of record. The portal vein was completely occluded, its walls much thickened, and containing in its centre purulent matter tinged with bile-pigment. The greater part of the liver was perfectly healthy, but in various parts scars were found which mostly had a caseous centre and in one spot near the surface was a distinct mass of caseous matter, apparently an old or residual abscess.

Under the microscope a quantity of new fibrous tissue was seen to have destroyed the liver substance almost completely at the spots described as scars.

The interest of the case seems to hinge upon the probability that the suppurative pylephlebitis had ended, not as usual in the death of the patient, but in cicatrization, and in doing so had set up isolated centres of cirrhosis such as have been described by Hanot, Charcot and others in connection with the ducts. A condition similar to this has been observed, and such cases have been recorded by Dr. Moxon and myself, to exist occasionally in the kidney.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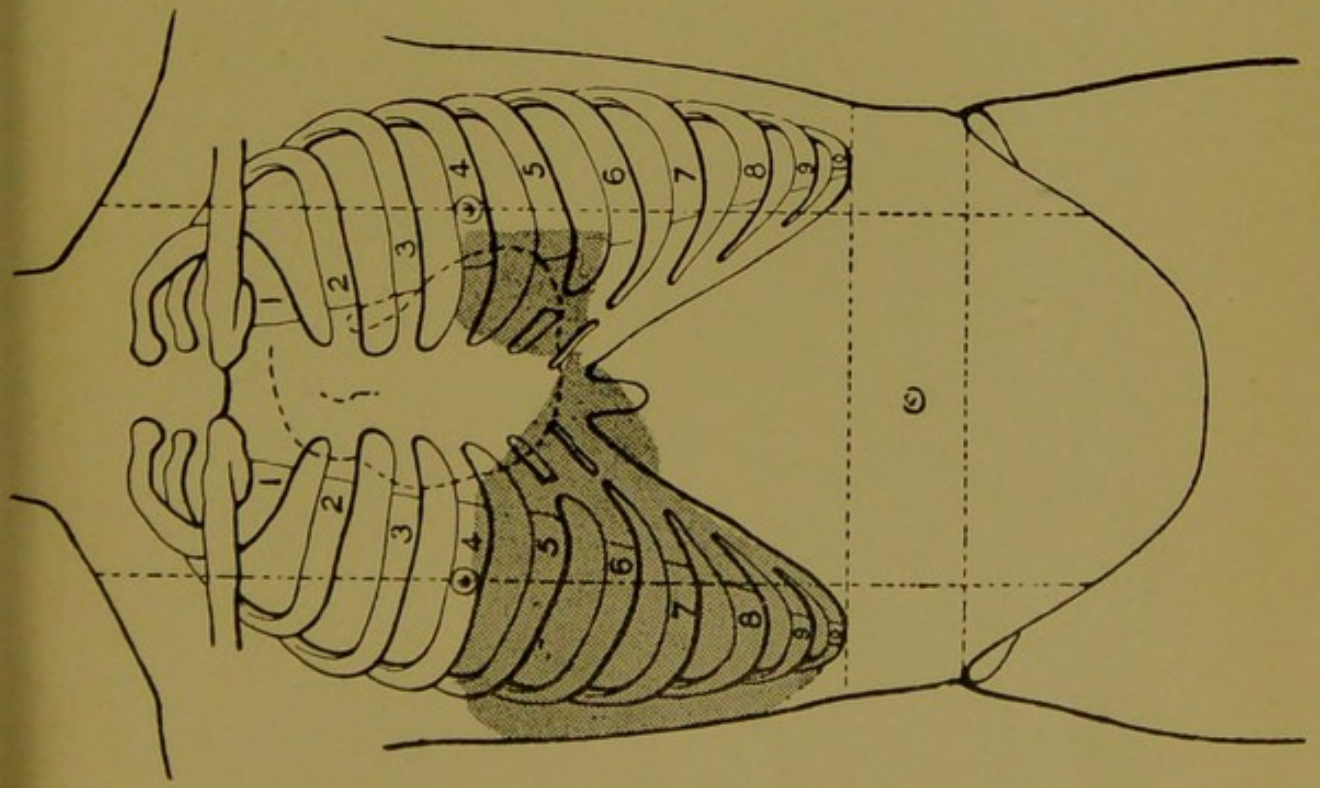
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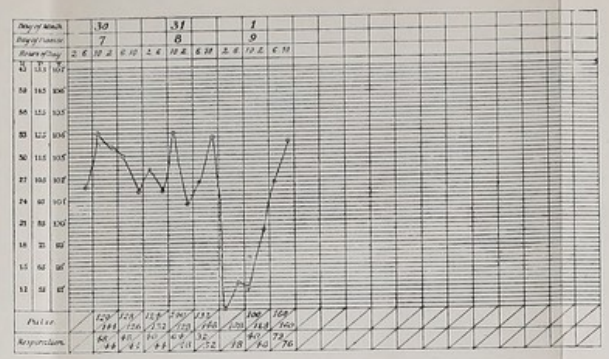

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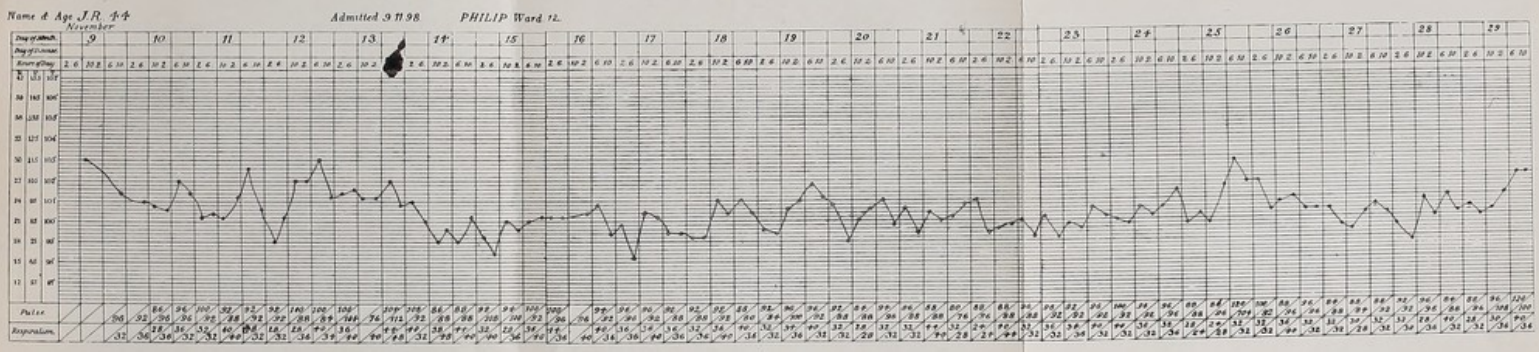
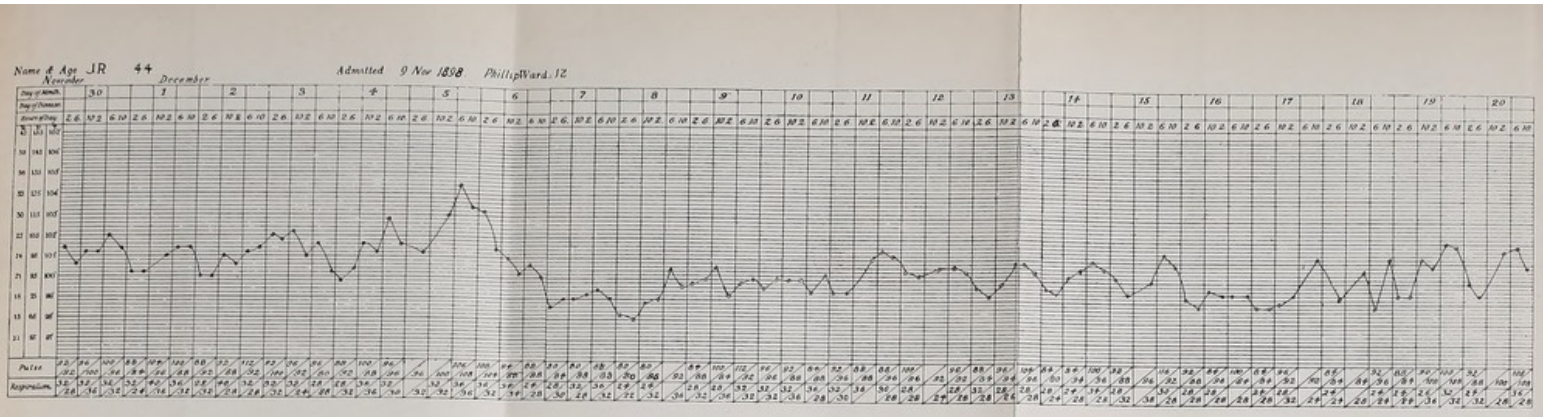


CASE 2.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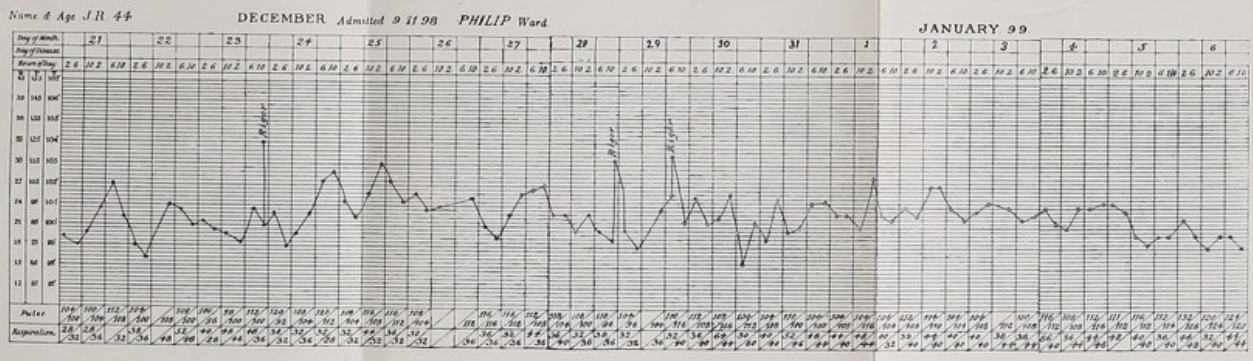
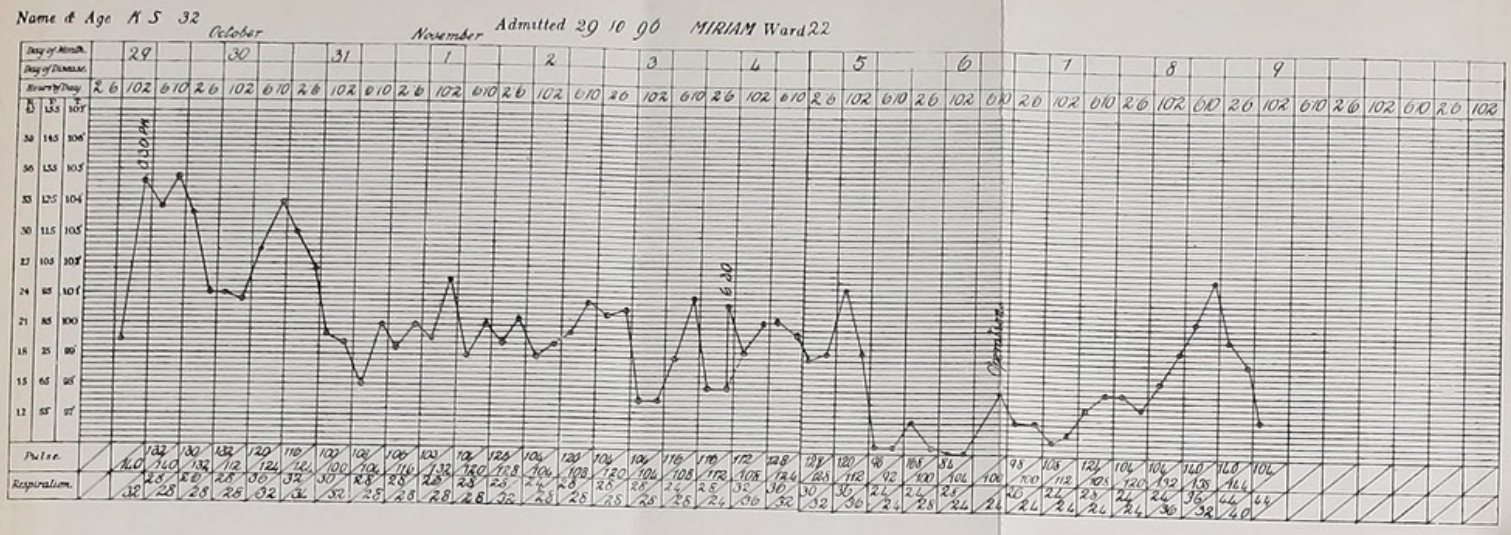
Respirations

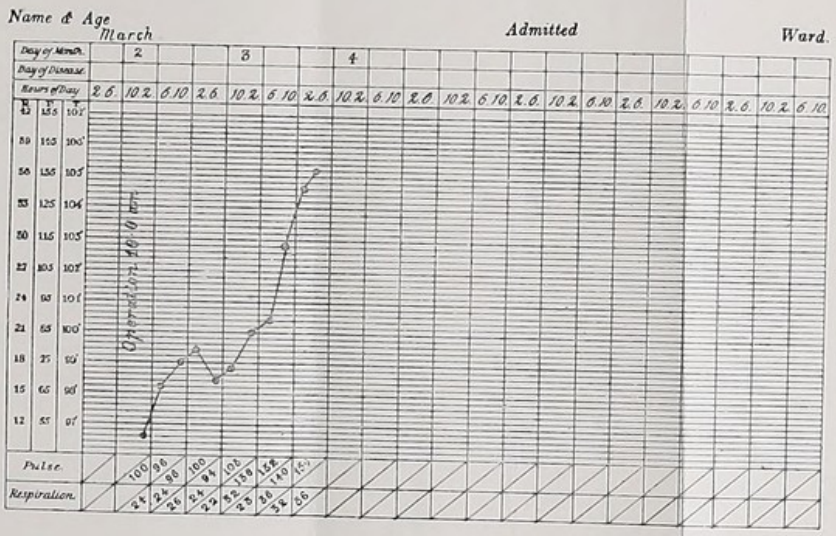
Case 2.


Name & Age J.R. 44
DECEMBER Admitted 9 11 98 PHILIP Ward
JANUARY 99
Day of Month
Day of Disease
Hours of Day
Pulse
Respirations

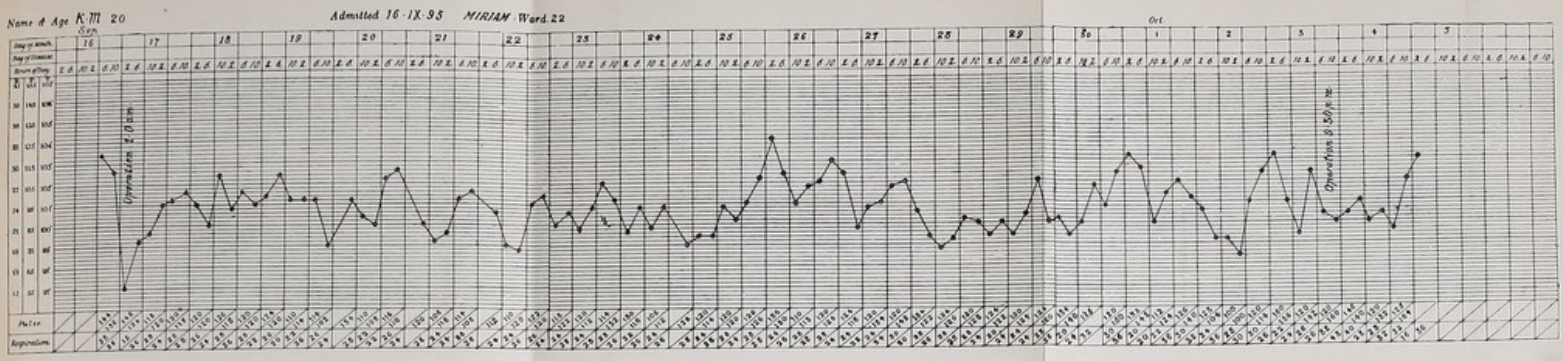
Case 2.


Name & Age M S 32
October
November
Admitted 29 10 96
MIRIAM Ward 22
Day of Month
Day of Disease
Hours of Day
Pulse.
Respiration.
Operation
Operation

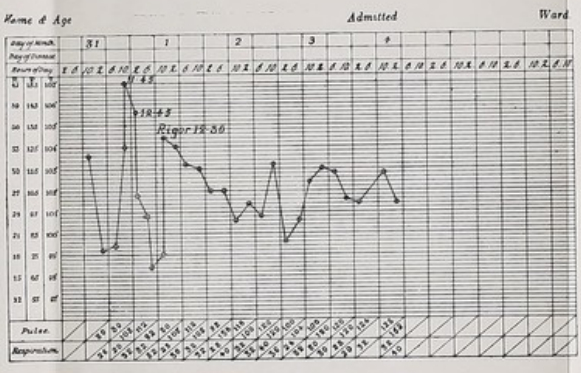
CASE 3.


Name & Age
March
Admitted
Ward.
Day of Month
Day of Disease
Hours of Day
Pulse.
Respiration.
Operation

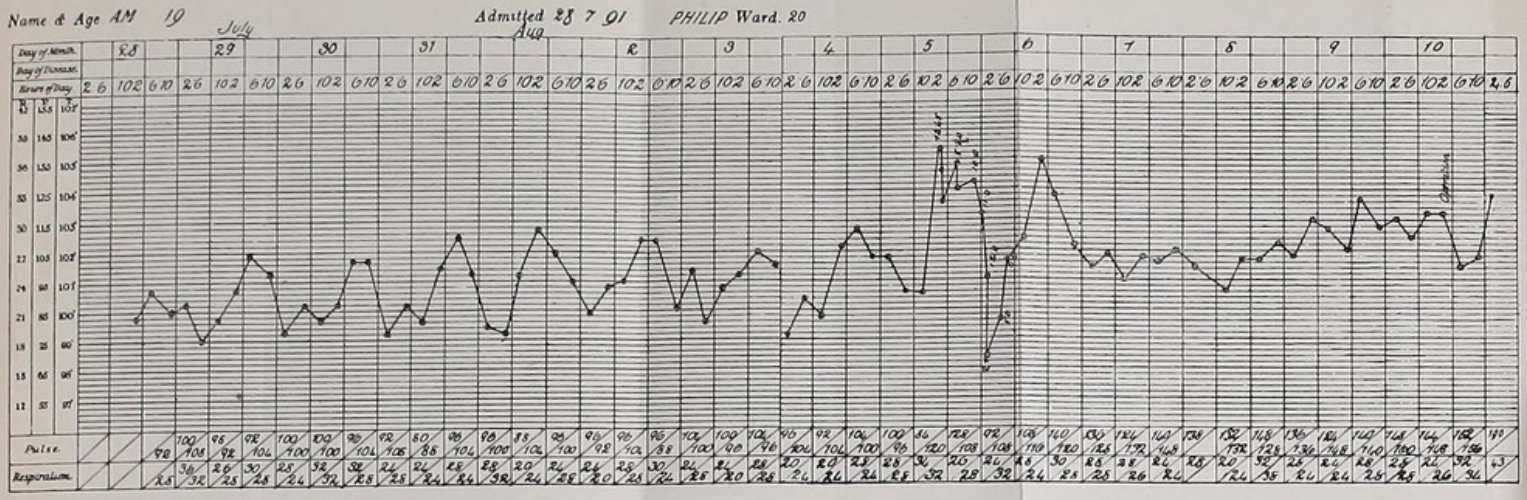
CASE 4.


Name & Age K.M. 20
Admitted 16-IX-95 MIRIAM Ward 22
Sep.
Oct.
Operation 2.0 a.m.
Operation 3.30 p.m.
Pulse
Respiration

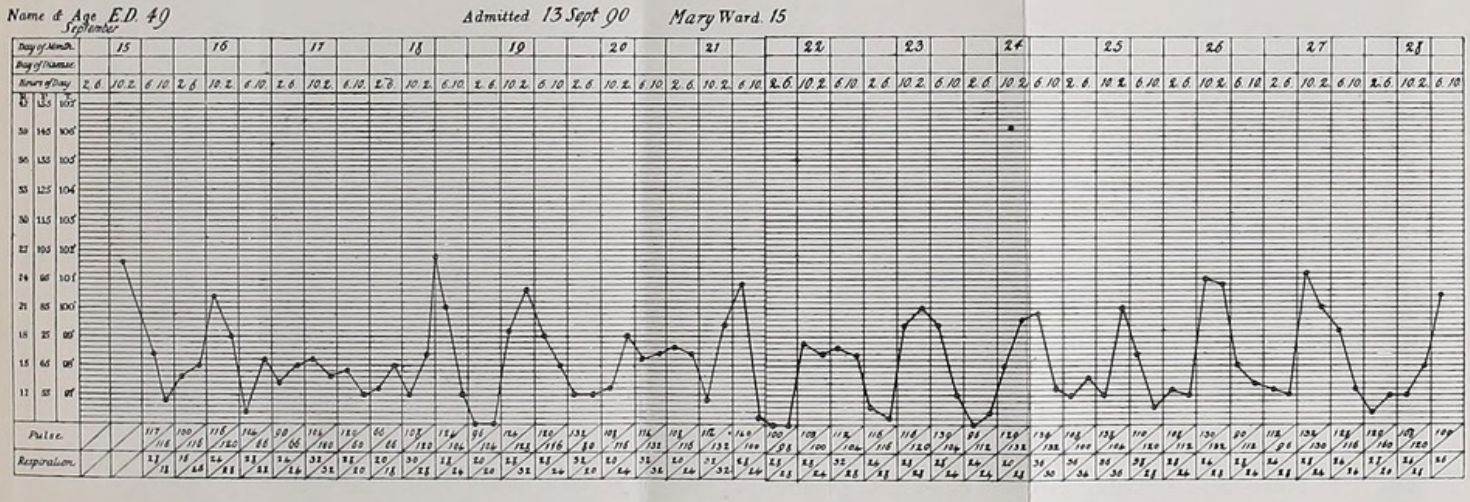
Case 5.


Name & Age
Admitted
Ward
9.45
9.45
Rigor 12.30
Pulse.
Respiration.

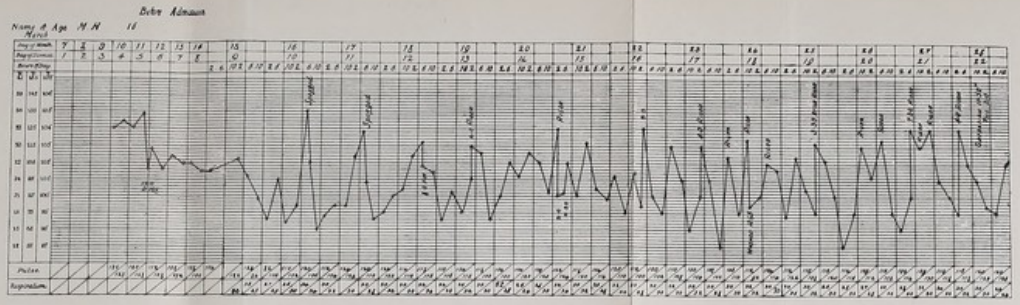
Case 6.


Name & Age AM 19
July
Admitted 28 7 91 PHILIP Ward. 20
Aug
Day of Month
Day of Disease
Hours of Day
Pulse.
Respiration.

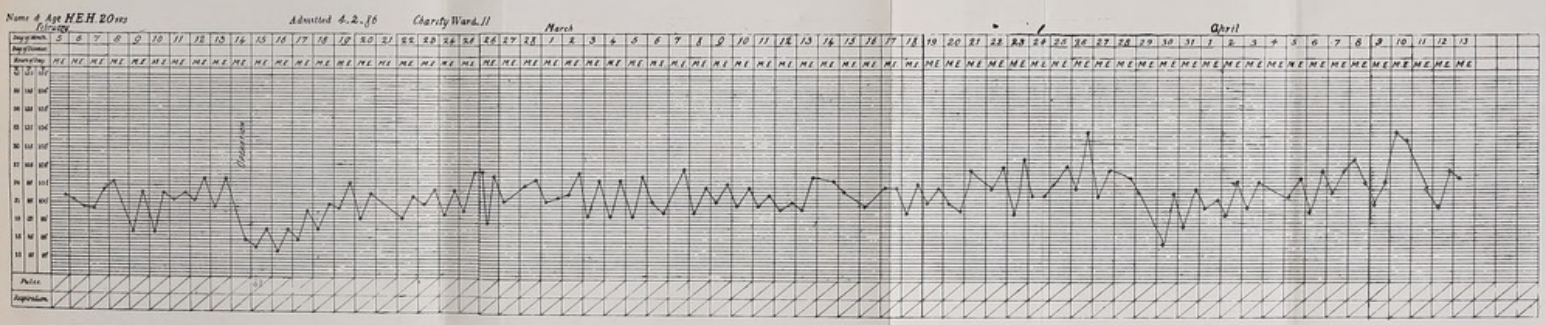
Case 7.


Name & Age E.D. 49
September
Admitted 13 Sept 90 Mary Ward. 15
Day of Month
Day of Disease
Hours of Day
Pulse.
Respiration.

Case 8.



Case 9.



Case 10.