Title | Cardiac disease
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Author | Whiting, A. J.
Qualification | MD
Year | 1888

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- Formed by two case studies: numeration starts again with the second.
Wightman Prize Essay
for
Session 1887-1888
by
Arthur J. Whiting.

I. Case of Cardiac Disease (Aortic), with observations on Cardiac Dyspnoea and Cheyne-Stokes' Respiration.

II. Case of Cardiac Irritability (with Mitral Stenosis), and observations on lateral transposition of the Thoracic and Abdominal Viscera.
Report and Commentary—
on a case of
Cardiac Disease,
(Aortic Stenosis and Incompetence;)
with Observations on
Cardiac Dyspnoea
and
Cheyne–Stokes' Respiration:

by Arthur J. Whiting.
Name: Robert Ling
Age: Fifty-seven years
Occupation: Labourer in an Iron Foundry.
Place of Birth: Middlesex - The West End of London.
Place of Residence: 6, Prinseose Place, Abbey Hill, Edinburgh.
Date of Admission: February 27th 1888.
Date of Examination: February 27th – March 1st 1888.
Complaint: Shortness of breath and cough, pain in the chest and swollen legs.
Duration of Illness (of the acute attack): Five days.

Arthur J. Whatling
History:

**Hereditary Tendencis** – patient's father and mother have been dead for about thirty-five years. The father sustained an injury to his back when lifting a heavy load and died in the course of a few days. The mother died in childbirth. Patient is the second of a family of six, and is the only survivor. One brother was killed by a fall from a lofty building. One sister was drowned. The others died while patient was serving abroad in the army; the causes of their death are unknown to him. There is no history of Acute Rheumatism or of heart affections amongst his near relatives.

**Habits as to Food and Drink** – patient has always had an ample supply of nutritious food. He sometimes takes porridge, about twice a week. He takes butchers' meat three times a day, with which he drinks tea. He has always taken alcohol freely, with and without food, especially without; abstaining only from taking it when he lacked the means of purchase. For three or four days after his wife's death, which occurred ten weeks ago, he drank somewhat heavily, taking four or five glasses of whisky during the day, also a pint of beer, and at night more whisky. He has taken whisky also every day since. He has never smoked tobacco.

**General Surroundings at Home and at Work:** his house is surrounded by the railway and breweries. The locality is healthy and the house dry. At the foundry he has to make the sand ready for the moulders to work their iron. He...
helps to carry the metal and to hoist the cranes, which entails occasional severe exertion. He works nine and a half hours in the day; he is frequently exposed to extremes of heat and cold.

Previous Illnesses and Accidents: patient's health before the commencement of the present illness (with the exception of a slight cough since the beginning of the winter) has been good. He had a clean medical register sheet after twenty years service. In 1865 he had an attack of Ague when in India. There is no history of phrenic or venereal disease. As to accidents — when a boy a saw went over his leg without seriously injuring him. In 1859 as he was going into Lucknow, under Havelock, he was hit on the leg by a spent bullet, which caused a superficial wound. About five years ago he was shamed while loading a crane which resulted in an inguinal hernia. Two years ago he was burned on the dorsum of the foot with molten metal.

Time and Mode of Origin and Course of Present Illness: the present attack commenced on the evening of Wednesday, February 22nd 1888. During the preceding three days which were very cold, he was working outside, and took a bad cold (as he described) with frequent attacks of shivering, "something like the ague"; this he supposes to have been the cause of the present trouble.

About nine weeks ago (one week after the death of his wife and a few days after his acute alcoholic attack) he and two
others were carrying a heavy load of metal weighing 2½ cwt. He made a false step from treading upon a piece of iron and suffered a sudden jerk; he then experienced an aching pain in the chest and a sudden weakness came over him, both of which went away there and then. About a week after this (eight weeks ago) he was first conscious of a sensation of breathlessness. It was when walking quickly or on making any unusual exertion that he noticed the shortness of breath, then "a sudden weakness seized him and the breath seemed to leave him." He would recover his breath after about two minutes and be all right again.

Then he noticed swelling of his feet and ankles for the first time about five weeks ago. On going to his work in the morning he had to use a shoe-horn to get on previously easily fitting boots; at night the swelling was quite gone. He noticed that at the time his feet began to swell the pain became worse. His cough has been bad for about a fortnight, but he had had a slight cough since the beginning of the winter. On Monday, Tuesday and Wednesday the 20th, 21st and 22nd of February he felt the cold weather severely, his cough being very troublesome, and he began to suffer regularly from attacks of pain in the chest, once or twice a day. On Wednesday morning his legs began to swell so that he had difficulty in putting on his trousers.

He came home on Wednesday evening (from work) shivering and shaking, and could not take his food. He sat over the fire until eight o'clock when he took some warm porter and went to bed. Immediately thereafter he began to feel
very breathless, as he describes "the breathless" came on all at once, like a stoppage at the chest" and he could not lie down for six hours. He slept for about an hour and a half and woke up on Thursday morning feeling weak and a tendency to faint. He could not take any food at breakfast time but during the morning he took a little beef tea and some port wine. His cough being very troublesome he sent to a druggist for some medicine, "for a cold," a cough mixture was brought which he thought gave him a little ease. The breathlessness became gradually more distressing and was worse on exertion. On Friday morning, after a very bad night, his feet and legs became very much swollen, and at night he noticed that his face was becoming puffy. The pain in the chest was very troublesome, on Friday night, it came on suddenly and was aching in character; it was so bad that he applied a mustard plaster over the left side of the chest; he put on another on Saturday night and a third on Sunday. The breathing continued to be very bad, he was prevented from sleeping on Friday, Saturday, and Sunday nights. On Sunday morning he noticed that his legs were more swollen, and still more on Monday morning. His employers at the foundry advised him to come to the Hospital. He left Abbeyhill at ten o'clock and walked to the Infirmary in an hour and a half. He accomplished his journey with great difficulty on account of the extreme breathlessness and
the intense pain; he suffered from an attack of faintness on his way and had to sit down. He was admitted into Hospital (to Ward XXVI under the care of Professor Fraser) on Monday morning, February 27th, 1888.

Epitome of Health History:

1. Patient unusually alcoholic for three or four days after the death of his wife which occurred ten weeks before admission;
2. Strained when lifting a weight nine weeks before admission;
3. Onset of breathlessness eight weeks before admission;
4. Onset of swelling in feet and ankles five weeks;
5. Onset of cough two weeks before admission; and
6. Onset of acute attack five days before admission.

Commentary on the History of the Case:

Patient is a man of strong constitution with good hereditary history. He is a soldier of twenty years service and has passed through the privations and hardships of the Crimean War and the forced marches and strain of the Indian Mutiny; and this without having suffered from any more serious illness than an attack of ague. The weak point in his personal history appears to be his alcoholic habits. When on active service he took alcohol freely, but not to excess, according to his own account. Since his discharge in 1874 he has admitted he was occasionally intemperate. About ten weeks before his present illness in December 1887 he had the great misfortune to lose his wife. Suffering under the depressing in-
fluence of grief he is seized with a paroxysm of interrup-
tance which lasts for some days. He resumes
work receives a strain when carrying a load of
iron, feels a sudden pain in the chest and weak-
ness which are followed in the course of a week by
a hitherto unknown condition of dyspnoea on exertion.
three weeks thereafter by anaesthesia of the lower limbs to
which is added congestion of the lungs and cough which
reach an acme - of paroxysmal attacks of intense breath-
tlessess, continuous dyspnoea preventing sleep, and ex-
trusion of the oedema to the face, - nine weeks after
the accident, compelling him to give up work and ul-
timately to seek advice at the Hospital.

These symptoms point to a traumatic cardiac lesion,
the predisposing cause being alcoholism and the exciting
cause the strain of the accident.

State on Admission

General Facts: Patient's height is 5 ft. 6 inches,
his weight is 115 ½ lbs. There is evidence of his having
been a well developed muscular man (the clavicles are well
curved etc.) now his muscles are soft, flabby, and some-
what wasted.

Obvious Morbid Appearances: There is considerable
subcutaneous oedema of the face, especially of the under eye-
lids and of the skin covering the malar bones. The Ab-
domen is tense and projecting from hepatic enlargement.
(there is little if any ascites.) The serotum itself is slight
fly oedematous, any tendency to hydrocele is concealed by the large scrotal hernia. There is intense oedema of the lower limbs, especially of the skin as high as the knees, of the dorsum of the foot, ankle, and leg. The swollen skin falls on pressure and the indentation disappears slowly. Measurements of the greatest circumference of the several regions, right instep 11 inches, left 10 3/4 in.; right ankle 15 3/4 in., left 16 inches; right calf 15 3/4 in., left 16 inches; right knee 14 3/4 in., left 15 1/2 inches; right mid thigh 16 1/4 in., left 17 3/4 inches.

There is not any oedema of the arms. There is pallor of the cheeks, with an irregularly distributed weather-beaten, bronzed colouration. There is capillary injection of the skin of the nose giving it a bluish-red appearance. The lips are distinctly cyanotic. There is jaundice of the face and conjunctivae.

**Evidences of Injury or Previous Disease**: Patient has a reducible inguinal hernia distending the scrotum to the size of a cocoa-nut. It came on after sustaining a severe strain at his work with the handle of a crane and has existed in its present condition for more than five years. He has worn a useless truss. On the inner side of the right leg over the tuberosity of the tibia is a scar, the remnants of a wound received by being run over by a van when a boy. On the dorsum of the left foot is an old scar from a burn received in the iron foundry. On the outer side of the left leg above the ankle is seen the remnant of a superficial bullet wound received in the Sudan War in
which healed and reopened. In its neighbourhood there is considerable venous congestion of the skin, which has an erythematous appearance.

**General Appearance and Expression of Face:**
 pacientes' general state of nutrition appears to be good. His facial expression indicates mental distress and embarrassment breathing. The Arcus senilis is very conspicuous, forming a complete ring round the iris.

The temperament is not well marked. Patient lies on his back or on his left side with his head and shoulders raised, being propped up in bed with pillows.

The temperature is normal 98.4°F.

**Commentary:** On admission the most striking external morbid phenomena were an agonizing condition of dyspnoea, intense cyanosis of the lower limbs, marked oedema of the face, which was distinctly cyanotic and jaundiced, and distension of the abdomen, not ascitic but by the enlarged liver.

**Circulatory System:**

**Subjective Phenomena:** patient suffers from an intermittent aching pain, referred to the front of the chest wall above the body of the sternum. There is no angina. He has never had palpitation. He has occasionally a feeling of faintness. Dyspnoea is patient's most distressing symptom. It prevents sleep so that he has only slept six or seven hours in all. Since the commencement of his present illness, (existing over a period of six days) The dyspnoeic condition is
constant and exhibits exacerbation at irregular intervals of time, in the form of paroxysms of breathlessness. These paroxysmal attacks of dyspnoea occur about five or six times in the day. Each lasts about three or four minutes. They are precipitated by (1) exertion (2) nervous excitement (3) when he "comes on to cough" (4) by change of position, (a) in bed, as during the physical examination, (b) when before admission he was getting into bed, after sitting by the fire, (c) since admission, especially in the early morning, by going to the turret, (here chill would have some influence also) Suddenly he has a feeling of faintness and "a catching in the throat as if he were about to be suffocated". He feels as if he wanted to vomit. He experiences a sensation of constriction in the region of the chest "just like as if he were strapped across". Each paroxysm comes on gradually, reaches a climax, and then gradually passes off, leaving him feeling very weak. The condition is relieved by sitting up in bed.

The effect of treatment upon the dyspnoea, which was commenced on Thursday, March 1st 1888.

At 10 A.M. one grain of Nitrite of Sodium was administered, he felt immediately great relief "as if a load was taken off his chest". He sat up in bed for a while appearing quite bright.

At 4.30 P.M. the first dose of five minims of the tincture of strophanthins was given. Five minims were
Trace copy of stethogram, taken with Narup Polygraphe - March 20th 1888.

Robert Dying

Pulse 84 - Respiration 27

per minute.
then given every fourth hour. At 8.30 p.m. (after mV and T. Stophanuth.) the breathing speedily became more tranquil, freer and less laboured. It decreased in frequency. It continued thus for thirty minutes, at least. Patient began to feel drowsy and expressed himself as feeling much more comfortable as to his breathing. He had the best night since the beginning of his present illness: sleeping for about two hours. (2 hours.)

March 2nd, Friday: Patient had a paroxysmal attack of dyspnoea before breakfast after a visit to the sunset. Patient is to be allowed out of bed. At 12 noon patient had an attack of Cheyne-Stokes' respiration; he noticed and remarked that he was breathing as "if he was laughing"; a whistling sound was produced. He felt cold all over. He felt his feet to be cold; (they were not appreciably cold to the touch, a hot-water bottle however had been applied to them for some minutes after.) He had a cold shivering. He experienced sensations as if he wanted to sleep but could not. He was more cyanotic during the attack, the face of a more dusky hue. At 5 P.M. after the taking of a sphygmographic tracing with Professor Marcy's polygraph he had a second attack of paroxysmal dyspnoea, like that of the morning but not so bad.

At 8.15 P.M. after five minutes of excursion Stophanuth thus the breathing was observed to become at once easier.
he became apparently more comfortable. He expressed a hope that he would sleep well. The breathing was observed to continue comparatively unembarrassed for over half an hour. During the night he was given the eighth of a grain of Morphina I slept fairly well.

Saturday, March 3rd at 12 o'clock - Noon - Cheyne Stoke. Breathing is again observed. Patient appears to be in a somewhat comatose condition; during the apneic period his eyes are shut and there are twitchings of the muscles of the ball of the left thumb and contractions of the pronators of the left forearm and hand approaching the clonic spasm character. He feels that he 'wants to sleep and cannot'. He wakes up from his semiconscious state at the beginning of each apneic period. He complains of flatulence and of an aching pain in the chest.

Observation I - The whole respiratory cycle lasted fifty-three seconds; the apneic period lasted thirty-five seconds during which there were eighteen respirations which gradually increased and then decreased in depth. The apneic period lasted eighteen seconds during which muscular twitchings (as above) were observed. Formula D \( \frac{35``}{XVIII} \) A 18``.
Observation II. One apnecic period lasted thirteen seconds and the next sixteen seconds. The dysnecic period lasted thirty-four seconds during which there were laboured respirations. During the apnecic periods were observed muscular twitchings. Formula A13 D 35 A16

Observation III. Formula: A22 D \frac{35}{XXIV} A25

Observation IV. Formula: D \frac{28}{XX} A13

Observation V. Formula: A11 D \frac{36}{XXIX} A13

Observation VI. During the period of dysnecia there were forty-one pulse beats in twenty-eight seconds; during the period of apnecia there were twenty-four pulse beats in nineteen seconds; that is during the dysnecic period at the rate of eighty-eight beats per minute, and during the apnecic period at the rate of seventy-six beats per minute.

Sunday, March 4th, 1888 - Patient had an attack of paroxysmal dysnecia this morning at seven o'clock; for which no cause could be assigned.

At 1 P.M. patient was breathing twenty-seven times per minute, with marked rhythm of Cheyne-Stokes respiration. He had the anxious appearance of embarrassment of breathing. During the apnecic periods there was general muscular jerking; the eyes were closed; there was increased venous congestion of the face, great throbbing of the carotids and nodding or jerking movements of the head.
the arterial pulsations. Slight heaving of the chest wall was occasionally observed -
the muscular movements during apnoea consisted of chronic apneuic abduction of
the right arm and indefinite jerkings of the legs. During the dippuicic period
the alas rasi were working; the drowsy condition vanished and the patient ap-
peared to be keenly conscious of his dippuicic state. The drowsy look sometimes
continued into the dippuicic period to a point about midway between the commen-
cement of dippuic and its acme; that is for about six respirations he was
hemidippuic with the apnomic appearance. He complained of a feel-
ing of tightness in the chest which came on about the beginning of dippuic
or with the end of apnoea and passed off between the acme of dippuic
and its termination.

Observation I.

Formula A 10" D $\frac{33}{xvi}$ A 13" D $\frac{29}{xv}$.

Observation II.

(35"

Drafty look.

First the tightness in the chest: "Now it has gone away."

Observation IV.

Apnoeic period.

= Heaving of the chest wall.
Sunday March 4th 1883. at 8:30 am: patient has slept for half an hour and is lying much lower in bed, the head alone raised. His breathing is comparatively unvaried and raised. He is perspiring freely. Twenty-four respirations in the minute.

During the apnoeic period he has the characteristic somnolent appearance; towards its end there are muscular jerks and working of the face. The chest heaves five times during the period of apnoea, or once every three seconds on an average.

At the beginning of the apnoeic period he opens his eyes, appearing to wake up.

During the fifteen seconds of apnoea there were eighteen pulsebeats at the rate of 12.

During the thirty seconds of apnoea there were forty-five beats at the rate of 90 per minute.

Observation I. Formula A D \(\frac{33''}{XVI}\) A 20''

Observation II. Formula D \(\frac{32''}{XVI}\) A 18''

Observation III. Formula D \(\frac{33''}{XVI}\) A 16''

Observation IV. Movement of the chest in Apnoea

1) Four 'heaves' in thirteen seconds
2) Four 'heaves' in eighteen seconds.
Monday, March 5th, 1888. At 12 o'clock, noon, there was only a slight tendency to Cheyne Stokes' Respiration. There were eighty-seven pulse beats and thirty-three respirations in the minute.

At 1.50 p.m. after patient had dined there was marked Cheyne Strokes breathing. Patient remarked "there seems to be a little tightness here" on the chest. The characteristic rhythm was not fully developed; occasionally between two distinct respiratory cycles was a period in which the respiration approached the normal — an intervening phase of "hemidiapnoea" and "hemiaipnoea."

Observation I. Formula \( \frac{4\frac{3}{4}}{10} \text{ AV} \)

Observation II. \( A \frac{15}{V} \)

Observation III. \( D \frac{33}{XVIII} \frac{A/10}{V} \)  \( D \frac{29}{XIII} \) = Formula

Observation IV. Formula \( \frac{34}{10} \frac{A/15}{V} \)

Observation V. Pulse rates: Diapnoea 36 beats in 25"; 40 beats in 30 seconds (= 86\(\frac{2}{3}\) or 88\(\frac{1}{3}\)). Hemiaipnoea 30 beats in 15"; 35 beats in 17 seconds (= 80 or 88\(\frac{1}{3}\)).
Monday, March 5th at 7:45 P.M.: patient was observed (for the first time) to be lying on his right side, and asleep. There were eighty-seven pulse beats and twenty-eight respirations in the minute. Temperature 98°F. There were general convulsive shakings at intervals. The face was much congested. The dyspnea was more exaggerated than in the morning, but the apneic periods still occurred irregularly, being occasionally replaced by a period of very shallow breathing: "hemi-apnea.")

Observation I. Formula \( (\frac{D}{V}) \ A \frac{26}{XI} \ D \frac{23}{XI} \ A \frac{22}{V} \ \frac{D}{V} - A - D \ \frac{48}{XI} \)

Observation II. Formula \( D \ \frac{18}{IX} \ A \frac{17}{A} \ D \frac{25}{XI} \ A \frac{10}{IV} \ \frac{D}{IV} - A \frac{15}{V} \)

Observation III. Formula \( A \frac{12}{IX} \ \frac{D}{IV} \ A \frac{40}{A} \ D \frac{38}{XVII} \ A \frac{17}{A} \ D \frac{30}{XI} \ A \frac{20}{IV} \ D \frac{30}{XIV} \ A \frac{13}{XI} \)

Observation IV. Formula \( D \ \frac{27}{IXV} \ A \frac{10}{IV} \ D \frac{43}{XVII} \ A \frac{9}{A} \)

Observation V. Pulse-rate

Dyspnea

(1) 50 beats in 40" = 75 per minute.

(2) 39 beats in 29" = 86 \frac{2}{3} per minute.

Apneic

(3) 19 beats in 15" = 76 per minute.

(4) 25 beats in 19" = 79 per minute.
Tuesday, March 6th 1888: at noon, patient's breathing was comparatively tranquil; there was little congestion of the face. The pulse was fairly well filled between the beats. There was a very slight tendency to Cheyne-Stokes' breathing. Patient did not exhibit any dyspnoea, but was inclined to be apnoeic at regular intervals.

Observation:

On the immediate effect of Stophanthins upon pulse and respiration.

Before Stophanthins:

Pulse - seventy-one beats per minute.

Respiration - twenty per minute:

The breathing was shallow.

Dyspnoea - absent.

Apnoea - well marked.

After T. Stophanthins mV:

Pulse - sixty-nine beats per minute.

Respiration - twenty-four per minute:

The breathing became more rapid, deeper and freer, immediately after the medicine was swallowed.

Dyspnoea - absent.

Apnoea - absent.

The apnoeic tendency disappeared.

At 8.30 PM, the Cheyne-Stokes' breathing was practically gone.
Wednesday, March 7th 1888: at 10.30 A.M. patient's face was somewhat pale; he was lying on his side, with his head only propped up. Temperature 97°F. Pulse seventy-three beats per minute, somewhat irregular and weak. Respirations twenty-seven per minute, quite tranquil, rather shallow, with a slight tendency to the Cheyne-Stokes' type.

At 7.30 P.M. patient's face rather pale, cyanosis practically absent. Pulse seventy-nine beats per minute. Respirations twenty-one per minute.

Observation I. Formula \[ \frac{D}{x_{11}} \cdot \frac{A_{12}}{V} = \frac{D}{x_{11}} \cdot \frac{A_{18}}{V} \]

\[
\begin{array}{cccc}
(50') & (30') & (42') & (12') \\
(30') & (40') & (20') & (60') \\
\end{array}
\]

Observation II. Formula \[ \frac{A_{10}}{IV} \cdot \frac{D}{x_{14}} \cdot \frac{A_{20}}{VII} = \frac{A_{10}}{V+x_{13}} \cdot \frac{D}{IV} \cdot \frac{A_{22}}{IV} \]

\[
\begin{array}{cccc}
(40') & (50') & (60') & (48') \\
(30') & (60') & (60') & (10') \\
\end{array}
\]
Thursday, March 8th 1888 - at 12:40 A.M. patient feels the ward to be very warm indeed, the thermometer registers 63° F. His temperature is 98.4° F. His pulse beats seventy-seven times per minute. Respirations twenty-seven per minute and regular, without any indication of Cheyne-Stokes' breathing.

At 8:30 P.M. patient is perspiring very freely, complains greatly of a sensation of oppressive heat. His temperature is 97.4° F. His pulse beats eighty-three times per minute. Respirations twenty-six per minute, breathing regular, somewhat shallow and markedly abdominal in type.

Swung sixty seconds.

Twenty-six respirations.
Commentary:

What is the most probable cause of this abnormal respiratory condition? There is apparently a relation of the function of elimination of waste products to the Cheyne-Stokes' respiration in this case. On admission the action of the kidneys was much below natural.

On February 28th the patient weighed 1150. 4½ lbs. and he passed 24 oz. of urine, which contained 185.4 grains of urea and other nitrogenous products, and a trace of albumen. On Feb. 29th he passed 180.3 oz. of urine. On March 1st he passed 203. oz. of urine. On March 2nd he passed 34 oz. of urine containing 230.7 grains of urea. On March 3rd he passed 236 oz. of urine containing 258.3 grains of urea. On March 4th he passed 100.3 oz. of urine containing 163.8 grains of urea. On March 5th he passed 116 oz. of urine containing 217 grains of urea; and the faint trace of albumen had disappeared. On March 6th he passed 26 oz. of urine, containing 241 yrs of urea. On March 7th the patient weighed 1050. 4½ lbs. he passed 62 oz. of urine, which contained 261 grains of urea. On March 8th he passed 102 oz. of urine, containing 405.75 grains of urea, and the breathing was normal for the first time since admission. Patient had thus passed during ten days 634.9 oz. of urine (during the first five days 142 oz. and during the second five 492 oz.) and lost one stone in weight (from 1150 to 1050. 4½ lbs. on March 7th to 1888.)
The waste and waste products accumulating in the blood, they or the results of their decomposition in the blood being supposed to produce and irritability and lowered vitality of the centres in the medulla, notably the respiratory (expiratory and inspiratory) and vaso-motor, would suffice to harmonize and explain many of the facts recorded in the preceding observations.

**Inspection of the Præcordium.** There is no unnatural prominence of the præcordial region, nor is there abnormal flattening. The cardiac impulse is not visible. There is slight redness of the skin of the præcordia, the remains of the marks caused by the application of a mustard plaster. In the suprasternal notch and along the course of the carotics there is visible, jerking, collapsing pulsation. At the root of the neck there is also visible pulsation of the superficial veins. On producing a capillary blush by drawing the finger over the skin of the forehead, there capillary pulsation to be seen. The capillary paralysis, produced by scoring the skin of the forehead, spreads over a comparatively wide area and persists for a considerable time.

**Palpation:** the cardiac impulse is very diffuse. The maximum impact (aper-beat) is felt in the fifth left interspace, at the upper border of the sixth rib, about six and a half inches from the midserreral line (and about one and three quarter inches external to the nipple-line).
A systolic thrill is felt in the vessels of the neck and is extremely marked in the right Subclavian Artery.

Percussion: the upper border of the heart is in the second interspace, at the level of the upper margin of the third rib. The apex is in the fifth interspace, six and a half inches to the left of the middle line. The right border is one inch from the right margin of the sternum. (The upper surface of the liver reaches as high as the level of the third intercostal space.)

Auscultation: the rhythm of the heart sounds is regular. In the Mitral area the sounds are very indistinct. The first sound is relatively accentuated. The second sound is hardly audible. The second sound is hardly audible — it is accompanied by an indistinct murmur (the propagation of the Aortic regurgitant murmur, probably afer.) In the Aortic area the first and second sounds are replaced by a double murmur, systolic and diastolic in rhythm. The character of the sound is blowing; almost a sirenly sound is produced by the confluence of the systolic and diastolic streams. The diastolic murmur has its point of maximum intensity at about the middle of the sternum. It is propagated down the sternum and is soft and blowing in character. The systolic murmur is heard most distinctly at the Aortic Cartilage, it is propagated upwards into the vessels of the neck and is better heard in the right Subclavian artery (in which it very marked-
(thrill is felt) than in the Carotic, owing to the shortness of the neck. It is rough in character. It is audible in the Radial artery close to the wrist. In the Tricuspid area both sounds are of low tone (flat) the first is relatively accentuated: the second sound is weak. The Aortic diastolic murmur is well heard. In the Pulmonary area both the first and second sounds are very weak, so that they can scarcely be heard.

The pulse beats eighty-nine times in the minute. It is regular and of considerable volume. It is easily compressible. Each pulse wave rises rapidly and continues at its maximum (or about its maximum) for an appreciable time; it then sinks rapidly. During the diastole of the ventricle the vessel appears on palpation to be nearly empty. The arterial coats are very slightly, if at all, atheromatous. There is no appreciable difference in the condition of the two radial arteries.

The Arteries though collapsible are not markedly so, on inspection, and their tortuosity is not exaggerated. The veins of the neck are distended and pulsating. There is no venous thrill. Not only in the jugular and superficial cervical veins are pulsation and overdistension visible but they are also conspicuous in the superficial veins of the wrists and the back of the hands. There is regurgitation of blood into the cervical veins from the right side of the heart.
Respiratory System.

Patient breathes twenty-seven times per minute. The breathing is costo-abdominal in type and is painless. Cough comes on at intervals, in paroxysms; it is most severe in the morning. It is often distressing, patient describes it as catching here in the throat. Each time of coughing he suffers pain across the lower part of the abdomen, radiating from the rupture.

The sputum is scanty, dark and of a pretty bronchitic character - it is not very viscous. Microscopically (8.11.88) it shows (1) cubical epithelial cell, molten and rounded, some apparently containing blood pigment, others undergoing fatty degeneration; (2) ciliated columnar epithelial cell; (3) squamous epithelial cell; (4) pus corpuscles; (5) mucous or salivary corpuscles and (6) fat. Inspection - the thorax is somewhat barrel shaped, short (from the upper margin of the manubrium sterni to the point of junction of the xiphisternum with the meso-sternum, it measures only five and a half inches.) It is narrow, but deep, antero-posteriorly. It expands, well and uniformly in all directions. In front on the right side the vocal fremitus is well marked, as also on the left. The percussion note is good all over. On auscultation in the infra-clavicular region of the right side, inspiration is a little harsh and expiration is prolonged, there is snoring rhonchus towards the end of
expiration. In the mammary region the auscultatory phenomena are similar. On the left side the sounds in the infracavicular region are very much the same as on the right side. The vocal resonance is not increased, but is well marked. Behind the vocal fremitus is fairly well marked all over. The percussion note is resonant in all the areas. On auscultation in the right supraclavicular region the breathing is heard to be vesicular, expiration is prolonged; in the right infraspinous the breathing is similar, and there are somewhat coarse crepitations with both expiration and inspiration. At the right base coarse crepitations mask the breathing. In the left supraclavicular region there are snoring rhonchi audible with both expiration and inspiration. In the left infraspinous region there are coarse crepitations with inspiration and a snoring rhoncus with expiration—the expiration is prolonged. At the left base the breathing is masked by coarse crepitations. The vocal resonance is well marked but not exaggerated on both sides.

Urinary System:

There is neither pain nor premonies in the loin, blad-
der or urethra. Richardion is not of unnatural fre-
quency: he has not made so much water since his ill-
ess began and it has become redder in colour. He began to pass a smaller quantity of urine four days before ad-
mission on February 23rd 1888.
The urine collected between 8 A.M. of Feb 28th and 8 A.M. of February 29th was examined on the 29th: quantity eighteen ounces, of a reddish brown colour, Specific gravity 1022. Slightly alkaline in reaction. A trace of albumen: no sugar: no blood. A trace of bile acids. No bile pigment is discoverable with Schubin's test. The quantity of urea passed during the last twenty four hours is estimated at 185.4 grains. The deposit is composed of a cloud of mucus, with whitish specks scattered sparsely throughout it. The microscope reveals triple phosphate crystals, tabular; pus corpuscles; desquamated tubular casts and renal epithelium.

Urine of March 2nd and 3rd: quantity 34.3: of an orange colour, opalescent. S.G. 1020 - faintly alkaline in reaction. Deposit of a cloud of mucus. Albumen is present in small quantity: no sugar: no blood. No bile pigment, but a trace of bile acids. 230.724 g. of urea were excreted within the last twenty four hours.

Urine of March 3rd and 4th: quantity 46.03: a faint trace of albumen: no sugar: no bile. Amount of urea excreted within the last twenty four hours 253.83 grains.

Urine of March 4th and 5th: quantity 100.3: of a pale yellow colour, clear. S.G. 1012 - neutral. No albumen: no sugar: no bile: no blood. Excretion of urea within the last twenty four hours 163.8 grains.

Urine of March 5th and 6th: quantity 160.3: clear; amber coloured; faintly alkaline: S.G. 1008 - no albumen.
etc. A trace of phosphates. Excretion of urea 217 grains.
The microscope shows tubular (coffin-lid) crystals of
triple phosphate; renal epithelial cells undergoing fatty
degeneration; epithelial squames from the bladder; and
pus cells.

Urine of March 6th and 7th: Quantity 8603. of an
amber colour, opalescent, reaction neutral; Specific
Gravity 1012 - a mucous cloudy deposit contains white
particles. No albumen; no sugar; no blood; no bile.
Quantity of urea passed during the last twenty four hours
241.488 grams - Microscopic examination shows a
few pus cells; scanty crystals of triple phosphate, 300-
shea masses of bacteria and epithelial cells from the
deep layers of the vesical mucous membrane.

Urine of March 7th and 8th: Quantity 6203. of an or-
ange colour, opalescent, a cloud of mucus - re-
action neutral - S.G. 1016. No albumen; no sugar;
no bile. Urea excreted during the last twenty four
hours 261.14 grains.

Urine of March 8th and 9th: Quantity 10223. of an
amber colour: opalescent: neutral: S.G. 1008. No al-
bumen: trace of phosphates. Urea excreted during
the last twenty four hours 405.75 grains.

Urine of 9th + 10th: March: quantity 7203. Amount
of urea excreted within the last twenty four hours 370.65 grains.

Urine of March 11th and 12th: 32 oz. of orange colour,
clear: S.G. 1020. Reaction faintly acid. No albumen:
no sugar: no bile: no phosphates. Amount of urea excreted within the last twenty-four hours 205.72 grains. The microscope shows epithelial squames and a few renal epithelial cells.

Urine of March 12th and 13th, quantity 30 oz. Amount of urea excreted 328 grains.

Urine of March 13th and 14th, 56 oz: clear, faintly acid in reaction. S. G. 1020. No albumen; no sugar; no blood. Amount of urea excreted 458.64 grains.

Urine of March 14th and 15th, 40 oz. Nothing found abnormal. Amount of urea excreted 270 grains.

Urine of March 15th and 16th, 40 oz. Nothing abnormal. Amount of urea excreted within the last twenty-four hours 355 gr.

Urine of March 16th and 17th, quantity 79 oz. Containing amount of urea estimated at 499 grains.


Urine of March 21st and 22nd, 52 oz. Urea 413 grains.

Urine of March 22nd and 23rd, 41 oz. Urea 307 grains.

Urine of March 23rd and 24th, 64 oz. Urea 464 grains.

Urine of March 24th and 25th, 58 oz. Urea 339 grains.

Urine of March 25th and 26th, 34 oz. Urea 198 grains.

Urine of March 27th and 28th, quantity 47 oz. — Examined and nothing abnormal found. Amount of urea excreted within the last twenty-four hours is 275 grains.
Alimentary System.

The lips are firm and not thick, they are of a good red colour, or would be if they had not a bluish tinge of varying intensity. The teeth are small, well formed and covered with a thick enamel. In the lower jaw they are crowded; and the first right praemolar of the lower jaw is decayed. The gums are red, firm and healthy. The tongue is large, moist, flabby, tremulous and covered with a slight grey fur. The fauces show considerable venous congestion and engorged capillaries. Patient has never had sore throat. Since the beginning of the present illness patient's appetite has been poor, the difficulty in breathing seems, as he says, to take his appetite away. Thirst is increased. He suffers from flatulence, before and after meals, of the bowels, and of the pharynx.

It appears sometimes to bring on pain in the chest, also pain in the lower part of the abdomen, in the region of the hernia. The bowels are quite regular, they are moved twice daily; the motions are pale and small in quantity. On inspection of the abdomen it is seen to be projecting and distended. On palpation it is felt to be tense, the distension is felt to be caused by great enlargement of the liver, (which is probably due to the effect of passive congestion superadded to the effect of cirrhosis and of fatty infiltration after.) Its lower margin which is firm and rounded extends to within two inches from the umbilicus, the intestinal coils being
pushed downwards. The abdominal walls are slightly oedematous. There is no tenderness on pressure. There is not to be felt any thrill of fluctuation. On percussion a dull note is elicited in the flanks (in part at any rate due to renal enlargement) the note is tympanitic round the umbilicus and elsewhere except over the solid viscera. The vertical hepatic dulness, in the mammary line, with the patient semi-recumbent, is 9 1/2 inches. (On Wednesday, Feb. 29th, 1888.)

On Monday, March 5th, the vertical dulness, in the same line is 8 1/2 inches: on March 10th, it was 6 inches and on March 17th, it was 5 1/2 inches.

**Haemopoietic System.**

The superficial lymph glands are enlarged, those of the neck and axilla, the inguinal and deep femoral chains of glands especially.

The splenic dulness merges into that of the heart and liver. March 14th, 1888. Percussion of the Spleen gives the following results: — upper border, at the anterior end corresponds with the lower border of the 7th rib; at the posterior end with the upper border of the 10th rib: the vertical diameter in the posterior axillary line is 1 3/4 inches; the longitudinal diameter is about five inches. The anterior end is 7 3/4 inches from the mid posterior line. The lower border at the anterior end corresponds with upper margin of the 11th rib; at the posterior end with the lower margin of 11th rib.
There is general enlargement of the Thyroid Gland, of
the isthmus as well as of the lobes.

Microscopic Examination of the Blood: the red blood
corpuscles are unnaturally pale. They are not so viscous
as in normal blood, they do not run into rouleaux
in the ordinary fashion. They are very soft and plastic;
many are crenatose. There are many of smaller size.
The white blood corpuscles are abnormally numerous,
there are a few large finely granular, some coarsely
granular; medium sized and some small finely granu-
lar corpuscles. Several microcytes. (March 10th 1888)

Estimate made on March 12th 1888—S.R. 1062—
Haemoglobin 56%. Haemocytes 5,120,000. Leucoocytes at
20,000.

Nervous System. (March 11th 1888)

Pain is felt in the chest sometimes associated
with flatulence, and occasionally after taking food.
Acute pain is felt across the lower part of the ab-
domen, on coughing, originating in the hernial pro-
jection. Patient experiences a sensation of heat,
especially at night, accompanied with a cold sweat
of the forehead. The sensibility to touch, pain
and tickling are naturally acute. Sensibility to heat
is slightly delayed. Sight is quite good. The pupils
are well and equally contracted. They react sluggis-
ly to light and on positive accommodation. The ar-
ous scleiris is very well marked.
Hearing, taste and smell are quite good. The organ-
ic reflexes are normal, with the exception of breathing
which is difficult and exhibits paroxysms of unctuse
dyspnoea. The skin reflex is not elicited over the
abdomen. The plantar reflex is well marked but
not exaggerated. Intelligence is good, above the
average of hospital patients. Attention, memory
and speech are all quite good. Sleep has been
very much disturbed and in great part prevented
by dyspnoea. There are no abnormalities of
cranium or spine.

Comentary on the Facts of the Case:
The leading facts are (1) precordial pain, (2) dys-
noea, (3) Anasarca, (4) Corregan's pulse, (5) Distension
and pulsation of the superficial veins, with regurgita-
tion of venous blood from the right side of the heart.
(6) Capillary pulsation, (7) Systolic thrill in the arteries
of the neck, (8) Enlargement of the heart, (9) Soft dias-
tolic murmur in the aortic area propagated down
the sternum, (10) Rough systolic murmur in the
aortic area propagated upwards into the vessels
of the neck, and audible in the radial artery at
the wrist, (11) Oedema of the lungs and bronchi, (12)
Congestion of the Kidneys with the passage of
a small quantity of urine, (13) Enlargement of the
liver caused by passive congestion added to early cir-
rhosis and fatty infiltration due to alcoholism.
Of these certain primary phenomena indicate the lesion to be aortic obstruction and incompetence, and are Corriigan's pulse, capillary pulsation, systolic thrill and double aortic murmurs, and enlargement of the left side of the heart. Acute Brouxitis supervenes, the liver already offers obstruction originating in alcoholism: there results dilatation of the right side of the heart, probably tricuspid incompetence, and compensation breaks down, if already established.

Then are added, auriculo-ventricular phenomena, namely, dyspnoea, anasarca, venous distension, with regurgitation into the veins, enlargement of the right side of the heart, with pulmonary, renal, and hepatic congestion. These last call urgently for treatment.

Provisional Diagnosis:

Anemia and incompetence of the semilunar valves of the aortic orifice of the heart.

Treatment:

Injection of Strophantin, Digitalis, Morphine; wet cupping in the loin; cough mixture; convalescent diet and bitter beer.

March 1st 1840: 1/2 Strophantin mg V every fourth hour.

5th 1/2 Strophantin mg V " sixth "

9th 1/2 Strophantin mg V " eighth "

April 13th 1/2 Strophantin mg Dr " eighth "
Further Report of Progress:

Feb. 28th. Sixth day of illness. Did not sleep well last night until he had Paraldehyde 3, which made him sleep soundly. Weight 115 to 1161/2 lbs.

March 3rd. Tenth day of illness. Slept fairly well last night after Morphine 1/8 gr. Dyspnoea not so severe as it was, and is somewhat paroxysmal in character. Cheyne Stokes' respiration observed yesterday, still continuing.

March 4th. Eleventh day. Slept much more soundly last night. Has not slept so well for more than a week. Wecarousel him in both legs, but did not draw off more than half an ounce of blood. Breathing is a last deal improved.

March 5th. Twelfth day. Cheyne Stokes' breathing very slight; has been sleeping well. Liver dulness 3/4 inch, decreased one inch in the mamillary line. Has not had an attack of paroxysmal dyspnoea since 7 A.M. yesterday. Sunday, the 3rd instant. No albumen in the urine; bile acids have disappeared. Still some jaundice of conjunctiva. Cheyne Stokes' breathing was more marked after patient had dined. Measurements of the arm, being the greatest circumference of the several regions:

Inches.

Right, 10 1/2 in.; left 10 in.; ankle, right 13 1/2 in.; left 13 1/2 in.; calf, right 13 1/2 in.; left 14 1/2 in.; knee, right 13 1/2 in.; left 14 in.; mid-thigh, right 16 1/2 in.; left 17 1/2 in.

March 6th. Thirteenth day. Slept well last night, for over four hours. Feels much more comfortable this mor-
-ving, attitude more natural. Breathing comparatively un-embarrassed. Complained that the last dose of medicine (T. Stophantri, m.v.) caused a feeling of nausea.

March 7th, fourteenth day. Did not sleep so well last night, very restless. Felt faint on sitting up in bed this morning. Feels weak, complains of pain referred to the midthoracic region; of a sensation of tightness in the chest somewhat paler. Respiration tranquil, and rather shallow. A very slight tendency to Cheyne-Stokes' respira-

tion. Pulse less jerking, and better filled between the beats.

March 8th, fifteenth day. Slept fairly well last night, waking up at intervals. When sitting up in bed this mor-
ing, in order to wash himself before breakfast, he was suddenly seized with dizziness of vision, "a regular darkness" came over him; he felt weak. The dizziness persisted for about two or three minutes, passing off grad-

ually; the blindness was momentary. About fif-

teen minutes afterwards frontal headache came on and persisted until the afternoon. Complains of "wheez-
ing" in his breathing. He feels the hand very warm in-

 deed; he feels the heat more oppressive than a tempera-

ture of over 100° F. in India. (The temperature of the

hand is 63° F.) At 8.30 P.M. perspiring very freely;

complains greatly of the heat, his surface temperature (axillary) is 97.4° F. Respiration very shallow; the

headache gone; complaints of pain in the left eyeball, superi-orly.
March 9th, sixteenth day. Did not sleep well last night, was restless. Frontal headache came on, before breakfast, as he was sitting up in bed washing himself, it persisted until noon. Breathing unembarrassed, almost natural, feels altogether better and stronger.

March 10th, seventeenth day. Did not sleep well, was restless. No faintness or headache on sitting up in bed before breakfast. Appears calmer, less anxious; breathing not troublesome, cough easy. Liver dulness decreased to six inches in the mammary line.

March 11th, eighteenth day. Was restless last night was given Morphia ½ gr. hypodermically, then slept fairly well. He feels fine this morning, his only trouble being a sensation of "weakness."

March 12th, nineteenth day. Was very restless last night but slept for 2½ hours. Feel well, only weak.

Measurements of legs - the greatest circumference of the different regions (to be compared with those of Feb. 27th page 9; and those of March 5th page 36) in step:
- Right: 9½ in.
- Left: 10½ in.
- Ankle: Right: 12½ in.
- Left: 12½ in.
- Calf: Right: 12½ in.
- Left 12½ in.
- Knee: Right: 13 in.
- Left: 13½ in.
- Mid-thigh: Right: 14½ in.
- Left: 15½ in.

Weight 93½ ¾ lbs.

There is now no oedema of the legs; there has never been any oedema of the arms.

March 13th, twentieth day. Slept well last night, the cough is rather troublesome, no hoarseness.
March 14th, twenty-first day. Had a very bad night. The least thing wakes him. He however feels much stronger this morning; he feels "fine." Yesterday he walked from the Clinical Theatre to the ward xxvi - up the steps without requiring any assistance and with but very slight breathlessness. The inguinal hernia was reduced this evening and kept in position by means of a pad and bandage.

March 15th, twenty-second day. Does not feel quite so well this morning. The hernia came down immediately; he began to cough. His bowels were moved five times during the night; the feces are loose and very pale.

March 16th, twenty-third day. Slept fairly well last night and feels very well this morning. Suffered from slight headache during the night. At 4:30 P.M. while sitting up in bed, drinking tea, he had a sudden attack of pain in the chest and breathlessness; he felt faint and weak and perspired profusely. He had severe aching pain over the precordium, referred into great vessel intensity to the mid-sternal region; the pain lasted for about three quarters of an hour and went away suddenly. The very profuse perspiration lasted for about twenty minutes. He was given brandy. He describes his condition as little that on admission.

March 17th, twenty-fourth day. Slept fairly well last night, no return of last night's condition. Feels well, only weak. Appears calm and comfortable.
March 18½, twenty-fifth day. Slept fairly well last night, troubled only with a feeling of weakness. Pulse less jerking and better felt between the bracts.

March 19½, twenty-sixth day. Slept fairly well last night; feels "fine" this morning. The vertical liver dullness is decreased to 5½ inches in the mammillary line.

March 20½, twenty-seventh day. Slept for only two hours last night. The slept for a considerable time during yesterday. Feels weak but well. Weight 93½ lbs. There is a very marked thrill to be felt in the subclavian artery, of the right side, and still more marked in the Transversalis Colli artery. It is most distinct in the systolic period, but is palpable during the diastole of the pulse. On auscultation the thrill is rather fine in sound character and is heard to be distinctly systolic and diastolic in rhythm.

March 21½, twenty-eighth day. Patient slept well last night and feels well this morning. Complains of a shooting pain in the left lumbar region posteriorly, felt especially on turning over in bed.

March 22½, twenty-ninth day. Slept well last night, feels "fine"; can complain of nothing but weakness.

March 23rd, thirtieth day of illness. Slept well last night. About 1:45 a.m. had an attack of pain in the chest with a feeling of general weakness, accompanied by profuse perspiration. He feels quite strong this morning.
March 24th, thirty-first day. Slept fairly well last night; walks about quite vigorously; is cheerful. The apex beat is now, and has been since March 4th, in the sixth inter-space, two inches external to the nipple line. A dull note on percussion is elicited over the mammaeum sterni.

March 25th, thirty-second day. Slept well last night; feels well this morning.

March 26th, thirty-third day. Slept fairly well. About 5.30 a.m., had pain in the chest, referred to the midsternal region, not shooting, but a dull aching pain, the most severe of any since the commencement of his illness. Lasted for about half an hour. He perspired profusely all the time.

March 27th, thirty-fourth day. Weight 95.5. 84 lbs. Slept well last night. Feels "fine" this morning, but he complains of feeling "dozy" (i.e., sleepy). He was allowed to be out of bed for three quarters of an hour this morning. When in the dozing condition the breathing approached the Cheyne-Stokes type, with twitches of the lips; when awake the breathing is very shallow. Pulse 76, and respiration 25 per minute.

March 28th, thirty-fifth day. Slept for five or six hours last night; feels "fine" and stronger.

March 29th, thirty-sixth day. Did not sleep well after midnight. Feels fairly well. He can hardly keep his eyes open this morning. Feels the temperature of the head to be very high (60°F) and "sweats fearful." He says...
 Conjunctivae are more jaundiced. The breathing approaches the Cheyne-Stokes type. Pulse, rate 69, is very easily compressed and diastole. Apnoea marked during a somnolent period. Breathing very shallow, rate 25. Deep apnoea at rather long intervals and not very pronounced. The condition began at 10 AM and passed off about 1.30 PM. At 4.30 PM, the breathing is natural, patient feels "fine" to night.

March 30th, thirty-seventh day. Patient slept fairly well last night. When he gets up to walk he feels quite vigorous. The breathing is natural.

March 31st, thirty-eighth day. Feeling quite strong and vigorous and is anxious to get up.

April 2nd, fortieth day. Patient had an attack of pain, sharp and spasmodic, over the precordia, lasting about half an hour. The pain was entirely localised, and did not shoot in any direction; it was relieved in about a minute by Nitroglycerine 1/20; he then slept well and this morning feels much better and stronger. He is still taking his food well.

April 3rd, forty-first day. Weight 9 st. 8 1/2 lbs.

April 5th, forty-third day. Patient is still keeping quite well; no pain; a good appetite, was allowed up yesterday, and feels no worse. Breathing quite regular.

April 6th, forty-fourth day. Patient complained of severe pain over the precordia last night, which was relieved by 1/2 gr. of Sod. Nitrite. He is much better this morning.
April 10th, forty-eighth day. Weight 956 11/4 lbs. Still keeping well though he was somewhat restless in his sleep during the night; he does not complain of anything.

April 13th, fiftieth day. Feeling quite strong again; has had no return of pain in the precordium; cough very much less troublesome.

**Commentary on further course of case.**

<table>
<thead>
<tr>
<th>Before treatment</th>
<th>Treatment begun March 1st 88.</th>
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<tbody>
<tr>
<td>1. Pulse rate 103.</td>
<td>1. Pulse rate 70 (March 6th).</td>
</tr>
<tr>
<td>2. Urine 18 oz.</td>
<td>2. Urine 102 oz. (March 8th).</td>
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<tr>
<td>3. Urea 135 grains.</td>
<td>3. Urea 1405 grains. (March 8th).</td>
</tr>
<tr>
<td>Paroxysmal dyspnoea.</td>
<td>Respirations quite normal by March 8th.</td>
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<tr>
<td>(Cheyne-Stokes’ probable.)</td>
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<tr>
<td>5. Quasarca, intense.</td>
<td>5. Quasarca absent by Mar. 12th.</td>
</tr>
<tr>
<td>7. Liver dulness, in mamilary line, 9/4 inches.</td>
<td>7. Liver dulness, in mamilary line on Mar. 5th 8 1/4 inches.</td>
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<tr>
<td></td>
<td>on March 19th 5 1/4 inches.</td>
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The further course of the case (after about a fortnight’s treatment) was one of steady progress, and the patient was dismissed, ‘very much improved’ on the twenty-second day of May, 1888.
Observations
on a case of
Lateral Transposition of the
Thoracic and Abdominal Viscera;
Abstracts from six recorded cases,
with comments
and
Report of a case of
Cardiac Irritability with Mitral Stenosis:

by Arthur J. Whiting.
Name: Margaret Jardine.
Age: Twenty-three years. Married.
Occupation: Housewife.
Place of Birth: Leith.
Place of Residence: 28, Buiinobe St, Cochrane Road, Leith.
Date of Admission: March 5th 1888.
Recommended by: Dr. Johnston, 9 Morton Street, Leith.
Date of Examination: March 19th - 30th 1888.
Complaint: Pain in the right side of the chest with flattening at the lower part of the neck (in the suprasternal notch) and shortness of breath.
Duration of Illness: Eight months.

Arthur J. Whiting.
The History:

Hereditary tendencies: patients' parents are both living. The father has been an outpatient of the Royal Infirmary (under the care of Professor Stewart) for nearly two years, from July 1886 until Thursday, March 22nd 1888 when he was admitted into the Infirmary to WARD XXII. He - James weatherstone is forty-nine years of age, resides at 49 Glover Street, Leith and was born near Kelso. He complains of loss of power in both arms (especially in that of the right side) which came on upon the night of Tuesday, March 18th 1888 being the effect of a "shock on the brain." Before the month of July 1886 he was (with the exception of suffering from indigestion) a healthy, strong man. Shortly before this time his master, a architect, became ill and all the work and responsibility fell upon him - the clerk. He used his mind actively, overworking in fact, for example if engaged with important plans for a church or school-horse, he would get up in the middle of the night to revise his work. Towards the end of July 1886 he suffered from a "shock on the brain" after which his power of speech was impaired. In 1887 he had a second attack after which his speech was still more impaired. He suffered from a third "shock" on Tuesday night March 18th when he lost the power of moving his right upper limb almost entirely and in great part the power of moving the left. (Examined on Monday, March 26th 1888 -
He is a tall spare man of nervous temperament. His eye-
balls are projecting and staring, his lips tremulous. The
viscera are in their normal position. The heart sounds
are rapid and weak, after.) The paternal Grandfather
was twice married and had a large family. Seven chil-
dren were born after the first marriage, and three after
the second among the latter being patient's father. He died
at a good old age from the results of paralysis when patient
was quite young. The paternal Grandmother (the second
wife) was a healthy woman. She died from old age in
1879 aged seventy-nine. Patient remembers one patro-
nal uncle who was not a strong man. He died at adult
from heart disease. The other paternal uncle died
from cause unknown to patient. A half-sister of
patient's father lives in Glasgow, she is pretty strong
and has many children. The other members of
the paternal grandfather's family died in middle age
and were all consumptives, (phthisis "runs in the family"
patient believes.)

The mother, although a muscularly strong woman,
suffers from palpitation and breathlessness. About two-
ly four years ago, two or three months before patient was
born, she was very ill from Rheumatic Fever. Even since
patient can remember she has suffered from the above
symptoms with swelling of the abdomen and lower limbs.
Her breathless condition is especially bad on exertion. She
is very stout. On going up stairs she is greatly distressed and
when she has extra work the breathlessness is so bad that she requires often to sit down, gasping for breath. The dyspnoea frequently comes on upon lying down after a hard day's work; it is often so severe that she has (in order to obtain a greatly needed supply of fresh air) to put out her head from the opened window. Swelling of the abdomen and of the lower limbs comes on after every day of more severe exertion. Patient has seen her mother's legs so much swollen as to render difficult the process of taking off her stockings. She has not been able to wear leather boots for six or seven years, but wears large cloth ones instead. The abdominal swelling is accompanied by diffuse abdominal pain. The swollen condition gradually passes off in the course of a few days. Three years ago, just before the patient's first illness in July, 1886, she had obstruction of the bowels for nine days. She also is much troubled with indigestion. Patient knows that her mother has "come through many troubles" but cannot say of what nature. She is fifty-four years of age. (She was examined by the House Physician on Monday, March 26th, 1888 with the following result.) Barbara Weatherston complains of palpitation and dyspnoea on exertion. She had Rheumatic Fever thirty-three years ago, a few months before her daughter (W.J.) was born. Two years ago she suffered from "stoppage of the bowels." She is troubled with attacks of giddiness. She is very stout - obese. The heart sounds are weak. The aper-
is freely felt on the left side. There is no thrill to be felt over the precordium. There is a slight presystolic roughness to be heard. The liver is on the right side. The viscera are in their normal position. The maternal grandfather was a watchman at the Baltic Dock, and was a strictly temperate man. He died when about seventy years of age, during patient's childhood. The maternal grandmother was a very strong woman. She died four years ago, at the age of eighty-six, from 'old-age.' She never suffered from dropsy or breathlessness and 'retained all her faculties to the last.' She sometimes was troubled with a slight pain in the left side of the abdomen which could be relieved by the application of a hot plate. She was always very healthy and used to say that she 'did not know what it was to have the colicache.' There is one maternal uncle living who is a seafaring man; acting as sailmaker on board ship; 'a great, big, healthy man he is.' The sisters of patient's mother died when they were very young from cause unknown to patient. Patient is the seventh of a family of eleven children; of whom two are dead, a brother and a sister. The brother was the first born child, and died when two and a half years of age. The sister was the eighth child. She died in infancy, at about the age of fifteen months from malarial fever in the head, with a heavy cold and diarrhoea. Patient's oldest brother (the second of the family) is a strong, very
healthy man; he is married and living in Glasgow. The eldest sister, Janet Weatherston, aged twenty-seven is not strong; she is always complaining of indigestion. She is troubled with rheumatic pains in the wrists and suffers greatly from neuralgia in the head. She was examined personally by the Resident Physician (Dr. W.H. Tofft) on March 19th 1888 with the following result: there is no abnormal displacement of liver or heart. She suffers from palpitation. A pre-systolic thrill is felt and a murmur pre-systolic in rhythm is heard. She is employed in keeping a confectionery shop. Neither is the second eldest sister strong. She (Elizabeth Weatherston) is twenty-five years of age and is described by patient as having 'had much trouble.' Four years ago, she was an in-patient of the Royal Infirmary (in ward XXIV) having lost the power of using her hands, and while under observation was found to be suffering from Diabetes. She has since been married, eighteen months ago. She also was examined by the House Physician. The thoracic and abdominal viscera were found to be in their usual position. She suffers from palpitation and dyspnoea, which came on after marriage. There is present a slight pre-systolic thrill and murmur. She has two children both of whom are healthy. The fifth and sixth of the family are twin brothers, twenty-five years of age. One is pretty strong but not so healthy as the oldest brother in Glasgow. He is of lazy habit, not energetic, but he takes his food well enough which patient
days is a good sign. The other is not so strong. Ten years ago he had scarlet-fever, complicated with inflammation of the lungs, and was 'given up' by his medical attendant. His occupation is that of a wine-cooper. He has to work under ground in the vaults, the unhealthy atmosphere of which affects him greatly. Twice or three times he has been brought home unconscious, and apparently dead, from breathing the noxious gases of the vaults. He had a fall at the Gill Docks when nineteen years of age, which affected him very much. His head was injured (the scalp being cut in the temporal region) and he was ill in bed for eight weeks. He has always been delicate. Next in order is patience. Then comes the sister who died in infancy from hydrocephalus. The ninth of the family is a sister, nineteen years of age. She was married last October. She is very strong and has never been confined to bed from illness since her childhood days, when "all her troubles were" (meaning) patent says. She has one child. The tenth of the family is a sister aged seventeen years. She is far from being strong - is decidedly delicate. She is always complaining, suffers from neuralgia and is much troubled with pain in the head. She is breathless on exercise, patient thinks. The eleventh and last of the family is a sister who is fifteen years of age. About six years ago she got a needle into her big toe, the half of it still remains there. She has had her foot lanced four times, and expects the half needle to appear at some distant part of
the body, some day. She is not able to retain a situation on ac-
count of it; it affects her so much that she has to sit down
and cannot go about. Sympathy, as regards the exant-
needle, is distasteful to her. She constantly, after walk-
ing a short distance, sits down and takes off her boot;
when the affected foot is always found to be "dead and
cold," while the other foot is all right. Patient's
child, aged fifteen months, was examined by the
Resident Physician on March 19th 1888 and was found
to be not very healthy. It looked poor and delicate and
had a cough. The heart and liver are in their normal
position and there is no murmur. As patient says it was
"easily brought up" it is she thinks "an awful child to sleep.
She also thinks it to be "very small for its age." It was
born two months ago, when thirteen months old.

Habits, mode of life and general surroundings: Patient's
home is a house on a second flat, in what she believes to be
a healthy locality, but she thinks that there is an extraordinary
number of deaths in the street. The house is draughty, and
the drainage is defective with consequent bad smells. It con-
sists of two rooms - a sitting room and a kitchen, in which
there is an open sink with waste pipe, Cape 26. The latter
is used as a sleeping room. Patient begins the day by get-
ing up at 4:30 A.M. to prepare a cup of tea for her husband
who goes to his work, as labourer in the Eelit Dock Yard,
at half past nine o'clock. She takes a cup of tea at the
same time, without any food, then usually goes back to bed.
but not to sleep, until half past seven. If she has any extra work to do, as is usually the case on one or two days of the week, she does not go back to bed but commences the washing of clothes etc. From 7:30 A.M. to 8:30 she attends to her household duties and then prepares breakfast for 9 o'clock, when her husband returns from work. For breakfast, she takes porridge and milk only—this being the first food of the day. She is engaged in housework all the morning. While suckling her child, she takes luncheon at eleven o'clock, consisting of half a pint of porter and a little bread. Her most trying work is carrying the child, always on the left arm, she could not carry a child for even a short distance on the right arm. Her married sister uses the right arm for this purpose. She then prepares dinner for that time when her husband returns from work, which is one o'clock. She does not care for butcher's meat and rarely takes anything except broth, white potato, she takes fresh vegetables freely and sometimes fish. In the afternoon she usually (when the weather permits) goes out, carrying the child. She prepares tea, for six o'clock, when her husband returns from work, at this time, she takes bread and butter and tea. And this is her last meal for the day. She may or may not take a cupful of milk later in the evening. She works at sewing or knitting for the remainder of the night, before bed time (about 10 P.M.) A most tiring duty was that of suckling her child.
as she observes "everything she looked turned to milk." She
sucked the child twice in the forenoon, once or twice
in the afternoon, for a long time, on putting her hand,
and practically, the whole night through. And as fast
as the milk was sucked from her left breast by the
child, so fast did it escape from the right breast.
As far as she is able to judge the same amount of milk
escaped from the two mammary glands during the
same period of time. In this way four or five glasses
ful each containing about half a pint of milk
would overflow every day and be wasted. During the
night she was accustomed to put a flannel pad over
her right breast, this would be saturated with lobal
secretion in the morning, and in her own words "I
have seen that I could pour it many a time."

Previous Illnesses and Accidents: patient
had a severe attack of small pox in early child-
hood. When eleven years of age she suffered from scar-
tlet fever and was very ill. From her girlhood up
to this present she has been troubled with attacks of giddi-
ness. She cannot give the date of the occasion when it
first attracted her attention. She describes her subjective
sensations at these times as "something coming before the
eyes and a floating over the brain" at the same time
a cold sweat breaks out over her forehead. She has
suffered from delirium two or three times in the day and
after it has passed off she has felt very weak, the
perpiration of the brow continuing for some time. The attacks came on upon looking at a distant object, if the eyes were kept steadily fixed upon it for a short time. Also, when in the street, after any slight excitement, so that she had often to take hold of something for support. She never fell down in such an attack before last October. On a day between four and five o'clock in the afternoon, being a little behind her time, she was hurrying home through Prince's Street: she was troubled by the crowd passing noise, everything seemed to whirl round in her head and she fell to the ground. She was never unconscious and did not hurt either herself or her baby. A glass of water was brought to her, after drinking she came round again all right and took the car home.

The attacks came on also when elevated from the ground and looking upwards, as when on steps cleaning the windows or walls. She could never foretell their occurrence and is surprised that she has had more falls. The judders disappears on taking the horizontal position or on lowering the head. She was recommended by an acquaintance to take quinine for the judders, this appears to have done some good, to have "put them off" in longer intervals, have elapsed between the individual attacks. She has occasional very severe headaches "like a heavy weight on her forehead," they usually come on in the morning after waking and wear off during the day. About nine months ago on the
night of Sunday, January 29th, she sustained a strain in the left side when reaching up to a too high shelf. At the age of eleven she was knocked down by a van horse and was kicked on the outside of the left knee, from which time she has suffered from varicose veins below that knee. On December 16th, 1886 her child was born. She got up too soon after her confinement and caught cold. Patient is of the opinion that she nursed her child far too long, for whereas before marriage she was stout and plump enough “she is now rather the reverse.” According to patient’s description the mammary gland tissue ran under both her arms (reaching the midaxillary line). Her right arm during this superlactation became wooden and stiff. Patient has never suffered from acute rheumatism. She has been much troubled with facial neuralgia, especially three years ago for three months.

Time, Mode, Origin and Course of Present Illness: On a day in June (eight months ago) she was suckling her seven months old child at her left breast. She had been washing for three hours, standing, scrubbing the clothes. She was perspiring, being anxious to wash as much clothing as possible while the child was asleep. At the end of three hours the child woke up; she left her washing to give it a drink at the breast - from the mamma it always was offered, namely the left. To catch the milk oozing from the right mamma patient put a glass under the nipple, in process of which the back of her fingers came
into contact with the right side of the chest wall, (in the mammary region below the gland,) she was surprised by feeling a fluttering under her fingers; she put down the glass and felt the side of the beating with the palmar surface of her hand. She continued pickling the child and mildly wondered what it was fluttering in her chest, (she thought "it might be a beast taking it's nap out.") After the child was fed she went on with her work — when her husband came home she told him about the beating at the breast and allowed him to feel it. She "got a sort of shiver" at the time, but hoped the condition would wear away. She did not trouble about it for four days, when it occurred to her to feel at the left side of the chest, expecting to find the beating of her heart there; she could feel no beating on that side. She told her mother about it upon one occasion when she happened to be at her father's house; the mother just laughed. After this when any of her numerous friends came to see her she would tell them about it, they would desire to feel it and were allowed to do so. It was quite distinctly felt through all her clothing. After discovering the beating she has been conscious of it as a constant sensation. It was worse on any exertion e.g. going up stairs or carrying the child. It also becomes worse after any mental excitement or worry and along with the palpitation the breathless condition begins. She has however been troubled with shortness of breath ever since she can remember.
before the attack of Scarlet Fever at the age of Eleven years.

Nine weeks ago on the afternoon of Sunday, January 29th, between three and four o'clock, patient was taking some cups from a shelf which was too high for her to reach without standing on her "tip-toes." She heard a crack in the left side, she imagined, but did not feel anything at the time. About 7:30 PM she began to suffer from pain and hardness of the abdomen which got gradually worse and prevented her from doing anything; the husband remaining at home to nurse the child. She suffered also from violent purging and persistent frequent vomiting. Further there began on the Sunday night a vaginal discharge which lasted for eight or nine days and which unlike that of ordinary menstruation consisted of thin and blood together. From its unexpected occurrence and from its character she became alarmed fearing a miscarriage. She could not sleep on Sunday night, on account of the pain in the lower part of the abdomen and pain referred to the mammary regions and on account of the continual purging and vomiting. Unguent and bruised meal poultices were applied to the chest. The pain in the abdomen, the diarrhea and the vomiting continued during the next day and night. She could not retain any food. She could not sleep on Monday night. On the Tuesday morning (January 31st) she sent for the Parish-Doctor of Leith, Dr. Johnston, who came about noon. "He called it inflammation of the bowels" and prescribed medicine (which patient thinks
was check mixture) for the diarrhoea. At this time she called the attention of the doctor to the swelling in the right side of the chest. She thought that the doctor appeared to be a little alarmed; "he could not say anything for it." He said that it ought to have been looked after long ago, that it was now an after consideration and that the inflammation must be cured before he could look into the matter. Then patient and her mother began to be troubled. Patient took nothing but milk. The diarrhoea was a little relieved by the medicine — the vomiting continued and lasted about a fortnight. Episodic or rather retching, occurred every two or three minutes; when she retched the palpitation was exaggerated, and the palpitation was always followed by shortness of breath. The diarrhoea began to diminish on the evening of the next day (Wednesday, February 1st) and was gone by Thursday. Dr. Johnston visited her on this day (Thursday) and allowed her to get up. She remained up too long, for six hours, not retiring until 10th. During the night she began to be worse, the pain became more severe and the sickness more distressing. The pain was continuous and shooting; she could not move in bed on account of it, and it prevented her from sleeping.

On Friday morning (February 3rd) she had again to send for the doctor. The pain was relieved by the application of hot plates to the abdomen, by patient's mother. By night patient had become very weak. "She felt as if
she would break in piece the purging had made her so weak; the mother applied a binder round patient's abdomen and back. Dr. Johnston came in the evening, he ordered brandy and more mustard poultices, he said he had never seen anyone so weak a patient was. She could not sleep on Friday night (though she had not slept on any night during her illness) she had dozed a little during the day. On the Saturday (February 4th) she was a little better, the pain was less, the purging gone. She was very much troubled with the precipitancy during all these days. The retching continued but not so frequent. She still took only milk and lime water. The doctor visited her on the day (Saturday) for the last time and directed that the brandy and diarrhoea mixture should be continued. On Sunday (February 5th) she remained in bed still feeling slightly better. She gradually improved and on Friday (February 10th) she began to have the suspicion of an appetite and took a little light food. On this day she retched comparatively little and after this date the nausea and tendency to vomit gradually passed away. She was confined to bed for three weeks. She got up on Monday afternoon February 20th feeling weak and giddy. For a few days she remained up only for a short time each day. She did not feel able for any work except the very lightest. On the Wednesday of this week, February 22nd,
as she was lifting the dinner things from the table "some-thing came over her heart on the right side"; this per-
ception did not last long, but the beating became very 
bad and shortly after it began "some moving thing 
came into her throat" (in the Epiglottal fossa) and 
she became very breathless. She sank into a chair, her 
hands fell limp and she was "as if fainting altogether", 
gasping for breath. She was given some brandy by 
herself-mother-in-law which revived her somewhat. On the 
afternoon of the following Tuesday, February 28th, Patient 
was working at the sink in the kitchen, the water was 
rushing noisily from the tap and upon turning round 
she was startled by seeing her mother-in-law standing 
in the kitchen, having entered unheard. Patient had to 
sit down for a minute or two on account of the violent 
beating in her right breast; she felt the fluttering in her 
throat, this however was not so bad as during the 
attack on the previous Wednesday. She was somewhat 
breathless. This condition lasted for about ten minutes. 
The Doctor Johnston had left words that after she felt 
better and felt strong enough she was to visit him. She 
got to see him on Thursday, March 1st 1888. He said 
that the side the seat of the beating should be examined 
at the Infirmary and gave to Patient his card to bring 
to Professor Fraser. Patient came to the Royal In-
firmary on Friday but could not remain as she had 
not made the necessary arrangements for the care of
her child and of the house during her absence from home. She was however examined by Professor Fraser who found that the heart and liver were transposed and that there was a praecordial thrill and murmur. As she was on her way home on Friday afternoon going down the little walk she had a sudden attack of giddiness "everything seemed to be going round." She recovered after taking hold of her friend's arm. On the evening of the same day she was making purchases in a shop and had to stand for some time - her husband remaining outside in the street. As she was making her way to where he was standing about forty yards distant she was for the second time on this day seized with vertigo (but without palpitation and without dizziness.) She felt as if about to fall and caught the arm of an unknown woman who conducted her to the abstracted husband. This was the last attack before admission into Hospital on Monday, March 5th 1888.

The Present Condition

(The examination of the present state was begun on Thursday, March 22nd 1888.) General Facts: Patient's height is sixty-four inches; her weight is one hundred, twenty-four and a half pounds. Patient is fairly well developed but thin; her muscles are soft, flabby, and somewhat wasted. The face is of a pale yellow hue, with slight flushing of the cheeks. The lips are pale red; the buccal, nasal and palpebral mucous surfaces are pale. There is slight ap-
Appearance of jaundice of the face, especially marked in the skin of the temporal and zygomatic regions. The subcutaneous veins of the skin of the face are distended, those of the forehead and eyelids being especially conspicuous; but all the superficial veins of the face are distinctly visible as faint blue lines running under the skin. There are dark areolae surrounding the eyes, and there is some puffiness of the lower eyelids. The conjunctivae are pearly, glistening, and a little jaundiced; the conjunctival vessels are injected. The mucous membrane of the inner canthus (the canthae) is hyperaemic and yellowish. The yellow colouration spreads out upon the conjunctival surface for a short distance. There is no oedema. The lips have a faint bluish tinge. The nose and the ears are more distinctly cyanotic, but even here the cyanosis is not marked. The veins of the left leg are varicose (the condition caused after a kick from a horse); the internal saphenous vein just below the knee joint is very prominent. The varicosity extends to the veins of the anterior aspect of the calf (a little lower down,) here the condition is painful and in the course of the veins small round lumps are to be felt. After moving about a few days ago she had a "nasty pain" from the ankle to the knee. The skin of the lower limbs is warm and dry.

Below the knee of the left leg just beneath the head of the fibula is a scar the remains of the wound resulting from a kick by a horse received in childhood. Under the right
eye is a red scar in the skin over the orbital margin of the malar bone; remaining from a deep cut by a fragment of glass bottle, in December last. There are a few small pox marks on the forehead and about the bridge of the nose, (on any slight indisposition as headache they become more conspicuous, this was first noticed by patient's mother and was afterwards distinctly recognized by herself.) On the left of the sternum at the level of the second costal cartilage is the scar of a burn caused by a hot piece of coal 'flying' from the fire on her chest. This also becomes deeper and more distinct when patient is unwell. There are some wrinkles on her fingers she 'used to have a great many'.

Patient's general state is that of anaemia and debility (of superlactation esp.) Her energy is low, she appears to be feeble and somewhat languid. She is inclined to be dependent and somewhat emotional. Her general state of nutrition is feeble. Her face is rather emaciated and her cheeks somewhat fallen in (after the extraction of teeth.) Her expression is pensive, she keeps her mouth slightly open. Her breathing is sighing (occasionally) but unembarrassed except during the paroxysms of palpitation. There is slight projection of the eyeballs. The hair is scaly and black. The eyebrows are very fine and faint. The eyelids are short and sparse. There is some fulness under the eyes.

Patient's temperament is nervous with a tendency towards the rheumatic. In her attitude there is
Circulatory System

Subjective Symptoms: patient does not suffer from pain in the region of the heart. She suffers from attacks of palpitation which are paroxysmal in character. They come on after any over-exertion, physical or mental excitement; if she "gets a start", and notably early in the morning following upon more severe pitching of her "morning sickness." During the paroxysmal attack the heart beats quicker; the contraction is regular; it is never painful but is always a very acute pulsation. It is sometimes audible to herself. On one occasion it was heard by her husband when she was asleep; he awoke her as she had cried out in her sleep. (Patient thinks she must have been dreaming.) Before admission it often came during the night and patient believes it was occasionally worse then than during the day (or at any rate it was more acute, perceived than during the day). During the attack she has a constant, blaring, pulsating noise in the ears; and sometimes though rarely, pulsation in the suprasternal notch. With the paroxysm she perspires and almost always has a feeling of faintness. Sometimes she has a choking, fluttering sensation in her throat which seems to take away her breath and she always "feels faintest" with this. The fluttering in the neck lasts two or three minutes, with
it the dyspepsia disappears, the palpitation wears away gradually. The paroxysmal attack lasts for about fifteen minutes, but since admission the duration of the attack has been shorter. They sometimes occur twice a day, and sometimes only once, or on the second day or with the intermission of two days. The last and severest attack patient had came on upon the morning of Monday, March 17th, when she got up to have her bed made without having the cup of tea which had been prescribed for her 'morning sickness'. The vomiting was very bad and the occasional retching brought on palpitation, which the sap was worse than ever before. The Hour Physician's report at this time is as follows:

March 17th and day preceding - "no palpitation".
March 18th - "Slight palpitation this morning. Nausea but no vomiting. Tea omitted".
March 19th - "Tea omitted, very severe vomiting this morning; palpitation very severe lasting for about an hour and a half." She had palpitation during her first pregnancy on going upstairs, but she did not attend to it much nor did she notice that it was on the right side.

Patient is troubled with occasional attacks of piddliness; she cannot say when they are coming on - she has no pre-monitory sensation. She has had one attack since admission, when rising in the morning as she was sitting on the edge of the bed she had to lie down again. The attacks usually pass off in the course of five or six
minutes, and she feels "faintish like."  Faintness comes on with giddiness and with the sensation of fluttering in her throat. She has suffered "nothing worth speaking of" since admission. Dyspnoea supervenes on the outset of palpitation, immediately following the sensation of fluttering in the throat. She has always suffered from "want of breath" after any exertion. The dyspnoea never comes on of itself and lasts only for a few minutes.

Inspection of the Precordial Region: there is no distinct projection on the right side of the chest extending from the level of the second rib to the level of the sixth rib so that the base of the right mamma is more anterior than that of the left. There is no cardiac impulse visible on simple inspection but the pendulous right mamma is seen to move up and down with the heart beat, and upon lifting it up the apex beat is seen as a rather sudden pulsation in the fifth right intercostal space. There is no pulsation to be seen in the epigastric region, nor any in the supra-sternal notch.

Palpation of the Heart: the precordial projection is felt to be especially marked from the third rib down to the sixth rib, on the right side. The apex beat is felt in the fifth right intercostal space four inches from the midsternal line and in the right mamillary line. The cardiac impulse is diffuse, being felt in the right mammaery region over a quadrangular
area measuring (about) three and a half inches from above downwards and three and a quarter inches from side to side, beginning inferiorly at the apex (beat) and laterally at the right margin of the sternum. The cardiac contractions are sharp and short; not powerful but meeting the chest wall in an abrupt manner - being more pronounced during expiration. A fine thrill, praecordial in rhythm is felt over the whole area of the cardiac impulse (as mentioned above) but is most marked and vibrating in the region of the apex of the heart. There is felt a distinct pulsation in the second right intercostal space subsequent to, and alternate with the apex beat. There is no pain or tenderness on pressure over the precordium. Percussion of the Heart: the upper margin of the heart (i.e. of the area of cardiac dulness) is in the second right intercostal space, at the lower border of the second rib. The dull note gives place to an unpaired note as high up as the middle of the first right intercostal space. The left margin is between the midsternal and left lateral sternal lines. The apex is difficult to define by percussion; it is in the fifth right intercostal space, just above the sixth rib, five inches to the right of the midsternal line and in the right mammary line. (The upper margin of the liver is in the third left intercostal space.)

Auscultation of the Heart: the rhythm of the heart is regular. In the tribal area (region of A apex beat, in the
fifth right intercostal space) the heart sounds are distinct but not loud. The second sound is faint and reduplicated. In the immediate after it is heard a rough, rolling murmur, which runs up to, and ends with the occurrence of the first sound. The first sound is sharp, stark, sudden or clicking (more like the typical second sound) and impure. This murmur pre systolic in rhythm is heard with greatest intensity a little internal to and above the apex beat. It appears to be propagated to the apex. The systolic impurity of the first sound is propagated towards the axilla. In the aortic area there is heard a pre systolic "roughness" running up to the first sound which is sharp, sudden and low. The second sound is reduplicated and muffled in character. In the pulmonary area, in the second right intercostal space) there is a sudden first sound with a systolic murmur (anacocic apex) the second sound is reduplicated, accentuated and impure, being rough in its first (pulmonary) reduplication.

In the Tricuspid Area both sounds are faint. The first sound is short and sharp (like the normal second sound); the second sound is flat.

Auscultation of the Main Vessels: over the left Subclavian Artery both sounds are faint; both are short, the second is slightly accentuated. Over the right Subclavian Artery (in the right infraclavicular region) the heart sounds are more loud than on the left side in the same region. Both sounds are sharp and short, the second
is reduplicated and impure. Over the manubrium sterni, just under the suprasternal notch, the first sound is short and faint; the second sound is accentuated, rough and reduplicated. There is no abnormal pulsation in the suprasternal notch. The superficial arteries: the radial pulse beats seventy-five times in the minute. It is regular, of small volume; not very readily compressed. The pulse wave does not rise much and it has a rounded summit. The vessel is well filled during the diastole of the left ventricle. There is no arteroma of the arterial wall. There is no appreciable difference between the radial pulses of the two sides. There appears to be a deficient filling of the capillaries of the body. The superficial veins are distinct; in certain regions they are large and distended, eg of the forehead, eyelids, mammae, lips. They are varicose only in the left lower limb. There is no venous pulsation and no venous regurgitation. There is a loud venous hum to be heard at the root of the neck, on both sides; it is heard to be distinct. Pulsatile and its intensity is increased by pressure into the stethoscope.

Respiratory System.

Patient breathes twenty-five times in the minute. Her breathing is regular in rhythm, except that she occasionally sighs. It is markedly thoracic in type and is not at all painful. Patient does not suffer from cough and
she has not any expectoration. **Inspection of the Thorax**: the chest is narrow and short. There is slight flattening in the left infraclavicular region. The thorax is approximately symmetrical; measurement of the two lateral halves of the thorax shows that at the level of the second interspaces the right segment measures a fraction of an inch more than the left; at the level of the fifth ribs the two parts of the circumference of the chest are equal; and at the level of the sixth interspace the left segment measures a fraction of an inch more than the right. The action of the thorax is good, it expands well in all directions. **Palpation, Percussion, and Auscultation** - in front: the right apex extends one inch above the clavicle - the left apex extends for one and a quarter or one and a half inches above the left clavicle. The percussion note is good on both sides. On auscultating the left apex the inspiratory sound is heard to be a little harsh and prolonged. The expiratory sound is very faint. The vocal resonance is almost bronchophonic. There are no accompaniments. The breath sounds of the right apex are faint (as of the left); on forced inspiration the sounds are somewhat harsh and prolonged. The vocal resonance is very well marked. There are no accompaniments. The local fremitus is distinctly felt over the left apex, but is with difficulty differentiated from the tracheal thrill on the right - in the
Infraclavicular region, of the left side, the vocal fremitus is well marked; the percussion note is good; the breath sounds are a little harsh and prolonged, expiration is almost inaudible. The vocal resonance is bronchophonic. There are no accompaniments. On the right side the vocal fremitus is absent; the percussion note is impaired except in the outer third of the region. The breath sounds are faint and similar in character to those of the left side. There are no accompaniments. Vocal resonance is absent, (except in the outer third of this right infraclavicular region.) In the mammary region of the right side there is no palpable vocal fremitus; percussion gives the note of cardiac dulness; on auscultation, inspiration is heard to be somewhat harsh and slightly prolonged, expiration is hardly audible. Vocal resonance is absent. There are no accompaniments. On the left side the vocal fremitus is palpable but not well marked, the percussion note is good (until the hepatic dulness is reached). Inspiration is less harsh and not so much prolonged as on the right side.Expiration is very faint. Vocal resonance is well marked. There are no accompaniments. Behind; in the supra-epigastric region of the right side, the vocal fremitus is not marked; the percussion note is resonant; the breathing is somewhat harsh, expiration is a little prolonged but hardly audible. The vocal resonance is
almost aseptic; there are no accompaniments.
On the left side the vocal fremitus is more distinct
than on the right side, but even here only faintly well
marked. The percussion note is more resonant on the
left side than on the right. The breathing is harsh, the
expiration a little prolonged. The vocal resonance is
very well marked, but not so exaggerated as on the
right side. In the infra-scapular regions the physi-
cal signs are similar to those in the supra-scapular
regions. On the left side, the vocal fremitus is fairly
well marked; the percussion note is good, inspira-
tion is a little harsh; the expiratory sound is hardly audi-
table during ordinary respiration, on forced respiration
it is somewhat harsh. The vocal resonance is well
marked. There are no accompaniments. On the
right side the vocal fremitus is scarcely palpable;
the percussion note is good but not so resonant as
on the left side. The auscultatory phenomena are
the same as on the left side, except that the vocal
resonance is exaggerated. Being bronchophonic — At
the left base the vocal fremitus is faint; on percus-
sion the dull dulness is elicited. The breath sounds
are faint, inspiration is slightly harsh and there are
a few medium precipitations with inspiration. There is
also heard with inspiration (towards the end thereof)
the cracking of pleuritic friction, the sound being inre-
sed on forced inspiration and on pressure with the end
of the stethoscope. At the right base the vocal fremitus is absent; the percussion note is impaired; the breath sounds are very low, the inspiratory sound is somewhat harsh and there are a few medium crepitations with both inspiration and expiration.

On both sides the vocal resonance is bronchophonic.

**Respiratory System.**

The lips are pale and dry. They are somewhat stained and deep, the epithelium tends to form scales. The mucous membrane of the lips inside the mouth is pale. The teeth in front are small and somewhat irregular at the edges. They are very closely apposed in the lower jaw. There is considerable caries of the molars, three have been extracted and there are at this present six in a decayed condition. The gums are of a good red colour but are spongy. The tongue is thick, moist and pattered flabby, marked at the edges by the teeth. It is tremulous and covered anteriorly with a thin grey fur and posteriorly with a thicker white fur. Its upper surface in the anterior half shows transverse cracks. The secretions of the mouth are somewhat scanty. The fauces and the back of the pharynx are pale. The tonsils are small and irregular. The mucous membrane of the back of the throat shows patches of yellowish mucus. Patient has been very much subject to 'sore throat.' Deglutition is quite normal. The appetite is fairly good. Patient is very much troubled with thirst, especially after din-
... During fasting she felt a "nasty crave" at the pit of the stomach. She suffers from no morbid tendation during or after eating. She is never troubled with excess acidity of the stomach. She is not infrequently troubled with flatulence which sometimes causes a sensation of discomfort at the pit of the stomach and is followed by dyspepsia. On admission she was much troubled with painful flatulence; it was relieved under the administration of Eucalyptus oil (in capsule, containing five minims.) She has been greatly troubled with water-brash but not so much lately; she sometimes has fluctuation of food. Patient often vomits a yellow bilious material, quite fluid "like the yolk of an egg." Since admission she has only vomited in the early morning. Just on setting up she has a feeling of nausea and may or may not vomit. The bowels are regular and are moved twice a day (on an average.) Before admission her bowels were constipated, so that often two or three days passed without their being moved; and on two or three occasions eight days have elapsed without a motion. On the day of admission Mar. 5th there was no motion; on March 6th, patient was given Hawes' Solution (the supersulphate of magnesium) and on the 7th next, there were no motions on the 8th, and on the 9th, too. Commencing on March 9th she was given twenty minims of the liquid extract of Cascara Sagrada, night and morning. On
the 10th rib, there were two motions, on the 11th rib, and
the Cassarea Sagrada was discontinued. They have since
been quite regular. There is now a tendency to looseness
in the character of the alvine discharge. On inspection
the abdomen is seen to be prominent being generally, dis-turbed. The linea nigra is well marked, the umbilicus
is pointling. On palpation there is felt above the
brim of the pelvis, about midway between the sym-
physis pubis and the umbilicus the enlarged uterus in-
clining to the right side. There is slight tenderness
on deep palpation over the enlarged uterus. A tym-
panic note on percussion is elicited over the whole
anterior surface of the abdomen. The vertical dihors
of the liver in the main miliary line of the left side
is seven inches. Posteriorly its diameter is five inches.
The low note characteristic of the Caeacum is elicited
on percussion in the left iliac fossa, and the higher
note of the Sigmoid ileum of the colon in the right
fossa ilia. On percussion the Stomach is found to lie in
the epigastric and right hypochondriac regions. It is
difficult to obtain the exact position of the greater
curvature owing to the distension of the abdomen by
the uterus. Nekrobi from the region of the apex of the heart,
in the fifth right interspace, through the right hypochondriac
into the umbilical region, reaching to within an inch of the
umbilicus, and up, to the left of the mid anterior line,
into the epigastric region - being lost at the lower border
of the liver, opposite the seventh left intercostal space at a distance of one inch from the costal margin.

**Hematopoietic System**

There is no enlargement of the superficial lymphatic glands. (The submaxillary, salivary glands are slightly enlarged.) The thyroid gland is not enlarged. Percussion of the spleen shows that it corresponds with the tenth right rib. Its posterior extremity is at a distance of four inches from the middle line of the back. Its lower border is at the lower margin of the tenth right rib; its upper border is at the upper margin of the ninth rib. Its longitudinal diameter is five inches; its transverse diameter is two inches. Its anterior is seven inches from the mid-anterior line.

**Urinary System**

Patient does not suffer from any abnormal subjective phenomena, in the region of the loin, bladder or urethra. Since admission patient has urinated four or five times during the day, more often than before admission. Urine of the 29th and 30th of March (6-6 AM) seventy-five ounces, of an amber color, clear, showing a flocculent deposit of mucus with little clots of mucus floating throughout the urine; specific gravity 1018 - faintly acid in reaction; no albumen; no sugar; no blood, and no bile. The amount of urea excreted is estimated at 5.616 grams in the ounce or 1421.2 grams during the twenty-four hours.
Reproductive System.

Patient expects to be confinée in August. The Cæla-
meria have ceased since November 1887. She has
no abnormal discharge per vagina. The uterus is
felt about midway between the symphysis pubis
and the umbilicus, inclining to the right side. The
uterine souffle and the sound of the foetal heart
are not yet heard on auscultation.

Nervous System. (Friday, March 30th, 88)

Patient not infrequently feels her lower limbs to be
numb and cold, "as if they were asleep." Sensibili-
ties are quite acute, to touch, heat, tickling and pain.

Sight is good. She inclines to be short sighted. The pupil
are well and equally contracted, they react well on
positive accommodation and to light. Taste and smell
are quite good. The motor functions are normal, ex-
cept breathing - as she suffers from dyspnoea with
the paroxysms of palpitation. The vasomotor, nutritive,
cerebral and mental functions show nothing abnormal.
There are no peculiarities of cranium or spine.

Provisional Diagnosis.

Stenosis of the mitral orifice of the heart; the thoracic
and abdominal visera being completely transposed.

Treatment.

Tincture of Strophanthius; liquid extract of Cascara Sagrada;
Eucalyptus Oil and compound mixture of Cardamum.
Progress:

March 26th. Last night when at Chapel she felt a faintness come over her (the atmosphere was warm), but no palpitation, so that she was obliged to come out. About 7 she, just after she got into bed, she felt a sharp pain in the small of the back which went away in about three hours after the application of hot fomentations. This morning there is only a slight pain in the back, no palpitation, nor dyspnoea.

March 27th. - No pain in the back, nausea this morning but no vomiting, on the whole feels much better.

March 28th. Weight 9 st. 1/4 lbs. (164 lbs.)

Abstracts from six recorded cases of lateral transposition of the thoracic and abdominal viscera in man, with comments:

1. Case recorded by E. P. Young M.R.C.S. (in the Lancet 1861 page 630) of complete transposition of all the thoracic and abdominal viscera.

Woman aged 35 who previous to death had enjoyed good health and who was found dead in her room. At the necro the oesophagus was found lying to the right—
of the aorta. (From auscultation of the Oesophagus during the third stage of deglutition in the case of Margaret Jardine. I believed but could not be certain that the oesophagus was to the right side of the spinal column at the level of the 3rd dorsal vertebra. - p. 26.)

2. In the report of the proceedings of the Royal Medical and Chirurgical Society, London - a case of visceral transposition is recorded by Dr. Webster (in the Medical Times and Gazette, December 6th, 1862, p. 3614.)

Woman, aged 22, who died in the clinical hospital of the University of Moscow: at the necropsy the heart was found to lie in the right thoracic region and the liver in the left hypochondrium, "with the stomach and spleen pushed towards the situation usually occupied by the liver and its lobes." ("Pushed towards the situation" is probably meant developed in the situation." - p. 26.) During the discussion, it was remarked that preparations of four analogous transpositions were to be found in the London Museum of Surgeons, University and King's College, of St. Thomas and the College of Surgeons' Museum.

3. Case, recorded by W. C. Maclean M.D., Professor of Military Medicine at the Army Medical School, Netley, (in the Lancet Vol. II. 1863, page 159.)

Private Isaiah A - age 25, 166th Regiment. The heart and liver are transposed; the spleen is in the normal position; the right testicle is lower than
the left and the man is left handed. Patient was liable to attacks of palpitation at will, when free movements of his chest were interfered with by the pressure of his tight lince and accouterments.

4. From the report of the proceedings of the Pathological Society of London, on December 17, 1876 (the Lancet vol. II 1876 page 894.)

Dr. Lee showed a living example of visceral transposition "a fair haired, delicate looking and intelligent boy, eight years of age" who came amongst Dr. Lee's out patients at the Hospital for Sick Children, "suffering from weakness and some wasting, but no definite organic disease." The right testicle was slightly lower than the left and the lad was right handed. (During the discussion it was stated that the spleen was subdivided in many cases.)

5. Case recorded by Dr. C.A. Babcock (in the British Medical Journal vol. I 1881 page 828.)

of T. S. Brandin, aged 17, born at Malden, near Ontario, of healthy parents. He is right handed. His health is good. A very loud bruit de diable was detected in the right clavicular region. (Dr. August Foster says that the viscera are always found to be laterally transposed in that individual which lies to the right in double monsters united at the umbilicus.)

6. Case recorded by M. Lequeur (in Le Progrès Medical for September 13th, 1883.) Of a young
woman aged 19 who died after Acute Rheumatic Fever.  
The pancreas was reduced to the size of a chestnut  
and occupied the usual position of the head on the left  
side. The spleen was in two portions each not  
larger than a nut.

Commentary:

The following conditions found in the preceding  
six cases are not in the report of the case of Margaret  
Jardine. Oesophagus at the right side of the Aorta.  
Spleen in the normal position. Spleen subdivided.  
Pancreas reduced in size and head to the left of the mid-  
ddle line. Right testicle lower than the left. Left  
handedness. Right handedness.

Margaret Jardine could use either hand equally  
well but stated that she could not carry a child on  
her right arm even for a short distance. Out of  
forty cases details of which are recorded by Dr. A. Richter  
of Dillingen in Virchow's Archiv 97. 2. (Lancet 1881  
p.306) in only one case was left handedness  
found.