NOTES
on
TYPHOID FEVER
by
F. G. PROUDFOOT M.A., M.B., C.M.
From June 1896 to May 1897, 12 cases of Typhoid Fever came under my care as House Physician at the Radcliffe Infirmary Oxford. In the following pages I have recorded the principal notes which I took on these during their residence in Hospital. At the end of each I have made a few remarks on the chief points of interest and the treatment employed. In addition, taking my cases as a basis, I have discussed the symptoms of Typhoid Fever, their effects on the different systems, the points of diagnosis, the prognosis and treatment.
Typhoid Fever.


History previous to admission. - Had a frontal headache for one week with disinclination to move about. She had been sick on several occasions during this time. Her bowels had been opened regularly once every day.

On Admission. The tongue was covered with a white fur on the dorsum, but was clean on the tips and sides. The heart sounds were normal, and the lungs were healthy. The abdomen was distended, and area of splenic dullness was increased \(\frac{1}{2}\) inch below costal margin. Pulse 108. Temperature 102 F.


Aug. 26. Temperature 103.8 F. Diarrhoea begun to-day.

Bowels opened 10 times in the 24 hours.

First sound of the heart fairly distinct.

From Aug. 27. Not much change in the general condition to Aug. 31.

Diarrhoea still continued, and a large increase in the number of spots. Temperature highest 103.8 F.

Sept. 4. Patient was slightly delirious during the night, but in the morning temperature had fallen to 99.8 F.
Sept. 5. Nothing of importance to record during these
days, except that the temperature gradually
became lower in the mornings but rising in
the evenings to 99.8 F.

Sept. 16. Temperature normal this morning, in the even-
ing 99°. First heart sound was quite distinct,
pulse 100°- tension more marked than it had
been for some days. On this day the patient
was given junket, raw beef juice, and one egg
beaten up in milk, having previously had only
milk.

Sept. 21. While the patient's temperature had been
coming down to Normal in the morning, it still
reached 99 F. in the evening, and on this
day the morning temperature did not reach
normal, and in the evening was 101 F.

Sept. 22. Temperature 99° F. in the morning, 102° F. in
the evening. There was evidently a relapse.
Pulse 128 and of low tension. First sound of
the heart fair.

Sept. 26. Stools (which were previously formed)
were liquid to-day and typhoid characters
reappeared.
Sept. 28. Temperature 106.2° F. The ice pack was applied and temperature fell to 104° F. rising immediately to 105.2° F. Patient was put into a bath with water at a temperature of 100° F. and reduced to 90° F. Temperature fell to 103° F.

Sept. 29. Temperature 105° F. Bath originally 100° F. reduced to 78°. Temperature fell to 102° F.

From Sept. 30. The temperature varied between 105° F. and 104° F. She was cold sponged all over whenever her temperature rose above 104° F, and on each occasion after sponging her temperature fell about 2 degrees, but rose again within an hour. She was cold sponged on an average every 3 hours.

Oct. 2. Sponging not necessary as her temperature did not reach 104°, but she became very delirious.

Oct. 3. Temperature 103° F., but still very delirious. Pulse running and can with difficulty be counted, numbering 150 on several occasions. Tincture Hyoscyamus was given, but with no effect.

Oct. 4. Being still very delirious Liq. Opii Sed. was given every 2 hours for 3 doses,
and after third dose patient fell asleep and slept for 6½ hours. After this she was quieter, the pulse was now only 120 F.

Oct. 5. She was not delirious. Temperature 100 F. Pulse 112, fuller in volume and with a certain amount of tension. She slept all day nearly, waking only for nourishment.

Oct. 8. Temperature normal in the morning, rising in the evening to 100.4 F. Pulse 112. Fuller and of fair tension.

Oct. 13. For the last four days her temperature has been normal or subnormal and her whole general condition has very much improved.

Nov. 7. Discharged cured.

Remarks on the case and treatment employed.

The first part of the case was an ordinary one of Typhoid of a fairly severe type. It pursued a typical course till the unfortunate relapse. The diet before the relapse consisted of milk 2 parts, barley water 1 part \( \frac{3}{8} \) every 2 hours, after the temperature had reached normal for 3 days, raw beef juice was given in addition to the milk, and also a beaten up egg in the milk.
Whether this was the actual cause of the relapse it is difficult to say but the fact remains that 2 days afterwards the temperature began to rise. The relapse, as the preceding notes shew, was of an extremely severe type, and we relied for treatment simply on reducing the temperature and giving stimulants. The stimulants used at one time or another were Brandy, whisky, and champagne. At one period she was taking as much as \( \frac{3}{xvi} \) of champagne and \( \frac{3}{iv} \) of whisky. Before the relapse she was taking \( \frac{3}{iv} \) of brandy in the 24 hours.

As to the delirium, to my mind it was undoubtedly due to the amount of alcohol she was taking acting on her weakened condition. The turning point was after she had the opium which gave her 6½ hours sleep. She had diarrhoea more or less during her whole illness but this was not checked at all, as it was not considered very excessive. No drugs were given except for the delirium and the temperature was controlled by tepid sponging, ice sponging, ice pack, and cold bath.
Case II.

S. G. age 28. Admitted into hospital Aug. 27.

History previous to admission. Patient has been nursing her husband, who is now convalescent, of Typhoid fever. She has been feeling "not well" for 10 days, with attacks of sickness and headaches. She has had constipation for 4 days.

On admission. The tongue had a thick white fur on the dorsum and the face was flushed. Her abdomen was somewhat distended, but no spots were seen, and the splenic dulness was not increased. Her temperature was 104.8 F. the Pulse was 120. There was a very small result after an enema.

Aug. 29. Again a small result from an enema but the faeces showed a more typhoid appearance.

Aug. 30. The bowels were opened each day with an enema and on each occasion the result was characteristic. On Aug. 30 one or two spots were found on the abdomen and the amount of splenic dulness was slightly increased. Temperature on Sept. 1 was 104° F.
Sept. 4. First sound of the heart was slightly weaker and somewhat impure. The pulse was regular, 92 per minute and compressible.

Sept. 4. The temperature fell steadily until Sept. 10 to Sept. 10. it reached normal for the first time. The first sound of the heart is now stronger and pure, the pulse is 90 and fuller, and not so compressible.

Sept. 16. Temperature has been quite normal for 4 days and patient has greatly improved. Her bowels have been opened every other day by a simple enema.

October 2. Discharged cured.

Remarks and treatment employed. - This was a very mild case of enteric fever with few very definite signs. the diagnosis was based on the following facts : -

(1) Patient had been nursing and was still nursing before admission her husband who had undoubtedly typhoid Fever.

(2) One or two rose-coloured spots on abdomen.

(3) Constipation

(4) Slightly enlarged spleen.

(5) Persistent high Temperature.
The diet consisted of Peptonised milk $\frac{2}{3}$ and half a pint of beef tea in 24 hours.

Extra feeding was begun early, namely on the first morning of a normal temperature when junket was given and one egg beaten up in milk. Phenacetin gr viii was given for headache and on Sept. 3 Salol gr v was given every 4 hours. Then during convalescence Ferri et Armonon Cit gr x was given ter die with a bitter infusion. No stimulants.

**Case III.**

C. C. Age 15. Admitted into Hospital Sept. 28.

**History previous to admission.** Patient had been feeling out of sorts for 3 weeks. He had diarrhoea more or less during that time. There was no sickness or headache. Had been at his work most of the time. He stated the stools were very liquid and of a yellowish colour.

**On Admission** The tongue was covered with a yellowish fur on the centre and was very dry. The abdomen was not distended and there were one or two spots on the abdomen. The splenic dulness was slightly increased. Heart sounds were good and pulse was full and bounding (100). The temperature was $104^\circ$ F.
Oct. 1. There was nothing of importance to report during the previous days, except the fact that whereas before admission patient stated that he had diarrhoea, since admission his bowels had not been opened. On this day an enema of glycerin was given with a good result. The first sound of the heart was weaker to-day. Temperature 102° F.

Oct. 4. Patient's temperature now tends to come down. It is 102.2 F. and Pulse is steady but soft.

Oct 8. Patient's condition has steadily improved during the last few days. Temperature 98 F. Heart sounds still rather weak. Spleen is now distinctly enlarged and can be felt beneath the costal margin. The bowels require to be opened every second day by an enema.

Oct 11. The temperature since last note has been slightly but steadily increasing and to-day is 102 F.

Oct. 13. Temperature this morning is 99 F. but it rises somewhat in the evening.

Oct. 18. The bowels have not been opened for five days and the temperature, though it comes down in the morning, rises to between 100° to 101° F.
in the evening. An enema of oil and water was given with a good result.

Oct. 21. The temperature has kept normal since Oct. 19th. Convalescence was now fairly begun and it continued uninterrupted until he was discharged Dec. 16th.

Remarks and treatment employed.

This was another ordinary case of Typhoid Fever. In this case the constipation which was present after admission was not relieved regularly, but on several occasions was allowed to continue for 4 or 5 days. During one of these intervals there was a threatening of a relapse which subsided after the bowels had been opened. In this case during the whole period of elevated temperature, and for 10 days after the temperature had reached normal the patient was kept entirely on milk and water equal parts. Three pints daily being given when the temperature tended to relapse, the heart sounds became rather faint so Brandy 3 were given in the 24 hours. On the 10th day of normal temperature patient was given one pint of beef tea and 3 ounces of junket in the 24 hours. Then the food was very gradually increased till on Nov. 5 Patient was having pounded chicken, thin
bread and butter and custard pudding.

Nov. 22. A chop was added to the dietary, and for a few days before discharge he was taking the ordinary diet of the ward.

Case IV.


History previous to admission. Had been ailing 3 weeks having frequent headaches and pain in the stomach and abdomen. There was no diarrhoea, but bowels were opened each morning very loosely.

On admission The tongue was raw, cracked and slightly furred, and the lips dry and cracking. There was pain over the epigastric region, and tenderness on touch. The abdomen was not distended, and there were no spots seen. The area of splenic dulness was somewhat increased. The heart sounds were strong and no murmur heard. The urine contained a slight trace of albumen. Temperature was 102° F. Pulse 112 full and soft.

Oct. 10. Several spots were now seen on the abdomen. It is slightly tender to the touch. The bowels have not been open since admission.
Oct. 12. Pain and tenderness over abdomen still continue. The bowels have been opened 3 times. Stools light in colour and partly formed.

Oct. 13. Temperature keeps up to between 103° and 104° F. and the heart sounds are fairly strong. Pain and tenderness slightly improved. Bowels act each morning.

Oct. 18. Temperature reached normal to-day by a sudden drop from 101.4 F. but it rose again immediately.

Oct. 26. Nothing of importance occurred until to-day when patient complained of great pain in her left leg. The abdominal pain was gone. The temperature was raised between 99 F. and 101°F.

Oct. 28. Severe abdominal pain returned yesterday necessitating ½ grain of Morphia hypodermically. The abdomen was distended and tympanitic. The bowels were slightly moved twice, on the last occasion there was a little blood in the stools. Pulse is now 128 small and no tension. Temperature subnormal. The diet which had previously consisted of milk and water equal parts and beef tea or mutton broth was now exclusively milk and water.
Oct. 29. No pain to-day and patient altogether seems better.
Temperature 99° F. Pulse 106. Some few crepitations heard over the base of right lung.
Heart sounds still continue faint. She has had for the last 3 days Brandy every 4 hours.

Nov. 6. Patient now complains of great pain in her left leg which is somewhat edematous round the ankle. There is again a rise of temperature reaching 102° F. at highest. She has evidently a thrombus in the internal saphenous vein of left leg.
The pain disappeared in a week, but the swelling persisted for 4 weeks, then gradually subsided and she was discharged cured Jan 19th.

Notes and remarks on Treatment.

This was rather a doubtful case and the diagnosis was chiefly made by a process of exclusion and also by the fact that she was maid in the house next to the one in which case 1 (A. H.) was nurse, and where the master of the house himself a medical man was suffering from typhoid fever. The slight haemorrhage which occurred Oct. 28th with increase in pulse rate and fall in temperature favoured the diagnosis somewhat. As to diet
for the first 9 days after admission she was kept on milk and water $\frac{\alpha}{\tau}$ in 24 hours. After that till the haemorrhage occurred she had in addition chicken or mutton broth. At that time also when there was tym-
panites $\beta$ Naphthol gr $\frac{\beta}{\gamma}$ was given every 6 hours. Beyond that and an occasional opiate for the severe pain no other drug was given till she was convalescent when an acid mixture with strychnine was given. The occurrence of thrombus in the leg was an unfortunate accident and delayed convalescence considerably.

Case V.

W. G. age 21, admitted into hospital Oct. 15.

History previous to admission. Patient had been ailing more or less since July, but only took to his bed 3 weeks before admission. During this time he had no diarrhoea but felt "very weak." He saw no doctor then. On attempting to get out of bed 16 days before admission he nearly fainted. On Oct. 8th he was brought to the Infirmary as an out patient and was strongly urged to "remain but his friends drove him back home and then sent for a doctor. This doctor gave him a pill and from that time his diarrhoea commenced. Finally he was sent into
the Infirmary on Oct. 15th by the doctor as a case of Typhoid Fever.

On admission His tongue was furred and very dry, his teeth were covered with sordes. There were several spots noticed on the abdomen. The splenic dulness was increased. The first sound of the heart was very muffled and weak while the second was slightly accentuated. On examining the lungs Rhonchi were heard over both bases, while expiration was prolonged over both apices. For the first two days after admission he had diarrhoea.

His temperature on admission was 102.2 F.

Oct. 18. The diarrhoea ceased and temperature was slightly less. Not much improvement in heart sounds.

Oct. 22. During the previous days there was nothing of importance to record, the temperature was now 98 F.

Oct. 26. Heart sounds at base of lungs were now clear, plenty of air entering. First sound of the heart rather stronger but still very faint. His tongue is moist and only slightly pale.

Nov. 3. Temperature after having been normal for 12 days began to rise slightly on Nov. 1. namely
99° F. and on this day reached 100° F. This was taken to be the beginning of a relapse. There was no diarrhoea. Temperature remained up until Nov. 14th when it reached normal again. The highest point which the thermometer reached during this attack was 102° F. After this the patient made an interrupted recovery.

Remarks and treatment employed.

This was, I think, a very mild case of Typhoid Fever. Patient evidently came into hospital about the end of the second week. The point of interest is the fact of relapse after 12 days of normal temperature. The treatment during the attacks was limited entirely to diet viz. milk and water, after the temperature had been normal 4 days, beef tea and junket were given in addition. On Nov. 1st just before the rise of temperature was noticed 2 eggs, toast soaked in beef tea, and bread crumbs in milk were added to the dietary; then when the temperature rose, milk and water only were given. He was discharged Jan 11th cured.
Case VI.


History previous to admission. Patient had been ailing for several weeks, her doctor told her she had anæmia. For a week before admission she had headache and diarrhoea.

On admission. Her tongue was moist and flabby and slightly furred. The abdomen was slightly distended and tympanitic, no tenderness anywhere and no spots. The skin was moist, patient perspired freely. The spleen was not enlarged. The lungs were quite free of any mischief. There was a slight systolic murmur heard on the apex and over the pulmonary region of the heart. The urine contained a slight trace of albumen. Temperature 104° F. on admission.

Oct. 17. Temperature has been twice above 104° F. and the patient has been cold sponged twice. Pulse regular full, very easily compressible. There is not much distention of abdomen and no spots.

Oct. 21. No change to record.

Oct. 27. Abdomen more distended, and numerous spots seen over the abdomen. There is dulness at both bases of lungs, with some crepitations and numerous Rhonchi over the greater part of the lungs.
Oct. 28. Patient's aspect is much duller than it was. Heart sounds and pulse are fairly good.

Oct. 30. Successive spots have appeared daily. The tongue is much more furred. The condition of the lungs is no worse.

Nov. 4. No new crop of spots. Condition of lungs has improved.

Nov. 6. Temperature has reached normal for the first time. Pulse is small and of low tension.

Nov. 16. Temperature has been normal and subnormal for over a week. Lungs have cleared up well, and heart sounds have improved considerably.

Remarks and treatment employed.

The diagnosis in this case was somewhat doubtful for a few days. The absence of any definite Typhoid symptoms, and the presence of some pulmonary trouble made the diagnosis difficult, and it was only when the rose coloured spots appeared, and the concomitant increase of abdominal distention, that we came to the conclusion that it was typhoid. The condition of the lungs was not severe enough to account for the high temperature and great prostration of the patient. The diet of this
patient consisted at first of Peptonised milk \( \times 3 \) twice every 2 hours. No beef tea was given because of the tendency to diarrhoea. A week after admission an egg beaten up in milk and junket was given in addition to the peptonised milk. There was no evident bad effect from this. After the temperature reached normal, patient was quickly put on to more solid diet such as custard pudding "Typhoid bread" and pounded chicken. The patient was cold sponged whenever her temperature reached \( 103^\circ F \). She was also given \( B \) Naphthol grs v every 8 hours. After the first day in hospital the diarrhoea ceased, and therefore her bowels were opened every second day by a simple enema.

She was discharged cured Dec. 6th.

**Case VII.**


**History previous to admission.** Patient who is a waiter has been ailing for over one month, but he has been much worse during the last week. At this time diarrhoea and sickness commenced and a day or two ago he had a "shivering fit." During this time he had been delirious specially during the night. He had always been a hard drinker.
On admission Patient was very delirious. His tongue was dry and furred. On his abdomen there were numerous rose coloured spots, very considerable distention, and marked tympanites. The splenic dulness was not easily made out because of the great distention. There was some slight dulness over the right lung posteriorly below the spine of the scapula, but no definite bronchial breathing or crepitations. Temperature on admission 102°F.

Nov. 15. The abdomen continued very distended. The spots were less prominent. His motions which were passed in bed were of a yellowish colour, and in other ways somewhat resembled Typhoid Stools. On deep inspiration a few crepitations were heard over the right lung posteriorly just below the spine of the scapula.

Nov. 17. The abdomen which had been flaccid for 2 days again became distended and tympanitic. There were no fresh spots. The dulness over the right lung had increased somewhat and bronchial breathing and fine crepitations heard over most of the lower lobe. The patient still wanders, but there is now no violent delirium.
Nov. 20. Temperature which has reached 104.6 F. now tends to come down. To-day it is 99.2 F. The heart sounds are feeble and the pulse small and easily compressible. There is no increase of the dull area of the lungs, and otherwise they shew no change.

Nov. 23. The tongue now dry and raw. The abdominal distension though still present very much less marked. In the stools to-day there was a trace of blood. No effect on temperature. Lungs have begun to clear up, pulse fuller and more tone in it.

Nov. 30. Tongue continues dry and raw, but the abdominal distension has now disappeared, the abdomen being quite soft. Heart sounds are still faint but pulse is fuller, though tension continues low. There is still some dulness at R. base, and a deficiency of lung sound pointing possibly to the pressure of some fluid at the base.

Jan. 2. Patient made an uninterrupted recovery. His lungs cleared up entirely and he was discharged cured Jan. 2.
Remarks and treatment employed.

The important fact in this case was the presence of the strong delirium. He required a male attendant as well as a special nurse to look after him during the first 3 days after admission. Thereafter he became quieter though his mind continued to wander till after convalescence had been well established. Sleep was procured when he was violently delirious only by means of morphia gr $\frac{1}{2}$ given hypodermically. His diet consisted of milk, Beef Tea or Mutton Broth. After his temperature had been normal for 6 days he was given an egg beaten up in milk and junket, then his diet was increased gradually from day to day till he had pounded chicken and fish and finally ordinary diet. Convalescence was uneventful and steady.

He was discharged Jan. 2.
Case VIII.


History previous to admission. Patient had been feeling "out of sorts" for 3 weeks. He gave up work 10 days ago and sickness and diarrhoea came on a week ago.

On Admission. The tongue was covered with a yellow fur, and was very dry and tremulous. The abdomen was somewhat distended and numerous spots were seen over the abdomen, thorax, and back. There was tympanites and the area of splenic dulness was increased. The heart sounds were faint, the first sound being specially weak. At base of right lung there was dulness on percussion and a few crepitations and Rhonchi heard over that region while Rhonchi were heard over left lung posteriorly.

Temperature on admission 103 F. Pulse 130, soft, compressible and dichrotic. The stools were not particularly offensive but were somewhat dark in colour.

Urine contained albumen.

Nov. 20. Temperature has continued high reaching 104 F. at one time. Pulse continues weak and dichrotic while the heart sounds are still faint.

He has marked subsultus tendinum. The condition of the lungs remains as before.
Nov. 21. Pulse to-day is fuller but still very compressible. Temperature has a lower range. The bowels have been opened after an enema.

Nov. 24. The improvement is maintained. Pulse 100 and no longer dichrotic. Temperature 102 F. There is still albumen in the urine.

Nov. 25. Temperature continues to fall, having fallen to 99 F. on one occasion. Urine is now free of albumen.

Nov. 30. Temperature is now normal, and the condition of patient considerably improved. Pulse is now 80, and with a fair amount of tension.

Dec. 6. Patient now quite convalescent.

Remarks and treatment employed.

This again was an ordinary case of Typhoid Fever with nothing special to call attention to, beyond the presence of some Pneumonia in the lungs, again in this case probably due to the Typhoid Bacillus itself.

The diet at the height of the fever consisted of milk and water (2:1) and Beef tea. Owing to the weakness of the heart patient was given Brandy every 4 hours for 5 days and thereafter gradually reduced.
More solid food was commenced 6 days after temperature had been normal. He was sponged whenever the temperature was above 103 °F. On one or two occasions he had his arms tepid sponged and his spine rubbed with ice. Naphthol gr vi was given every 6 hours till the temperature was normal, and then night and morning until convalescence was well advanced.
Case IX.

F. B. age 13. Admitted into Hospital Dec 1.

History previous to admission. About a fortnight before admission he had an attack of sickness and diarrhoea. This continued for over a week and the patient who was from home, returned and walked to the station, a distance of about a mile. He had no diarrhoea after he got home, but his temperature keeping high his doctor sent him to the Infirmary.

On Admission. Tongue was furred and very tremulous. Lips were cracked, dry and black. Abdomen distended and tympanitic; there was no marked tenderness, but he complained of general pain in the abdomen. There were one or two suspicious spots. Heart sounds were muffled.

Pulse 108, regular, small and soft. In the lungs coarse breathing and Rhonchi were heard but there was no dulness on percussion. Temperature on admission 102° F.

Dec. 4. Some crepitations were heard over the upper lobe of the right lung and over left base. There was a little diarrhoea.

Dec. 7. Pulse weaker and more rapid though temperature is not so high.
Dec. 10. There was a small haemorrhage from the bowels to-day which were opened 3 times. His temperature fell to 99° F. He takes milk very well.

Dec. 16. Patient's condition has improved somewhat. Pulse is stronger and temperature has reached normal.

Dec. 29. During the last 5 days temperature has been gradually rising again, and with it the pulse has become more rapid and distinctly dichrotic and diarrhoea has begun again. There was a copious haemorrhage from the bowels to-day, and patient looks very pale and collapsed. Temperature 99°. Pulse 134.

Patient's legs and arms were bandaged and he was given ice to suck, and a mixture containing Liq: opii: Sedativ: m1/ given every 4 hours.

Dec. 30. Patient has rallied to-day and his temperature has risen again to 103.4 F. There was no motion from the bowels to-day.

Jan. 3. Patient's bowels were opened twice naturally to-day, and only a speck of blood seen. Temperature still keeps high 103.6 F. & dichrotic.
Jan. 7. Temperature has now fallen to 100.8 F. Pulse 116. Altogether patient is better.

Jan. 14. Temperature has been normal for 4 days, and pulse has improved considerably. Finally patient made a slow but otherwise satisfactory recovery.

Remarks and treatment employed.

This was interesting for two reasons, because of the relapse and the rather serious haemorrhage that took place. His diet consisted entirely all through the febrile state of equal parts milk and water, and after the first week Brandy in fairly large quantity; at one time he was having as much as 3f every 2 hours. As mentioned above Liq: Opia: Sed: mv every 4 hours was given for the diarrhoea, otherwise until he was convalescent no other drug was given. During convalescence he had Liq. Ferri Dialysed mxx twice daily.
Case X.

P. F. age 36. Admitted into hospital Feb. 15.

History previous to admission. Patient states he has had Rheumatic Fever 3 times. For the last fortnight he has been complaining of pains in his back and head, and three days ago pain in his stomach began. He took to bed at this time. His bowels moved once a day loosely, but not diarrhoea.

On Admission. Tongue was dry and covered with a yellow fur, except at the tip which was red. Abdomen was full with tenderness in both iliac regions. There was marked tenderness over the spleen which was distinctly enlarged. His heart sounds were weak but not accompanied by any murmur. Pulse 108, regular, small, and compressible. There was slightly harsh breathing over the left lung posteriorly but otherwise the breathing was normal. There was no albumen in the urine. Temperature on admission 102.2 F.

Feb. 18. Heart sounds still continue weak, Pulse also weak, his bowels have been opened twice.

Feb. 20. His bowels have been opened 3 times, small in quantity, very dark in colour. Pulse is stronger.
Feb. 21. Has had his bowels moved 8 times to-day, but on each occasion there was very small result. Stools still dark in colour. Pulse very soft and dichrotic. Heart sounds fairly distinct.

Feb. 23. Still a number of small stools, but they have become lighter in colour. There is some tubular breathing over the lower lobe of right lung, and some crepitations heard over base of left lung. Temperature 103° F.

Feb. 28. Patient is now much better. The diarrhoea has ceased, and temperature reached normal this morning. Pulse is stronger 10o and not dichrotic.

March 4. Patient is improving, temperature several times has been normal. Heart sounds are stronger, but a slight systolic murmur is heard over the apex. No crepitations heard over the lungs, but tubular breathing still continues at upper part of lower lobe of right lung.

March 11. Patient has had a severe relapse, temperature has risen to 103° F. Pulse 132 and again distinctly dichrotic. There is no murmur now
heard over the heart and beyond the slight
tubular breathing at the spot previously in-
dicated the lungs are clear.

March 18. Temperature now shows a tendency to come down
having reached 99° F. Slight impurity of the
first sound of the heart again heard over the
apex, Pulse 112 but stronger, the bowels are
kept open every day by means of a simple enema.

April 1. Temperature has now been normal for 8 days,
and his condition has improved considerably.
Tongue very clean, Pulse of good tension. No
murmur heard over heart. Patient made a good
recovery.

Remarks and treatment employed.

This case was an anxious one from beginning to end. The
history of 3 previous attacks of Rheumatic fever made us
watch the heart very carefully, while the patient himself
was a highly nervous individual, and was easily worried
by every change in the course of his illness. The re-
lapse too was a very severe one in fact the temperature
was higher during the relapse than in the first attack.
His diet consisted of milk and water 2½ pints daily,
Beef Tea and the white of an egg daily. He was given
Brandy in varying doses from 3/4 to 3/4 in 24 hours. In
addition because of his heart he had a mixture contain-
ing Li. Strychnine 3/4 and Tincture of Strophanthus
mv ter in die. He had also 3 Naphthol every 4 and then
every 6 hours. He was cold sponged whenever his temperature rose above 103 F. He made a good recovery.
Case XI.

F. W. age 15. Admitted into Hospital March 29.

History previous to admission. Had been feeling ill for about 10 days, and 6 days before admission felt very giddy and hot. His bowels were very constipated, and had not been open for 6 days. He had a headache a few days before admission.

On admission His tongue was pale, dry and furred. His abdomen was not distended, but there was gurgling on pressure over the right Iliac region. There were no spots. The spleen was not enlarged. On listening to the heart there was a slight systolic murmur heard. The lungs showed no evidence of disease. Temperature on admission was 104.8 F.

April 1. Temperature still kept very high, reaching 104° F. on several occasions. Pulse 116 of good volume but easily compressible. One or two spots noticed to-day.

April 2. Temperature 104° F. but pulse did not get much weaker.

April 4. Temperature now showed a downward tendency falling in the evening to 100.2 F.

April 5. Temperature has gradually fallen, till it reached normal to-day for first time. Pulse 88 of good volume, and fair amount of tension. Convalescence was satisfactory and patient was discharged on May 10th.

Remarks and treatment employed.

This was another straightforward case, and we came to a diagnosis at first chiefly from the fact that he came from a small neighbouring town where there had been
several cases of Typhoid, and one case in the house where he had been living. For the first week after admission his temperature kept persistently reaching as high as 104° F. He was cold sponged whenever the temperature was above 103° F. His diet to begin with consisted of milk (2 pints to 1 pint of water) Beef Tea, or chicken broth. His diet was increased when his temperature was normal. He was given Naphthol gr vi every 6 hours.
Case XII.

M. D. age 25. Admitted into Hospital April 8.

History previous to admission. Patient who is a nurse had been nursing away from Oxford a case of Typhoid Fever, and about a fortnight before admission while still nursing the case she began to feel "out of sorts" and troubled with a nasty cough. Being rather suspicious she came home to Oxford at once, saw a doctor, who sent her into the Infirmary 4 days afterwards.

On admission Patient was evidently in a very weak state. Temperature 103° F. Pulse small and of low tension. Tongue dry, cracked and furred, she had subsultus tendinum well marked. There was no diarrhoea. The abdomen was markedly distended, and tympanitic and there were spots on the abdomen. Heart sounds were very weak, especially the first sound. The enlargement of spleen was not made out.

April 11. Patient has been extremely restless these last few days requiring the administration of drugs. There was low muttering delirium and excessive subsultus tendinum. To-day there is dulness on percussion over the left base with distinct tubular breathing. Pulse small and running. Temperature 102° F.

April 15. Patient's condition continues grave. Her breathing has become very rapid varying between
40 and 50 in the minute. The area of lung dullness has increased, and pulse is fast and running. Heart sounds are extremely feeble. The abdomen continues greatly distended and tympanitic, and diarrhoea has once more set in.

April 18. Pneumonic condition became gradually aggravated, and patient died of heart failure.

Remarks and treatment employed.
This case unfortunately came to us too late, as the patient had practically been walking about for a fortnight before admission. It was undoubtedly a case of Typhoid though the immediate cause of death was from the Pneumonia which supervened. Her diet consisted entirely of milk and water in the proportion of 2 to 1. Brandy was given in large quantities as much as \( \frac{3}{4} \text{in} \) in 24 hours, being administered finally.

For her sleeplessness and restlessness Trional in \( \frac{q.m.}{n.} \) doses was given with little effect, so Lig. Opii Sedal: in \( m.v \) doses was given as required. This was fairly successful. Finally hypodermic injections of Strychnine (\( \frac{1}{40} \) grain) was given when necessary, and a mixture of Ammonium Carbonate, Ether, Digitalis and Senega given every 4 hours. For the last two days frequent inhalations of Oxygen were given. For the distension ext of Belladonna and Glycerine in the form of a thick paste was applied to the abdomen.
Symptoms

In Hospital practice one rarely sees a case of Typhoid at the very beginning, but usually about the beginning of the second week, or end of first week. The history obtained in most cases previous to admission was after the following manner. Patient for about 10 days to 3 weeks before admission was practically in his usual health, then he had a feeling of lassitude with some headache, his appetite previously good, became very poor, he did not feel rested after a night in bed and was unable to perform his work satisfactorily. Then in a certain proportion of cases diarrhoea commenced, with possibly some sickness, finally he was compelled to take to bed. In some cases there may be no diarrhoea but a persistent constipation, in some instances the first symptoms noticed were of a pulmonary character. Patient felt shivery and cold and a cough commenced which might even go on to a well marked bronchitis developing even to a Pneumonia. After the patient has been admitted into hospital the following are the most prominent symptoms. The patient as he lies in bed is dull and listless, on looking at his tongue one notices it dry, covered specially in the centre with a yellowish brown fur, the lips are dry and frequently cracked in places and teeth and lips may be covered with sordes. On examining the body of the patient the most prominent point noticed in most of the cases is the distension of the abdomen and on percussion it is found to be markedly tympanitic. On pressing in the right iliac region gurgling may or may not be elicited. Scattered over the abdomen spots varying in number from one or two to a large number are observed. They are of a rose colour, and slightly raised above the skin, they disappear on pressure
reappearing after pressure has been removed. These spots may in some instances be seen upon the chest, back, and occasionally on the thighs. A point on which much stress has been laid is the fact that the spleen is enlarged. In my experience it has always been a matter of great difficulty to map out with any degree of exactness, the area of splenic dulness and if there be much abdominal distension and tympanites it is next to impossible to map out the area at all accurately. In several cases however it was made out that the spleen was enlarged though to what extent it was difficult to say. Diarrhoea is a very important symptom, though by no means constant as constipation existed in a few of my cases. The stools of a typical typhoid patient are liquid, of a yellowish brown colour, (pea soupy). On being allowed to stand for some hours in a jar they separate into 2 layers, the upper layer being a clear yellowish fluid, very rich in albumen, and the lower layer consisting of the more solid matters viz. undigested or partially digested food. The temperature of the patient was a very distinctive symptom as evinced by the course it followed. The temperature in Typhoid as pointed out by Wunderlich follows a fairly definite course. It gradually rises from the period of invasion every evening one degree or two degrees Fahrenheit with a slight remission in the morning until it reaches a height usually about 103 or 104 F. in the evening, and 102 or 103 F. in the morning. This condition called the fastidium lasts for 7 or 8 days when it falls steadily, or rises according to the severity of the fever.

The skin was usually dry and from it there exhaled a smell which was quite peculiar to typhoid patients and on which some people especially nurses lay great
stress. Pulse was ranging from 100 to 130 per minute, was fast, of low tension and usually dichrotic as the fever progresses that is as it gets into the third week the symptoms become aggravated in severe cases or begin to shew signs of improvement. The chief signs of improvement at this stage are in connection with the Temperature and pulse. In the temperature we notice that in the mornings it gets daily lower, though still rising in the evening. This goes on till it eventually reaches normal in the morning rising possibly to 100 F. in the evening, finally it ceases to rise above normal in the evening, and unless a relapse takes place convalescence may be considered to be fairly established. Corresponding improvement takes place in the pulse, which becomes slower, between 80 and 100 in the minute, and of greater tension. The stools begin also to have a more natural appearance, they become more formed and to act more regularly. Sleep is now natural and refreshing, a very noticeable feature in this convalescence is the presence of a voracious appetite; patient feels as if nothing could satisfy him but in reality very little is sufficient to appease his appetite at this stage. On the other hand if the fever takes an unfavourable turn we notice that all the early symptoms are aggravated, temperature shows no sign of abatement but keeps a high level or even goes on to hyperpyrexia. The pulse increases in rate and is small and running. The diarrhoea increases and certain nervous symptoms, and the fever becomes what Sir Thomas Grainger Stewart termed the "Nervous or Malignant" type of Typhoid, delirium either low and muttering or violent, subsultus tendinum and various other nervous phenomena appear, pneumonic symptoms if they have not previously appeared are present, and finally, the most
dreaded of all complications, perforation is common at this stage; nevertheless recovery is quite possible even when the patient seems to be at the point of death as was seen in one of my cases.

**Respiratory System.**

This system was in most of the cases which I have noted involved to a greater or lesser extent, and, in one certainly, Pneumonia was really more the cause of the death than enteric fever. On some of the cases lung trouble was present from the beginning usually however the only physical signs were moist zâles heard over the base of the lungs, then towards the middle of the illness signs of hypostatic congestion were frequently noted. In one of the cases (No. 6) the diagnosis was doubtful for a time because of the well marked signs of the lungs pointing to Pneumonia, and it was really only after the case had been well advanced that the diagnosis was made evident as one of typhoid. It is extremely difficult to say whether the Pneumonia which occurred in several of my cases was due to the Typhoid Bacillus or was a separate infection by the Pneumococcus. I have noted in my record of the cases those which appeared to me to be due to one or the other. One or two were undoubtedly the result of Hypostatic congestion. Cough was not usually a troublesome feature, merely a short cough with a certain amount of expectoration which in no instance showed any special feature such as the so-called "rusty sputum." These were the chief effects in the respiratory system noted in my cases. Other respiratory conditions which are said to occur with more or less frequency are Epistaxis and various laryngeal affections varying from a simple catarrhal to a diphtheritic condition.
Pleurisy and Empyema also occur in a certain proportion of cases.

Circulatory System.

The heart in Typhoid Fever has to be carefully watched as its condition affects the prognosis of the case very considerably. Myocardial changes take place similar to those which occur in any of the severe febrile conditions. In several of my cases the heart was a source of some anxiety especially in the case of the patient who had previously 3 attacks of Acute Rheumatism; as the illness advanced the first sound of the heart grew markedly feeble, and in 2 cases a murmur developed in the course of the disease, in each case during convalescence the sounds returned to their normal condition. The pulse very strongly showed the effects of the fever, the rate varied from 100 to 140 beats in the minute in the severest cases and was frequently dichrotic in character, an evidence of low arterial tension. In one of my cases a thrombus developed in the internal saphenous vein of the left leg, this is considered not to be of infrequent occurrence. The patient in addition to Typhoid was a very anaemic girl and this no doubt favoured the formation of the thrombus. There was no blocking of arteries in any of my cases. No examination of the blood was made, and so I am unable to mention the changes which undoubtedly take place during the progress of the illness. It is stated by certain observers that the number of red blood corpuscles diminish and also the leucocytes are found to be less numerous.

Nervous System.

Three of my cases especially showed marked nervous phenomena, while the rest showed very few. In case
No. 1 during the first part of the illness, namely before the relapse, patient showed occasionally the ordinary disturbances, she at times failed to recognise her attendants and kept muttering frequently to herself; on the other hand after her relapse these occasions increased in frequency, and in addition persistent insomnia was present, she was now continually muttering to herself, making efforts to get out of bed, and having constant hallucinations; sleep was only produced after the administration of opium. Undoubtedly the delirium was due in part to Typhoid poisoning but I consider that the large amount of alcohol she had been given for the purpose of sustaining the strength of her heart was in a large measure the cause of her excessive delirium.

Case No. 7 was admitted into Hospital with the delirium strong on him, he became quite maniacal, and required for nearly 2 weeks the constant attendance of a male nurse, when he became convalescent the mania disappeared, but he remained for many weeks in a partially unsound state of mind; he imagined he was in a large private house and that the nurses, patients, and doctors composed his retinue of servants; before his departure from hospital his mind quite recovered. As I have said in reporting the history the patient was a waiter and had been for many years a hard drinker.

The third case was that of No. 9. During most of his illness he was in a state of happy delirium, singing in the ward, and continually passing merry jests with imaginary people. During the few days immediately preceding and succeeding the haemorrhage he was more quiet, but he soon returned to the former state.

No other important conditions occurred in the rest
of the cases, but in another case (that of one of the nurses who had Typhoid fever, when I was House Surgeon and not House Physician, and whom therefore I did not attend professionally though I had every opportunity of watching her) towards the end of convalescence, complete facial paralysis supervened. This however was quite temporary and she recovered fully in a few weeks.

**Urinary System.**

There is not much to record under this system. The urine in all my cases showed the characteristic feature of feverish urine. In one or two albumen appeared in the course of the fever, but its presence was temporary, as in each case it disappeared during convalescence. They were cases of Febrile Albuminaria and were not associated with any permanent change in the kidney due to Bright's Disease. This latter occurrence, styled by some Nephro-Typhoid, is very rare. In the case with delirium urine was passed in the bed, and in one case (that of Case XI.) with cardiac disease retention of urine occurred at the beginning of convalescence, and necessitated the use of the catheter. No cystitis resulted. Ehrlich's Diag-0-Reaction was employed in several of the cases with definite result.

**Alimentary System.**

In a few of my cases the history previous to admission pointed out vomiting and sickness as part of the prodromal symptoms; in none of them did sickness persist after admission.

Diarrhoea was a common symptom both before and after admission, though it frequently happened that after the patient had been carefully dieted the diarrhoea ceased and constipation was the condition during the
illness. On the other hand constipation was found to persist right from the beginning of the illness to the end, and yet again it was noticed that when constipation existed on admission, on the administration of a simple enema, diarrhoea set in and lasted for a few days. In only one of my cases was the diarrhoea so excessive as to demand special treatment to stop it. Altogether the condition of the bowels is by no means a constant one in Typhoid, though perhaps the cases in which diarrhoea is the most prominent symptom are the most numerous.

Haemorrhage from the bowel occurred in two of my cases, in one to rather a dangerous extent. The patient became very much collapsed, his pulse at times could not be counted. He was pale and feeble. His temperature had dropped 4 degrees in a few hours; he eventually recovered. The other case was not so alarming. The chief point noticed was the drop in the temperature. Haemorrhage from the bowel is supposed to occur in from 3 - 7 per cent of cases according to Murchison. By some authors it is not looked upon as an unfavourable symptom, but occurring as it sometimes does at the end of the long illness, it must be considered as a most serious complication. Perforation of the bowel, supposed to occur in from 2.5 to 3 per cent of cases, did not occur in any of mine. Its causes are said to be passage of undigested food, sudden severe movement, obstinate vomiting and the presence of intestinal worms. The symptoms are sudden severe pain, at first localised, rapidly becoming general over the abdomen, vomiting, patient pale and haggard with an anxious expression of countenance, cold clammy skin, small fast thready pulse, abdomen usually distended, and temperature subnormal. Unless the patient is operated on at once, the result is almost always fatal. Ulceration and perforation of the Gall bladder is another & less common complication.
Enlargement of the Spleen is frequently present, and can sometimes be made out with some degree of exactness, but if tympanites is present, it is almost impossible to do this. It may also be felt on palpation and is tender on pressure.

No complications arose in the joints or the bones of any of my cases, though these are by no means uncommon.

Diagnosis.

In the cases I have reported we did not see them at the beginning of the illness, but after the illness had been well advanced, and when there was very little doubt as to the diagnosis. The points, however, on which we relied for diagnosis were as follows.

The previous history always showed a period varying from 10 days to 3 weeks, during which the patient was out of sorts. There was his history also of sickness, of pain in the abdomen, of headache, and of shivering fits denoting the existence of some degree of fever. In addition, in several of the cases there was the fact of persistent diarrhoea, though as I have mentioned before constipation was frequently present. After admission we noticed the temperature curve, the high evening temperature with slight morning remission, and also that the temperature did not yield to treatment. The presence of spots on the abdomen most frequently, though appearing less often on the chest, back, and thighs, disappearing on pressure and reappearing on removal of the pressure and fresh ones succeeding as the old ones faded was recognised as typical of Typhoid Fever. Distension of the abdomen with a certain amount of tenderness, the enlargement of the spleen, the condition of
the tongue dry, yellow, or brown fur; sordes on the teeth, cracked lips, gurgling in the right iliac region, the character of the stools, a peculiar odour exhaling from the patient were all points more or less important, and which, when taken with the other symptoms and the general history of the illness helped us to come to a definite diagnosis. As I have mentioned I used Ehrlich's Diag^ Reaction in one or two cases, and it gave the peculiar reaction, but as this result can be obtained in other febrile conditions, its value from a diagnostic point of view is small.

Widal's blood method was only being used after my cases were convalescent, so I was unable to verify the diagnosis by that method.

Prognosis.

The condition of a Typhoid patient is dangerous from the very beginning of the Fever till convalescence has been well established. On the other hand, no matter how desperate the patient's state may appear to be, all hope need not be lost, till death actually occurs. In case No. 1 especially it seemed to be impossible to save the patient's life.

First in importance from a prognostic point of view is the character of the pulse. As long as the rate continues about 100 in the minute, with moderate tension and distinct beats the prognosis is favourable, as it approaches in rate to 140, and assumes a "running character the case must be watched with special anxiety.

When the temperature keeps persistently above 103 F. there is the danger of the patient succumbing to exhaustion; on the other hand a case of Typhoid may end fatally with the temperature but slightly raised above normal.
The occurrence of complications such as Pneumonia, Haemorrhage, Perforation, Delirium adversely affects the prognosis, while also the existence previously of some pathological condition as Heart Disease, or Phthisis renders the case a particularly serious one. In case No. there existed a loud systolic murmur the result of 3 attacks of Rheumatic Fever. This made the case one of great danger throughout, even after convalescence from the fever had been well established.

Careful and judicious nursing, lying in a properly ventilated room are very important factors in making a prognosis. Further the younger the patient is, and the more temperate the patient has been, the more hopefully will a favourable result be looked for.

Treatment.

All the cases which I am reporting are hospital patients, so that the lines of treatment were determined in each case by the visiting honorary Physician. The methods employed differ in some important respects according to the Physician under whose care the cases were admitted. One of the Physicians laid it down as a fixed rule to be followed with his patients that the treatment should consist entirely in giving a very definite diet and in treating special symptoms as they arose. The diet to consist entirely of milk and water in equal proportions, without any addition until convalescence was fairly established. The amount of milk to be consumed by the patient to be 3 pints at least. Another of the physicians desired that his patients should have in addition to milk, a certain amount of beef tea or mutton broth or some other fluid meat extract, varying in quantity and character according to the liking of the patient, provided always that a sufficient amount of nutriment was taken daily. Junket,
eggs beaten up in the milk absolutely forbidden by the one physician was early begun by the other. Intestinal antiseptics viz. Naphthol in grs vi doses every 6 hours were given to several of the cases, while in others, as I have said, no specific drug was given. In none of my cases were any antipyretics given solely for the reduction of temperature, but on one occasion Phenacetin gr x was given for the relief of headache. For the relief of symptoms as they developed the following treatment was adopted.

(A) Cardiac symptoms. Alcohol was given in very large quantities by the Physician who restricted the diet to milk and water, and whom I shall call in future "Dr. W." the other Physician I shall designate as "Dr. C.". Almost from the commencement alcohol was ordered, at first in comparatively small doses viz. varying from 1 to 3 ounces in the 24 hours, but increased to much larger quantities as the strength of the head and pulse decreased. In one case especially (No. 1) the amount taken was exceptionally large, and accounted in my opinion in no small degree for the delirium which was so alarming. In addition to alcohol, Dr. W. relied very much on the administration of Strychnine both by mouth and hypodermically. Dr. C. on the other hand refused to give alcohol, until the pulse showed distinct signs of feebleness, trusting more particularly to the regular exhibition of heart tonics viz. Strychnine, Digitatis, Strophanthus and in the later stages of the disease to iron. Alcohol was never given continuously, that is, the patient's pulse one day showing signs of feebleness he was given alcohol, which was stopped immediately improvement was noticeable.

(B) Treatment of constipation and diarrhoea

The difference in treatment employed continued in
this. Dr. W. considered constipation rather a favourable condition should it exist. He on several occasions allowed the bowels to remain unopened for 6 days, and if by that time there was an unaided action, a very small (1/2 pint) soap and water enema was given, or a drachm of pure Glycerine or an ordinary glycerine suppository. On the other hand if diarrhoea existed and was not excessive that is not more than 3 times in 24 hours, it was not checked, if above that opium in small doses was exhibited. Dr. C. in cases with constipation requested that the bowels be opened by an ordinary simple enema every second day. In the early stage, Calomel in small doses (1 to 2 grains) was given. Diarrhoea if continuing for more than one day was checked by opium.

Hydrotherapy

Dr. C. desired the patient to be tepid sponged whenever the temperature rose above 103 F. and cold sponged when above 104 F. None of his cases were severe enough to necessitate a cold bath. Dr. W. only permitted one of his patients of those I have reported, to be treated by cold water. This was in Case No. 1 where everything was tried tepid sponging, cold water sponging, ice pack, and the cold water bath. The result of sponging was not very marked at first, but the cold water bath reduced the temperature; thereafter the temperature did not rise so high viz. 106 F. and ice pack and sponging were sufficient to bring the temperature down one or two degrees. Though the cases under the care of Dr. W. were on the whole more severe than those of Dr. C. still it was very instructive watching the effect of the different methods of treatment. The treatment which I should adopt myself in any case under my care would be on the following lines:
Diet. This would consist for the first 2 weeks of milk and water (3 pints of milk in the 24 hours) with half a pint of beef tea or mutton or chicken broth, night and morning if there was no diarrhoea. As the temperature was coming down, I should add the yolk of an egg to the milk twice daily. To vary the taste of the milk I should occasionally add a small quantity of weak coffee. After the temperature had reached normal and remained so 3 days, junket, custard or arrowroot, or Benger's food would be substituted for two of the milk feeds. At the end of a fortnight's normal temperature, more solid food in the way of thin bread and butter, and finely minced chicken or meat would be given gradually increasing till the patient reached ordinary diet.

Specific Drugs.

My experience has been much too small to state definitely the value of intestinal antiseptics, but at least they do no harm, and according to nurses, they certainly make the stools less offensive. I should be inclined to give Naphthol gr viter die and in the early stage an occasional dose of calomel, as the condition of the bowels required. The use of antipyretics as such, I should avoid. For the treatment of cardiac weakness, I should rely chiefly on alcohol, especially whisky, which is usually much better than the ordinary market brandy, and of course much cheaper. I should not give it in the early stages, but trust to the occasional exhibition of Strychnine. In the later stage I should supplement the alcohol with Strychnine or Digitalis or both as the condition demanded; I should prefer also to administer the strychnine hypodermically.
Hydrotherapy

In every case where the evening temperature is 103 F. I should advise cold sponging and also, when the morning temperature was above 102 F., and should the temperature not rise to 104 F. I should limit the number of spongings to two, one in the morning and one in the evening, as the patient gets very fretful and anxious at the continual sponging which is indulged in sometimes. Of course if the fever rises above 104 F. it will require to be done more often. Should the sponging not be sufficient to make an appreciable difference to the temperature other methods must be resorted to.

I should like to mention here a method which I have not seen repeated at any time and which I used with good result in a case of Hyperpyrexia from Acute Rheumatism. It has the advantage of being able to be used in any house and without much disturbance to the patient.

Cover the patient with a sheet of thin gauze, sprinkle by means of a sponge a solution containing 10 per cent of Methylated Spirits over the whole body of the patient, and then allow the spirit to evaporate; in the course of the evaporation the temperature may be reduced several degrees. In any case the temperature was 107.6 F. and in half an hour the temperature came down to 100 F. I may add that, in order to hasten the evaporation of the spirit, an ordinary pair of fire bellows may be used to blow over the surface of the body. I have not had an opportunity to use this procedure in any other case but I shall do so at the first opportunity.

Finally should all other methods fail, I should resort to the cold bath. The temperature of the water
when the patient is put in would be about 90 (this was the temperature of the water which was used in Case No. 1 and then by means of ice or cold water reduced to the necessary level. During all this time the pulse of the patient would be carefully watched.