A Discussion on the Nature & Cause of an epidemic of Ysana at Wellington, South Africa in the Autumn of 1887.

by François Paulus Marais

MTB & CH. (Edin) 1882.
Wellington 6/2/59

To the Dean of the Faculty of Medicine
Edinburgh

Dear Sir,

I am sorry to trouble you again about my Thesis— which may have been rejected by this time, because of my not complying to the Rules as laid down in The Calendar. But the fact is, that I did not possess a Calendar at the time when I wrote the Thesis and could not wait till I could have got one from Edinburgh. If I had waited, it would have been impossible for me to write it now, on account of the amount of sickness there is prevailing here now. As for the papers required for the Thesis, it will be impossible to procure them in Wellington—perhaps not even in Cape Town. As to composition, I am hereby certify that I have compiled the Thesis submitted
Wellington 6/12/89

This is to certify that François Paulus Carais, MB & Chyr. (Edw), has been engaged in Medical & Surgical Practice for four & a half years (4½ yrs) at Wellington, South Africa.

Andrews, Hammond
Min. Dutch Reformed Ch.
without the assistance of anybody.
As to quotations, there are two
from Prof. Nathaniel, which I trust
know that they have been published.
I attended his lectures in Vienna in
the year 1883, and there I got hold of
them. That is the reason why the
reference to them is not given.
I also enclose him a certificate
from the Revd. A. Murray
of Wellington to the effect, that I
have been practicing in Wellington
for more than four (4) years.

Hoping that this will explain my seeming carelessness,

I remain

Dear Sir,

Yours most sincerely,

P. Marais
MB & Ch. (Edin)
Wellington, 14/11/89

Dear Sir,

With the same mail I send up a report of an epidemic of Fever, which occurred in Wellington, Cape of good Hope, in the Autumn of 1887, as a thesis for the degree of M.D. I am aware of its imperfections, but hope these will be overlooked, considering that a busy country general practitioner has had the advantages of Specialists in large towns. During the epidemic lines were so busy that I could not take complete notes of all the cases. I had to do a great deal of work in the country, besides the fever cases in the village. On one day, I had 15 hours' driving to see all my patients.

Hoping that my efforts will satisfy the Medical Faculty,

I remain, your most respectful,

C.P. Marais M.D.

Full name: François Paulus Marais
Graduated in 1882 at Wits University
Residence, Wellington—Cape of Good Hope
A Fever Epidemic at Wellington

Typhoid vs. Cerebrospinal Meningitis

In the autumn of 1887 an epidemic of fever broke out in Wellington. Medical opinion was divided as to its nature. By some medical men it was called cerebrospinal meningitis by others Typhus material from the author considered it to be Typhoid and treated it as such with great success.

History of Epidemic

There were several cases of fever during the summer months, the majority occurring in the country district. It was only towards the end of March that the town was so severely visited by the epidemic, and this continued till near the end of Winter. It was not localized in any particular part of the town, but on the contrary, was all over the town, and amongst all classes of society. It was, however, entirely limited to the young, not one case of persons over 30 years of age being brought under notice. In one house all the children (5) except the baby at the breast, contracted the disease. The Huguenot Seminary (an Institution for young ladies) was also severely visited.
Symptoms of Epidemic.

The invasion was always gradual. Patients complain of frontal headache, pain in the legs, pain in the back and loss of appetite. They feel fairly well in the morning, but towards the middle of the day they feel better & complain of a complaint of chilliness which compels them to take to their bed. Next morning they feel better & often get up as usual, only to return to bed in the afternoon. There was a general complaint of dryness of the mouth, with thirst; and in several cases also of soreness of the throat.

The Abdominal Symptoms of this stage were not typical. They were more confined to the Stomach. In most cases the Stomach was tender. Patients complain of nausea, often of vomiting. Some patients however complained also of pain in the right side (Pt. Sial Fever) & of diarrhoea, which they described as of a yellow colour with a very offensive smell. On examination the Intestinal the Intestinal lesion could in most cases be recognized. There being pain on pressure & slight gurgling. In most cases the diarrhoea was a late symptom. The Chief complaints were about the Stomach, the
The rap. The back & the head. These symptoms led my colleague to the conclusion that the disease was cerebrospinal meningitis, she treated it as such.

Case 1. Mr. B. aged 29. On the 31st of March (1884) two young men came to my dispensary, complaining of pain in the legs and back, of headache, nausea, loss of appetite, and in vomiting, feeling always worse at night.

On examination, the tongue was found to be coated, the bowels constipated. Abdomen more or less distended, tender near right iliac fossa. Pulse 110 to 115 respectively. Temperature was the same in both, being 101° F. The spleen and liver somewhat enlarged but not tender. Lungs & heart normal. Tendon reflexes more or less exaggerated. I prescribed 15 gr. of Calomel to each also a mixture of Quinine & Hydrominum acid. Mr. B. did not take his medicine, and his friend did not, and came for more when it was finished & got Salicylate of soda (80 X1) every 4 hours, and also 5 gr. of Cholinum 117-8, ascending to 4 hours, and ordered to take medicine every 2 hours, once the Salicylate & two times the Cholin. With this treatment he soon got better. Mr. B. was all this time suffering from the above mentioned...
symptoms, but would not take medicine. On the 11th April I was called in to see him. He had now taken to his bed and was very ill. Pulse over 120. T. 104.5. In the evening, I prescribed tis du. Chloralum & sod. salicyl. By this time he was troubled with diarrhoea, which on examination presented the regular typhoid characters. For this a mixture of Bismuth, Carbolic acid & S. Ammannii in mucilage was ordered.


L. p.m. T. 104. P. 125-130. Resp. 20. Pat. very weak, but takes his milk. She is given milk regularly.

Ap. 13. Pulse & fever continue high. Pat. more restless, talks a lot in his sleep, which is very disturbed. More milk was still given.

Ap. 14. G. a.m. T. 104. Pulse 130. Resp. 20. Pat. was delirious during the night, and did not sleep. Tongue coated with a thick brown-black fur, tip edges red & raw looking. Refuses medicine. Diarrhoea the same, about 8 stools in 24 hours.

Ap. 15. G. a.m. Pulse 120. Still very high; T. being 104. Pat. quite delirious. Has no sleep. Takes the peptonised milk, but refuses to take medicine altogether.
6 p.m. Pulse 140, T° 105, Resp. 22
pat. still delirious. Had 6 stools during the day.
Pepinard milk still taken, also a little brandy and water. Stools were about the same. Never contained any blood.
Ap 21–30 Pulse and temperature declining. Patient sleeps better. Delirium only occasionally during the night. Diarrhea abating.
Patient very much emaciated.
May 1–10. Pulse & temp. nearly normal, only slight rise in the evening. Sleeps nearly all night.
Delirium altogether stopped.
May 25. Pat. sitting up in an easy chair. Has a good appetite & is progressing favorably.
Remarks. Wm. B. & his friend are staying in the same house, complain of the same symptoms, pulse & temp. alter a little more or less the same. Are taking medicine regularly & getting over his attack in a fortnight. Wm. B. requesting to take medicine regularly, & afterwards altogether & getting a severe attack of Fever. (3) This is the only case of mine that had delirium. (3) When the Fever kept him he got better very soon.
This I have found to be invariably the case with those who take plenty of food during the fever. This patient merely refused his milk (not knowing that it was prepared) and took also some eggs & soup before he got delirious.

Case 2. Day, 12th, 10. Patient has been complaining for the last week. When I first saw him Ap. 22, 6 p.m., he was very feverish & complained of headache, pain in back & legs, and mostly of the headache. Pulse was 108. Temp. 102.2. Ordered a good dose of Calomel, to be followed in 12 hours by 10 gr. of Salicylate of Soda. Other symptoms were nausea, pain over stomach & abdomen. Pain on pressure over right lobe of liver. Distinct gurgling. Ophthal. relaxed, tender. Respiratory & circulatory systems normal except that the heart beat more rapidly from the fever.

Ap. 23. 9 a.m. 100.4. Pulse 110. Headache & other pains much relieved. Has a good night. Passed three motions & recovered a good deal.

1 p.m. 102.5. Pulse 110. Pulse 22. Diarrhea was never severe in this case; only 3 or 4 stools in 24 hrs.

More pain over R. Iliac region, with gurgling sound on pressure. Few loose flatus over abdomen. Spleen distinctly enlarged and tender.

Ap. 25 Pulse 4 & C° about the same. Other symptoms continue.

Ap. 30 Patient improving. Temp. 98.4 in the morning & 99.5 in the evening. Pulse 90. Resp. 20. Diarrhea has always been taking plenty of nourishment; Diarrhea almost stopped.


Remarks: Treatment. Large doses of Calomel at the beginning, then Lej, Sod. Chlor., & Sod. Salicyl. This case was seen and treated in the early stage of the disease, and was never very bad.

Case 3. Girl, act. 7. Began complaining about the 25th of March. On the 28th her parents brought her to my dispensary. Her complaints and symptoms were the same as the previous patient. Complained of Igane, Calomel & Lej. Sod. Chlor. Ratte. Under this treatment she got better in a week. On the 5th of April I was sent for early in the morning. I found that the patient had a severe attack of vomiting and diarrhoea. After a good deal of cross-examination the mother ad-
omite had she given the child
French beans on the previous day.
I ordered a small dose of a camellia
with acetate of morphia. The vomi-
ting ceased the same day. The di-
arrohea lasted for a fortnight, &
the patient was better in less than
three weeks from this attack. On
the 36th I was again called for &
found the patient having another
attack of vomiting & diarrhoea.
Mother denied having given anything
that was not ordered. But what
would we expect from a mother
that gives French beans to a liver
patient! This time the vomiting
was more persistent & lasted for
3 days, when it yielded to pulvisyal
Hydrastis 60 & 40 & Hyoscyamus too. The
diarrhoea lasted a very long time.
Temperature and pulse ranged
from 100 to 103 (temp) & 100-112 (pul).,
This attack reduced patient to a
mere skeleton; & it took two full
months before she improved at all.
I believe her life was saved by the
peptonised milk, which she took by
teaspoonfuls every now & then. She
also got some old wine.

Remarks. Here we have a case,
which was originally a mild form of
typhoid, with 3-4 stools a day,
and improving rapidly under treatment,
and when apparently better, had a
Severe relapse from fever began. This lasted for two days, when there was another relapse, much more severe, and proving near fatal. On several occasions I felt, not expecting to see the patient alive again. But by careful nursing and intestinal anti-septic (e.g., Dr. Chlorinat, Colonel, Sod. Salicyl) the patient got over this attack also, and is now as well as ever.

Case 4. (This case occurred before the disease began to be epidemic.) Girl aged 8. She took ill on the 14th of January 1849. I was called to see her on the evening of that day, at 9 p.m. Pat. has been complaining for some time of nausea, loss of appetite, with occasional vomiting. On examination, the tongue was found to be dry and coated. Pulse 120. Resp. 34. Bowels rather costive. Abdomen distended. Right hypogastric very tender to touch. Aileen enlarged and tender. Pain in legs, the back and head. I prescribed a good dose of Colonel. Next morning at 9.30 p.m. 1st was 107 and Pulse 110. Resp. 34. Pat. had a good night. Powder operated twice. I find that a good dose of Colonel nearly always quiet a dysenteric patient in the beginning of the disease. Later on I rely on large doses of Sod. Salicyl. at nightime.

This case is quoted for comparison of cases before and during epidemic.
The Sod. Salicyl. causes a free perspiration after which the patient nearly always gets some rest. If there be delirium, I add morphia to the Sali.
ylates, & often with great benefit. If this fails, Paraldehyde or Urethane
should be tried.

Treatment in this case was as the
same as in the previous cases, viz.
by Sod. chlor. & Sod. Salicyl. Un
der this plan was doing very well
till the 14th of January, when I had
to leave Town for a few days. In my
absence, my colleague kindly at
tended the patient. He being a strong
believer in Decline, substituted that
for the L.S.C. & Sod. Salicyl. When I
returned, I found her very restless, had
little sleep, but was not delirious. On
resuming my treatment, diaphoresis
at once lowered the temperature & pulse.
And patient was much calmer, & slept
nearly the whole of the night. This
case confirmed my high opinion of
Sod. Salicyl. in Typhoid. My attention
was first directed to it in a case of
Typhoid with severe Rheumatic
pains. I prescribed Sod. Salicyl in that
case & found that not only did the
Rheumatic symptoms abate, but the
patient improved in every way. Since then
I have given it freely in most cases,
without either having lost any reason
to regret it. On the 17th January, there
\[ L.S.C. = \text{Lp. Sod. Chlorid.} \]
To leave again for a few days. My colleague again attended the patient and tried the same treatment, with exactly the same results. Pat. was more feverish (a difference of one degree) and what was most marked, very restless. On resuming my treatment, Pat. became more calm and slept well again. From this date progress was slow, but uninterrupted; and made an excellent recovery.

Case 5. Male. Act. 18. This is one of my colleague's cases, and was treated as cerebrospinal meningitis. It was during the epidemic. This Pat. got gradually worse, and when haemorrhage from the bowel was noticed, the mother called me in for consultation — when I saw the Pat. he was slightly delirious, had haemorrhage from the bowels twice: it was very weak, with a P.O. of 104 and pulse 120-130. My diagnosis was typhoid, and on treatment as such, the patient gradually improved and made an excellent recovery.

Case 6. Male. Act. 25. Also a consultation case, which was likewise treated as cerebrospinal meningitis. When I saw the Pat. he had been ill for nearly a month. Was completely delirious, with a P.O. of 105 and pulse 130-140, small
very weak & intermittent. I gave
a diagnosis of Typhoid, and a
very grave prognosis, which was
also verified in less than two days.
This was the second case that my
colleague lost; but in neither case
could a post-mortem be obtained.

Pat came to my dispensary on the
29th of April, complaining of head-
ache, pain in the legs, shank, and
in fact, symptoms similar to those
described above. Pat. was
ordered to bed, 4 leps. chloral
and sod. saltpet were ordered
after a dose of Calomel. With
this treatment he got better & was
able to get up on the 14th day.
Next day he went out of doors,
it being a very fine day, & Pat
in the sun for a long time (contra
orders). The process was very
slow, as the sun rather hurt his
eyes. That evening (Sunday night) he got
worse & was somewhat delirious.
On the Monday he got worse, and
that night he was quite delirious. Next
day I was sick for, but being then so
busy with all the Typhus cases, I
could not manage to see him till
the Wednesday; and then I found him suffer-
ing from a severe attack of
Pneumonia, which proved fatal in
a few days. This is the only case
+ + the boy's parents live in the country, she was re-
moved to them when he got ill.
that I lost during the epidemic. No postmortem was obtained.

Case 8, girl, aged 10. This case is very similar to the previous one, but is specially quoted to show the action of the Salicylate. To do
on the Temperature. Flash, first
Ap. 23, 9 a.m. 102.2. Pulse 120 Resp. 20.
Soda Salicyl was ordered in 10 grain doses every 12 hours, after a small dose of Colonol — because had diarrhoea already, therefore only a small dose was ordered.

6.30 p.m. 100.5 Pulse 100 Resp. 20.
Ap. 24. 9.30 a.m. 100.3/100 Resp. 18
6.30 p.m. 100 Resp. 18
Ap. 25. 9.30 p.m. 101.0/101 Resp. 18
6.30 p.m. 100.3/106 Resp. 18
Ap. 26. 10 a.m. 103.2/120 Resp. 20

Note. By some mistake the patient had no Soda Salicylas from 3 p.m.
on the 25th till my visit at 10 this morning, with the result that the
Temperature was up to 103.3 this morning. The Salicylate was adminsitered at
6.30 p.m. 100 Resp. 18.
Since this date it gradually came
down to normal & patient was
up on the 21st day after first
taking to bed.

Case 9: Indo P. aged 28. This
is another case illustrating the action
of Soda Salicyl on the Temperature.
Patient was first seen on the 13th of June. She has been in bed for more than a week, and was taking home remedies when first visited. Every day, instead of improving, I was and for one day.
June 12. Afternoon, 2:10 p.m., pulse 150.


Patient was discharged on the 13th of June.

Case 10. Boy, 13 years old.

This case was first treated with

Ureine for a few days [presumably] and afterwards with Sod. Salicylt.

May 19. Patient takingUreine

9:30 a.m. 11:102.5. P. 78. R. 104.5

May 20. 10 a.m. 11:102.5. Pulse 120

6 p.m. 11:102.5. Pulse 120

May 21. 10 a.m. 11:103.0. Pulse 120

6 p.m. 11:104.5. Pulse 130-140


were substituted for Ureine.

A.M. 11:101.2 P. 120

5:30 p.m. 11:102.2 P. 108

May 23. A.M. 11:101.2 P. 108

P. m. 11:101.8 P. 108.
May 24

10 a.m. 100.2  p. 108
6 p.m. 100.2  p. 108

25
9.30 a.m. 100.9  p. 96
5.30 p.m. 101  p. 100

26
10 a.m. 100.5  p. 96
7 p.m. 102  p. 108

27
9.30 a.m. 99  p. 84
6 p.m. 100  p. 108

28
11 a.m. 98.4  p. 86

29
9 a.m. 98.4  p. 84

From this date the fever
continued normal and was up
in a few days. From the fore-
going facts it will be seen that
the temperature & pulse fell
immediately when the quinine
was substituted for by the 0.07
Salicyl & 0.005 Chloroform,
and was only on 3 occasions
as high as 102° F.

In all I had about 50
Cases of this Fever. Of these I only
lost one, namely, Case 7, who
it will be remembered died of Pneu-
monia & not of Typhoid. My
Colleague who treated the Fever
as Cerebrospinal Meningitis lost
3 Cases. One was a young lady
in the Kupenthal Seminary. In this
institution there were about 54 Cases
(Note. These are about 100 Disorders).
This caused some correspondence
in the Newspapers, whereupon the
an official inquiry was instituted.
To investigate the cause and nature of epidemic fever, the seminary authorities got two medical men from Cape Town (Dr. Anderson & Faltiner). Both of them declared the fever to be undoubtedly typhoid. The author had 2 cases in the seminary (my colleague is the seminary doctor). One of these was of a very severe type. On two occasions her temperature was 105°F. She made, however, an excellent recovery; it was up during the 14th week (since the time she looked ill).

**Nature of Fever.**

Here we have a continuous fever, coming in an epidemic form, affecting many young people, in different parts of the town, at the same time. The invasion was gradual, with feeling tired, pain & stiffness in limb, pain in the back, with headache, especially frontal headache. They also complained of sore throat, pain in the stomach, nausea, & frequent vomiting. On examination he found the tongue very much coated, first with a whitish, & afterwards with a thick brown, sometimes black, film. The edges of tongue were & sometimes raw looking. The stomach was often tender & sometimes very painful. Abdomen more or less rise,
It will be remembered that this patient did not take his medicine, belonging to the Peculiar people.
Tended, and taken over right side.

Diarrhoea in most cases

was a late symptom. When present
however, it lost the true character-
istics of a Typhoid Stool. The spleen
was invariably enlarged. The liver in most

cases. "Mann muss niemals ein

Typhus abdominis diagnostizieren

ohne Erfassung der Milz und Leber."

(Pr. Rothnagel). The rash was
well marked in several cases. The
pulse & temperature were also
indicative of Typhoid.

(1) Tyroide was

highspurred, with excess of uric

acid; (2) Chlorides diminished;

Epistaxis was present in 25 per

cent of the author's cases. Nervous
symptoms were severe in some cases.

Case 6, (my colleague's) was de-

lirious for several days & died in

that condition. But they (nervous

phenomena) were always a late

symptom. In the author's cases,

they never developed to delirium,

except in Case 7. In the rest,

they disappeared under treatment.

In my colleague's cases, the head-

ache, back-ache persisted, &

were treated with blisters, poulti-

ces, &c. In spite of these, there

was delirium in most of his cases.

The author considered these pains
came to Rheumatism, not only because

they yielded to Salicylates, but also
because I had at the same time two cases of acute Rheumatic. Besides these was a history of the patients having had an exposure to rain (like later). In none of my colleague's cases was there apopliathisis, nor was there any paralysis either temporary or permanent.

Now let us look at the symptoms of Central Spinal Meningitis. Here the fundus (as a rule) no premonitory symptoms. Invasion is sudden & particularly severe. Head symptoms at once severe, if most at back of head. There is no complaint about the back & leg for a day or two as a rule. Head is the principal seat of pain & is soon drawing back either to relieve vomiting & shames. In 3 or 4 days are felt opisthotonos, and now the complaints about back & leg are raised; and on examination we find acute tenderness all along the Spinal Column.

The only symptoms within this disease that point to C.S. Meningitis, are:
1. Headache & vomiting (central?)
2. Constipation at beginning, as was the case in most patients
3. Restriction of urine, to young people. (But this is also the case with typhoid)
4. The fact that several of the patients had a severe breach one Sunday evening. But none of these are
sufficient to establish the disease as C. S. Meningitis; and against this we find the slow onset of the disease, the leuk. Pulse, the typhoid stools, Absence of Quinsy, the yielding of the Parain fever & limbs to salicylates. Also the mortality average in C. S. M. is much greater. & c. & c. From these facts I think we have to do with an epidemic of Typhoid, complicated with Rheumatic pains.

A Few Words about Typho-Malarial. The only symptoms that point to Typho-malarial fever are: 1. The Constipation followed by Typhoid Stools 2. The Vertigo 3. The Pharyngitis. But the fact that Antitoxin and Soda Salicyl were devoid of effect do exclude Typho-malarial fever altogether.

Cause of Epidemic. At the Segregated Seminary some cases of Typhus were discovered. The in a very bad State & very near the boarding department. But this could not account for the cases in the rest of the Town. We have seen that there were cases all over the Town & in all classes of society. Hence we must look for a general Cause; and I accordingly made an examination of the water supply of the Town.
This I found very far from clear and sparkling—almost muddy in the reservoir. The source of this water is from the Drakenberg Range & is very pure at its origin. But in its course the stream passes many farms & towards the end of summer & during autumn is very weak—sometimes literally. Each farmer takes a small stream from the sewer, for use on the farm, & what is not used runs back to the River. Here I must state that pigs run about on the farms & are not kept in pens. Also that there are no water closets on most of the farms, and that all the refuse from the house goes to this stream, of which an extract goes to the River. Further, the water is not filtered before it reaches the reservoir, nor after it leaves the same. But this state of things being constant all the year & all summer, could scarce account for this epidemic all at once. After further enquiry, I got at the root of the condition of the water in the reservoir. This reservoir water is never very clear, but never as bad as on this occasion.

Cause of Turbidity: About the 2nd of March, one Sunday night, we had a very heavy, unexpected rain. Before this rain it was very dry for a long time, and the stream reduced to as much as would easily flow through a 3 inch pipe.
Organic matter, impregnated with symptomatic poisons, diluted with water, tends only to increase the danger. The microorganisms contained in the polluted water are capable of infecting an almost indefinite amount of water. (Professor Lances, July 23, 1861)

"In the Lances Epidemic the water was filtered at the rate of a mill of corn, but yet the germs were not checked."

This corresponds with Professor Bouillon's remark in his address at the late Congress at Vienna, namely, that "precisely the water after the waters of the scene are substituted for that of the Vienna river. The hospitals of Paris are filled with typhoid patients."

Lances, Oct 1861, page 684.
On account of the scarcity of water, every drop was turned towards the Reservoir. With this unexpected rain, all the surface water from the farms got into the Reservoir, which is just a big open basin for storing up water. In addition to this, I discovered later, that there were 3 or 4 cases of Typhoid amongst the coloured people, at the very farm where the stream is turned off towards the Reservoir. The houses were dismissed, the stocks were sent, and the house, in which the fever occurred, is not more than five yards from the River. The information about the Fever I got from the farmer, and my colleague is said to have attended them to declare the disease to be Typhoid Fever. Here we have the most favourable conditions for the spread of a disease, which depends on a specific agent. An open reservoir, with plenty of animal and vegetable matter, and warm weather (afta rain we had warm weather again). The Epidemic began in about three weeks after this Pollution of the River. (Note: in winter it is a small river; in summer it is often reduced to a small streamlet). Taking all these facts into consideration, one must come to the conclusion that this Epidemic was caused by the River, whose water having been polluted by the secrets of Typhoid patients, had that
Dr. Sebrell also began his treatment of typhoid by large doses of calomel and declares that it answers better than any other treatment.

Prof. Fraser (Letters on Med. mid) also recommends large doses of calomel in the beginning of typhoid.

++ Prof. Notthnagle (Vienna)
it was typhoid fever.

Treatment of Typhoid Fever. Although this paper was mainly intended as a discussion on the nature, and the cause of this epidemic we had at Wellington, I conclude by giving a short account of the treatment of Typhoid, which I have found the most satisfactory.

When I meet with a case in the earlier stages, I always commence by administering large doses of Calomel (grains). This effectually clears out the alimentary tract and causes a flow of bile into the intestinal tract, which is of the greatest importance, bile being the intestinal antiseptic par excellence; it also prevents quinine (where that drug is given) from forming insoluble salts with the bile acids. If I meet with cases of advanced Typhoid, I still prescribe calomel, but then in smaller doses, and add some morph. Acet, when diarrhoea is excessive.

Calomel can safely be given in all stages of Typhoid fever. I have done so with the best results. This was especially the case with a patient I saw in consultation with my colleague in Dec. 1884. He had declared the patient as beyond recovery. I was
Dr. Parham also prescribed L.S.C. for his great faith in it. Of more than 100 cases so treated, he lost only one. (Leitch Sept 19th 1885 p. 520)

Robin (Paris) gives no other antipyretic than Dr. Salicif., which, according to him, acts as an eliminant & increases oxidation. (Proc. Med. Journal April 1887)

Mr. Collay (Liège) also treats typhoid with Sand. Salicylic. & finds that temperature come down & patient feels comfortable after perspirations & does not feel chilly. (Progrès Médical Jan. 1888)

Dr. Carey also found great benefit in the salicylates. (U.S. News & Circular, Nov. 12th 1884, p. 598)
consulted. I prescribed small doses of Calomel, followed by stimulants. The patient improved almost immediately & completely recovered. It has been remarked in the Irish Academy that constipation is one of the worst complications of typhoid. I find that in Calomel we have a very reliable drug to overcome this complication. After the alimentary tract has been properly cleansed out with Calomel, I prescribe Lig. Soda, Chloroform (1/3 - x) + and Soda vel Pot. Sali- 
cylas (8s x - xx). Order medicine to be taken every two hours, once the Lig. Sal. chlor + next time the Salicylas
If the fever is very high, desalin

sodium L.S.C. is given as an antiseptic and diaphoretic. As a means to clean the tongue it is well
valued in my opinion. + + The Salicylas

is given as eliminant, diaphoretic & antisyphilitic, and indirectly as hypnotic. In large, it not too often repeated dose,
it does not produce Cauce headache &
noises in the ears as a rule. It causes
peroration generally the patient feels
comfortable after it - which creates
confidence in the patient, and keeps him
up & inspires hope, which are of


Complications are treated as they arise, and will not be considered in this report.

Diet: This I consider of the utmost
That was also the opinion of the late Prof. Hunt. It seems, now however, from later researches, that beef extracts are of some value. vide Dr. Meigs' paper in the Atlantic, June 1887, age 259 to.
importance in typhoid fever. I allow milk, soft boiled eggs, eggs beaten up with brandy only when necessary and soups.

**Milk.** This is always to be bailed, as the patient is forced, if necessary, to take at least 3 pints a day. Exception is made in cases where milk absolutely disagrees with the patient. When patients are very low, then the milk is pertinued with extract pancreatis (Fairchild). And wine (good old wine) is freely given. It is the most easily assimilated form of hydro-carbon (Carbohydrate, strictly speaking). Prof. Hill says: "alcohol is promptly oxidised, & is capable of absorption without digestion. So far as it is oxidised in the body, alcohol in the fever, supplies matter consumed in the production of heat, & saves the destruction of tissue. I never prescribe beef tea &extracts, not having any faith in them. My experience is, that patients who like milk, I take plenty of it, get on the best; and when the fever leaves them, they improve most rapidly, in every way. When patients do not like milk, they are still to take it; when it absolutely disagrees with patients, I rely on soups & eggs. When milk is freely taken, eggs & soups are only given as a change.