Yellow Fever.
Clinical study.

E. N. Darwent.

San Fernando Hospital.
Trinidad.
British West Indies.

14th March 1898.
On the 7th September 1843 - Dr. Prada - one of the medical men practicing in Port of Spain
was called to the Hotel America to see a gentleman who had arrived that day from
La Guayra, ill with fever.
He had come from Porto Rico - (where yellow
fever was raging at the time). Via La Guayra.
He suffered from what Dr. Prada, then
diagnosed, as Bilious Remittent Fever.
His urine was not examined.
At the same time there was a family
staying at the Hotel America, consisting
of five persons & a black servant.
These had come from the interior of
Venezuela, two or three hundred miles
from the coast.
In six days after the departure of the first
mentioned gentleman for Carupano, the
whole family of five were taken ill with
a similar type of fever - & of these two
died with black vomit - albuminuria -
suppression of urine.
The black servant was the only one who
remained in perfect health.
Shortly after this two young Corsicans
who had recently arrived from Europe
were struck down with fever - black
vomits - albuminuria - jaundice &c.
and.
and both died within four days.
This turn, was the starting point of an
Epidemic of Yellow fever, which, although
never very serious at any time, lasted for
several months.

Modes of Invasion - dissemination and
infection.
"An analysis of any yellow fever Epidemic
say Heisch, " shows certain groups of
Cases so arranged as to constitute
separate foci of disease sometimes in
single houses sometimes in blocks of
houses or again in streets or groups
of streets, so that each new case of
disease as it occurs, may be traced
to infection of the individual within
any one such focus. That case may,
in its turn, become the centre of a
new focus."

In this way the extension of Yellow
Fever once it has been introduced into
non- endemic localities, may frequently
be traced back to the original introduction.
There can be little doubt, then, that in a
sense at least, Yellow Fever is a com-
municable disease. But this communicability
differs from that of small pox, typhi-
t and other typically infectious maladies.
*
more resembles Cholera - Typhus from.
It is a matter of very general experience that those in close attendance upon the sick - do not specially contract the disease. Considering all the facts then, it appears clear that the yellow fever patient does not usually at any rate, directly infect others, but that he nevertheless gives off in some way or other, probably with his discharge, the virus of the disease. That this, if it should meet with suitable conditions, is capable of infecting the particular locality, of thus, indirectly, giving rise to the disease in other persons.

(A Treatise on Hygiene, Public Health.
by Stevenson Murphy - 1873).

Professor Sanarelli says with regard to the mode of infection:

"By what way the specific microbe can enter the organism, where it manufactures its poison in it, is very difficult to establish:

In countries where yellow fever prevail, evidence sufficiently demonstrative to establish the transmission by water has not been collected.

On the contrary, there exists an inexhaustible series of facts, which point..."
strongly to atmospheric infection. Further, contagion by the respiratory passage has been demonstrated to be possible. It is notable that the virus of Yellow Fever displays a special ability to establish itself in ships' dwellings. Epidemics on shipboard occupy a conspicuous place in the history of the disease; and that such epidemics have been due to the fact of the ships themselves becoming infected, not to the direct transmission of the disease from case to case, is evident from the circumstances of the epidemics in question.

As regards the tenacity with which the disease clings to dwellings, Guyon, as a result of Lisbon experience remarks of the infected house. "Whether there are sick persons in it, or whether there are no longer any, that house will become a centre to reproduce the disease in the strangers who enter it."

It has been seen that the cause of Yellow Fever may be conveyed from place to place by the sick. But it may, too, be transmitted by fomites.
outbreaks in towns have followed the arrival of apparently healthy people from infected localities. There are, however, certain apparently conflicting facts with respect to the spread of yellow fever, by the agency of infected persons, strings which require a further hypothesis for their reconciliation.

On the one hand, it is maintained that a single imported case may act as a focus for the spread of the disease, so that infected baggage from the Yellow Fever Gown may also set up the disease elsewhere.

On the other hand, it is said that "even the most intimate kinds of contact, such as the healthy & sick sleeping in one bed, the attendance of physicians & nurses upon the sick, & post-mortem examination of the bodies & the like ... have usually failed to spread the disease."

(Hirst - op. cit. Vol I. p. 372.)

In respect to this seeming paradox it has to be remembered that it is probably not every case of yellow fever that is capable of reproducing its kind. Moreover, it may be that the yellow
From microphyle is infective in certain phases, but in others, particularly that, as has been often suggested with regard to Cholera - it is not infective immediately after leaving the patient, but requires time to undergo some functional modification outside the body.

The case of George Henry Stanton (vide page 44) who was treated by us at the San Fernando Hospital, Trinidad, brings out what has already been stated about ships becoming sources of infection in themselves.

Stanton - a white man, a native of the United States of America, shipped on board the Brugesentine 'Minnie Swan' at Port of Spain on 9th September 1895, as second mate.

He had been in Trinidad only a few weeks.

He was admitted to the San Fernando Hospital on 15th September 1895 suffering from Yellow Fever.

The 'Minnie Swan' had been stationed for six weeks at Pernambuco, where Yellow Fever was epidemic at the time.
Most of the crew, officers were taken ill with yellow fever at Pernambuco. Some of the men & officers were left behind there.

The ship sailed for Barbados & was then quarantined & afterwards came on to Trinidad.

Two black men were shipped as sailors at Barbados.

Two white men were taken on in Trinidad as 1st & 2nd mate. Both shortly after got fever.

The first mate was treated at the Colón Hospital. Port of Spain; the second mate (Stanton) was treated by me at the San Fernando Hospital.

The two black sailors remained healthy. This case emphasizes two facts with regard to yellow fever.

Firstly, that yellow fever once installed on board ship is there long tenaciously maintained as Professor Sannarelli says.

Secondly, that natives enjoy more or less immunity from attacks of yellow fever. Professor Sannarelli says, "Yellow fever once installed on board a vessel is there long tenaciously maintained."
more particularly in the hold, magazines, merchandise, or in all close restricted "parts."

"Humidity, heat, and want of light and ventilation, therefore, seem the coefficients "special to the preservation of the bacillus ictroides."

A simple phenomenon, which at various times during these studies, has occupied all my attention, has afforded a new "explanation of the probable cause of the "mysterious longevity and resistance of the "bacillus ictroides on board ships."

"This is in the fact that the common "wounds of the atmosphere are the great "protectors of the bacillus ictroides."

We must then consider wounds as "the natural protectors of the specific "agent of yellow fever, because it is only "through their intervention that the latter "can find the force to live multiply, "whereas the unsuitableness of the nutritive "means, or the unfavourable action of "the developing temperature would render "its existence altogether impossible."

The intervention of this factor, apparently "so insignificant, constitutes perhaps "the principal cause of the acclimatization
of yellow fever, not only on board ships, but also in certain localities where it appears to find conditions extraordinarily propitious to its sad dominion.

So much then, for the outbreak of the cause of the outbreak.

We must now consider why the disease spread in Port of Spain.

The disease was at one time believed to be of malarial origin. There were some who considered that the two agencies which produce yellow fever—plasmodial fever and yellow fever—were inseparably associated and were refractory to tillage and entomology.

The experience of later times has, however, distinctly shown its separability from, and independence of, malaria and its diffusion by personal intercourse.

Geological characters of the soil do not appear to exert any influence, either in the production or diffusion of yellow fever—but climatic conditions and more particularly temperature do exert an important influence upon its spread.

Its causation is most closely associated...
with the presence of fecal & other waste organic matters, such as accumulates around human habitation in densely populated towns.

Influence of Climate & Season.

The two chief factors on which an epidemic depends are temperature and moisture. An epidemic once started is not dependent for its continuance on a relatively high temperature.

It occurs only to a slight extent, if at all, in years with little rain.

Dry weather, or long continued drought are unfavourable to the diffusion of the disease.

Here, in Nicaragua, the rainy season usually begins at the latter end of May or beginning of June and lasts until the beginning of January.

The average rainfall per year during the thirty years, 1862-1891, was 65.91 inches; the wettest month being generally August.

The mean temperature for 1893 was 76.01°, the minimum being 65.16°, and maximum 89.7°, a variation of 24°.

The mean temperature for 1896 was 79°.
99º, the minimum being 66º, maximum 91º - a variation of 25º.
The temperature is fairly equable, ranging on an average between 70º and 85º (Fahr).
The climate is rather damp or mildew soon collects on articles, if they are not in daily use.

In the rainy season, at any rate, we have a moist heat, the great factor needed in keeping up an epidemic.
The sanitary conditions of Port of Spain are not of the most modern, or most healthy.
The town is drained by open sewers, which are the receptacles for all kinds of filth.
These sewers, however, are cleaned in the last season, when they get constantly flushed by the heavy rains.

There is no general system of sewerage. Cess-pits are usually employed.
After a heavy shower of rain these cess-pits, which are situated in yards on a higher level than the street, have been known to get flooded & distribute their contents about the yard, often into the sewers at the sides of the street.
From these conditions, then, it will be
seen that we have a nidus for any epidemic once started.
One of the most recent epidemics of yellow fever is that at Ocean Springs, between New Orleans and Mobile, which is partly attributed to the pollution of the water of the bay fronting the city where the system consumed by the city are embittered.
The epidemic spread to New Orleans - Mobile - Memphis, and did not begin to die out until half a dozen heavy frosts came on at the beginning of November 1897.
The most recent epidemic is that which is now raging in the island of Jamaica.

Influence of Race.
A point of special interest in the history of yellow fever is the influence acclimatization have upon its distribution. New arrivals from northern latitudes and those not yet acclimatized, are most subject to the disease, while the natives and acclimatized whites suffer more or less exemption from attacks. This is well borne out by the facts.
stated on the first page by every case reported on by me.
In the first case quoted by me on page 1. the five white contracted the disease; two of them died; the black servant however remained healthy.
In the case of the Barque "Mannie Swan" from Pernambuco the two black men taken on as sailors at Barbadoes remained healthy. the two white men who had only shortly before arrived in Trinidad soon developed Yellow Fever.

Cause.
Small observers, notably Dr. Domingo Freire, of Brazil, Dr. Carmona y Rebel of Mercado, and Dr. Hidalgo of Havana. have described different micro-organisms which they regard as standing in causal relation to the disease; but Dr. Stirnberg, who has specially studied the matter, believes that he has been able to exclude, in a definite manner, each of these several microorganisms. Last year, however, Professor Lanurdi of Montevideo described a microbe which he believes to be the specific microbe of Yellow Fever - which he calls the Bacillus.
Mycobacterium Intermedium.

From the description of this bacillus, in the British Medical Journal, dated July 3rd, 1847, which contains a translation of Professor Sanarelli's paper, it would appear that its separation is very difficult.

It was only possible to find this microbe in 58% of the cases—after death; it in some rare cases during life. This bacillus seems to be a very powerful one, as it is not found in large numbers even in the most favourable cases.

It is the cause of fatty degeneration of various tissues or organs. It has an emetic action.

A very important matter in the behaviour of this bacillus is its rapid growth and multiplication on broth. Professor Sanarelli has since this succeeded in preparing a curative serum.

The animal selected by Professor Sanarelli for preparing this serum was the horse. An abstract of an memoir on some experimental and anatomical research on yellow fever, by Dr. W. Havelberg, of Rio de Janeiro, has been published in
the Annales de l'Institute Pasteur.

Dr. Havelburg's bacillus differs very materially from Professor Sanarelli's:

As the writer in the British Medical Journal of July 31st, 1897, says:

"The differences between the two organisms are not merely those of detail, there is a fundamental disagreement on almost every important point, so far, at any rate, as the descriptions at hand enable us to form any opinion."

Dr. Havelburg did not succeed in obtaining any toxin, separable from the body of the bacillus itself, in this respect differing very materially from Professor Sanarelli, and it will also be observed that the comparison of virulence in different animals differed very markedly from that given by Sanarelli.

Dr. Havelburg concludes that "yellow fever is a disease of which the specific toxic agent enters the stomach, where, and in the bile-tubes, it develops; it is only exceptionally that it makes its way from these positions to other organs, and then in small numbers."

He argues that the toxic substance found in the stomach and intestine are
are probably the result of the breaking down of the bodies of the bacilli by the digestive juices, and that it is in the absorption of the poison so formed that the various alterations in the tissues result, are brought about.

It maintains that it is essentially analogous to Asiatic Cholera.

Professor Sanaroli's bacillus, on the other hand, has not its habitat in the stomach and intestine, but affects especially the blood and connective tissues.

The organism, which apparently may remain at rest after its introduction into the tissues, finds its way, in the first instance, to the spleen, where, after a lapse of some two to seven days, the period varying in different animals, it suddenly manifests its presence, undergoing a fairly rapid multiplication, but more important still, producing an exceedingly active toxin which appears to have a special effect upon the parenchymatous cells of the organs of secretion.

At the same time this poison acts as an emetic, and this, along with its effect on the walls of the blood vessels, gives rise to the condition known as black vomit.
Though the mucous membrane of the stomach undergoing degenerative changes, haemorrhages taking place into the necreses, but with all this the specific bacillus does not appear to make its way from the tissues into the stomach. It is by a consideration of these facts that Professor Samarellli accounts for the failure to produce the disease by the ingestion of the contents of the stomach of a patient suffering from yellow fever.

The toxin appears to have an effect also upon the nervous system, but the most marked changes of all appear to be set up in the liver, and in the kidney, the toxic inducing a condition which might be compared to the rapid fatty degeneration that takes place in acute phosphorus poisoning, or perhaps more correctly, like the haemorrhagic and degenerative changes that take place in acute yellow atrophy of the liver.

The epithelium of the kidney undergoes similar fatty changes, and haemorrhages also occur into the substance of this organ. So far as the kidney disorganised, that the urine becomes scanty, albuminous, or it may be entirely suppressed.
In such cases the amount of urea in the blood rises very rapidly, so the actual cause of death may be uraemia.

**Mortality.**

The mortality from yellow fever varies greatly in different epidemics, and among different classes of the community.

Among the natives of the cities in which the disease is endemic, or in which it has frequently prevailed as an epidemic, it may be as low as from 7 to 10 per cent. Among unacclimatized adults the mortality ranges from 20 to 50 per cent, and in certain circumstances even exceeds the latter figure. (Hygiene Diseases of Warm Climates - Davidson).

I am unable to state exactly the mortality in Port of Spain in 1893-1894, but it was about 30 to 40 per cent.

**Treatment.**

This may be divided into:

1. Prophylactic.
2. Curative.

1. Prophylactic: St. Joseph’s in
the article on Yellow Fever in Quin's Dictionary of Medicine says:

"Experience has established the possibility of excluding yellow fever from localities in which it has prevailed as an epidemic, subsequent to introduction from other regions, by means of an absolutely strict quarantine."

One of the most essential elements for the origin and spread of yellow fever within or immediately around its recognized geographical limits, is the influx of strangers or immigrants, or an unacclimatized population.

The affected area should be divided into districts and special officers nominated to make house-to-house inspections and to report to the health officer, who should have special powers to visit and inspect all lodging houses, hotels, and dwelling houses and their premises. This would ensure the early notification of all cases of disease.

2. Curative.

As Sternberg in the article on Yellow Fever in his Davidsson book on Hygiene and Disease of Warm Climates says.

The unsatisfactory results obtained from the
the various methods of treatment proposed, are shown by the fact that a majority of the physicians, in those parts of the world where yellow fever prevails, who have had an extended experience, agree that active medication is injurious, have settled upon an expectant or symptomatic treatment, with careful nursing, as giving the most favourable results.

The treatment followed by me in all my cases is that recommended by Dr. Sitrin of Dr. Wolford Wilson in a small pamphlet on the treatment of yellow fever. He recommends the following:

- R. Quininae Sulph.: \( \frac{1}{2} \)
- Acid Sulphuric: dil.: \( \frac{1}{4} \)
- Sodae Sulph.: \( \frac{1}{4} \)
- Jutae Cardam. Co.: \( \frac{1}{4} \)
- Aq.: as fitted.

\( \frac{1}{4} \) at once repeated in two hours, well diluted with water.

After the above:

- R. Calcii Phosph.: 384 grain
- Magn. Phosph.: 266
- Potas: Phosph.: 193
- Acid Phospor. (60%) 640 gr.
- Aq.: as fitted.
Sig: Every half a tumbler of water every hour or two - day and night for 24 hours - for 3 or 4 days.

A telegram from the Times correspondent at Montevideo, dated October 10th, announced that Professor Sanarelli had succeeded in preparing a curative serum. Professor Sanarelli gave a lecture at Montevideo on October 13th on the serum therapy of yellow fever. He expressed the hope that serum obtained from vaccinated animals would be efficacious for the cure of yellow fever in human beings. The serum is the serum from which he obtained the serum for the treatment of yellow fever.

I cannot find any record of a case of yellow fever treated by this method of serum therapy.

Before describing the cases I have had under my charge and the post-mortem appearances observed by me, it would be as well to mention the chief points of difference between Paratyphoid Fever (Milious Paratyphoid) and Yellow Fever.
Differences between Remittent and Yellow Fever.

1. Remittent fever has a distinct morning remission when the urgent symptoms abate. This is not the case in yellow fever.

2. Haemorrhage from any source is exceptional in remittent; in yellow fever, it proceeds from mouth, nose, bowel, urinary passage, etc.

In cases of yellow fever, very frequently besides the top black vomit you find the gums red & inclined to bleed, if not actually bleeding.

I have never seen this in Remittent fever.

3. Jaundice is rarely well developed in Remittent or Bilious Remittent fever.

I have never observed that in fatal cases the jaundice deepens after death. In cases of yellow fever the colour is developed immediately after death, even if it had not been very noticeable before.

4. Urine. Even in the worst remittent, albuminous urine is rare. It is the rule in yellow fever.

The presence or absence of albumen in the urine is usually one of the main
points of diagnosis between yellow and remittent fever.

The amount of urine passed in yellow fever, is below the normal standard and very commonly complete suppression occurs—especially in fatal cases.

The most marked diminution occurs during the stage of depression and the few much secreted in twenty-four hours in such cases, are loaded with albumen to such an extent as to form coagula which occupy one half to two thirds of the contents of the test tube.

5. The Pulse.

The gradual slowing of the pulse rate in yellow fever is never observed in remittent fever and is a very important diagnostic sign.

6. The Tongue.

Very commonly the tongue is narrow and pointed in yellow fever differing in this respect from the broad flabby tongue of the malarial fever.

7. Face and Conjunctivae.

The face, in yellow fever, is usually flushed and the eyes suffused. The suffusion of the eyes is characteristic. The conjunctivae usually begin
to show signs of jaundice about the third day in yellow fever.

8. Quinine.
This is of great use in remittent fever; it is either useless or harmful in yellow fever.

Death even in the worst remittent fever is rarely or never seen before the eight day in yellow fever it is common on the third day.
The death rate in remittent fever is from 2 to 5 per cent.
In yellow fever it is often 40 per cent or even 80 per cent.

10. Yellow fever is fatalable and contagious; remittent fever is not.

The finding of the Bacillus Felicoides in the case of yellow fever, and the various forms of malarial parasites in the case of remittent fever.

I have found that if blood is taken from a yellow fever patient, put immediately under the microscope, the red blood cells are crenated and do not form rouleaux. This is not the case in remittent fever.
TEMPERATURE CHART by M. Geo. Chas. COLES, M.R.C.S.

NAME: Joaquim de Freitas

RESIDENCE: Corner of Duke Street

AGE: 19

SEX: M

OCCUPATION: Clerk

DISEASE: Day Illness

1894

| Day | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Sep | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
|-----|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|

| Cent. Fahn | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
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| 104.2      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 103.2      |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
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| 96.2       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

Pulse per minute: 92, 69, 61, 56, 55, 50, 50, 50, 48

Respirations per minute: 145, 50, 35, 25, 25

Urine Ozs. N. 56: 1020, 1020, 1070, 1070, 1020

REMARKS:

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Clinic Cases

Case I.

Joacquin de Freitas.

Date of admission to hospital.
13th September 1894. 2.45 p.m.

History.
Arrived in Trinidad from Madeira.
8 days ago. Has had fever for 3 days.
Complains of general pains - especially frontal headache & backache.

Case and treatment.
Patient is a strong young man.
(Portuguese). Wt. fever on admission.
Temperature = 100-10 4.
Face flushed. Eyes suffused.
 Tongue covered with thick white fur.
Especially at the base.

He was ordered.
R. Hydriog Subchlor.
Sodii Bicarit â 1â 2.8.

Sig. Statsumpt.

R. or. Ricini Tis.

Sig. 4 hours after powder.
A hot mustard foot-bath at once.

Mustard plaster to Epigastrum.
Dist.

Cor. Milk, Soda, Barley water, Ice.

Lemonade
Lemonade
At 7:45 p.m. he was seen again. He had vomited at 6 p.m. Vomited a thick liquid - black - contained streaks of recent blood.
Temperature = 101° F.
Pulse of fair volume; occasionally irregular; rate 92 per minute.

14th September.

Urine bright yellow - contains albumin. Vomited once this morning. Dark liquid.
No motion last night; one this morning.
Complaints of back ache, frontal headache, and epigastric tenderness.
Temp: = 100.2°.
Pulse 69, regular & of fair volume.

R.
Sodii Acet: gss 150.
Hydrg: Pilocarp gss 1/3.
Aq: 1 quart.

Sig. 31/4 every hour, iced.

15th September.

Temp: last night = 100°.
This morning = 101°.
Slept at intervals last night - no motion.
No vomiting - skin moist.

Pulse.
Pulse 60. of fair volume and regular.  
Complains of sore throat, gums red and irritable. Tongue moist and cleaning.  
Face still flushed, eyes suffused. Pupils equal and dilated.  
Epigastic tenderness still marked.  
Vomited once this morning. Whitish-green mucoid fluid.  
Urine: Acid. Albumen 1/".  

September 16th  
Slight report. Slept well, passed 30 oz.  
1/2 Urine. Temp: last night = 99°.  
The urine is slightly darker and nearly neutral in reaction.  
Sp. gravity 1020. Albumen 1/".  
No headache or backache.  
Epigastic tenderness very slight now.  
No vomiting last night or this morning, but occasionally has nausea.  
Complains much of thirst.  
Pulse 61: regular.  
No fever this morning.
Skin cool and slightly moist.
No motion since day before yesterday.
(Or: Ricini B.P. ordered - but patient refused
to take it.)

September 17:
No fever last night or this morning.
Vomited twice last night.
45 ounces of urine passed last night.
Slept fairly well.
No vomiting this morning.
Says he feels well and wishes to get up.
Jaundice more marked.
Urine: dark yellowish-brown in colour.
Amount of albumen somewhat less.
Pulse 56 - regular - but weak.
Blood examined under the microscope.
Red blood corpuscles - cresated; do
not run together into rouleaus.
The following ordered:

Rp. Ammon. Carb. fr. iii
Iniet. Chinon. Co. 3f
Iniet. Digitalis. 4f.
Liq: Strychninae 4f
Ag: quinina fr. 3f
Koffmirt.

Sig: 3f every 3 hours.
September 17th 3.45 pm.
Urine is acid. Pulse 65.

No food at 4.45. Patient ordered soup as he called for it, and 2 hours later.

September 18th
Night report:

No fever last night. Slept well.
Skin moist. No vomiting. No motion.
Passed some urine. Took nourishment.
No fever this morning. Has passed a little urine. Still albuminous.
Ordered a pint of iced water as enema every 3 hours.

7.30 pm.
Pulse 50. Diastolic.
Tongue clean, moist.
Passed 1/3 1/3 of urine today.

September 19th
55 1/3 of urine passed last night. No fever. Slept well. The motion.
White, clear. Slightly acid. No album.
Jaundice has cleared up.
Pulse 50.

Discharged from hospital. Well.

25th September 1894.

E. Harwood
Case II.

Vincenzo Lubrano.

Age. 30. Birthplace. Italy.

Occupation. Sailor.

Admitted. 25th September 1874. 7 p.m.

History. (from the captain.)

Fever for 3 days, with headache and vomiting. Is a sailor that only been in Trinidad a few days.

Case and Treatment.

On admission.

Patient is a stronly-built man. admitted in a very weak state.

Temperature = 100.4°.

Pulse very weak, barely perceptible at the wrist.

Tongue glazed and dry, devoided of epithelium.

Patient is in a state of stupor.

Eyes much injected, slightly famine.

Epigastric tenderness.

Diet: cow's milk, soda, ice.

Krandy 4 ounces.

R. Fruit: Etheria. every 2 hours.

1. mustard plaster to epigastrium.

2. Sponge with tepid water.

Seen again at midnight.

Patient has vomited twice. Material
like coffee-ground.
Is very restless. Has passed no urine since admission.
Temperature now = 100°.
Pulse a trifle better.
Hot poultices ordered to legs and
Serrata of iced water.
He continued in a state of stupor.
Passed no urine.
Died at 4.45 A.M. 26. 9. 94.
Not quite 10 hours after admission.

Post mortem - at 1.30 P.M. 26. 9. 94.
Body. Muscular and well-nourished
Rigidity marked.
Divinity and general restlessness very well
marked, especially about the ears.
Colours. Lemon-yellow has deepened
considerably since death.

Chest:
Lungs. Hypostatic congestion marked.
Circumscribed haemorrhages at the
base.

Heart. Stained of a light yellow colour
both externally and internally.
Muscular tissue friable and in a
state of fatty degeneration.
Left ventricle. Contracted empty.

Blood
Blood in right side dark and fluid.

Abdomen.

Liver. Weight 56 ounces.
    Colour light yellow. edge well defined. Substance firm.

Gall bladder.
    Empty.

Spleen.
    Not enlarged. weight 8 ounces.
    Substance congested but firm.

Kidney.
    Weight of each. 6 ounces.
    Stained of a light yellow colour.
    Cortex increased. Elongated coryxes.
    Capsule slightly adherent.

Stomach.
    Mucous membrane congested. and stained with black mucus at the posterior part. At other parts nodules at others congested ecchymosed.
    Contents. mucoid and of a dark greyish colour.

Intestines
    Congested.

Bladder
    Contracted contained about 3 oz. of urine. turbid and loaded with albumen.
Case III

Henry Schonack.
Age: 29. Birthplace: Germany.
Occupation: Labourer.
Admitted: 26th September 1894. 6 pm.

History:
Fever for 2 days: severe backache.
Complaint today: Has been in Trinidad 6 months.

Case and Treatment:
A strong man admitted with hot fever.
Temperature: 104°.
Pulse: full, regular - 88.
Tongue covered with a yellowish brown fur; cracked, moist.
Face flushed. Eyes suffused.

Ordered:
1. Chlorodyne 5 fluid ounces.
2. Hot mustard foot-bath.
3. Dine, lemon milk, ice.
4. On.

Has omitted the oil.
Gums bleeding and irritable.
Ordered: 1. Mustard plaster to spine.
2. Vapour bath.
3. Hallberg's mixture.

10.30 pm:
Temperature: 103°.
Has passed 8 oz of urine.
Urine yellow contains urine.
Contains albumen 1/6 No bile.
Has had one light brown motion.

September 29th
Night report. Temp varied from
103° to 102.6°. Slept at intervals.
Took nourishment fairly well.
Vomited twice. Had 2 motions.
25 ounces of urine passed
Temperature this morning = 103°.
Pulse 90 full. Of good volume.
Slightly irregular.
Tongue moist, clean at tip red.
Vomited, covered with yellowish white
fur in centre.
Complains of Epigastric pain.
Has vomited once, like white soup.
Eyes suffused slightly jaundiced.
Pupils dilated and equal.
Gums red and irritable.
None albumen. A little bile.
Complains of feeling hungry want
Something to eat.
Proposed will after the vapour bath.

7:30 pm.
30 ounces of urine passed today.
Slightly acid. Albumen. 

Pulse 100. Of good volume & regular.
Tongue - cleaner at tip & edges - but rather dry & raw-looking at tip.
Gums -inclined to bleed & turns red and irritable.

Pain in Epigastrium less, but has some backache still.
Vomited once.
Had another vapour bath. Respired freely after it.
The following mouth wash ordered.
Incat. Myrrhae Tit.
Glycerini as Fst.

Sig. Sapce utend.

September 30

Right report: "Sp: 102. To 100.6."
Restless 1 1st part of night. Slept towards morning. Skin moist. Vomited once after nourishment. No urin.
30 oz of urine passed.
Urine - brownish - yellow - clear. Acid.
Irregular this morning = 101.8.
Pulse. 86.
Jaundice more marked. October 1.
October 1st


Urine dark brownish-yellow, acid.


This morning he feels better. No backache. No nausea or vomiting.

Spigastric tenderness. Jaundice has increased. Skin of chest and abdomen tinged.

Tongue clean. No moist.

Pulse 80. Soft and regular.

8pm. T = 102°. Pulse 95.

October 2nd

An attack of Spigastric. Otherwise is doing well.

October 3rd

Urine nearly solidifies on boiling. Contains a good deal of bile.

Jaundice has increased.

Skin still bleeds.

Not much urine passed.

Iced water enemas ordered.

October 5th

No fever this morning.

Complaints of earache.

October 7th: Albumen less ½.

October 9th
October 9th:

No more albumen in urine.

Much better in every respect.

October 10th:

Convalescent.

Ordered:

P. sermon Caust. 8 m

Quid Digitalis 4 E

Quid Quick Lo 3 E

Dig: Syrup cholinae 47 m

Aq: Infus 25 Fr

Sig: 4th hour

October 25th:

Discharged. Will

Eh. Harmon.
Case IV.

Walter Peterson.
Birthplace: Nova Scotia.
Residence: Port of Spain.
Occupation: Seaman.
Date of admission: 22nd October 1894, 1400.

History:
Sick for 4 days. Vomiting last night.
General pains.

Case and Treatment:
A fairly strong man with fever on admission. Temp. = 100°.
Has been drinking heavily.
Eyes suffered slightly jaundiced.

Ordered.

Hydargyrum Subchlor.
Soda bicarb: a 2b 5u
Ipecacua 3.

Sig. one every hour.

Ry. b 7: Ricini Gif
Sig. An hour after the last powder.

Diet:
Low milk. Soda, \&c.

October 23rd.

Night report. Temperature = 102°.
Mouth freely moved - vomited twice
last night: Urine yellow. Contains albumen.
albumen.

October 24th.

Night report: "No sleep. Skin dry.
Vomited 3 times. One loose, dark and
Shiny motion." Complained of severe
Headache. Restless.

Temperature last night = 102°
This morning = 100°.

Pulse this morning: 80. Fair volume
and regular.

Tongue: Very dry and cracked.
Complaint of severe epigastria pain.
Jaundice has deepened.
Small petechiae about abdomen.
Has been having eructations.

Ordered:
Bailey water. More soda rink.
1. Mustard plaster to epigastrium
   to be repeated, if required.
2. Steinberg's liniment - 31/2 every
   hour, to be given iced.
3. Ice cap to head.
4. Intrameta. iced water every 2 hours.

October 25th.

Fruits: Yesterday afternoon. A dark
brown liquid with a black ordnance
like coffee grounds.

Night report: for last night. "Temperature
varied."
varied from 100.2° to 99.8°.

No sleep - hiccupping all night. Skin dry - restless. Poor nourishment well.

No vomiting during night. No motion.

No urine passed. Complained of great thirst. Delirious towards morning.

This morning is very restless. Delirious.

Profuse haematuria and epistaxis.

Pulse 130 - small + weak.

Temperature = 99.4°.

Arteries: Sonorous - of tauty.

Patient died at 5 p.m. 25.10.94.

Post mortem held at 5 p.m. 25.10.94.

Body well-nourished.

Postmortem rigidity, lividity well-marked hunting my distinct.

Body of a lemon-yellow colour.

Colour intensified since death.

Chest.

Heart: Substance fatty - numerous petechiae on both internal and external surfaces of the heart. Rales jaundiced.

Lungs: Numerous haemorrhage into both lungs, also in face.

Abdomen.

Liver - very fatty.

Gall bladder - contained a little light coloured
light-coloured bile.

Kidneys. Large. Cortex increased.
   Substance pale. Glomeruli well seen. Very congested.

Stomach.
   Small tough.

Stomach.
   Haemorrhage all over. Muscles
   Submucous covered with black, stained
   Membrane. Contents. A little fluid
   coffee-ground.

Intestines.
   Congested.

Bladder.
   Empty.

E. Harwood.
Case V.

Antonio Quinta.
Birth place: Madeira. Age 28.
Occupation: Clerk.
Admitted 24th October 1894. 5.30 pm.

History:

None obtained.

Case and Treatment:

A well-nourished man. In a collapsed state. Skin cold, clammy.
Face and hands livid.
Pulse: Small, quick, easily compressible, and scarcely perceptible at the wrist.
Is delirious. Tongue furred brown and dry.
Temperature = 102°.
No apparent jaundice.
Pupils equal. Not dilated.

Died at 7.35 pm. 24.10.94. All efforts at stimulation to having failed.
The temperature, after death, in the left axilla was 107.2°.
Black coffee grounds fluid issued from his mouth since.

Post mortem held at 10 AM 25.10.94.
Post mortem.

Body - well-nourished, tinged of a light yellow colour.
Rigidity - well-marked.
Dividity & mottling - well-marked.

Chest:

Lungs. Numerous haemorrhages and fibrin in both lungs.
Heart. Substance, pale fatty.

Dark fluid blood control.

Abdomen.

Stomach. Numerous small haemorrhages in mucous membrane.

Contents. Liquid like coffee containing ground.

Liver. Very fatty.

Gall bladder. Contained a little bile.


Spleen. Normal size, but congested & rather soft.

Bladder. Contained 2 or 3 ounces.

Pulence

E.H. Larnoud.
## Temperature Chart

**Name:** George Henry Stanton  
**Residence:** Manchester  
**Age:** 36  
**Sex:** Male  
**Occupation:**  
**Disease:** Yellow Fever

### Dates of Observations

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### Temperature

- **Fahrenheit:**
  - Cent: 41
  - 40
  - 39
  - 38
  - 37
  - Normal
  - 36
  - 35

### Pulse

- Per minute: 62, 64, 48, 48, 62

### Respiration

- Per minute:  

### Urine

- O.R.S.  
- 1020

### Remarks

- ENT St. N. Hall

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Published by T. Brettell & Co. 51 Rupert Street, London W.
Case 17.

George Henry Stanton, aged 36.
Birthplace: United States of America.
Occupation: Second mate on board the "Mannie Swan".

Admitted to the San Fernando Hospital 15th September 1895, 6.30pm.

History:

"Of fever since the night of the 12th." He has been freely purged with castor oil that he has vomiting a good deal. Complains greatly of frontal headache and also pain across epigastrium. Illness began with a rigor or chill. He had typhoid fever in October 1894. He has been in Trinidad 4 months. He joined this ship as second mate in Port of Spain on 9th September 1895. The "Mannie Swan" had been six weeks at Pernambuco where yellow fever was epidemic at the time. Most of the men and the captain were taken ill with fever from time. Some of the men and the two mates were left behind at Pernambuco. The ship went from Pernambuco to Barbados was then quarantined, and afterwards came on to Trinidad."
Two black sailors were taken on in Barbados, and two white men in Trinidad as first and second mate.

Case and Treatment:

A strongly built man with hot face.
Temperature = 103.2°.
Pulse - regular, of good volume.
 Tongue - coated. Heart has a peculiar earthy odour.
Urine - albuminous.
Face flushed. Gums suffused and slightly jaundiced.
Dr. Ion. milk, soda, foot soup, beef tea.

Orders:
1. Hot mustard foot bath.
2. Phenacetin 8 gr. stat.
3. Cooling lotion to head.
4. Mr. Quin Salph: 8 dr.
    Potas: Bromid: 8 dr.
    Acid Hydrom: dil 4 gr.
    Aq: in pia. a5f.
    Sig. 4th hour.

September 16th

Night report: Slept fairly well.
Head 2 degrees motion. Monument 2.
Pitching & rolling nausea constant.
Pain in Stomach. Temperature
this morning — 101°
Urine dark yellow — Acid. 1020.
Albumen 1/4
Quincke urtication — stopped. (He had
varied very done he had).
Ordered.
1. Whiskey 2 ounces.
2. R. Soda: Salicyl: 8¢ cc.
   Bismuth Subnit 8¢ cc.
   ipecacuan 3¢
   Ipecac 1 dr.
   Aq. Aq. 8¢ ml.
Sig. 3¢ every 3 hours
3. Mustard plaster to stomach.
September 19th.
My restless last night — had a
dose of nightdraught — (which is:
R. Potas: Bromide 8¢ cc.
Choral Hyd. 8¢ cc.
Sy.
Aq. 8¢ ml.
Hardly any sleep. Vertigo, frequent
& severe. Headache easier.
Still tenderness in epigastrum —
siles very weak.
hips dry.
Ordered. 1. Repeat mustard plaster
2. Stop: Cod: Galien: unicorn and pin

mist with Pep to every 4 hours.

B. Simnuth Tart 3 f.

dig: Pepsiae 5 f.

acid hydrocyanici dil. 4 4.

dig: morphi: hydrochlor 4 3.

Quinet: hydrocyanici 4 3.

Ag: 5 3.

3. Glycerine to moisten lips.

4. Two more ounces of whiskey.

Lemonade - ad lib: iced.

September 18th:

Not so restless last night. but had

very little sleep.

Imagine this morning is rather fairly

clean. vomiting less frequent.

Pulse 6 2.

Urino still contains albumen but also

some bile.

September 19th:

Slept well last night. So from this

morning - Amount of albumen in urine has increased.

Is jaundiced.

Patient is stronger.

September 20th:

Urino still contains a good deal of

albumen. but patient is much better.
Letter.

September 22nd.
He vomited several times last night.
Gums bleed occasionally.
Given a mouth wash of Bacter. Chlorat.
& Quiet Myrrh.
Pulse 48.

September 23rd.
Albumen lessening.

September 26th.
No more albumen in urine.
steadily getting stronger. Taking
solid food. Appetite good.
Girin.

A. Ammonium Carb. 30 gr.
Inj. Quina 60 gr.
Inf. Digitalii 3 gr.
Aq. Chlorat. a.5 ti.
1. dos.

The improvement continued & the
patient was discharged well. on
October 4th, 1895.

E. B. Cours.
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[Initials]