Thesis
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By
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Malarial Haemoglobinuric Fever.
(so-called) Blackwater Fever, of the Gold Coast.
Chiefly from a Clinico-Pathological Standpoint.

With Illustrative Cases etc.

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Malarial Haemoglobinuric Fever (so-called) Blackwater Fever of the Gold Coast: Chiefly from the Clinic - Pathological Standpoint.

Malarial Haemoglobinuric Fever is one of the more, if not the most, grave and necessarily dreaded types of Malarial infection as met with on the Gold Coast. More perhaps, than otherwise, on account of the panic which it causes in its victim at the knowledge of being attacked by the malady, it has during the past thirty years at least attracted the particular attention of the medical profession as well as the non-medical portion of the community under the popular name "Blackwater Fever".

It is undoubtedly a deadly form of Malarial Fever, and the mortality which it causes amongst Europeans and other races resident in the Gold Coast is deplorable. The intensity of its malignancy and the degree of its fatality may be fairly judged from
from the number of deaths that have resulted from the cases that have come under observation of the cases already reported; three out of five of St. Caemon's and one of St. Byles's two cases died, giving a death rate of 60 per cent, and 50 per cent or 600 and 500 per thousand respectively. Four of Eleven of my own cases died from the effects of the malady, giving a death rate of nearly 37 per cent or 370 per thousand. Taking then, an average of the deaths of all the cases we have a death rate of nearly 49 per cent or 490 per thousand which is excessively high and demonstrates in no small degree the profound malignancy of this subtle and least understood form of impaludism. It is no wonder then that the natives amongst whom this fever occurs, though rarely, regard it as invariable and certainly fatal, and which

The ravages caused by Malarial Haemoglobinuric Fever, however, give us only a side view of the potency of the maleficient agency of Malaria, and would seem to give us a clue to the explanation of many and doubtful cases of sudden and other deaths usually affirmed by the natives, and not only the natives of the Gold Coast but in truth by the Roman peoples of Ancient Classical times also, to be deaths from poisoning.

We can, from inference, understand why these latter peoples with their painful experience of the effects of the intensity of Malaria have shown a common tendency to personify the great enemy of their new colonies - The Malaria. In fact the Latins looking upon the effects, and the cause which produced it, as one, instituted the Cult of the "Dea Febris" (Goddess Fever).
To appease the fury of this divinity, Tommasi Gudeli tells us, they erected Temples in her honour and instituted a worship which religious tradition carried on, even after the notion of natural things became less vague, and the struggle of men against the maleficient agency of Malaria assumed a more practical form. Besides, it is probable, that, these people, like the natives of the Gold Coast in that respect, did not always know how to trace back to their original cause the most dangerous attacks of Malaria, as, according to the accounts of Tommasi Gudeli, many of these do not in the least resemble attacks of Common Intermittent Fever, and often, even now, say he, are attributed to other causes, by those who have not had a long experience in places where virulent malaria is prevalent. Considering the matter, thus, in the light of our present-day knowledge of Malarial Haemoglobinuric Fever...
Fever, it must be conceded that there is a fairly good ground for his assertion when Tompiaesi Cruelii. Continuing his remarks says:

"It is not at all unlikely that many secret assassinations and many instances of poisoning recorded as such in the Chronicles of Ancient Rome, were purely and simply cases of death caused by deadly Malaria, because we have seen many errors of the sort interwoven in the Italian History of the last four centuries, and accepted as true. There are in fact many reasons for believing that the final catastrophe which befell the Borgias in 1503, instead of being due to a mistake in the administering of a poison prepared for some other person was caused simply by an attack of a malignant Fever which killed the already an old man, but which Cesare Borgia, young and robust was able to overcome.\" (The Climate of Rome and the Roman Malaria: Chap. IV, p. 58)
It is gratifying to note, however, that this much dreaded malady no longer fills the breast of the medical profession on the Gold Coast with the same degree of alarm and anxiety as hitherto, and although I admit that amongst the community generally the medical practitioner has to deal with a far more formidable complication than Haemoglobinuria or Jaundice, viz., "Anic" (Eyleo), yet our knowledge and treatment of this disorder are, happily, advancing through slowly, in a satisfactory manner towards the attainment of an exact knowledge founded on scientific basis.

In endeavouring to arrange my notes for this subject I am strongly reminded of the fact that many authors, both foreign and in this country have published works on the subject; on the other hand I am equally reminded of a certain degree of labour of doubt there is existing, effort to be cleared up in respect of the
learnings of this subject, and whilst investigations into the subject have not yet enabled us to make a dogmatic statement regarding it, the facts already cited by these painstaking authors in their able contributions appear to me to require to be, more or less, supplemented by others derived exclusively from the Clinico-Pathological study of the malady in order to form, if possible, a basis of data more immediately useful in the interpretation of the phenomena of Malarial Haemoglobinuric Fever.

Despite the many difficulties in the way and irrespective of the tests I am to meet with, I shall endeavour to treat, though in an imperfect manner, of this subject more especially from the Clinico-Pathological standpoint.

In bringing this subject before the faculty of medicine I make no apology on the ground of its dealing with a malady practically unknown in Europe.
I am satisfied that the immense importance of it to the teeming millions of the population within the Gold Coast and the ravages which it is causing amongst the European residents, particularly, call for the observations such as I venture to submit in the following remarks, however fragmentary, in the hope they may throw some further light on this grave form of paludal disease.

**Definition and meaning of the Term:**
This form of Malarial Fever has been described under the names, "Pilious Haemoglobinuric Fever" "Malignant Pilious Fever", "Pernicious Remittent Fever", "Haemorrhagic Malarial Fever", so frequently mentioned in clinical reports of cases and patients in whom the condition occurs; while many interesting references are to be found in foreign literature: E.g., "Pilore Pilience Nématurique", "Pilore Pilience
Rilevence grave of the French, and the Bilious Remittent Fever of the North American writers, and "Fevre Remittens Hæmorrhagica etc." (Hirsch: Handbuch der Historisch-Geographischen Pathologie, 2nd Ed. I. S. 164), as the "very pernicious so-called Bile Fever (Gallen Fieber) of the Gold Coast," described by Mähly - (Hertz: Grammen's Handbuch der speziellen Pathologie und Therapie, 3rd Ed. II. T. p. 46). On the Gold Coast, Dr J. Farrell Casmon and Dr E. H. Cyles have published works relating to this subject, and as far as I have been able to ascertain, I believe Dr Casmon was the first to apply the term "Blackwater Fever" to this morbid condition in the records of his observations on the subject (Casmon, "The nature and Treatment of Blackwater Fever"). After Dr Casmon, Dr Cyles published his interesting brochure in which it is clearly evident that he views "Blackwater Fever" as a malarial Remittent Fever to which is added another malarial manifestation.
manifestation, viz. Haemoglobinuria, and that when this occurs there is more marked hepatic disturbance than in ordinary Remittents (Coxes: "Malarial Fever as met with on the Gold Coast" pp. 11 and 58). Whether we describe this condition as "Blackwater Fever" or apply any other terms of inference to it, we are to understand by the term "Malarial Haemoglobinuric Fever," an endemic, miasmatic Fever, malicious in its kind, and characterized by a well marked group of series of symptoms in which Pyrexia—Pardoxymal, continued or irregular, Black—Porter—like—wine, or in some cases a colour not unlike that suggested by decomposed venous blood, with more or less yellowness of the skin and Conjunctivae are the essential features of this morbid condition. I have adopted the term, "Malarial Haemoglobinuric Fever" in preference to any others applied to this condition.
for the simple reason that in the first place it conveys the general idea that the condition is of malarial or paludal origin accompanied by fever typical of malarial infection; and in the second place it is, etymologically speaking, logical, and pathologically it is, more or less, an attempt to be accurate in conveying the grave nature of the condition present. I admit that this term does not tell us anything precise regarding the true and exact nature of this malady, but I am persuaded that it will be found to be not unsuitable when all that could be known in respect of this malignant fever, is brought within the domain of practical medicine.

**Distribution** - Malarial Haemoglobinewic

Fever is found everywhere in the Gold Coast Colony and its hinterland, and not improbably it is a disease of Tropical Africa generally. I have met with it occurring on the Seaboard as well as in the Hinterland, e.g. in elevated places.
places like Begoro in Eastern
Ashanti, Akeli in Kwahu and Bompa at in Ashanti -
Ashanti. These are towns situated
at considerable heights above the
level of the sea. Thus, it is a
disease that does not appear
to be influenced, so far as the
Gold Coast is concerned, by a
high altitude (Elevation).
Conditions in which "Black urine"
and yellow discoloration of the skin
and conjunctivae, have been observed
to arise—are for the most part as
follows:—"Paroxysmal Haemoglobinuria"
(T. Grainger Stewart: "Haematinuria,
Quain's Dictionary of medicine). High
Temperature affecting the blood
directly" (Joffeik, Klebs); in the
same way certain chemically active
substances act on the blood—
such are, Nitrobenzol, (Tiechee),
Potassium Chlorate (Marchaud),
Pyrogallic Acid (Keiser), Sulphuric
Acid (Layden and Munk), Nitrite
of Amyl (Hoppe - Seyler), certain
Mushrooms of the novel kind
(Hoffeik), and the venom of certain
Serpoats (Hafford); Cooling of the
Cutaneous Surfaces (Lickheim).
Clinical Phenomena, Symptoms, and General Course.—Malarial Haemoglobinæmic Fever occurs at all seasons of the year but more commonly during the warmer and dampish wet months. It is not contagious and has never been known to occur in Epidemic Form. It attacks all races but Europeans and others of European origin are extremely much more susceptible to its effects. Among the negroes and mulattoes it occurs though rarely. One attack does not confer immunity from subsequent attacks. Here lies the almost impossibility of European acclimatization in malarious countries. The weak and debilitated are much more frequently attacked, and often cases of mild Remittent or even Intermittent Fever precede this disorder for sometime; it may be a few days or hours, before the condition manifests itself; in other cases the onset of symptoms may be sudden. From the Illustrative cases which I append herewith, it is well to bear in mind that
that there are several phases of this morbid condition apparently differing slightly in their nature but that in all there is a remarkably significant similarity standing out prominently in the grouping sequence and arrangement of the symptoms. It will be convenient therefore to classify the symptoms under the systems to which they naturally refer—
as for instance: (1) Those symptoms both primarily and directly referable to the blood and circulatory system; (2) Those referable to the digestive and excretory systems; and (3) Those referable to the nervous system.

The phenomena referable to the blood and circulatory system contribute the greater, if not the most serious, aspect of this malady, because all the secretions of the body are maintained in an active and regular condition by means of the activity of the circulation of the blood which is constantly driving out the Malaria—germ when moderate quantities
quantities are absorbed, but should the circulation be enfeebled from any cause whatever, then the malaria-germ has time to attack directly the red corpuscles of the blood (as Macleishaba and Celli have demonstrated), and thus produce infection which becomes either stasis form - the subject under review - or some other variety of malarial fever. The chief points observable with reference to the circulation and blood are, that the Pulse is quick, soft, small, regular and easily compressible, or it may be slow, irregular and intermittent. The heart's impulse is weakened and sometimes the apex sounds have a tendency to overlap each other. But I have not observed in any of my cases any distinctive Cardiac murmur. In the convalescents, however, after the abatement of general symptoms or sometimes in bad cases before death, a distinctive Haemic hoot is audible in the large veins of the neck indicating a profound anaemic state of the blood.
blood frequently described as oligocytania and Haemoglobin-aemia, are conditions induced by the excessive breakdown of the red blood corpuscles. In this connection the use of the Haemocytometer and Haemometer at the bedside is simply invaluable, for if blood from a patient is examined by these means it will be observed that the number of red corpuscles are reduced whilst the whites appear to be relatively increased with a marked deficiency of Haemoglobin.

In connection with the clinical examination of the blood in this morbid condition the Faucet, (27th July 1896 p. 225), has drawn the attention of the profession to the usefulness of the Haemometer in malacious diseases generally, and it would not be out of place in quoting here its remarks, as they coincide with my own views of the matter, and cannot be too strongly insisted upon. The Faucet, (Loc. Cit.), remarking on the "Ferrocious Fevers of Eastern Africa" in connection with a most interesting
paper on the subject of "Rilious Haematuric Fieures," written by Staff Surgeon Major Steudel of the German Army, says:

"In twelve cases he (Staff Surgeon Major Steudel) made an examination of the blood by means of Fleschel's haemometer, and found that the amount of haemoglobin present oscillated between 50 and 21 per cent. of the normal standard. In two other cases this quantity was too small to be determined by the instrument, but it was estimated by the observer at not more than 5 and 8 per cent. respectively. He lays stress upon the prognostic value of haematological examinations and furnishes details regarding two patients with a deficiency of haemoglobin in their blood in whom Rilious Feuer subsequently showed itself on several occasions when their ordinary mode of life underwent a change for the worse. The clinical facts here alone described agree in some important respects with the condition of the blood in malarial
malarial Haemoglobinuria. Fever.
Continuing his remarks the facet adds:

"It seems only reasonable to conclude that a systematic use of the Haemometer cannot but render great service in the detection of the incipient stage of a disease which is invariably attended by more or less destruction of the red Corpuscles of the blood. Staff-Surgeon-Major Hendel looks on the diminution of Haemoglobin as a certain index of latent or incipient malaria, and is satisfied that this important sign manifests itself long before the more salient symptoms become apparent. As long as the impoverishment continues slight the sufferer can be restored by appropriate treatment on the spot, but as soon as it passes certain limits he should at once be invalided to Europe, or at all events sent to a Sanatorium. The means thus furnished for unmasking the residious
enemy while it is still comparatively impotent, and
before it has had time to acquire
the firm hold on the patient's
constitution which it subsequently
manifests, should enable the
medical officer to save many
a valuable life that otherwise
would be sacrificed to the 

Turning to the Digestive and Secretory
systems, the lips are anaemic and
dry, or almost blackish in grave cases;
the tongue is found to be dry, or
moist and slimy, and incrusted
with a thick, dirty—yellow or
dark brownish fur, or sometimes
leaden—coloured with an abundance
of sordes on the teeth and gums;
inertiable thirst, anorexia,
dejection may be affected from
weakness; griping pains in the
abdomen; irritable stomach
as evidenced by nausea, or
vomiting of green or yellow bile
or, in malignant cases, coffee-ground
coloured matter mixed more or less
with frothy fluid, and when there
is much retching there may be actual
haematemesis.
haematemesis and epigastric
unpleasantness or actual oppression
around the chest; hiccup is
also present, frequently
distressing; constipation is
the rule in all my except where
purgatives had been taken before
the case came under my observation;
there may be, though rarely and not
so much in this as in the simple
Remittent variety, gastro-duodenal ataxia
with bilious stools: Tenderness in
the Right Hypochondriac region
with or without an enlargement
of the liver; tenderness over the spleen
and, at times, over the stomach.
The abiding evacuations are as
a rule feculent with an ad-
mixture of mucus and a
melancholic matter of very offensive
odour or they may be scantly,
hard and "slotty" black lumps
(Scybalae), or assume a peculiar
mixture of green and reddish
black colour like pounded
spinach mixed with Palm
oil, or at times black and
jelly-like; this latter is contain-
poraneous with diminished
urine.
urine, and excessive vomiting of "coffee-ground" fluid matter. The skin is, in some cases dry and hot, in others bathed in cold clammy sweat; the surface temperature varies between 102°F and 104°F or higher, generally paroxysmal, or continuous or irregular conforming to no regular type of fever. There is yellowness of the skin and conjunctivae, and nails with, at times, injection of the conjunctivae. In the more dependent parts of the body, there may be ecchymoses giving a mottled appearance of the skin, especially over parts usually exposed to pressure, or the skin may be covered with Lichen Sarcoidosis.

The urine - there may be a certain amount of dysuria, or retention present or suppression at the very onset of symptoms, though in some cases urine and feces are passed involuntarily. Usually the urine passed is scanty, or of moderate quantity; the color varies from at first, it may be dark-ruddy,
or Sherry, afterwards it turns muddy Portwine, or in some cases at the commencement it is thick and black like molasses, Sp. g varies between 1020 and 1030. Acid in reaction and has sediment; contains a trace of albumen, but in bad cases it may be one-half, constituent of haemoglobin; sediment consists of urates principally but no blood corpuscle, and as a rule, no tube cast except when nephritis is a complication, nor bile nor sugar. In one of Dr. Casmon's cases we read the following remarks on the examination of the urine:

"Specimens of the urine were forwarded to Professor Reiger and Dr. Wickham, both of London, but neither of these physicians and one of them, the latter, is a specialist on the subject—was able to detect bile; on the contrary the microscope and spectroscope revealed the presence of reduced blood" (Casmon: Op. Cit; Case of 3, p. 22).
With regard to symptoms referable to the nervous system, the most noticeable is the depression of the nervous force and vital energy; malaise, weariness, aching pains in the bones and joints, and back, shifting muscular pains; headache, periodical attacks of rigors with shiverings, restlessness, dizziness, impairment of the power of the mental faculties in the form of a dull and clouded intellect, a mind wandering strangely, light-headed; there may be hallucinations of sight and hearing, a low muttering delirium gradually passing into a somnolent state or. Sometimes the delirium is acute, violent and noisy; voice is tremulous and there are muscular tremors, subsaultus tendinum, Carphology and occasionally, but very rarely, there may be Convulsions.

From day to day the fever progresses and all the symptoms increase in their severity; there are more severe pains in head and loins; yellowness of the skin and Conjunctivae deepened; urine more scanty or absolute.
absolute suppression; when examined now it may show increased albumen, about one-half; faeces are healthy, black, hard and "shotty" - lumps, rigor severe; temperature is now 105°F or 106°F. Pulse very weak and running; Head symptoms increase and severe; and the scene is quickly closed, if the case is to terminate fatally, - in comatose, hyperpyrexia, or hyperemic suppression. In a typical case the whole scene occupies the space of seven days, or a bad case may go on to a much later date and the patient then dies from exhaustion. death, at times, takes place speedily in three or four days.

Haemoglobinuria usually appears on the third or fourth day after the onset of prodromal symptoms, or it may be sudden, and then ceases on the third or fourth day after its onset - though there have been cases in which Haemoglobinuria has gone on till the seventh day, and sometimes never ceases before death supervenes. With the cessation of Haemoglobinuria there is often desquamation.
defervescence in the temperature with an abatement of general symptoms: the patient is thus relieved and passes into convalescence. Often, rather than not, however, there is a deceitful remission before the manifestation of fatal symptoms. When this unfortunate phenomenon occurs every care and watchfulness have to be exercised in the attempt to save the patient's life.

Pathology

As to the organism which produces the morbid changes in this as well as in the other varieties of Malarial Fever a controversy still continues. But I believe it is generally admitted that in all cases of Malarial Fever of which Malarial Haemoglobinuric Fever is only a type, a germ—Bacillus Malariae—is found in the blood of patients both during life and after death. I am aware of the opposition to this view led by Surgeon-Lieutenant-Colonel Laurie who maintains as the result of his investigations...
investigations that there is no parasite in the blood in malaria—
a conclusion, it need scarcely be added, at variance with the researches
of Levene, Marchiafava, and quite a number of independent observers
in Europe, America, and elsewhere.”
(Lancet: October 5th, 1895).
In what manner the malarial forms—
spores, flagellate, or crescent—produce
disease is by no means a settled
question. As to whether the disease
is due to their presence or to some
product generated by them is a
view which is still awaiting
elucidation and respecting which our
knowledge is advancing though
slowly. But whatever may be said
on this subject, I think we may
claim a right to be certain of this—
that the pathology of malarial
Haemoglobinuria Fever is
essentially the pathology of the blood:
it is, at iniquo, the medium of
the attack of the micro-organisms—
infact the arena of combat between
the vital forces of the blood consti-
tuents and putrefaction—wherein the
issues of the body generally suffer.
The blood, as Ziegler says, is a definite
...
living tissue, and in disease, too, it conforms itself as a living tissue, (Tieger: Pathological Anatomy and Pathogenesis. Sect. 281. p. 8).
As a tissue may not the blood be regarded as subject to all the inflammatory changes, with their attendant phenomena, to which an ordinary solid tissue is subject? If this be so, then any grave changes in its composition or serious variations from the normal must be looked upon as a pathological phenomenon. Clinically we find in malarial Haemoglobinuric Fever morbid processes affecting the blood in the direction of changes in the form and quantity of its morphological elements, and manifesting themselves by simultaneous grave changes in the functions of the organs generally.
Of the malaria germ in the blood we have the authority of Levean who found 'filaments mobiles' in the blood of sick patients (Levean: Nature parasitaire de accidents d'impaludisme. Paris 1881). Marchiafava found the Bacillus...
in the blood, marrow, and spleen of patients who had died of Malarious Fever (Marchiafava, Gabon — Nuovi Studi sulla natura della Malaria, Acad. dei Lincei, Jan. 2, 1891). Léger tells us that in the condition so-called Melanaemia, a result of malarial infection, the blood change is due to the destruction of the corpuscles and the retention of the disintegrated products in the blood (Léger: Special Pathological Anatomy, Part I, Art. 262) and quite recently we have been placed in possession of what St. Patrick Mauvon says of the Malaria parasite within the human body:—

"These spores" says he, "on becoming free, attack themselves to red blood corpuscles, and begin enter the red blood corpuscles, and begin to grow at the expense of the Haemoglobin, which they convert into their proper tissue and into the black pigment which must be regarded as a sort of excrementitious product of the parasites digestion. In about forty-eight hours they have attained their maximum growth and..."
and prepare for sporulation, the nucleus and nucleolus becoming diffused through the protoplasm.

Although there may be differences of opinion on some minor points, pathologists and biologists in the main agree that this is substantially the history of the benign tertian parasite in human blood, and that the same account practically applies to all the malaria parasites. (Manson: Goulstonian Lectures, I., March 14, 1896).

The effects of these morbid processes on the blood are that the blood is poor in red corpuscles and in haemoglobin. Conditions described as oligocythaemia and haemoglobinaemia. When these conditions exist combined we have a deficiency of blood supply in the organs of the body called oligaemia or anaemia. This condition is indicated during life by the pallor of the skin and mucous membranes, and after death it appears in the small proportion of the blood contained in the several organs. As bearing upon the effects of the malaria micro-
micro-organism on the blood and in support of the view that the blood is, prima facie, the first line of attack in this malady before any manifestation of impaludism appears in any of the organs of the body we find that Staff Surgeon Major Steedle looks upon the diminution of haemoglobin as a certain index of latent or incipient malaria, and is satisfied that this important sign manifests itself long before the more salient symptoms become apparent, and furnishes details regarding two patients with a deficiency of haemoglobin in their blood in whom bilious Fever subsequently showed itself on several occasions when their ordinary mode of life underwent a change for the worse (Samuel: July 17, 1895). If, now, we accept the usual account given of the occurrence of haemoglobinuria, that when the destruction of blood cells becomes so excessive that haemoglobin appears in solution in the plasma, and in excess of the amount that can be dealt with by the spleen, liver, and
and bone marrow, the kidneys take part in the eliminating process, and haemoglobunuria is induced; (Tiegler: Special Pathol. Anatomy, Part II, art. 268); that the eteric discoloration of the stomach and conjuncive is due to the solution and effusion of the coloring matter of the blood (Reynolds 1st, of medicine, Vol. I, p. 483), the crystals of which appear to be identical in form with those of biliverdin, the chief coloring matter of human bile (Gamgee: A Text Book of the Phys., Chemist, of the Animal body, Vol. I, p. 120); that when the disintegrated red corpuscles accumulated in the blood, exercise an injurious effect, in the way of shades of degrees of congestion upon the various organs with which they are brought in contact; and further if we accept the hypothesis that the malaria micro-organism when settled in the tissues or in the course of their elimination from the system exercise their destructive effects upon the tissues (Tiegler: Gen. Pathol. Anatomy, Part I, art. 198), we should have very little difficulty in
in accounting for the occurrence of the phenomena exhibited by the several organs and tissues of the body taking part in the morbid processes of malarial Haemoglobinuric Fever.

Thus we see that the significance of this factor, Haemoglobinuria, when associated with malaria is greater than it may have appeared at first sight. It is a phenomenon that should be regarded, if not more, in the same degree as the elevation of Temperature itself, inasmuch as both depend, as I maintain, upon the destructive effects of the malaria micro-organisms upon the blood primarily, and subsequently upon the several organs.

As regards the morbid changes in this Fever there is on record a post-mortem performed on one fatal case with microscopic examination of the tissues in another case which throw some light on the morbid Anatomy of Malarial Haemoglobinuric Fever, but I must admit beforehand that the available observations on this head have not the extent or exactness that could be desired.
described to enable us to formulate a definite theory of the morbid changes applicable to all cases. It would, therefore, be highly desirable and advantageous if in every case of death from this malady one could have the opportunity of performing an autopsy with a microscopic examination of the tissues including the blood and other fluids; for, as N. Moore, urgently urged upon all students of medical Pathology, it is of no less importance that they should see and understand as many postmortem examinations as possible, for thus only can they attain clear notions of disease, sound principles of diagnosis, and accurate views of the right direction of treatment. (Norman Moore: Medical Pathology).

On the cold feast, though fatal cases are common enough, our opportunities in this respect are unfortunately very much limited by circumstances over which the medical practitioners have no control. I have not myself performed any postmortem examination on a fatal case, and therefore quote with some slight
slight abbreviation the report of a fatal case examined by my colleague Mr. Connolly:

The colour which had slightly faded had again deepened and assumed a mustard hue.

The body was emaciated, particularly in the face and upper and lower limbs. On section jaundice was found to penetrate the entire skin, but did not seem to extend to the deeper tissues, as the muscles connective tissue and nerves.

There was no diminution apparently of adipose tissue underneath the skin of the thorax and abdomen.

The lungs were extremely pale and light ash in colour, very little congestion being visible even in their posterior bases.

On section scarcely any blood flowed, only a light mucous or serous frothy liquid.

The heart's colour was pale, grey, and the muscular fibres were thin, worn and easily separated, an evidence of muscular degeneration and the walls of the ventricles were exceedingly fine and thin. There was a loose collection of frothy, light red blood.
blood, not deserving the name of a coagulum, in the right auricle and ventricle. The left side of the heart was empty, and not so much in a state of constriction as Collapse.

The liver withdrawn under the ribs, seemed somewhat shrunken and looked like an immense lemon. The capsule was loosely adherent and formed numerous bright saffron, yellow tumours, varying in size from that of the head of a pin to that of a buck shot. They were cysts formed of obstructed and expanded ducts and contained a thick, liquid cheesy matter. The lemon-like colour pervaded the entire substance of the liver. The gall-bladder was full and distended, its contents being dark green. The pancreatic blood in the portal vein and in the Inferior Vena Cava was light red and frothy and no clots were to be seen.

The kidneys were uniformly enlarged, the right weighing eight ounces, and the left eight ounces and a half. They resembled in appearance the result found in a case of acute desquamative Nephritis, they were deeply congested, etc.
the cortical portion, particularly, which was enlarged, looking red and inflamed, whilst the pyramids, though congested, seemed to have undergone a change towards enlargement rather than towards inflammation. The substance of the kidneys was readily friable and the capsule loose. The pelvis and infundibula seemed to partake of the general increase in size and contained a dark slimy fluid.

The spleen was enlarged, weighing fourteen and a half ounces, was in a condition of extreme friability and congestion the capsule peeling off like the fingers of a glove. A red frothy blood-like liquid exuded from it.

The stomach was distended and contained a few lumps like black current jelly, and was markedly inflamed along the entire surface of the greater curvature from which point no doubt haematemesis arose.

The small intestines showed scattered patches of red congestion appearing on their outer surface.
except at the entrance of the common bile duct where there was intense yellow staining. Internally they were covered with mucous-gelatinous matter varying in colour from light green to deep black; the valvulae conniventes and even the mucous membrane seemed worn away; and Peyer's patches although the intestines were well washed could not be made visible.

"The large intestines displayed an augmented vascularity beyond the ileo-caecal valve, and through the entire rectum, circular and irregular, ulcers and a ragged destruction of the mucous membrane, were prominent.

"The bladder was normal and contained a few drops of yellow urine. A fact most striking to the observer was the deficiency of blood in the organs of circulation and in the tissues, and its non-coagulability."
From the remarks made by Dr. Wheaton at a meeting of the Pathological Society of London (Lancet: Feb. 4, 1893) relative to some preparations from the organs of a case of what he calls "West African "Blackwater Fever," exhibited by him we gather the following:

After a preliminary stage of shivering, numbness of the extremities, with pain in the loins, slight jaundice, developed, as also fever followed by the passage of Portex-coloured urine. In severe cases, bilious vomiting occurred, succeeded by death with symptoms of anaemia. The attacks recurred again and again, some patients having as many as ten attacks. The urine contained haemoglobin or metahaemoglobin, and red corpuscles were absent from it. . . . . The preparations showed in the cortical portion of the kidneys cloudy swelling of the epithelium and the accumulations of granules of haemoglobin in the tables. In the pyramids the tables were filled up by large masses of haemoglobin.
the spleen showed small red spots, due to collections of haemoglobin, as could be shown by examination with the microspectroscope, as also the presence of large circular cells with large red nuclei also containing pigment. The liver showed cloudy swelling of the cells and the presence of collections of large granules of pigment in them. There was no blood pigment in the vessels or capillaries of the organs nor were there extravasations of blood"... "The Nephritis which occurred and was most marked in the specimens shown was probably due to the irritating effect of the passage of blood pigment through the secreting cells of the kidney tubules." Dr. Samuel West, criticizing the above observations, maintained that the disease belonged to a malarial group of a newer kind and gave as his reason for adopting this view a case from the west coast of Africa which had come under his observation. That was the patient's third attack. His temperature rose, on the third day, to 104.5°F, and
and he began to pass blood in his water. Next day he was jaundiced, the urine containing haemoglobin with albumen, but no blood corpuscles or bile. Two days later blood oozed from different parts of his body, on the slightest scratch, the temperature fell to subnormal, vomiting was constant, and he died of exhaustion. And he added that his patient told him that the disease was more fatal amongst the black than among the white people. (Quoted: loc. cit.).

Further, Dr. Patrick Manson, in his paper on what he terms "African Haemoglobinuric Fever" read before the Epidemiological Society (Quoted: April 1, 1878) observes:

"The essential phenomenon was the destruction of the blood cells; in the vessels the blood corpuscles were seen to be of all sizes and forms, broken, discoloured and partly dissolved. The colour of the urine to which the disease owed its popular name of "Blackwater Fever," was caused by the presence of broken-down blood..."
blood cells, epithelial casts, and a quantity of granular debris and reddish-brown pigment— which slowly subsided or was carried down on boiling by the Coagulum of albumen leaving the supernatant fluid clear. The "jaundice" was not due to bile, but to staining with altered blood pigment."

Thus far has reached our present knowledge of the pathological features of malarial Haemoglobinuric Fever and as our knowledge further advances so much cleaner would become much of the unsolved problems which at present render this malady one of the most subtle and insidious forms of impaludism yet known to West African Pathology.
Differential Diagnosis between Malarial Haemoglobinuric Fever and Yellow Fever.

The clinical observations of Malarial Haemoglobinuric Fever bring before one's mind, a pathological state of the blood which closely approaches that of Yellow Jack. A true distinction can however be always drawn between Malarial Haemoglobinuric Fever and Yellow Fever—the following being, if not all, some of the essential points of difference between the two:

**Malarial Haemoglobinuric Fever**... **Yellow Fever**.

Non-contagious... Contagious

Source—Malaria... Source—Contagion

which may be carried beyond malarious districts.

Attacks—Recur... One attack

Fever—Paroxysmal... Fever non—paroxysmal

remission of paroxysms.

Haemorrhage— as a rule, none. Haemorrhage from all the mucous surfaces.

Spleen—Often enlarged... Spleen—not enlarged.

Facies—Ordinary... Facies—Peculiar.
Determination of the prognosis from the morbid Anatomy.—As regards prognosis the morbid appearances demonstrate that the cases in which death cannot be averted are those in which: (a) old Renal disease is present; (b) vascular disease or some other form of Cardiac weakness is present; (c) There is present ulceration of the large Intestines and in consequence there is great intestinal perfoxia. Whilst cases in which the prognosis may be considered unfavourable but in which recovery may take place are:
(1) Cases in which there is slight derangement of the liver of long standing.
(2) Gastro-Intestinal Catarach.
(3) Cloudy swelling of the Kidneys and inspection of debris of Haemoglobin in the tubuli uriniferi.
(4) The presence in some form of lung disease.
Principles of Treatment indicated by the morbid Anatomy.—The general effects of Acute Haemolysis and its consequent Anaehaemia
an hydroaemic state of the several organs produced by the Malarial micro-organism point to the extreme importance of adopting some such measures as the following:

1. Absolute rest in the recumbent position under suitable cover.
2. Strictly enforced fluid diet.
3. Deplete the urine by the injection of water and suitable mild purgation.
4. Attack the site of infection by appropriate remedies such as quinine, Calomel, &c., and by every precaution of cleanliness entailing exclude the further introduction of micro-organisms.
5. Reduce fever by antiperiodic remedies and cold sponging.
6. Arouse the action of the liver and other abdominal organs by hot fomentations over the abdomen.
7. Maintain the physiological action of the kidneys by mild diuretics and saluretic saline drinks.
8. Support the heart as much as possible by stimulants, though only when the condition of the patient requires it.
9. Where there is ante-mortem lung mischief present, it is of special importance...
importance to guard against Pneumonia and severe Bronchitis.

(10) As evinced by the state of the Gastro-Intestinal tract at the autopsy after death, strong purgative remedies must be guardedly used if at all necessary.

[Signature]

R.M. Quarters
Acting Col. Surgeon
Gold Coast.

May 1876.
Illustrative Cases
Case I

Rev. Mr. German Missionary, aged 32. Result - Recovery.

The patient is a German Missionary, brought down from the interior with a bad fever. He had been in fever for three days, and complains now of pains around the waist and back, weakness, thirst, loss of appetite, nausea, sleeplessness and being light-headed, and Diarrhoea after taking some purgative. He is restless. Skin hot and slightly moist. Conjunctivae and skin are jaundiced - almost lemon - yellow discoloration; incoherent vomiting of green bile mixed with frothy fluid; Bowels loose; Temperature 104° F. Pulse 120 rather rapid, regular and compressible; urine scanty, tinted black like muddy portwine, contains a trace of albumen, the constituents of Haemoglobin, a heavy deposit of urates, acid in reaction, but no blood, bile, sugar or tube casts; spleen enlarged and tender to touch, so is the liver; Tongue covered with a dirty yellowish film. Quinin Sulph g+ ÷ and Calomelos g+ ÷ were administered to be followed in one hour by
by a draught containing Warburton’s Tincture. There were not retained and at 3.30 p.m., a large mustard poultice was applied to the whole of the abdomen, after which a draught containing Aromath and Soda given and retained.

7 p.m. Patient slept in the afternoon and feeling slightly better; Temperature 102°; Pulse febrile. Quinine and Colonel repeated. Egg flip, Champagne, and Milk retained. 10 p.m. Vomiting less frequent.

5th February. - 8 a.m. Patient had a bad night. Complains of feeling the head swimming, headache, and pain in the Hepatic region; Tongue cleaning; Bowels have not opened since last note; Temp. 101°. Pulse 99 regular and fairly strong; urine is of moderate quantity, clear and dark coloured; skin and conjunctival discoloration, improving.

To take Calomelos gr. v with a draught containing 1 of. Ricini. Egg flip, Milk and Champagne retained.

6.30 p.m. Had a good sleep in the afternoon. Temp. 101.7. Pulse febrile and weak. Had Champagne, Milk and Egg flip but all expelled immediately after they had...
had been swallowed, so was the sleeping draught administered at 9 p.m. Bowels have acted twice. Stools are scanty and darkish-red coloured.

6th Feb. - 7 a.m. Patient had a good night and doing fairly well this morning. Temp. 100. 4°. Pulse fairly good; urine is now clear and light-coloured; Tongue cleaning; Bowels have acted twice - stools have the same characters as last note. pains in the region of liver and spleen better. 6 p.m. Patient has had several motions of the bowels. Temp. 101°. Pulse febrile; urine normal colour.

Quinin. Sulph. qtr. given at once.

7th Feb. - 8 a.m. Had a much better night. Temp. 99°. Pulse good, vomiting has entirely ceased; conjunctiva and skin discoloration improved; urine normal; Tongue quite clean; one good stool; appetite good. Patient has so rapidly regained strength that he is permitted to sit in an arm chair. 6 p.m. Patient is convalescent. Temp. 99°. Pulse good. One good stool. To take quinin. Sulph. qtr. Aechiice stopped
8th Feb. — Convalescence is complete. Temp 98.8 F. Pulse good, urine normal. Appetite good. Placed on a generous diet and a bitter tonic. Sent shortly after to Germany for a change of air.

Case II

Rev. Father S., aged 28 years. Recovery. Patient is a Roman Catholic Missionary and has been out two years on this Coast, during which he has suffered once from an attack of Malarial Haemoglobinuria. Fever in June last so that this is his second attack of the same fever. On seeing him in the afternoon of 1st August 1890 he complained of a feeling of uneasiness in the Lumbar region, headache, thirst, periodical chilliness over the whole body with shiverings, sleeplessness, loss of appetite, constipation, and nausea, and said that this illness began three days ago with lassitude and want of energy. I find the skin and conjunctivae intensely jaundiced; skin hot and
slightly moist; Eyes dazed and suffused; Tongue covered with a dirty yellowish fur; head tossed on the pillow from one side to the other. Incessant vomiting of white fluid mixed with frothy mucus; no tenderness elicited on pressure over the abdominal Organs. Temp. 105° F. Pulse 120 rather rapid, regular and fairly strong. Had not passed urine since last night when he had much difficulty in doing so and what came was very scanty and black coloured.

To take quinin, Salph gr. 5 and Calomel gr. 1 at once; old sponge of the head and upper part of the body, and hot water bottles applied to the feet; Sterilised milk and Soda and Beef-tea ordered. 6 p.m.


About 2 oz. of black wine drawn off looking very much like moustees and contains a very small quantity of albumen, constituents of Haemo-globin, and heavy deposit of urates etc., but no blood, bile, sugar or tube.
take casts, Thirst insatiable but fluids are ejected as soon as they are swallowed; Antipyrin gr. xx to be taken at once followed in half an hour by quinin Sulph. gr. xv; a large mustard poultice applied to the whole of abdomen.

2nd August: 8. 30 am. Sent for hurriedly to see the patient who is reported getting worse. On attending patient complains of having had a bad night, thirst, pains in the lumbar regions and ast also in the Hepatic region. He is restless and very hot all over the body; the Icteric tinge of the skin and conjunctivae is very pronounced; had been sick - vomiting matters consist of undigested food and frothy fluid but contains no bile no blood; Respiration defective; Temp. 105 2° F. Pulse very rapid irregular and weak; no urine passed since last note and the bowels have not acted. To take antipyrin gr. xxv every hour till 30 grains have been taken to be followed in half an hour after by quinin
quinine sulph gr XX. 1 p.m. Temp 103. 2° F. Pulse rapid, regular and compressible; no urine has been passed. Skin sweating profusely. One stool - dark rich red coloured. Milk and soda retained. Antipyrin gr XV to be followed quinin sulph gr XX ordered. 6 p.m.

Temperature 103. 8° F. Pulse febrile and weak. Perpiration continues. Patient kept down. Egg, flip, beef tea and milk. 9 p.m. — Temp. 101. 4° F. Pulse febrile and weak; about 8 ounces of urine passed with difficulty. Colour of urine is like that of molasses. Colomelo gr XV administered at once, and a sleeping draught ordered to be taken at 10 p.m.

3rd Aug. 6.30 a.m. I found the patient quiet and calm. He said he had a bad night and vomited once during the night and then slept for one hour after which he awoke and sweated throughout the night. Temp. 102° F. Pulse rapid and rather weak, urine has the same characters as last note but increasing in quantity.
Apyria much lessened, skin
discolouration is improving,
Bowels not open; Headache
persists. To take a draught
containing Ol. Ricasz. 3 p.
Tinct.
chloroform. A 4 XV and 6o. Meath.
Dip. 1130 am. - Temp. 101°F.
Pulse febrile and weak. One
Stool - greenish - yellow coloured;
sweating profusely: quinin Sulph.
gr XV administered. Egg flip,
Beef - tea, and some white wine
were retained. 6 p.m. - Temp.
102°F. Pulse febrile; urine is still
black but increasing in quantity.
Four greenish - yellow stools. More
rings of skin and conjunctivae
improving. Nausea and vomiting
have ceased; Patient taking
nourishment and urine freely.
quinin Sulph. gr XV administered
and a slopping draught ordered
to be taken at bedtime.
4th Aug. - 8:30 a.m. Patient
had a bad night. He awoke in
the night feeling very chilly and
shivery. Perspiration defective.
Patient reported to me that he took some raw eggs this morning. Bowels have not opened; Storie tinge of skin and Conjunctivae has increased. Apyrexia has ceased and urine is passed freely and increasing in quantity; Stool is still black. Temp. 102.4°F. Pulse febrile regular full and compressible. To take quinine sulph gr. X, to be repeated at noon. Must eat Aet B Chiot broth. Beef-tea, Cud tea and arrowroot ordered. 12 a.m. Felt sick and brought up the undigested raw eggs taken in the morning. Temp. 101°F. Pulse febrile, about 10 ounces of reddish-yellow coloured urine passed. 6 p.m. Temp. 101.6°F. Pulse slightly febrile. Patient had a sleep from the afternoon from which he awoke in a fright. One shool. quinine sulph gr. XV administered to be taken at 9 p.m.

5th Aug. Patient had a bad night. In spite of the sleeping draught he did not have any sleep.
after taking the sleeping draught it is however improving. Temp. 101° F. Pulse slightly febrile and fairly strong; urine increased in quantity, Colour Changed to darkish-red; Bowels have acted thrice. Stools are dark-red; Coloured, skin discolouration improving. Quinine Sulph. gr XV administered afterwards. He took some arrowroot and retained it. 6 p.m. - Patient is calm and perspiring freely. Temp. 100.2° F. Pulse 98 regular, full and fairly strong; frequent micturition - urine is plentiful and of the same colour as last note, general condition has much improved; appetite improving and no return of headache nor nausea. Dil. Adolph. C 1 ordered to be taken at once and followed in the morning by a Saline aperient, and a sleeping draught ordered to be taken at bedtime.

6th Aug. 6 a.m. Patient is doing fairly well. Temp. 101° F. Pulse 98 fairly good; Colour of urine changed to reddish-brown. Two reddish-brown.
coloured stools; Hicksy heat appears on the forehead and back; taking nourishment freely. To take quinin Sulph g+ x/2 n. b.p. m. Temp. 100.4°F. Pulse 80, good. A lotion containing Alum & Salt g+ to 2 pints of water ordered to be used in strapping parts of the skin affected with Hicksy heat. To take quinin Sulph g+ x and a sleeping draught at bedtime.

6 Aug. 6 a.m. Had a good night after taking the draught, and feeling better this morning. He complains of bad mouth especially at the back part of the tongue, and the mouth being sore; Temp. 100°F. Pulse fairly good; micturition less frequent, urine is clear and has changed to “light-olivaceous”. Stools are clayey-coloured; dis-colouration of skin and conjunctivae continues improving. Salomel stopped and mouth leach containing 60 t. Chlorat. and acid hydr. ordered to be used frequently, b.p.m. Condition the same as last note.
8th Aug. - 8.30 am Patient had a very good night. Slept well. He is steadily improving. Appetite keen; tongue clean; bowels not open; Temp. 100.8°F. Pulse 76 good; urine light - clear and clean. To take quinin sulph 9gr. 6 p.m. Temp. 101°F. Pulse 80. Febrile; bowels not open. To take Dil. Joseph 6 II at bedtime to be followed in the morning by a saline aperient.

9th Aug. - Patient had a fairly good night. He is improving. bowels passed last night and four this morning. Temp. 101°F. Pulse 80. Febrile; urine normal colour. To take quinin sulph 9 gr. Χ⅚. Chicken soup and toasted bread with some Champagne allowed.

6 p.m. Slight bleeding from the nose when he sneezed. Temp. 100.4°F. Pulse good. Two more stools are clayey and sticky. To take quinin sulph 9gr. Χ⅚.

10th Aug. - Patient complains of being restless. Temperature ranged between 101.2°F in the morning and 100.6°F.
100° 6° F. in the evening. Pulse good. Tongue quite clean. Quinin Sulph.
q" xv administered.

11th Aug. - Patient had a very good night and has made much
progress towards Convalescence; morning and evening temperatures
are 101° F. and 100° 8° F. respectively. Pulse fairly good. Mouth more
better; urine still normal, and
bowels open. Quinin Sulph repeated.

From the 12th to 14th Aug. - Patient's
progress has been uninterrupted.
Temperature ranged between 98.4° F
and 100° 2° F. Pulse good, urine normal
discolouration of skin better but the
conjunctivae remain jaundiced;
bowels open, appetite keen, and he
sleeps better. Quinin Sulph, q. o.
every four hours. Patient permitted to
sit up and to have fried bacon,
roasted bread and Blanc mange
pudding with some white wine.

15th Aug. - Patient is Convalescent
Recommended to be sent to Europe
for a change of air. A bitter tonic
prescribed.

16th Aug. - Patient sent to France today.
for a change of air. He has since returned in good health to resume his work on the Coast and is quite well.

**Case III**

T. E. European. Aged 28. Inabled and Died. A mercantile agent brought down from the Volta River District to Adda for treatment on account of strong headache, incessant vomiting, pains all over the body especially at the joints, weakness, thirst, Constipation, difficulty of passing urine, loss of appetite and utter aversion to food, bad mouth and a feeling of chilliness with shivering.

On seeing him this morning 11th October patient is restless. Skin and Con. 

junctionae extremely jaundiced; eyes injected and suffused; lips fairly coloured; tongue large, dry and covered with a dirty yellow froth; frequent vomiting, vomited matters at first greenish frothy fluid, after-
afterwards black coloured matter; about 2 ounces of black wine, looking like molasses drawn off; is acid in reaction. Up gr. 10.30 acid contains a small quantity of Albumen, Constituents of Haemoglobin and a considerable deposit of urates etc, but no blood, bile, sugar or bile casts; tenderness to pressure elicited over the abdomen generally but more in the Hepatic and Left Lumbar regions. Temp. 107°F. Pulse febrile but regular and small. Calomel 3 gr. and Iodid of Iodine 1.2 gr. administered and retained. 8 p.m. Bowels have acted several times but patient is not better; he is very restless. Inject. Morphine Hypoderm administered. Milk and Soda ad lib, Calomel gr. 1 and Quinine gr. 7 every four hours ordered.

12th October. — 6.30 a.m. Patient had only two hours quietness during the night but had no sleep. Temp 99°F. Pulse regular, slow and weak; Throat is so irritable that patient is unable to retain any food; One Ovopipetteful Saline Mixture..
About 2 Ounces of black wine drawn off; vomited matter greenish-yellow coloured. An effervescing draught containing Acid Hydrocyanic Acid administered to be repeated every three hours till vomiting has ceased; mustard instilled to abdomen; sterilized milk and soda and rectal feeding ordered to be carried out till gastric irritation has subsided. 6 p.m. vomiting and abdominal pains much relieved; patient is quieter. Temp. 100° F. Pulse slightly febrile and weak. Skin warm and moist.

13th. At 8 a.m. Patient had a fairly good night. He is improving. Temp 99° 8° F. Pulse 80 regular small and weak; Apyrexia persisted; about 3 ounces of thick black wine drawn off; vomiting ceased; Eyes brighter. Bowels not open; discoloration of skin and conjunctivae improving. The draught containing Acid Hydrocyanic acid and rectal feeding stopped. Quinin Sulph gr. XV and Calomel gr. II to be administered every four hours. To take Champagne Brand Essence of Beef and Egg Flip. 6 p.m. Might perspiration. Temp. 99° 8° F. Pulse regular and
and weak. Insect Morphine Hypoderm. ordered at 9 p.m.
14th Oct. — Patient had a good night and is improving. Temperature ranged between 99.8°F and 100°F throughout the day. Pulse fairly good was able to pass about an ounce of Black wine. Bowels not open.
15th Oct. — Patient slept well and is improving. Temp 99°F. Pulse good. Tongue cleaning. Bowels have acted twice — stools dark rich. Red Coloured wine increasing in quantity, clear and light Coloured; discoloration of skin and conjunctivae improving. Taking nourishment freely. 6 p.m. Temp 100°F. Pulse fairly good. Quinele stopped. Quinine reduced to 10 gr. doses, twice daily. To take iced Champagne.
16th Oct. — Had a bad night. Felt sick and vomited twice during the night. Temp. 99°F. Pulse good; wine in now plentiful, clear and light Coloured. 6 p.m. Condition same as this morning a sleeping draught containing Atropine and Chloral Hydrate ordered to be taken at bedtime.
17th Oct. — Had no sleep last night after
after taking the draught. He has however much improved. Temp. 99°F. Pulse good; Bowels open; urine, good quantity, clean and light-coloured. Urinated once this afternoon. Inject. Morphine Hypoderm ordered to be taken at 8 p.m.

18th Oct. - Patient has so much improved that he was today recommended to be sent to the Sanatorium at Aburi for a change of air. From this date up to the 20th patient's progress has been uninterupted.

21st Oct. - Patient is not quite so well today. Temp. 102°F. Pulse febrile; urine normal; sickness and vomiting have returned. An effervescing draught containing Quent Eronymin and Brandy stopped sickness and vomiting and towards the evening temperature was lower 99°F.


23rd Oct. - Patient sent by a Steamer to Accra en route for Aburi for a change of air. It has since been reported that he had had relapse at Accra and died at that place.
Case IV

J. D.- European. Aged 25. Recovery. A Frenchman belonging to the Roman Catholic Mission. This is his first tour of Missionary work on this Coast and has only been six months away from France. With the exception of slight attacks of Fever and other ailments referable to Malarial Origin he had been healthy and able to maintain his strength and vigour fairly well, until the morning of the 10th June 1894 when he felt out of sorts—pains all over his body, lassitude, headache, loss of appetite and restlessness at night and feeling no better day after day he thought he must send for me as he has had a strong attack of shiverings with Chillsness this Evening, 12th June, and on passing urine he noticed it black—coloured which frightened him considerably.

He complains now of splitting headache, thirst, nausea, loss of appetite, and a feeling of oppression in the Epigastrium. He is restless; vomiting green bile.
mixed with frothy fluid, skin hot and dry; Tongue coated with a dirty - yellowish fur; stools blackened, Temp 108.4°F. Pulse febrile, regular and fairly strong; urine is scanty, and blackened like muddy portwine, it is acid in reaction, op. q. 1030, and contains a trace of Albumen constituents of Haemoglobin, and a considerable deposit of urates etc but no blood, bile, sugar or hule casts. Antipyrin gr XV every hour till 30 grains taken and then followed in half an hour after by Quinin sulph gr XV. The following nourishment ordered: - Sterilized milk and Sauerbraten ad lib; Beef tea, Brandy Essence and arrowroot.

13th June. 6 am: Patient had a fairly quiet night but only one hour's sleep. He complains of oppressive feeling in the Epigastricium; Bowels not free; urine, scanty and black; Temp 99.4°F. Pulse fairly good; Quinin sulph gr XV administered 6 p.m. Temp 102°F. Pulse febrile, quinine and antipyrin repeated, but
but an hour after they had been swallowed they were ejected.

Mustard poultice applied to the epigastric region.

14th June. - 6 a.m. Patient had a bad night. Rather restless and weak this morning. Temp. 104° F. Pulse rapid, regular, small and weak; bowels have not opened; urine is scanty, still black; thirst persists. Calomel 0 gr. and quinin sulph 0 gr. xv administered to be followed in one hour by a saline aperient draught 6 p.m. He complains of weakness. Temp 102° F. Pulse febrile and weak; urine black - coloured; Taw black - coloured stools; Colour of skin turning yellow; conjunctivae not affected; thirst persists. Patient sponged down with tepid water. Calomel 0 gr. v and quinin sulph 0 gr. xv administered, and dext. Jot. Acet. q. every three hours ordered. Seed champagne permitted.

15th June. - 6 a.m. Patient had a quiet night but sleep was very much disturbed. Temp 100° F. Pulse slightly febrile but fairly strong; urine...
is now plentiful, clear and turning darkish-red colour like claret; one stool still black; vomiting and pain have ceased, thirstless. Colomel gr xv and quinin sulph gr xx given at once, and ordered to be repeated at 6 p.m. 6.30 p.m. He still complains of a feeling of lightness in the epigastrium and thirst. Vomiting has entirely ceased; about 15 ounces of light coloured urine passed; Temp 100°. Pulse slightly febrile but fairly strong; tongue cleaning. Taking nourishment freely; Champagne stopped. A sleeping draught containing Pot. Arsenic and Chloral Hydral ordered to be taken at bedtime.

16th June — 6 a.m. Slept up to this morning after taking the draught. He is improving and gaining strength. Complains of sore mouth. Temp. 99.6°. Pulse good. Tongue cleaning. Bowels not open; urine increased and still light-coloured; no pain nor headache. Quinin Sulph gr x, Colomel gr xv to be followed by a saline aperient draught at 12 noon. 7.30 p.m. Temp 100.4°. Pulse
Pulse fairly good. Bowels have not acted; urine normal.
Calomel ½ gr. and quinin Sulph ½ gr. administered.
17th June—8 a.m. Patient had a good night and expressed himself as
feeling better this morning but
still complains of sore mouth. Temp. 98.6°F. Pulse good; urine normal;
bowels still confined; Calomel
stopped. Saline aperient draught
administered. Quinin Sulph ½ gr.
ordered at 12 noon. 6 p.m. Temp. 100.4°F. Pulse fairly good;
urine normal; Bowels have acted
several times—stools are watery and
darkish—red colour; Peptone stopped;
patient continues to take nourishment
freely. Sponge down with tepid water
and permitted to sit up in bed for an
hour. Quinin Sulph ½ gr. and Eff. Flp.
18th June—6 a.m. Patient had a good
night and is doing fairly well. Temp.
99°F. Pulse good; urine normal.
Quinin Sulph ½ gr. administered.
Permitted to have some fried ham
and toasted bread. 6 p.m.—
Patient has developed Dysenteric
symptoms.
Symptoms (Diarrhoea Mercurialis)
Temp. 100°F. Pulse regular and fairly strong. Skin perspiring, urine normal; Tongue quite Clean; slight shivering. Mustard poultice applied to the whole of the abdomen. To take quinin Sulph. gr. XV and a sedative draught containing Chlorodyne y. X. Tinet 0.24, y. V. opt. Ammonia form. y. XV. Tinet. Chloroform, A y. XX at once and the draught to be repeated at 8 p.m. Mouth wash ordered to be used frequently. A teaspoonful of Brandy to be taken every two hours.

19th June—8 a.m. Patient had a good sleep and did not pass a stool throughout the night. Temp. 99.6°F.
Aypenteric symptoms have subsided. Temperature 98°F. Pulse good; urine still normal. Quinin Sulph gr. XV administered 6 p.m. Patient had a sound sleep in the afternoon. Bowels confined; Appetite fairly good; urine is a shade darker but no return of Haemoglobinuria. Temp. 101.4°F. Pulse febrile but fairly strong. To take quinin Sulph gr. XV
20th June—6 a.m. Patient had a much better night. Temp 100°F. Pulse slightly febrile; urine burned bright yellow colour. Bowels still confined. A draught containing Castor Oil and opium administered and mustard poultice applied to the abdomen 6.30 p.m. Bowels have acted twice times stools are are watery and dark reddish brown. Temp 101°F. Pulse febrile. Patient complains of headache and giddiness on the slightest exertion. Quinin sulph gr XV administered and cold sponging of the head ordered.

21st June—6 a.m. Had a bad night. He is rather restless and weak this morning. Headache is better and giddiness much less. Temp 99°F. Pulse fairly good, urine still plentiful and clear but now darkish coloured. Quinin gr XV given. To take Eggflap and Brandy increased to half an ounce in water three daily 6.30 p.m. Found patient in a cold shivering state. He said he had had two severe attacks of it in the afternoon. He is restless and
and light-headed. Bowels not free; passed a light-coloured urine; Temp. 104°F. Pulse rapid, regular, full and fairly strong.

A draught containing Antipyrine gr. xxx administered to be followed in half an hour by quinin Sulph gr. xx; hot water bottles to the feet and cold applications to the head produced a fall in the temperature with profuse perspiration.

22nd June. - 6 a.m. Had a quiet night and feeling much better this morning. Temp. lower—99°F. Pulse regular, small and weak. Bowels have still not acted.

Urine is plentiful and light-coloured.

To take Calomellos gr. v and quinin Sulph gr. x to be followed in a couple of hours by a saline aperient draught. 6 p.m. Patient had been sick in the afternoon and brought up a lot of bile mixed with frothy fluid substance;

Bowels have acted twice—stools are dark—reddish coloured;

Skin discoloration better. Temp. 101°F. Pulse febrile and weak.
Patient sponged down with tepid water. Quinin Sulph gr xv administered 23rd June - 8 a.m. Patient doing well. Had a good night. Temp 100° F. Pulse fairly good, urine normal. Sore mouth is better. Taking nourishment freely. Appetite good. Mouth Wash and Must Pot. Need 60. Stopped 6 p.m. Patient is brighter and more cheerful. Temp 99° F. Pulse fairly good. To take quinin Sulph gr xv.

24th June - 8 a.m. Patient had a very good night and feeling much stronger this morning. Temp 98.8° F. Pulse good. He is allowed up for two hours. 6 p.m. Patient is convalescent. Temp 98.4° F. Pulse regular full but weak. Bitter tonic prescribed. Patient's further progress was good and in the morning of the 25th of June he embarked for France for a change of air.

He has since returned to the Colony to resume his Missionary work.
Case V

D.G.D. - European. Aged 21. Death has been only six months in the Colony and acting as French Consular Agent during a portion of the time. He had not enjoyed good health since his arrival in the colony, having suffered from Remittent and other Malarial Fever which had completely weakened his constitution.

On the 24th September, 1899, I was sent for hurriedly to see the patient. On visiting he complained of headache, thirst, constipation, giddiness, loss of appetite and sleeplessness with pains at the knees and nausea. He is restless, skin hot and dry, mouth parched, tongue dry and covered with a dirty yellowish fur; Pressure in the Hepatic region elicited pain; Temp. 102° F. Pulse 100 rather rapid and regular but weak. Bowels not open... urine is dark coloured, like Sherry, vomiting bile mixed with a frothy fluid...
fluid; Icteric tinge of the conjunctivae. Patient is the subject of Inflamed Haemorrhoids.
quinin Sulph gr x every four hours. Hot water bottles to the feet and cold sponging of the head. Nux. gallae et opio to be applied on lint to piles. Milk and soda ad lib. Beef tea and arrowroot.

25th Sept. 8 a.m. Patient had a fairly good night. Temp. 103.4°. Pulse feeble and weak. To take a Saline aperient draught at once, and quinin Sulph gr xvi with a Diaphoretic mixture ordered to be taken at 10 a.m. 6 p.m. Temp. higher 105°. Pulse very rapid, small, regular and compressible. Felt sick and brought up a lot of green coloured fluid; Bowels have not opened; urine high—coloured. Tongue still coated, Ocrea of Castor Oil and Soap brought away, very offensive blackened, shotty—hard faeces; mustard poultice applied to the abdomen.

26th Sept. 7.30 a.m. Patient had
a bad night. He sweated all night but feeling no better. Temp. still higher - 104.8°F.
Pulse very febrile and poorly. Patient is rather restless; skin hot and dry; no urine not stool passed since last note; eyes dazed and conjunctiva injected. Hot water bottles applied to feet and cold sponging of the head. Mints and Arrowroot were retained. 6 p.m. was sick several times and brought up a lot of green coloured fluid. Temp. 105°F. Pulse extremely rapid, irregular and feeble. Heart is depressed; skin burningly hot and dry. Diaphoreotic mixture ordered every two hours till perspiration is produced.
27th Sept. 6 am. Patient had comparatively a quiet night. Temp. lower - 103.8°F. Pulse febrile and weak. Patient felt sick after taking nourishments and brought all up, urine is scanty and dark reddish coloured; there has been one very dark and shotty bard stool. An Eucemia containing Castor Oil and Soap brought
brought away very offensive black faeces. Calomel gr. v administered. 6.30 p.m. Temp. 103.4° F. Pulse still rapid, irregular and compressible; urine very scanty and dark coloured; complains of thirst and nausea. Calomel gr. v administered. To take Egg flip, and a tablespoonful of Brandy every three hours, and a sleeping draught ordered to be taken at bed time.

28th Sept. - 10 a.m. Had a quiet night but no sleep after taking the draught. Temp. lower 101.4° F. Pulse febrile regular and weak. Two stools during the night same characters as last note; skin perspiring; was able to retain nourishment. Calomel gr. v administered.

7.30 p.m. Temp 102° F. Pulse febrile and weak. Patient complains of weakness. He is unable to raise himself up in bed without assistance. Urine still dark. To take Champagne frequently.

29th Sept. - 6 a.m. Patient is rather worse this morning. Temperature
is higher throughout the day - 103°F both morning and evening. Pulse 75 regular, small and fairly strong. Bowels acted after embrace of soap and castor oil - stool is scanty and blackened; passed about 4 ounces of black urine like molasses. Acid in reaction Sp. gr. 1030, and contains a fair quantity of albumen, constituents of haemoglobin and a heavy deposit of urates etc. but no blood, bile, sugar not tube casts; to take mustard Pot. Acid Q every three hours in addition to other medicines. 30th Sept. Patient had indifferent night. He is calm. Temperature ranged between 103°F and 103.2°F all day. Skin fairly moist; bowels confined; urine now contains about ¼ of albumen, but contains no tube casts. and in other respects is of the same characters as last note. 1st Oct. 8am Patient slept off and on during the night. He looks considerably worn out and thin in the face which is pinched. Lips covered with herpes, weakness is considerable
Considerable. Temp 103° F. Pulse so regular and weak; about 6 ounces of dark coloured wine passed. Bowels not open for two days. Taking nourishment— which is fairly well retained. Patient sponged down with tepid water. Lime drinks ordered. Quinin Sulph increased to 20 grains and Calomel 0.1 gr. administered 6 p.m. Temp. lower—102.8° F. Pulse febrile, regular but weak. Tongue cleaning. Bowels still not open, skin slightly perspiring; no urine passed since this morning. Calomel 0.1 gr. and quinin Sulph 0.1 gr. administered. A saline aperient draught ordered to be taken in the morning.

2nd Oct.—8 a.m. Patient became delirious during the night and bled a good deal from the nose, after which he became quiet. This morning he is again delirious, noisy and very restless. Temp 104.8° F. Pulse 90 slow, irregular and compressible. 4 ounces of black wine passed, contains about 1/3 of albumen but no bile casts.
not blood and does not deposit on standing; Bowels acted twice; stools are black and "shotty". To take Champagne in small quantities with strong Beef-tea and cold sponging of the body generally. 12 noon. Nellium persists; patient now refuses nourishment of any kind; 10 ounces of black wine passed freely some characters as last note, tinge of conjunctivae more pronounced; but no discoloration of the skin generally; piles have bled a good deal. Temp. 103.5° F. Pulse feeble and weak. Enema of castor oil and soap brought away black "shotty" feces. 7 p.m. Nellium continues. Skin perpetually on the head, neck and arms only but not over the body generally. Wine has the same characters as last note; no stool; Temp 104.4° F. Pulse rapid, irregular, bounding and full. Patient does not now refuse Beef-tea, and egg flip which he retains. To take Caromel gr X and quinin Tspf gr XV.

3rd Oct. 3.30 a.m. Nellium has passed off. Patient complains of pain in the Right Stice Region which is tender.
tender on pressure. Bowels acted twice last night and once this morning; skin hot and dry; Temp. 104°F. Pulse very febrile and weak. Urine passed is clearer but still dark and contains less albumen. Poultice over the whole of the abdomen. A tablespoonful of Brandy every two hours ordered. Hot water bottles constantly kept applied to the feet. 6 p.m. Temp. lower 103.8°F., but patient is no better and appears quite overpowered by the effects of the Fever. He is slightly delirious and exhausted. Blisters to the napes of the neck produced no satisfactory results, and at 10 p.m. I went for my friend A. W. of the Army Medical Department, then Acting District Medical Officer of Cape Coast, to join me in consultation.

Having unanimously agreed upon the opinion that this is a malignant type of the fever with nephritic complication, it was definitely decided upon trying Iodoi Phosphor, antipyrin internally and Tarantine suppes over
over the Hepatic region, but patient became more restless and delirious, and the temperature rapidly rose to 106°F with running feble pulse. Patient rubbed down with Brandy and quinine and Ether injected. An enema containing quinin Sulph q. x x and Sulph. Oil, 3p and Brandy 3iy was retained but without producing any effect on the temperature which has further risen to 107°F. The patient was so much exhausted that he rapidly became unconscious and died in a Comatose Hyperpyrexia in the morning of the 4th Oct. at 6 a'clock.

Case VI.

Sister L.J. - European. Aged 23. Recovery. A Missionary lady; has been out a little more than 2 years in the Colony in connexion with the Bone-men Mission. With the exception of slight attack of Malarial fevers she had enjoyed good health. Her present illness commenced
Commenced four days ago with loss of appetite, weakness and flying pains about the lower limbs and chest with feverish symptoms every evening but she commenced to pass black urine only the last evening.

On the 21st January 1894 - the 8th day of her illness I was sent for at 12 a.m. by the Lady Superintendent of the Mission to attend the patient. On seeing her she complains of pain, terrible thirst, nausea and headache, and said she commenced to pass black urine only the last evening; she is restless and groaning on account of pains all over the body, sleeplessness, and weakness, frequent vomiting of bile mixed with frothy fluid, skin warm and slightly moist: Temp 02.57 Pulse febrile and weak. urine is scanty and quite black like the colour of molasses, acid in reaction, Sp gr 1.025; contains a trace of albumen, Constituents of Haemoglobin and a heavy deposit of urates etc; no blood, bile, sugar or bile casts; tongue covered with a dirty yellowish fur. Bowels indifferent Tenderness on pressure in the Hepatic and left lumbar regions. Tertianine stripes over the Abdomen. To take Calomel 0.5 gr and quinia Sulph 0.5 gr mum 6 gr to every three hours, sterilized milk.
milk and cocoa ad lib 6.30 p.m. Feeling
easier and is able to retain nourishment.
Temp. 100°F. Pulse rapid, regular and weak;
about 4 ounces of black wine passed;
bowels not open; sweating profusely;
thirst persists, headache, pain and
nausea better. Raff. Peptone, and
Raff. Jely, ordered, and a sleeping
draught containing Pot Bromid and
Chloral Hydrat at bedtime.
22nd Jan. 8 a.m. Patient had a bad
night. She vomited five times during
the night; one scanty black-coloured
stool; thirst less; Temp 99.8°F. Pulse
regular and weak, urine increasing
in quantity, clear and turning light
coloured. In spite of the frequent
vomiting her general condition
shows marked improvement,
and taking nourishment. 6 p.m.
complains of oppressive feeling
about the chest and abdomen,
with nausea and headache. Skin cold and
moist; Temp 100.8°F. Pulse regular and fairly
strong. Calomel gr. v. and quinin
sulph. gr. x three daily. To take
Antipyrin gr. x v at bed time and
and a draught containing 0t. Ricini ordered to be taken in the morning.

23rd Jan. 8 a.m. Patient had a better night and slept after the draught. She has much improved and taking nourishment freely. Temp. 99.4° F. Pulse good; urine is plentiful and normal in colour. Bowels have not acted; tongue cleaning. Permitted to take a little Greek wine. 6 p.m. Feeling much easier and cheerful. Temp. 99.2° F. Pulse good; urine still normal.

24th Jan. 8 a.m. Patient had a very good night and slept well. Temp. 99° F. Pulse good; urine normal; tongue cleaning. 7 p.m. Temp 99.6° F. Pulse good; urine normal. Bowels not open. Mist Dr. act. Co. stopped.

25th Jan. 8.30 a.m. Patient doing fairly well. Temp. 99.2° F. Pulse good; urine normal; tongue quite clean. Bowels still not open; appetite improving; 6 p.m. Patient enjoyed a good sleep in the afternoon and feeling quite refreshed. Temp. 99.8° F. Pulse good. Urine normal. Bowels not
not open.

26th Jan. 8 a.m. Had a good night.
The complaints of bad mouth, throat
and weakness. Temp. 100.8°F.
Pulse regular and weak; urine
normal; Bowels not open; A
draught containing Dr. Ricini
administered, and a teaspoonful
of Champagne ordered to be taken
frequently, 6.30 p.m. Patient is not looking
to bright this morning; she is a bit
down in the mouth and complains
of sore mouth and throat; Temp.
100.4°F. Pulse febrile and fairly strong.
Bowels have acted three - stools
dark-coloured; urine normal.
Calamel stopped. A gargle
Containing pot. Chloral ordered to be
used frequently.

27th Jan. 8 a.m. Patient had a good
night and slept waking up only
once during the night. The complaints
of difficulty of swallowing; urine
normal. Bowels not open; Temp
100.4°F. Pulse slightly febrile. 6.30 p.m
Temp. 100.8°F. Pulse slightly febrile
skin perspiring. Taking nourish-
ment freely. Wine normal; Bowels
not
28th Jan. 8 a.m. Patient suffers from slight Tonsillitis with inflamed submaxillary gland. Temp 99.8°F. Pulse fairly good; urine normal. Bowels not open. To apply poultice sprinkled with Linseed. Belladonnae to the affected part of the neck.

6 p.m. Temp - high 101.8°F. Pulse febrile. Patient complains of pain in Hepatic Region; urine normal. Bowels not free. To apply mustard poultice to the Hepatic Region.

29th Jan. 8 a.m. Patient had indigestive night. He has suddenly taken much worse; Haemoglobinuria has returned with shrieking fits and slight yellow discoloration of the skin. Temp - 99.8°F. Pulse rapid, regular and weak; about 3 ounces of black urine passed. Bowels still not open. To take Must Phaet 

6 p.m. Temp 101.2°F. Pulse febrile and weak; urine is plentiful, quite clear and changed to light-coloured again; sore mouth and throat getting better and the swollen glands subsiding. Bowels not open. To take Dil Hydraz 40 at bed time to be followed
followed in the morning by a draught containing Sodi Phosph and Sodi Sulph.

30th Jan. — Had a very good night and feeling better. Temp 100. 2° F. Pulse slightly feeble; urine normal; tongue clean. Bowels not free; sore mouth and throat getting better; swollen glands have subsided. 6 p.m. Temp. 100. 4° F. Pulse slightly feeble; urine quite normal; Bowels have acted three. Stools are very offensive and dark—reddish coloured; skin perspiring freely. Quinin Sulph 41/2 administered.

1st Jan. — 8 A.M. Patient had a very good night and slept well. Her general condition has much improved. Tonsilitis, sore mouth and swollen glands better. Temp. 99. 4° F. Pulse fairly good. 6 p.m. Temp. 99. 6° F. Pulse fairly good, urine normal; appetite good.

1st Feb. — 8 a.m. Patient is favourably progressing to convalescence. He feels quite comfortable this morning and rapidly gaining strength. Temp 98. 8° F. Pulse good; urine normal.
normal; discolouration of skin improved by p.m. Temperature normal. Pulse good. From this date the patient's progress to convalescence was uninterrupted. A bitter tonic ordered.

2nd Feb. Sent home to Germany for a change of air.

Case VII

G. D. J. European. Aged 28. Invalued and died. An officer of the Gold Coast Native Force. Had been little more than three years in the Colony and the last two years of Service. He had not enjoyed good health during this term of Service, having suffered more or less from attacks of diseases of malarial origin. On the 17th July 1891 - the first day of the commencement of the present illness he started from sleep feeling out of sorts with general malaise; had no appetite for breakfast nor energy to do anything; he however went to his duties but got worse and had to take to his bed and had taken quinine twice.

18th June - Feeling better on this - the second day he again attempted to return.
return to his duties, but he was attacked by shivering fits with chilliness all over the body, and pains in the back and legs. When seen at 8 pm, he complained of weakness and lassitude, headache and nausea. Skin cool and moist Temp. 99°F. Pulse regular, full and compressible; urine dark - coloured. Bowels not open; tongue covered with a dirty yellowish fur; Pressure elicited pain in the Hepatic region. To take quinin Sulph gr x every four hours, and practice applied to the abdomen. Bay tea, Brand's essence, arrowroot and Champagne ordered.

19th June. - 8.30 am. Patient had a feverish night. Complains of thirst and not passing sufficient quantity of urine. Bowels not open. Temp. 102°F. Pulse febrile. 6 pm. Skin perspiring freely Temp. 99°F. Pulse regular and weak. To take Dil Coc cit Ayous gr IV.

20th June. Called up at 3 am to see the patient whom I found in bed covered with blankets and shivering with cold, dry skin. He complains of chilliness all over the body.
body and of being light-headed. Temp. 104°F. Pulse rather rapid, regular, small and compressible; urine about 6 ounces, black coloured like molasses. Acid in reaction, sp. g. 1030, albuminous, constituents of Haemoglobin present with a heavy deposit of urates etc but no blood, bile, sugar or tube casts. Frequent retching and vomiting, vomited matters are black coloured; bowels have acted twice stools are black coloured. Tinge of conjunctivae and skin. To take fresh Milk and Säuberbrunnen frequently; Calomel 0 gr x and quinin sulph gr xiv administered at once. 6 a.m. Temperature lower - 102°F. with subsidence of general symptoms. 10 a.m. Complains of oppression in the epigastrium sick several times - vomits now "green" mixed with frothy fluid, wine black. Temp. 103°F. Saline aperient draught administered 4 p.m. Rather restless. Bowels have not moved.
moved. Twice - stools still black. Coloured. To take quinin. Sulph gr XV at once. 6 pm. Temp lower - 99°F. Pulse regular and weak; vomited twice - vomiting matters are bright yellow; urine black. Colomelos gr X given at once. To take seed champagne, and suck bits of ice.

21st June. 6.30 am. Patient had a much better night, and feeling better this morning. Temperature normal and pulse regular and weak, full but weak. About 10 ounces of urine passed. Colour has turned dark reddish colour. Bowels have opened thrice. Stools are dark reddish. Stomach is very irritable and rejects everything swallowed, even to a drop of water; sickness and retching came on in the night; oppressive feeling in the epigastrium is better. As stomach is so very irritable, no solid food was given, and an enema containing quinin sulph. gr XV, brandy ZT, and beef tea administered to be repeated every three hours. Enema retained till 11 am when bowels moved once. Tongue
Tongue cleaning. Temperature normal, Pulse regular and weak, Skin cool and moist; Four motions of the Bowels; vomiting incessant. Vomited matters are green, thirst insatiable. An effervescent draught containing Acid Hydrogami Oil administered at once, afterwards Bismuth, Novo's powder, and Soda were also retained. 12 p.m. Called up to see the patient who is restless and complains of being unable to sleep. Vomiting and retching have ceased. Insects Morphia Hypoderm administered, after this patient took about 4 ounces of Barley water and kept it down.

22nd June. 7 a.m. Patient had a quiet night after the Morphia Injection. He is gaining strength, and has been able to keep down some Brandy and Barley water. Nausea and vomiting with headache have ceased; thirst is much less. Temp 102° F. Pulse febrile; urine turned Bright yellow, coloured and clear.

6.30 p.m. Patient had a sound sleep in the forenoon and on waking up
he took some nourishment and retained. He is doing fairly well. Temp 100°F. Pulse regular and weak. To take some arrowroot. Rectal feeding stopped. 11.16 p.m. called up to see the patient who complains of sleeplessness. Inject Morphine Hypoderm repeated.

23rd June. 8 a.m. Patient had a quiet night but broken sleep. He complains of thirst and sore mouth. Temp. 102°F. Pulse febrile urine clear and light-coloured. One dark reddish coloured stool.

To take Milk and Soda ad lib. Mouth wash containing Pot Chlor. ordered. 6 p.m. Temp. 101°F. Pulse febrile; three motions of the bowels produced great weakness and fainting but these soon passed off and patient felt into a sound sleep at 8 p.m.

24th June. Patient has much improved and is making satisfactory progress. Taking nourishment freely. Temperature 100°F throughout the day.
As the patient has gained sufficient strength to undergo the strain of the voyage, he is recommended to be invalided home to England.

25th June. - 8 a.m. Patient's progress satisfactory. He is stronger. Temp. lower - 99°F. Pulse good, urine normal; tongue clean; bowels open. Sent home to England in the afternoon, but he had relapse on the voyage and died off the Coast of Grand Bassam in a comatose Hyperpyrexia from suppression of urine.

Case VIII.


is a mercantile factor stationed in the interior district of the Colony. He has been nearly three years out from England in continuous residence without leave, and with the exception of mild attacks of Ague, he had enjoyed a robust health. For three days preceding the present attack he had suffered off and on from Intermittent Fever but
they were not such as rendered him unfit to attend to his work. On the 13th September 1894 however, he has been compelled to take to his bed as he has been getting worse. This morning the 14th Sept., the 5th day of his illness, he has had severe attacks of pain all over the body, but principally at the joints, shivering and chilliness with thirst, headache, loss of appetite and weakness, and on passing urine he noticed it was black and so he got frightened, he said, and sent for me. On seeing him at 4 p.m., patient is rather restless, light-headed, and flushed all over the face. Temperature is high 105° F. Pulse very rapid, regular small, and fairly strong; urine is scanty, black, coloured like molasses and contains a trace of albumen, constituents of haemoglobin and deposits of urates etc., acid in reaction, but no blood, sugar, bile or tube casts; urine vomited green bile mixed with frothy fluid; bowels have kept loose by a mixture containing Fruit Salt and Lemon lemon squash taken by the patient this morning.
Skin not discoloured but hot and dry; Tongue covered with dirty-yellowish fur; slight tenderness on pressure in the Hepatic region. Antipyrin gr. T. every hour till 60 grains have been taken and then to be followed half an hour after by Quinin Sulph gr. T. To take Must Pot. Neet, every three hours; Sterilized Milk and Soda ad lib.; 7.30 p.m. Patient is much relieved. Temp. 102.5°F. Pulse febrile and weak; urine increasing in quantity. Colour turning; skin perspiring freely. To repeat Antipyrin and Quinin.

15th Sept. - 8 a.m. Patient had a good night. Feeling much better this morning. Temperature normal. Pulse regular and weak; urine increasing in quantity, clear and light coloured. Bowels free; Headache and vomiting have ceased. Thirst much less, Quinin Sulph gr. T. every four hours. To take a teaspoonful of Banda Essence frequently.

3 p.m. Temperature normal; Pulse fairly good; urine is now plentiful, clear and red - yellowish. Coloured. Antipyrin stopped.

16th Sept. - 8 a.m. Patient passed a good night.
night and slept till this morning. Feeling very much better and stronger. Permitted to sit up. Temperature normal. Pulse good; urine quite normal. Bowels free.

Tongue cleaning. Skin cool and moist. Appetite improving.

7.30 p.m. Patient doing fairly well. Condition remains the same as last note.

From this date up to the 18th Sept. Patient's progress was favourable and uninterrupted. On the 19th Sept., however, I was hurriedly sent for as the patient had suddenly got worse. On seeing him the patient complains of thirst and headache. Skin slightly discoloured. Yellow, hot, but moist. No return of Haemoglobinuria but temperature is high - 103°F. Pulse febrile and weak. Urine plentiful and light-coloured. Bowels not open. Antipyrine gr XXX administered at once to be followed in half an hour by quin. Tulp 8 gr XXX 6 p.m. Temp. 103.6°F. Pulse febrile and weak. Urine high-coloured. Bowels still not open. Skin hot and slightly
Slightly moist. To take Calomelos gr. 5 to be followed in the morning by a Saltine apomint draught containing equal parts of Zodiil Sulph and Zodiil Phosph.

20th Sept. - 8 am. Patient passed a very good night. Temp 101.4° F. Pulse regular and weak; urine normal. Complaints of nausea and oppression feeling in the Epigastrium. Bowels not open. To take Champagne in small quantities frequently. 6 p.m. Temp. 101.2° F. Pulse regular and weak; urine normal. Bowels have acted twice, stools are dark reddish coloured. Headache and nausea better.

21st Sept. - 8 a.m. Patient had a very good night. Feeling much stronger and better. He complains of sore mouth. Temp. 100.2° F. Pulse regular and fairly strong; urine normal. Bowels not open. Oppression in the Chest is better. Mouth wash ordered frequently. To take Booril and arrowroot.

6 p.m. Temp 101.2° F. Pulse regular and fairly strong; Bowels not open.

22nd Sept. - 8 am. Patient had a good night.
night and doing fairly well. He complains of slight soreness of the throat. Temp. 99.8°F. Pulse regular and fairly strong. Bowels not free. Saline aperient draught administered 17 p.m. Bowels have acted thrice - stools reddish coloured. Temp 100°F. Pulse regular and strong. Appetite good.

23rd Sept. - 8 a.m. Patient feels much better and is quite cheerful and comfortable. Temperature normal. Pulse good, urine normal. Tongue clean; appetite keen. Bowels open 6 p.m. Patient's condition is the same as this morning.

24th Sept. - Patient is convalescent.

25th Sept. - Sent to the seaside town of Lome in German Togoland for a change of air. He has since returned in good health to resume his work and is quite well.

Case IX.

A timber merchant with five years' experience of this coast. During this period
period he had enjoyed good health with the exception of slight attacks of Intermittent Fevers. A fortnight previous to the commencement of the present illness he had been in indifferent health for which he had been treated. On the 27th July 1896 at 8 am the patient sent for me. On seeing him he complains of weakness, shiverings and chilliness all over the body with pains confined to parts between the soles of the feet and knees, and between the tips of the fingers and elbow, described as 'cramp', lightning, pains, headache, thirst and bad mouth. Tongue covered with thin white fur. Bowels irregular. Eyes bright, yellow discoloration of the skin. Temp. 104.2° F. Pulse rather slow, 60, full and irregular. Tenderness elicited on pressure in the Hepatic region but liver is not enlarged; urine is scanty and colour is like muddy portwine, acid in reaction and contains a trace of Albumen Constituents of Haemoglobin, deposit of urate, etc., but no blood, bile, sugar or bile casts. Bowels not open, vomiting of white flux and
frothy fluid substance
Atripyrin gr. xx administered and followed in half an hour by quinin sulph gr. xx. To take Dist. wt. Acet B every three hours. Fresh milk and soda ad. lib. and Brand's Essence of Beef. 12.30 p.m. Perspiring profusely. Temp. 101.0° F. Pulse 80, regular and full but weak; urine is still black and thick like molasses. Colonel gr. v twice daily.
6 p.m. Patient complains of his mind being cloudy, another attack of shivering with chilliness and vomiting came on at 8.30 p.m. Bowels have opened once - stool dark reddish coloured. About 15 ounces of black urine passed. Headache and nausea better. Temp. 103.2° F. Pulse so rapid, irregular but fairly strong. Atripyrin and quinine repeated.

28th July - 6 a.m. Had a bad night. Shivering came on at midnight with vomiting of white frothy substance, after which the bowels acted twice and passed urine four times. He complains of his voice being weak and broken, intolerance of light and insatiable thirst. Tective, discolouration.
Discolouration of the skin is more pronounced. Tongue covered with dirty yellowish fur. Temp. 101° F. Pulse 55, intermittent and weak. Patient sponged down with tepid water and underclothing changed. Poultice applied to the hepatic region and a saline aperient draught administered. To take egg flip, and arrowroot and a tablespoonful of brandy every two hours. 12 A.M.

Complains of feeling tired. One watery stool; urine is of fair quantity but still black; Temp. 101° F. Pulse slightly regular and weak. To take quinin sulph gr XV. 7.30 P.M Improving but complains of weakness.

Temp 100.8° F. Pulse 80, regular small and weak. Urine plentiful. Colour has turned to dark reddish brown and is clear; Bowels have acted thrice - Stools are peculiar - the colour and consistence are not unlike Spinach covered with palm oil, thirst persists; Skin is cool and moist.

To take quinin sulph gr XV. 12.7th July
29th July. 8 am. Had a very bad night but shivering did not return.
Temp 101.4°F. Pulse regular and weak; urine is clear and light colored.
Bowels not free; lightning pains severe in the calves of the legs.
A saline aperient draught administered. 12 noon. Temp 100.8°F. Pulse regular and weak; urine normal colour; Bowels have acted once - stool has the same characters as last note.
Patient sponged down and clothes changed. 7 p.m. - Temp. 100.4°F. Pulse less regular and weak. Urine normal; Tongue clean; appetite improving.
30th July. Patient had a bad night. No sleep whatever. Pains and headache better.
Temp. 100.4°F. Pulse regular and compressible. Symptoms of
cineresium developed. Bowels not open. Poultice stopped.
Saline draught repeated. 6 p.m. Temp. 99.8°F. Pulse fairly good; one stool, urine normal. To take some
Toasted bread and chicken broth.
31st July. 8 a.m. Patient had indifferent night, woke up often. Symptoms of Cinchonism subsiding; urine normal; bowels not open; discoloration of the skin improving. Temp. 99.2° F. Pulse 70, fairly good.

6 p.m. Temp. 99.8° F. Pulse fairly good. Taking nourishment freely. Quinine Sulph 80 X administered.

1st Aug. 8 a.m. Patient had a better night and is improving. Bowels not free. Tongue clean; urine normal. Temp. 99.2° F. Pulse 70 regular and good; Saline draught repeated. Mint Pot Aet. C. Stopped. To take chicken broth and Polane Mange Pudding.

6 p.m. Temp. 99.8° F. Pulse good. Two stools - dark reddish coloured, urine normal. Quinine Sulph 80 X administered.

2nd Aug. Had a very good night. Kept very well and feeling much better and stronger. Thirst much less. Temp. 99.2° F. Pulse 70 good. Appetite keen, urine normal. Pains in Calves of legs, sides and back have returned. Poulticing ordered. 6 p.m.
6 p.m. Temp 101 °F. Pulse slightly febrile. Calomel gr. ⅓ and quinin Sulphe gr. ⅓ administered.
3rd Aug. - 8 a.m. Patient had a very good night and slept well. Bowels not open; Temp 99.4 °F. Pulse good, urine normal; quinin Sulphe gr. ⅓ administered. Brandy stopped and to take Champagne instead. 9 p.m. Temp 100.4 °F. Pulse fairly good. quinin Sulphe gr. ⅓ administered.
4th Aug. - Patient is doing fairly well; complains of neuralgic pains in eyes and about the face. Hands hot but not the body generally. Bowels not open, urine normal. Temp 99 °F. Pulse good. Pill. Hydroxyl gr. ⅓ with saline aperient draught ordered. 6 p.m. Two stools at 1 p.m. Temp 101 °F. Pulse slightly febrile and weak. quinin Sulphe gr. ⅓ administered.
5th Aug. - 8 a.m. Patient has made great improvement. Two stools during the night. Neuralgic pains persist but the feeling of intolerance of light has subsided.
Temp. 99.2°F. Pulse good. 6 p.m.
Temp. 100°F. Pulse good. Quinin Sulph gr. ½ administered.

6th Aug. 8 a.m. Patient had a better night, and improvement continues. Temp. 99°F. Pulse good. Neuralgic pains better. Thirst and headache also better. 6 p.m. Temp. 99.8°F. Pulse good. Patient complains of sore mouth. He is however quite cheerful and taking food well.

Mouth wash, ordered.

7th Aug. 8 a.m. Slept very well and feeling much stronger and better this morning. Temp. 98.8°F. Pulse good. Champagne stopped. Patient allowed up for two hours. To take port wine, quinin Sulph gr. V thrice daily. 7 p.m. Temp 99.6°F. Pulse good, nourishment increased.

From the 8th to the 13th Aug. Patient progressed favourably to convalescence and on the 15th Aug., he had quite recovered, and soon after he resumed his work.
Case X

Moses D. - Native (Arab) aged 48. Recovery
A native born and brought up on the
Seaboard, stationed at Truce - One
of the most insalubrious and
Paroisy districts in the interior
of this Colony. He has been here for
nearly five years as Native Agent
of the Mercantile branch of the
Basel Missionary Society, and
during this period he had suffered
occasionally from Intermittent
Fever and other diseases of
Malarious origin. His present
illness commenced about two days
ago with weakness and slight
attacks of Fever in the Evening.
On the 26th November 1872 I was
sent for to see the patient. On
arriving at the Factory,
I was met on the verandah
by the Principal European
Agent Mr. Arphi and Mr.
Keenan of the firm of Chevalier
and Co. who informed me that the
patient had got Blackwater
Fever. On seeing him he complained of headache.
headache, headache, loss of appetite, pain in the abdomen, obstinate Constipation, thirst, difficulty of passing urine which is scanty, cold sweat, shiverings and chilliness and sleeplessness with vomiting of dark-greenish fluid substance and being light-headed. He is rather restless, doubled up with contortions and twirlings on account of pains, leg drawn up, breathing slightly affected; breath offensive, tongue covered with a leaden-yellowish film. Eyes suffused, conjunctivae tinted yellow, nails, palms of hands and soles of feet are extremely jaundiced. Pain elicited on pressure in the Hepatic region. Temp. 106° F. Pulse very rapid and irregular and weak. About 3 ounces of urine drawn off—colour like molasses, Acid in reaction. Sp. g. 1030 and contains a trace of albumen, constituents of Haemoglobin, deposit of urates etc. but no blood, bile, sugar nor tube casts. Bowels not open for three days. Antipyrin gr. 30 administered.
to be followed in half an hour by quinin sulph gr XV. Enema containing 1/2 Ricini, big opii seeded and soap also administered at once and brought away very scanty and hard - shotty, black faces; Poultice ordered to be applied to the whole of the abdomen. To take Mist 1st Acet 3 every three hours; Fresh Milk and Soda ad lib. 9 pm. Temp. 103.2° F. Pulse febrile and weak. Skin perspiring profusely. About 3 ounces of black wine drawn off; vomiting much less. Pain less. Constipation still obstinate; thirst persists but head is clearer. Antipyrin and quinin repeated. Enema of Castor Oil and soap ordered.

26th Nov. 8 am. Patient had a very bad night. No sleep whatsoever on account of pain and vomiting in the night. He is restless and weak this morning. Temp 102.5° F. Pulse rapid, irregular and weak. Bowels have acted once - stool is black hard shotty faces. About 6 ounces of urine passed in black
black, headache better. Pains are legs. To take Calomel 15 gr and quinin
Sulph 4 gr every four hours
7 p.m. Temp. 103° F. Pulse febrile
irregular and weak; urine
passed is still black and scanty
shivering with chilliness came
on at 5 p.m. Antipyrin 4 gr
repeated. A tablespoonful of
Brandy every three hours.
21st Nov. 8 am. Patient had
a quiet night but no sleep.
He is improving. Temp. 101.4° F.
Pulse regular and weak; urine
is increasing in quantity, clear
but still black. Coloured, vomiting
has ceased. Thirst abating;
Bowels acted twice last night;
feeling no pains anywhere in the
body generally. 4 p.m. Temp. 100.5° F.
Pulse regular and weak; urine
still black. Tongue cleaning.
To take 1/2 Hydraz. 40 TN at once
to be followed in the morning by
a saline aperient draught containing
Sod. Sulph and Sod. Phosphi.
22nd Nov. 8 a.m. Patient had a
better night. Slept fairly well but
woke
woke up early this morning feeling out of sorts. Temp. 99.8° F. Pulse regular and weak; Bowels free after taking draught; urine increased, colour has turned dark reddish; Tongue quite clean; appetite improving.

7 p.m. Patient is quieter. Temp. 100.4° F. Pulse regular and weak.

29th Nov. 8 a.m. Patient slept well and has made improvement. Bowels free. Skin and moist; discoloration of conjunctivae, nails, palms and soles is improving; urine is plentiful and light-coloured; thirst better. Temp. 99° F. Pulse fairly good. To have Akassa, Chicken soup and bread. 7 p.m. Temp. 99.2° F. Pulse good. Slept for two hours in the afternoon.

30th Nov. 5 a.m. Patient doing fairly well. He is gaining strength rapidly. Appetite keen. Patient requested to have peppered soup refused. Temp. 99° F. Pulse good. Urine normal; Bowels regular; discoloration of Conjunctivae, nails...

1st December 8 am. Patient feeling stronger and quite well. Temp. 98.8°F. Pulse good. Brandy stopped. 7 pm. Temp. 98.4°F. Pulse good. Urine normal. Bowels regular.

2nd Dec. Patient is convalescent.

Quinine stopped. Portwine and a bitter tonic ordered. From this date the patient's progress was uninterrupted, and on the 10th Dec. he had quite recovered. Went down to the Seaboard for a change of air. He has since returned in good health and resumed his work.

Case XI

G.F.C. Native (Mulatto) aged 65. Merchant. Brought
brought up on the seacoast and with the exception of occasional attacks of intermittent fever and chronic arthritis he had enjoyed a robust health. On the 20th November 1887 I was hurriedly sent for by the patient. On seeing him he complains of fever, headache, weakness, sleeplessness, constipation, passing of scanty urine, loss of appetite, vomiting with positive aversion to food, shiverings and pains in the joints and back. Restless, skin and conjunctivae jaundiced. Tongue covered with a dirty yellowish fur. Tenderness elicited on pressure in the hepatic and left hypocondriac regions. Temp 104. 60°F. Pulse rather rapid, small and weak. About 3 ounces of black coloured wine passed is like molasses. Acid in reaction, sp. gr. not accented, and contains a small amount of Albumen, heavy deposit of urates etc but no blood, bile or casts. Vomited matters are green.
Coloured like spinach.
Pil. Cloc at Hyosey 8° VI and Calomelox
gr. X administered. To take Mert
quininae every three hours.
8 pm. Temp 103 ° F. Pulse febrile
and weak: urine scanty and black.
21st Nov. 8 am. Patient had indifferent
night. Stains and vomiting less.
Pulse 100, rapid, regular, and weak.
Temp 103 ° F. Skin acting slightly.
Urine still scanty and black.
6 pm. Temp. 101. 6° F. Pulse febrile
and weak. There is considerable
abatement in general symptoms.
22nd Nov. 8 am. Patient had a good
night and feeling somewhat better.
Temp. 102. 2° F. Pulse 80, regular and
weak: urine still black and scanty.
Dorelso not open; jaundice of skin
and conjunctivae increased.
Milk and Soda, Arrowroot and
Aracca ordered. 6 pm. Temp. 102. 8° F.
Pulse 85 regular and weak.
23rd Nov. 8 am. Had indifferent
night. Feeling weaker this morning.
Vomited once. Vomits are black, coloured:
Urine still black and scanty. Temp
103° F. Pulse 100. Regular and weak.
Tenderness
Tenderness over the liver and spleen persist; thirst, jaundice, and constipation persist.

Chicken soup with Brand's Essence. Large poultice over the abdomen. 6 p.m. Temp. 103° F. Pulse febrile.

24th Nov. 8 a.m. Patient had a fairly good night. Temp. 101.2° F. Pulse 105 regular and weak; urine still black and scanty and passed with difficulty, it is thicker in consistence and having all the characters of "Coal tar", swallowing difficult, has pain of nausea; bowels evacuate; Colonel stopped; Enema ordered. To take Champagne frequently.

6 a.m., weaker and listless; slight haemorrhage from the nose; Temp. 103° F. Pulse febrile and weak. Patient sponged down with tepid water; he refuses nourishment. Rectal feeding ordered. Antipyrine administered to be followed in half an hour by Quinine Sulph 80 XV.

25th Nov. 8 a.m. Had a bad night, and is weaker. Temp. 102. 6° F. Pulse febrile and weak, urine still
still black and scanty.
Disecolouration of skin and conjunc-
tive pronounced. 6 p.m. Patient
is powerless and can hardly
raise his head on the pillows.
Wine drawn off is still black.
Temp. 103.6° F. Pulse very rapid,
small and weak; patient is
so much exhausted, that
death was thought inevitable.
He suddenly became unconscious for
two hours after which he again
rallied but partially. Rubbed down
with Brandy and quinine. Hypodermic
administration of Ether and Brandy
and quinine mixed with a strong
Peaf-tea per Rectum.
26th June. Patient's condition alarming
Temp. higher - 104.2° F. Pulse running
He is delirious; about 2 ounces of
thick black wine drawn off which
contains about one-fifth of Albumen
but no blood, bile not turbid casts
Dry cupping over the kidneys and
foot-warmers applied to the feet with
old sponging of the head had not the
slightest effect whatever on the course of the
symptoms. At 5 p.m., he has had three
successive
Successive attacks of shivering followed by convulsive seizures. Urine now completely suppressed. At 6 p.m. Temperature has risen higher - 105° F. Pulse so weak and remaining that it is hardly perceptible at the wrist. Every effort was made to mitigate the patient's condition but all unavailing. The temperature rose higher - 106° F. under which the patient rapidly became unconscious and soon afterwards died in Comatose Hyperpyrexia from suppression of urine.
<table>
<thead>
<tr>
<th>No.</th>
<th>Occupation</th>
<th>Age</th>
<th>Sex</th>
<th>nationality</th>
<th>Complaint and primary symptoms of patient</th>
<th>Condition at date of admission and character of disease</th>
<th>Treatment and result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Woman</td>
<td>35</td>
<td>F</td>
<td>American</td>
<td>Headache, vomiting, rapid, irregular, and abundant perspiration</td>
<td>Fainting, intense pain in the abdomen and the back</td>
<td>Ordered alcohol, cold compresses, and chloral hydrate</td>
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<tr>
<td>No</td>
<td>Name</td>
<td>Age</td>
<td>Sex</td>
<td>Occupation</td>
<td>Complaint and Condition of Patient</td>
<td>Condition of urine and aline of feces</td>
<td>Date of onset of symptoms</td>
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<tr>
<td>2</td>
<td>French M</td>
<td>28</td>
<td>M</td>
<td>Missioner</td>
<td>Dolent, shivering with chilliness all over the body, headache, a feeling of weakness in the lumbar regions but no pain, weaknessness, loss of appetite and constipation.</td>
<td>Urine is dirty and black with a smell of molasses, acid in reaction and contains a trace of albumen, 2 grains of albumen, 2 grains of Haeamelbin, and a heart, deposit gruel.</td>
<td>29 VII, 90</td>
</tr>
</tbody>
</table>

Cold, opium, rhubarb, quinine, and calomel. Borax and soda, saline draught. Bile and mustard, warm, sleeping draught, milk, and soda, steps, champagne and white wine.
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<thead>
<tr>
<th>No</th>
<th>Nationality</th>
<th>Sex</th>
<th>Age</th>
<th>Occupation</th>
<th>Complaint and Condition of Patient</th>
<th>Condition of urine and Anal evacuation</th>
<th>Date of onset of Haemoptysis</th>
<th>Date of admission</th>
<th>Date of death of the Enemy</th>
<th>Length of stay in the Colony</th>
<th>Treatment</th>
<th>Result</th>
</tr>
</thead>
</table>
| 8  | English     | M   | 28y | farmer     | Scomplaint: something at first green afterwards, coffee, fever, chills, headache, thirst, bad breath, dark urine, albumin in urine, weakness, pains, malaise, all over the body, especially in joints and back, constipation, vomit, cold and shivering, nausea, occasionally loss of appetite, pain in abdomen, difficulty of breathing or taking micturition and after meals, stools, mucous, purulent and offensive, face ashen, eyes sunken, eyelids, very pale, skin temperature to the body in the neck and lumbar (left) region. | 9-10-83 | 15-10-83 | 15-10-83 | 15 y | first attack | Opium and an mixture containing Acid of Arsenic and Antimonious acid for a change. Suggest: Morphine Mys, Justice to abdomen, Perley Water, Sleeping draught, bathing Enema of castor oil and soap, Miller and Soda freely, Champagne Perley Brands wine, Arras wool and Chloride North with Egg white | Invalided after treatment.
<table>
<thead>
<tr>
<th>No</th>
<th>Nationality</th>
<th>Age</th>
<th>Sex</th>
<th>Occupation</th>
<th>Complaint and Condition of Patient</th>
<th>Condition of Urine and Bowel Movements</th>
<th>Date of Onset of Fever</th>
<th>Date of Onset of Jaundice</th>
<th>Date of Jaundice in the Colony</th>
<th>Length of Subsequent Attack</th>
<th>Treatment</th>
<th>Result</th>
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</thead>
<tbody>
<tr>
<td>14</td>
<td>French</td>
<td>25</td>
<td>M</td>
<td>Missionary</td>
<td>Chilliness with periodical chillings, headache, loss of appetite, weakness, oppressive feeling in the epigastrium and faintness, yellow color of urine, harned bladder. Rather restless, skin icteric but no blood in urine. Tongue covered with dry, yellowish fur, vomiting green bile. Tenderness in hepatic region. Temp. 103.4° F. Pulse irregular and weak.</td>
<td>12.6.92</td>
<td>12.6.92</td>
<td>18.6.92</td>
<td>6 months</td>
<td>First attack</td>
<td>Phenobarbital, Calomel, quinine, leather, mustard dropped, hot water bottle to feet, rapid water sponging, saline suppository, milk and bread freely, round arm coat, brandy essence, tea broth, toasted bread, Champagne and brandy.</td>
<td>Recovery</td>
</tr>
<tr>
<td>No.</td>
<td>Nationality</td>
<td>Sex</td>
<td>Age</td>
<td>Occupation</td>
<td>Complaint and Condition of Patient</td>
<td>Condition of urine and alime evacuations</td>
<td>Date of onset of fever</td>
<td>Date of onset of Haemoglobinuria</td>
<td>Date of cessation of Haemoglobinuria</td>
<td>Result</td>
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<tr>
<td>5</td>
<td>Dutch</td>
<td>M</td>
<td>21</td>
<td>Merchant</td>
<td>Periodical attacks of urinary, old shivering, with constancy and headache, pain down limbs, and in body and face, shake, eyes especially, knees at feet, offer and back, stiffness, joints, muddiness, light-headedness, sleep disturbance, loss of appetite, little deposit, and inflamed haemoglobinuria, of urates, etc., shivers, constipation, loss of strength, flushed, rather albuminous at rest, tongue covered with a thick yellow albumen, or fibrin, vomiting green, 30/9/90, 4 cm fluid, thin and yellow albumen; of conjunctiva, albuminous; of throat, subacute, yellow, with no blood, bile or coat, 105. 2.7. Fever febrile, tenderness shortly after hard and black-coloured faeces.</td>
<td>21.9.90</td>
<td>24.9.90</td>
<td>Three months</td>
<td>First attack</td>
<td>Indigo in colon, Delirium, delusions in a state of delirium, shivering, coma, paroxysms, convulsions, pain in the back, abdomen, epigastrum, rigidity of the muscles, motility, sleep, rigidity of the muscles, spasm, palsy, opus to piles, Chrysanthemum, mixture, Nervus, Blotting to the nose, of the neck, 400 miles and years, death.</td>
<td></td>
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<tr>
<td>No</td>
<td>Nationality</td>
<td>Age</td>
<td>Sex</td>
<td>Occupation</td>
<td>Complaint and Condition of Patient</td>
<td>Condition of urine and all evacuations</td>
<td>Date of onset of fever</td>
<td>Date of onset of attack</td>
<td>Length of resistance in the Colony</td>
<td>First or subsequent attack</td>
<td>Treatment</td>
<td>Result</td>
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<tr>
<td>6</td>
<td>German F</td>
<td>25</td>
<td></td>
<td></td>
<td>Blind, all sight attacks of drinking with headache</td>
<td>Liver, beauty and all evacuations</td>
<td>25.1.94</td>
<td>21.1.94</td>
<td>25.1.94</td>
<td>2 years</td>
<td>First attack</td>
<td>Turpentine, Carbolic, Carbolic, Concoction, and Spermaceti, with all applications above.</td>
</tr>
</tbody>
</table>

Note: The text is not entirely legible due to the handwriting style.
<table>
<thead>
<tr>
<th>No</th>
<th>Nationality</th>
<th>Age</th>
<th>Sex</th>
<th>Occupation</th>
<th>Complaint and Condition of Patient</th>
<th>Condition of urine and alvine evacuations</th>
<th>Date of onset of Fever</th>
<th>Date of Creation of Haemoglobin</th>
<th>Date of Recovery in the Colony</th>
<th>Treatment</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>English</td>
<td>28</td>
<td>M</td>
<td>Office</td>
<td>Chills, sweats, pains in the back,稽_LOOPAGE, headache, dizziness, not passing sufficient urine, loss of appetite, constipation, and their like weakness, bad mouth, nausea, acid, vomiting, retching and in nausea, vomiting of blood ground coffee fluid in tongue with deposit covered with dirty of scabies, yellowish fur, jaundice and jaundice to pressure in the hepatic and intestinal region. Temp. 99°. Pulse 110. Haemoglobin regular and weak. Serbia ting of skin and conjunctivae.</td>
<td>Oliguria, albuminuria,</td>
<td>28.6.91</td>
<td>26.6.91</td>
<td>23.6.91</td>
<td>Entrance attacks</td>
<td>Quinine, Colonel, At Home on duty in Failing very febrile to abdomen, generally, must Pot. acet &amp; Sepia's Powder and Boro-Mari. To drink cold Water, Boxa Champagne, brandy, milk and in atone. Soda daily. Retail Hyperaemia.</td>
</tr>
</tbody>
</table>

Enlisted after Anoemia to England but had relapse and died on the voyage from Warrick to London.
<table>
<thead>
<tr>
<th>No</th>
<th>Nationality</th>
<th>Age</th>
<th>Sex</th>
<th>Condition of Patient</th>
<th>Date of Onset of Fever</th>
<th>Date of Onset of Rash</th>
<th>Date of Onset of Jaundice</th>
<th>Length of Residence in the Colony</th>
<th>First Place Quarters of Attack</th>
<th>Treatment</th>
<th>Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>English</td>
<td>M</td>
<td>28</td>
<td>Tinea and chapping</td>
<td>3/9/94</td>
<td>4/9/94</td>
<td>16/9/94</td>
<td>about 3 years</td>
<td>7th Barrack Room</td>
<td>Antipyrin, quinine, Colonol, blue pill, saline enema</td>
<td>Slightly improved, went to sea-board for a change of air.</td>
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<tr>
<td>No</td>
<td>Nationality</td>
<td>Sex</td>
<td>Age</td>
<td>Occupation</td>
<td>Complaint and Condition of Patient</td>
<td>Date of Onset of Illness</td>
<td>Date of Onset of Fever</td>
<td>Date of Onset of Jaundice</td>
<td>Date of Onset of Yellow Fever</td>
<td>Length of Illness</td>
<td>First Subsequent Jaundice</td>
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<tr>
<td>9</td>
<td>English</td>
<td>M</td>
<td>50</td>
<td>Work</td>
<td>Periodical attacks of chilliness and shivering, pains in the back and joints, melena, acid nausea, thirst, headaches, and constipation, bad mouth, a trace of weakness, jaundice, skin and conjunctiva icteric, vomiting of white frothy fluid, tongue covered with thin white fur, light-headed, tenderness to pressure in the hepatic region.</td>
<td>25-7-95</td>
<td>27-7-95</td>
<td>29-7-95</td>
<td></td>
<td>Five years only</td>
<td>First attack 2 years ago</td>
</tr>
</tbody>
</table>

Temperature 104.5°F. Pulse 60, irregular, but fairly strong.
<table>
<thead>
<tr>
<th>No</th>
<th>Native (negró)</th>
<th>Age</th>
<th>Sex</th>
<th>Occupation</th>
<th>Complaint and Condition of Patient</th>
<th>Condition of urine and alonė evacuations</th>
<th>Date of onset of fever</th>
<th>Date of onset of Hæmotoxylum</th>
<th>Date of cessation of Hæmotoxylum</th>
<th>Persistence of attack</th>
<th>First treatment</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td></td>
<td>48</td>
<td>M</td>
<td>præcip in abdomen. Dysuria, dysphoson; nausea, cold clammy sweat, afterwards epiludic attacks of chilliness and shivers. Vomiting of degreenish fluid, constantly in contortions. Feces hard, and doubled up with colicky pain, breathing slightly. Tongue dry, affected, breath offensive and black. Tinct. vin. scid. und. coloured. Dark yellowish froth, Conspicuous and restless.</td>
<td>Urine, sweely and black like muddy Portwine, acid,</td>
<td>23.11.97</td>
<td>25.11.97</td>
<td>29.11.97</td>
<td>All his life on board</td>
<td>Sod. salicylam., quinine, colchicum.</td>
<td>Recovery, sent to the seashore for a change of air.</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>Nationality</td>
<td>Age</td>
<td>Occupation</td>
<td>Complaint and Condition of Patient</td>
<td>Condition of Urine and Alimentary evacuations</td>
<td>Date of Onset of Fever</td>
<td>Date of Onset of Haemoptysis</td>
<td>Date of Onset of Haematuria</td>
<td>Length of Residence in the Colony</td>
<td>First of Subsequent Attack</td>
<td>Treatment</td>
<td>Result</td>
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</tr>
<tr>
<td>11</td>
<td>Native (mulatto)</td>
<td>65</td>
<td>merchant</td>
<td>Pains in the back and urine spots, palpitation attacks, some chilliness and shivering, black, not thick nausea, headache, alike sudden constipation, sleeplessness, passing very little urine, retention of food, and weakness, tongue coated with yellowish fur, tone of abdomen, tender to pressure in hepatic and lumbar regions, temp 102.6° F, pulse 120</td>
<td>melanosed, acid, and contains albumen and constipation of stool</td>
<td>18.11.87</td>
<td>20.11.87</td>
<td>no</td>
<td>All his life on the island and he died</td>
<td>fist attack</td>
<td>Poultice to abdomen, diet confined to bread, milk, and soda freely, chicken soups,Walker, champagne,</td>
<td></td>
</tr>
</tbody>
</table>
specimen's of Clinical Temperature Charts
Chart I

Name: Rev. H.  Age: 37  Disease: Blackwater Fever
Result Recorded: February 4th to 8th, 1890
Fahrenheit: 106° - 97°
Centigrade: 41° - 36°
Observations taken at: A. Mann.

Chart II

Name: Rev. Father S.  Age: 28  Disease: Blackwater Fever
Result Recorded: August 1st to 16th, 1890
Fahrenheit: 106° - 97°
Centigrade: 41° - 36°
Observations taken at: A. Mann.
Chart III

Name: J. E.
Age: 75
Disease: Blackwater Fever
Result: Recovered

Observations taken at... A.M.

Chart IV

Name: J. D.
Age: 25
Disease: Blackwater Fever
Result: Recovered

Observations taken at... A.M.
<table>
<thead>
<tr>
<th>Name</th>
<th>G. J. C.</th>
<th>Age</th>
<th>65</th>
<th>Disease</th>
<th>Blackwater Fever</th>
<th>Result</th>
<th>Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fehr.</td>
<td>2096</td>
<td>27</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

**Fahrenheit**

| 106  | 105  | 104  | 103  | 102  | 101  | 100  | 99   | 98   | 97   | 96   | 95   | 94   | 93   | 92   | 91   | 90   | 89   | 88   | 87   | 86   | 85   |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 104.5| 104  | 103  | 102  | 101  | 100  | 99   | 98   | 97   | 96   | 95   | 94   | 93   | 92   | 91   | 90   | 89   | 88   | 87   | 86   | 85   | 84   |

**Observations taken at...**

EDW. CASEY, M.D. Desgn.

Chart II

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