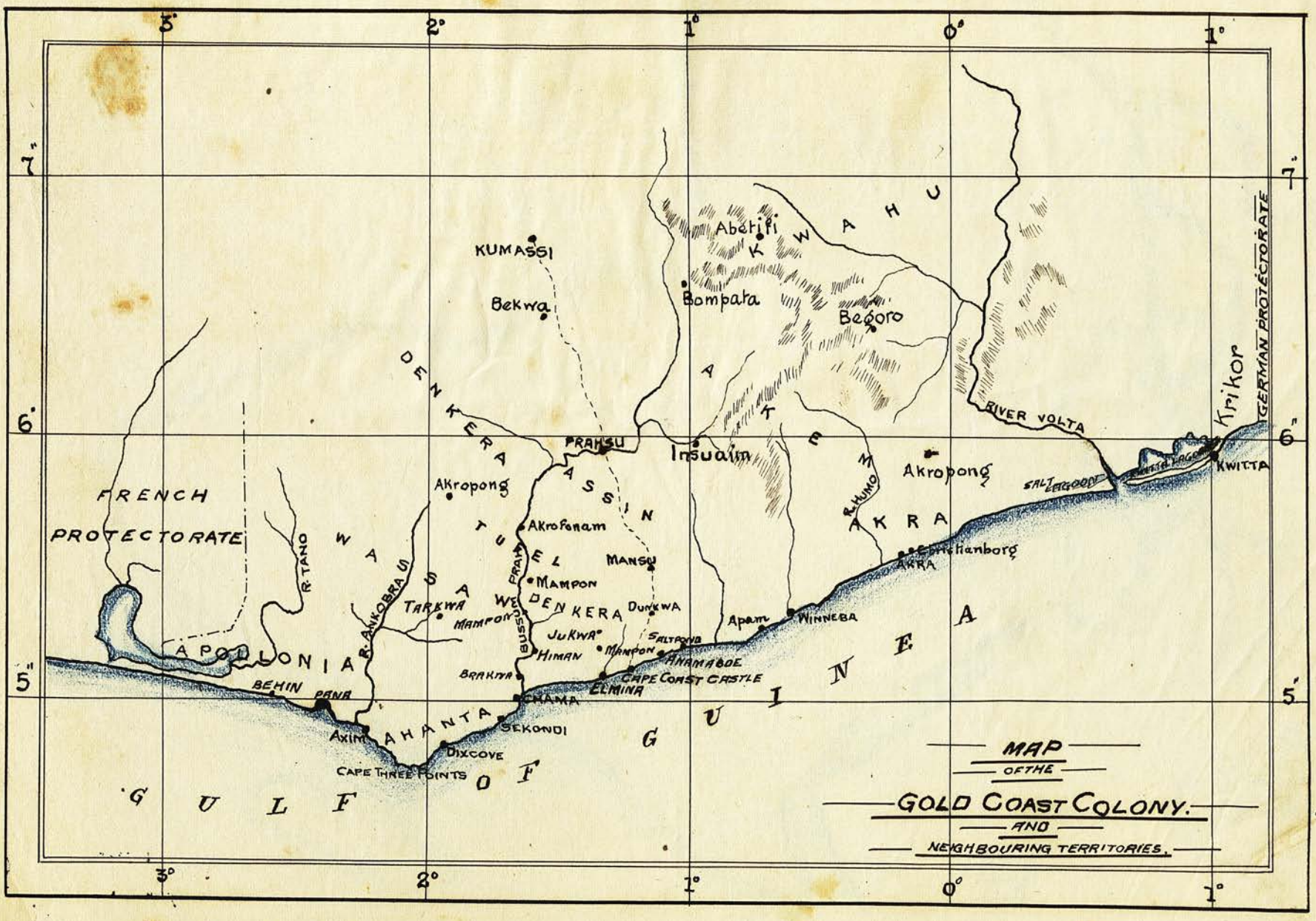
Thesis

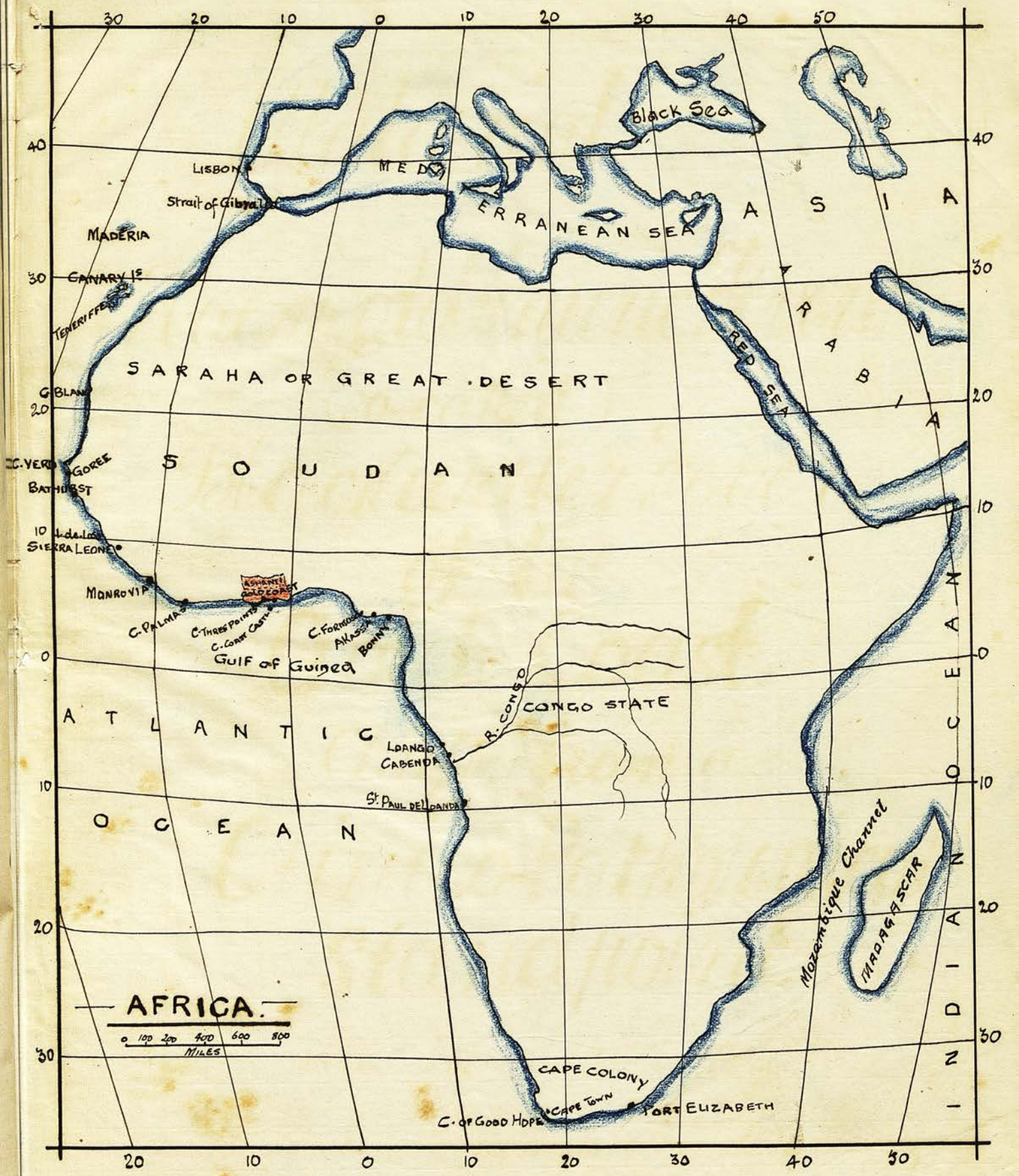
For the M.D. degree

university of Edinburgh

By

A. W. Quartey-Papafio M.B. & C.M.
Assistant Colonial Surgeon
Gold Coast Colony


MAP
OF THE
GOLD COAST COLONY.
AND
NEIGHBOURING TERRITORIES.
KUMASSI
Bekwa
Abetifi
Bompata
Begoro
KWAHU
ASHANTEE
DENKERA
ASSIN
TUFEL
WASSAW
DENKERA
AKRA
FRAHSU
Insuaim
Akropong
Akrofanam
MANSU
Mampon
TARKWA
MAMPON
DUNKWA
JUKWA
HIMAN
SALTPOND
ANAMABOE
CAPE COAST CASTLE
ELMINA
BRAKWA
CHAMA
SEKONDI
DIXCOVE
CAPE THREE POINTS
Axim
BEHIN
PANA
APOLLONIA
FRENCH
PROTECTORATE
R. TANO
R. ANKOBRA
R. PRAH
BUSUA
R. HUMO
Akropong
Christianborg
AKRA
Apam
WINNEBA
RIVER VOLTA
SALT LAGOON
KWITTA
Krikor
GERMAN PROTECTORATE
GULF OF GUINEA
5°
2°
1°
0°
1°
3°
2°
1°
0°
1°
7°
6°
5°


AFRICA.
0 100 200 400 600 800
MILES
LISBON
Strait of Gibraltar
MEDITERRANEAN SEA
Black Sea
ASIA
MADERIA
CANARY Is.
TENERIFFE
SARAHA OR GREAT DESERT
RED SEA
ARABIA
G. BLANC
C. VERD
GOREE
BATHURST
SOUDAN
I. de los
SIERRA LEONE
MONROVIA
ASHANTI
GOLD COAST
C. PALMAS
C. THRES POINTS
C. CORSE CASTLE
C. FORMOSO
AKASSI
BONNY
GULF of Guinea
ATLANTIC
OCEAN
R. CONGO
CONGO STATE
LOANGO
CABENDA
St. PAUL DE LOANDA
Mozambique Channel
MADAGASCAR
INDIAN OCEAN
CAPE COLONY
C. of GOOD HOPE
CAPE TOWN
PORT ELIZABETH
30 20 10 0 10 20 30 40 50
40 30 20 10 0 10 20 30 40

Malarial Haemoglobinuric Fever. (so-called) "Blackwater Fever," of the Gold Coast.

Chiefly from a Clinico-Pathological standpoint.

With illustrative Cases &c.

By
B. W. Quarley-Papafio M.B., Edin.
Master of Surgery, M.R.C.S. Eng:
Assist. Colonial Surgeon, Gold Coast.

Malarial Haemoglobinuric Fever (so-called) Blackwater Fever of the Gold Coast: Chiefly from the Clinico-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 Dr. Eamon's and one of Dr. Eyles's two cases, died, giving a deathrate 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 deathrate of nearly 37 per cent or 370 per thousand. Taking them, an average of the deaths of all the cases we have a deathrate 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 incurable and certainly fatal, and which they

they designate, "Attridi Asara" (Trans: Snuff-Coloured Bilious Fever), in Contradistinction to "Attridi." (Trans: "Bilious Fever").

The ravages caused by Malarial Haemoglobinuric Fever, however, give us only a side view of the potency of the maleficent 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."

Infact the Latins looking upon the effects, and the Cause which produced it, as one; instituted the Cult of the "Dea Febris" (Goddess Fever) to

To appease the fury of this divinity Tommasi Crudeli 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 maleficent agency of Malaria assumed a more practical form. Besides, it is probable, that, these peoples 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 Crudeli, many of these do not in the least resemble attacks of Common Intermittent Fever, and often, even now, says 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 Tommasi Crudeli. 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 infact, 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 Pope already an old man, but which Cesar Borgia, young and robust was able to overcome." (The Climate of Rome and the Roman Malaria: Chap. IV p 57)

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., "Panic", (Eyles), yet our Knowledge and treatment of this disorder are, happily, advancing though 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 ~~others~~ 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 hallow ~~of~~ in doubt there is existing, ~~yet~~ to be cleared up in respect of the bearings

bearings 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 lots 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

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, "Bilious Haemoglobinuric Fever" "Malignant Bilious 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., Fievre Biliense Hematurique," Fievre Bilense

Bilieuse grave of the French, and the Bilious Remittent Fever of the North American writers, and "Febris Remittens Haemorrhagica etc" (Hirsch: Handbuch der Historisch-Geographischen Pathologie. Bd. I, S. 164): as the "very pernicious so-called Bile Fever (Gallen Fieber) of the Gold Coast", described by Mähly-" (Hertz: Ziemssen's Handbuch der speciellen Pathologie und Therapie. 3rd Ed. II., T., p. 45). On the Gold Coast, Dr J. Farrell Eaemon and Dr C. H. Eyles have published works relating to this subject, and as far as I have been able to ascertain, I believe Dr Eaemon was the first to apply the term "Blackwater Fever" to this morbid condition in the records of his observations on the subject (Eaemon: "The nature and Treatment of "Blackwater Fever"). after Dr Eaemon, Dr Eyles 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," (Eyles: "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, Malarious in its kind,
and Characterized by a well
marked group or series of
Symptoms in which Pyrexia,
Cardiacyemal, Continued or
irregular, Black - Porter - like -
urine, 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

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 Haemoglobinuric 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 Akim*, Abetifi† in Kwabu and Bompata‡ in Ashanti-Akim. 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).

*-About 2000 ft
†-3000 feet.
‡-600 feet above the level of the Sea.

Conditions in which "Black urine" and yellow discolouration 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" (Ponfick, Klebs); in the same way certain Chemically-Active substances act on the blood - such are, Nitrobenzol, (Filehne), Potassium Chlorate (Marchand), Pyrogallic acid (Neisser), Sulphuric Acid (Layden and Munk), Nitrite of Amyl (Hoppe-Seyler), certain mushrooms of the morel kind (Ponfick), and the venom of certain Serpents (Halford); Coolness of the Cutaneous surfaces (Lichtheim). Ziegler

(Ziegler: Special Pathological Anatomy Part II; Chap. IV; Art. 262).

Clinical Phenomena, Symptoms, and general Course. — Malarial Haemoglobinuric 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 mulattos it occurs though rarely. One attack does not confer immunity from subsequent attacks. Here lies the almost impossibility of European acclamatization 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 attacks directly the red Corpuscles of the blood (as Matchiefaba and Celli have demonstrated), and thus produce infection which becomes either this 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 bruit is audible in the large veins of the neck indicating a profound anaemic state of the blood

blood frequently described as oligocythaemia and Haemoglobinaemia, a 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 Lancet, (27th July 1896 ii; 225), has drawn the attention of the profession to the usefulness of the Haemometer in malarious 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 Lancet, (Loc. Cit.), remarking on the "Pernicious Fevers of Eastern Africa" in Connection with a most interesting

paper

paper on the subject of "Bilious Haematuric Fevers" 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 Fleischl'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 the 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 Bilious Fever 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 Haemoglobinuric Fever.
Continuing its remarks the Lancet 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 Wendel 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. So 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 insidious

Enemy

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 Curse of Africa ..."

Turning to the Digestive and Excretory 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 incrustated with a thick dirty - yellow or dark brownish fur, or sometimes leaden - coloured with an abundance of sordes on the teeth and gums: insatiable thirst, anorexia, deglution 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 uneasiness or actual oppression around the chest; hiccough is also present, frequently distressing; constipation is the rule in all my cases 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 Catarrh 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 alvine evacuations are as a rule feculent with an admixture of mucus and a melanotic matter of very offensive odour or they may be scanty, 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 Contemporaneous with deminished

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 Tropicus.

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 faeces are passed involuntarily. Usually the urine passed is scanty, or of moderate quantity: the colour varies from at first, it may, be dark-reddish,

Sherry

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, Constituents 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 Easmon's Cases we read the following — remarks on the examination of the urine:-

"Specimens of the urine were forwarded to Professor Rieger and Dr Wickham Legg 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" (Easmon: Op. Cit; Case of S, p. 22).

with

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 comatose stupor. Sometimes the delirium is acute, violent and noisy; voice is tremulous and there are muscular tremors, subsultus 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 scanty, black, hard and "Sheepy" lumps: rigors 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 uraemic 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. The 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

defervescence

defervescence in the temperature with an abatement of general symptoms: the patient is thus relieved and passes into convalescence. Oftener than not, however, there is a deceitful remission before the manifestation of fatal symptons.
When this unfortunate phenomenon occurs every care and watchfulness have to be exercised in the attempt to ~~safe~~ 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 Leveran, Marchiafaba, and quite a number of independent observers in Europe, America, and elsewhere." (Lancet: October 5th 1895).

In what manner the malarial Germs,- 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 Haemoglobinurica fever is essentially the pathology of the blood: it is, ab initio, the medium of the attack of the micro-organism- infact the arena of combat between the vital forces of the blood Constituents and paludism – whence the tissues of the body generally suffer. The blood, as Ziegler says, is a definite living

living tissue, and in disease, too, it comports itself as a living tissue, (Ziegler: Pathological Anatomy and Pathogenesis. Sect. 251. 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 Leveran who found 'filaments mobiles' in the blood of ague patients (Leveran: Nature parasitaire de accidents d'impaludisme. Paris 1881). Marchiafaba found the Bacillus in

in the blood, marrow, and spleen of patients who had died of Malarious Fever (Marchiafava and Celoni ~ Nuovi Study sulla natura della Malaria, Acad. dei Lincei, Jan 2, 1881). Ziegler 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 ("Ziegler: Special Pathological Anatomy. Part I art 262.). and quite recently we have been placed in possession of what Dr. Patrick Manson says of the Malaria parasite within the Human body:—

"These spores" says he, "on becoming free, attach 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 tertain 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 Steudel 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 (Lancet: July 7, 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 eleminating process, and haemoglobinuria is induced, (Ziegler: Special Pathol: Anatomy Part II, art 268); that the icteric discolouration of the skin and conjunchivae is due to the solution and effusion of the colouring matter of the blood (Reynolds Syst. of medicine vol I, p. 483), the crystals of which appear to be identical in form with those of bilirubin, the chief colouring 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 (Ziegler: 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 postmortem 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 ~~described~~ 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 Dr Moore
cogently 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 Gold Coast, though fatal
cases are common enough, our
opportunities in this respect are
unfortunately very much limited
by circumstances over which the
medical practioners 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 Dr 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 mucus or serous frothy liquid,

"The Hearts colour was pale, grey, and the muscular fibres were thin, worn and easily seperated, 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 scanty 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, the

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 contained a few lumps like black currant jelly, and was markedly inflamed along the entire surface of the greater Curvature from which point no doubt haematemesis arose.

"The small intestines shewed ~ scattered patches of red congestion appearing on their outer surface except

except at the entrance of the common bile duct where there was intense yellow staining. Internally they were covered with muco-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 Porter-Coloured urine. In severe cases, bilious vomiting occurred, succeeded by death with symptoms of uraemia. The attacks recurred again and again, some patients having as many as ten attacks. The urine contained haemoglobin or methaemoglobin, 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 tubules. In the pyramids the tubules were filled up by large masses of haemoglobin. The

the spleen showed small red hæmorrhagic, due to collections of haemoglobin, as could be shown by examination with the microspectroscope, as also the presence of large circular cells with large 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 kidneys tubules" Dr Samuel West, criticizing the above observations, maintained that the disease belonged to a malarial group of a severe 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 patients 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. (Jaucet: loc. cit.).

Further, Dr Patrick Manson, in his paper on what he terms "African Haemoglobinuric Fever" read before the Epidemiological Society (Jaucet: April 1, 1893) 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, Epithelium 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 clearer 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:-

Mal. Haemog. Fever.	Yellow Fever.
Non-Contagious.	Contagious
Source - Malaria	Source - Contagion which may be carried beyond malarious districts.
Attacks - Recur.	One attack
Fever - Paroxysmal. remission of paroxysms.	Fever ~~non~~ - No Paroxysms.
Haemorrhage - as a rule, none,	Haemorrhage from all the mucous surfaces.
Spleen - Often enlarged.	Spleen - not enlarged.
Facies - Ordinary.	Facies - Peculiar.

Quinine -

quinine - Efficacious. quinine - Intractable to the use of.

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) Valvular 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 initial pyrexia.

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 Catarrh.

(3) Cloudy swelling of the kidneys and infraction 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 Anhydraemic

anhydraemic 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 and~~ Surcharge ~~the~~ ~~Con-~~ ~~gestive~~ ~~state~~ ~~of~~ ~~the~~ Organs by suitably mild purgation.

(4) Attack the site of infection by appropriate remedies such as Quinine, Calomel, &c, and by every precaution of cleanliness &c&c., exclude the further introduction of micro-Organism

(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 copious 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 antecedent 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.

E. W. Quarte Sapafio Lieut. &c.
acting Colonial Surgeon
Gold Coast.

May 1896.

Illustrative Cases

Case I

Rev. K. 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 Diarrhaea after taking some purgative. He is restless. Skin hot and slightly moist. Conjunctivae and skin are jaundiced - almost lemon - yellow discolouration; incessant 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 Haemoglobui, 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 fur. Quinin Sulph gr x and Calomelos gr v were administered to be followed in one hour by

a

by a draught containing Warburgs Tincture These were not retained and at 3.30 p.m, a large Mustard paultice was applied to the whole of the abdomen, after which a draught containing Bismuth and Soda given and retained.

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

5th February. – 8 am 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°F. Pulse 99 regular and fairly strong; urine is of moderate quantity, clear and dark coloured; Skin and conjunctival discolouration improving.

To take calomelos gr V with a draught containing ol. Ricini: Egg flip, Milk and Champagne retained.

6.30 p.m. Had a good sleep in the afternoon. Temp. 101°F. Pulse febrile and weak. Had Champagne, milk and Egg flip but all ejected 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°7. Pulse febrile; Urine normal colour. quinin. Sulph gr XV given at once.

7th Feb.- 8 a.m. Had a much better night. Temp. 99.°7 Pulse good; vomiting has entirely ceased; Conjunctivae and Skin discolouration 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°7 Pulse good. One good stool. To take quinin. Sulph. gr XV. Poultice 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 Haemoglobinuric 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 ½ and Calomelos gr x at once: Cold Sponging of the head and upper part of the body, and hot water bottles applied to the feet; Sterilized milk and Soda and Beef-tea ordered. 6 p.m. Temp. 104°F. Pulse extremely febrile; Patient complains of Dysuria: About 2 oz. of black urine drawn off- looking very much like molasses 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 $\overline{XX}$ to be taken at once followed in half an hour by quinin Sulph gr $\overline{XV}$; 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 also in the Hepatic region. He is restless and very hot all over the body: the Jeteric tinge of the skin and Conjunchivae is very pronounced; Had been sick - vomited matters Consist of undigested food and frothy fluid but Contain no bile no blood; Perspiration 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 $\overline{XV}$ every hour till 30 grains have been taken to be followed in half an hour after by quinin

quinin Sulph gr $\overline{XX}$. 1 p.m. – Temp 103. 2° F. Pulse rapid, regular and Compressible; no urine has been passed; Skin sweating profusely One Stool – darkish red coloured, Milk and Soda retained. Antipyrin gr $\overline{XV}$ to be followed quinin Sulph gr $\overline{X}$ ordered. 6 p.m.
Temperature 103. 8° F. Pulse febrile and weak perspiration Continues. Patient kept down Egg flip, Beef-tea and milk. 9 p.m. – Temp. 101. 4° F. Pulse febrile and weak; about 3 ounces of urine passed with difficulty Colour of urine is like that of molasses: Calomelos gr $\overline{V}$ 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

Dyewrid

Dysuria much lessened, Skin discolouration is improving, Bowels not open; Headache persists. To take a draught containing Ol. Ricini ʒp. Tinct Chlorof. Co ꝝ xv and Ess. Menth Pip. mp. 12 noon. – 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. Sclerie linge of skin and Conjunctivae improving. Nausea and vomiting have ceased; Patient taking nourishment and wine freely quinin Sulph gr xx administered and a sleeping 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

Patient reported to me that he took some raw Eggs this morning. Bowels have not opened; Steric tinge of skin and Conjunctivae has increased. Dysuria has ceased and urine is passed freely and increasing in quantity; Colour is still black: Temp. 102.4°F. Pulse febrile regular full and compressible To take quinin Sulph gr X, to be repeated at noon. Mist Pot Acet Co Chicken broth Beef-tea, Cold tea and arrowroot ordered. 12 a.m. Felt sick and brought up the undigested raw Eggs taken in the morning ~~vomiting~~. 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~~ in the afternoon from which he awoke in a fright. One stool. quinin 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

after taking the sleeping draught He 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.
quinin 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 Pil. Podoph. Co I 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 90 fairly good; Colour of urine Changed to reddish - brown. Two reddish ~~blood~~ black Coloured

Coloured stools; Prickly heat appears on the forehead and back; Taking nourishment freely. To take quinin Sulph gr XV. 6pm. Temp. 100.4° F. Pulse 80, good. A lotion containing Plumbi Sat 3ss to 2 pints of water ordered to be used in sponging parts of the Skin affected with Prickly Heat. To take quinin Sulph gr x and a Sleeping draught at bedtime.

17th Aug. – 8 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-Coloured". Stools are clayey-Coloured; dis-Colouration of Skin and Conjunctivae Continues improving. Calomel Stopped and mouth wash Containing Pot. Chlorat and acid Hydrochlor Dil ordered to be used frequently, 6pm. 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 cleaning; Bowels not open; Temp 100°F. Pulse 76 good; urine light-coloured and clear. To take quinin Sulph gr X 6 p.m Temp 101°F. Pulse 80 febrile; Bowels not open: To take Pil. Podoph. Co II at bedtime to be followed in the morning by a Saline aperient.

9th Aug – Patient had a fairly good night. He is improving. Two stools passed last night and Four this morning Temp. 101°F. Pulse 80 febrile; urine normal colour. To take quinin Sulph gr XV. 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 gr XV.

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 gr 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 sore better; urine still normal, and bowels open. Quinin Sulp repeated.

From the 12th to 14th Aug.- Patients 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 gr X every four hours. Patient permitted to sit up and to have fried bacon, toasted 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

for a change of air. He has since returned in good health to resume his work on this Coast and is quite well.

Case III

J.E. European. Aged 28. Invalided and Died.
A mercantile agent brought down from the Volta River District to Addah 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 shiverings.
On seeing him this morning 11th October the patient is restless, Skin and Conjunctivae extremely jaundiced; Eyes injected and suffused; lips fairly coloured; Tongue large, dry and covered with a dirty Yellow fur; frequent vomiting, vomited matters at first greenish frothy fluid, afterwards

afterwards black coloured matter; about 2 ounces of black wine, looking like molasses drawn off; is acid in reaction Sp 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 tube casts; tenderness to pressure elicited over the abdomen generally but more in the Hepatic and Left Lumbar regions; Temp. 101°F. Pulse febrile but regular and small. Calomelos gr V and Haustus Sennae ℥ ℈ ℥ ii administered and retained. 8. p.m. Bowels have acted several times but patient is not better; he is very restless. Inject. Morphiae Hypoderm administered. Milk and Soda ad lib, Calomel gr V and quinine gr X every four hours ordered.

12th October. — 6.30 a.m. Patient has only had hours quietness during the night but had no sleep. Temp 99° F. Pulse regular, slow and weak; Stomach is so irritable that patient is unable to retain any food; One copious offensive ~~stinking~~ bilious Stool;

About 2 Ounces of black urine drawn off; vomited matters greenish - Yellow coloured. An effervercing draught containing Acid Hydrocyanic Acil administered to be repeated every three hours till vomiting has ceased, mustard Poultice to abdomen, Sterilized Milk and Soda and Rectal feeding ordered to be carried out till gastric irritation has subsided. 6pm. vomiting and abdominal pains much relieved; patient is quieter Temp. 100°F. Pulse slightly febrile and weak. Skin warm and moist.

13th Oct.- 8 am. Patient had a fairly good night. He is improving. Temp 99.8°F. Pulse 80 regular small and weak; Dysuria persists; about 3 ounces of thick black urine drawn off; vomiting ceased; Eyes brighter. Bowels not open; Discolouration of Skin and Conjunctivae improving. The draught containing Acid Hydrocyan dil and Rectal feeding stopped. quinin Sulph gr XV and Calomelos gr II to be administered every four hours. To take Champagne. Brands Essence of Beef and Egg Flip. 6pm. Slight perspiration. Temp. 99.8°F. Pulse regular and

and weak; Inject Morphiae Hypoderm. ordered at 9 pm.
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 clearing. Bowels have acted twice - stools dark rich - red Coloured urine increasing in quantity, clear and light coloured; discolouration of skin and conjunctivae improving; Taking nourishment freely. 6 pm Temp 100° F. Pulse fairly good. Calomel 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; urine is now plentiful, clear and light coloured. 6 pm. Condition same as this morning a sleeping draught Containing Pot Bromid 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, clear and light-Coloured. Vomited once this afternoon. Inject. Morphiae Hypoderm ordered to be taken at 8 pm

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 patients 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 Tinct Gnonymin and Brandy stopped sickness and vomiting and towards the Evening temperature was lower 99° F.

22nd Oct.- Patient going on fairly well. Had a good night. Temp. 99° F. Pulse good.

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 Fevers 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 1892 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 chilliness 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

mixed with frothy fluid; skin hot and dry; Tongue coated with a dirty - yellowish fur; stools blackened, Temp 103.4°F. Pulse febrile, regular and fairly strong; urine is scanty, and blackened like muddy Portwine, it is acid in reaction, sp. g. 1030, and contains a trace of Albumen constituents of Haemoglobin, and a considerable deposit of urates etc but no blood, bile, sugar or tube 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 Sauerbrunen ad lib; Beef-tea, Brand's 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 Epigastrieum: 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. Calomelos gr x and quinin Sulph 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; Two black-Coloured stools; Colour of skin turning Yellow; conjunctivae not affected; thirst persists. Patient sponged down with tepid water. Calomelos gr v and quinin Sulph gr xv administered, and Mist Pot. Acet. Co every three hours ordered. Iced 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 dark sherry-red colour like claret; One stool still black; vomiting and pain have ceased, thirst less. Calomel gr v and quinin Sulph gr xv 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°7. Pulse slightly febrile but fairly strong; tongue cleaning. Taking nourishment freely; Champagne stopped. A sleeping draught containing Pot. Bromid 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°7. Pulse good. Tongue cleaning. Bowels not open; urine increased and still light-Coloured; no pain nor headache. Quinin Sulph gr x, Calomel gr v to be followed by a saline aperient draught at 12 noon. 7.30 pm Temp 100.4°7

Pulse

Pulse fairly good. Bowels have not acted; urine normal. Calomelos gr V and quinin Sulph gr XV 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 gr X ordered at 12 noon. 6 p.m. Temp. 100.2°F. Pulse fairly good; urine normal; Bowels have acted several times — stools are watery and darkish - red colour; Poultice stopped, patient continues to take nourishment freely. Sponged down with tepid water and permitted to sit up in bed for an hour. Quinin Sulph gr XV and Egg Flip.

18th June.— 6 a.m. Patient had a good night and is doing fairly well. Temp. 99°F. Pulse good; urine normal. quinin Sulph gr XV administered. Permitted to have some fried ham and toasted bread. 6 p.m.— Patient has developed Dysenteric symptoms

symptoms (Diarrhaea Mercurialis)
Temp. 100° F. Pulse regular and
fairly strong. Skin perspiring,
urine normal; Tongue quite
Clear; slight shivering. Mustard
poultice applied to the whole of the
abdomen. To take quinin Sulph
gr xv and a Sedative draught
containing Chlorodyne ɱ xv, Tinct
Opii ɱ v. Spt. Ammrae Aromat
ɱ xv. Tinct. Chloroform Ā ɱ 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. 98.6° F.~~
Dysenteric symptoms have sub-
sided. 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 turned 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 six times – stools are are watery and dark – reddish coloured 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 & 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 Eggflip and Brandy increased to half an ounce in water thrice daily. 6.30pm. 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 Antipyrin 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 Calomelos gr V and quinin Sulph gr XV 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 discolouration better. Temp. 101°F. Pulse febrile and weak.

Patient

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 Mist Pot. Acid. Co. 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. Patients 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 Fevers which had completely weakened his constitution.

On the 24th September, 1890, 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° 7. Pulse 100 rather rapid & 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 Haemorrhoides. quinin Sulph gr X every four hours. Hot water bottles to the feet and cold sponging of the head. Ung. gallae c. opio to be applied on lint to piles. Milk and soda ad lib. Beef-tea and arrowroot.

25th Sept. 8 am. Patient had a fairly good night. Temp. 103.4°F. Pulse febrile and weak. To take a Saline aperient draught at once, and quinin Sulph gr XV with a diaphoretic mixture ordered to be taken at 10 a.m. 6. p.m. Temp. higher - 105°F. 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, Enema of Castor Oil and Soap brought away very offensive blackened shotty-hard faeces; mustard poultice applied to the abdomen.

26th Sept:- 7.30, am. Patient had a

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 nor stool passed since last note; Eyes dazed and conjunctivae injected. Hot water bottles applied to feet and cold sponging of the head. Milk 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. Diaphoretic 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 - hard stool: An Enema containing Castor Oil and Soap brought

brought away very offensive black faeces. Calomelos 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. Calomelos 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 Calomelos 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

to

is higher throughout the day - 103°7 both morning and Evening, Pulse 76 regular, small and fairly strong; Bowels acted after Enema of soap and Castor Oil - stool is scanty and blackened; passed about 4 ounces of black urine like molasses,- Acid in reaction Sp. g. 1030, and Contains a fair quantity of albumen, constituents of Haemglobin and a heavy deposit of urates etc, but no blood, bile, sugar nor tube casts; To take mist. Pot. Acid. Co. every three hours in addition to other medicines.

30th Sept.- Patient had indifferent night. He is calm. Temperature ranged between 103°7 and 103.2°7 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.- 8 am 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 urine 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 Calomelos gr v 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. Calomelos gr x and quinin Sulph gr xv 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 go slow, irregular and compressible 4 ounces of black urine passed, contains about ⅓ of albumen but no tube casts

nor

nor 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. Delirium persists; patient now refuses nourishment of any kind; 10 ounces of black urine passed freely same characters as last note; Jeteric tinge of conjunctivae more pronounced; but no discolouration of the skin generally; Piles have bled a good deal: Temp. 103.5° F. Pulse febrile and weak. Enema of Castor oil and soap brought away black "shotty" faeces. 7 p.m. - Delirium continues. Skin perspiring on the head, neck and arms only but not over the body generally. Urine 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 Calomel gr X and Quinin Sulph gr XV.

3rd Oct. - 8.30 a.m. Delirium has passed off. Patient complains of pain in the Right Iliac 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. Poultices 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 sent for my friend Dr. D – 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 Sodii Phosph, Antipyrin internally and Turpentine stupes

over

over the Hepatic region, but patient became more restless and delirious, and the temperature rapidly rose to 106° F. with running feeble pulse. Patient rubbed down with Brandy and quinine and Ether injected. An Enema containing quinin Sulph gr XX acid Sulph Dil, ℥p and Brandy ℥ij 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 O'clock.

Case VI.

Sister L.S.- European. Aged 23. Recovery. A Missionary Lady; has been out a little more than 2 years in the Colony in connection with the Bremen Mission. With the exception of slight attacks 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 ~~this~~ last Evening.

On the 21st January 1894 - the 5th day of her illness I was sent for at 12 a.m by the Lady Superintendant 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 ~~only this~~ 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 102°.57 Pulse febrile and weak. Urine is scanty and quite black like the Colour of molasses, Acid in reaction; Sp.g. 1035; Contains a trace of albumen, Constituents of Haemoglobin and a heavy deposit of urates etc; no blood, bile, Sugar or tube Casts; Tongue covered with a dirty yellowish fur. Bowels indifferent Tenderness on pressure in the Hepatic and left Lumbar regions. Turpentine stupes over the Abdomen. To take Calomelos gr v and quinin Sulph gr x mist Pot. Aut 6 every three hours, sterilized milk

milk and Sodaad 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 urine passed; Bowels not open; sweating profusely Thirst persists. Headache, pain and nausea better. Beef-Peptone, and Beef-Jelly ordered, and a sleeping draught containing Pot Bromid and Chloral Hydrat at bedtime.

22nd Jan. 8.am. 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 Cool and moist; Temp 100.8° F. Pulse regular and fairly strong. Calomelos gr v and quinin sulph gr x thrice daily. To take Antipyrin gr xv at bed time and

a

and a draught containing Ol. 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 Pot. Acet. 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. She complains of bad mouth, throat and weakness. Temp 100° F. Pulse regular and weak; urine normal; Bowels not open; A draught containing Ol. Ricini administered, and a teaspoonful of Champagne ordered to be taken frequently. 6.30pm. Patient is not looking so bright this morning, she is a bit down in the mouth and complains of sore mouth and throat; Temp. 100° F. Pulse febrile and fairly strong. Bowels have acted thrice — stools dark-coloured; urine normal. Calomel stopped. A gargle containing Pot. Chlorat ordered to be used frequently.
27th Jan. — 8 a.m. Patient had a good night and slept waking up only once during the night. She complains of difficulty of swallowing; urine normal. Bowels not open; Temp 100° F. Pulse slightly febrile. 6.30p.m Temp. 100.8° F. Pulse slightly febrile skin perspiring. Taking nourishment freely. Urine normal; Bowels not

not open.

28th Jan. 8. am. Patient suffers from slight Tonsillitis with inflamed Salivary gland. Temp 99.8°F. Pulse fairly good; urine normal; Bowels not open. To apply poultice sprinkled with Tinct. Belladonnae to the affected parts of the neck. 6 p.m. Temp - high 101.8°. 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 am. Patient had indifferent night. She has suddenly taken much worse; Haemoglobinuria has returned with shivering fits and slight Yellow discolouration 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 Mist Pot Acet Co. 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 Pil Hydrarg gr iii at bed time to be followed

followed in the morning by a draught containing Sodii Phosph and Sodii Sulph.

30th Jan.– Had a very good night and feeling better. Temp 100.2° F Pulse slightly febrile; urine normal; Tongue clean. Bowels not free; sore mouth and throat getting better; swollen glands have subsided. 6 pm. Temp. 100.4° F. Pulse slightly febrile; urine quite normal; Bowels have acted thrice – Stools are very offensive and dark – reddish coloured; Skin perspiring freely. quinin Sulph gr x administered.

31st Jan.– 8. am. Patient had a very good night and slept well. Her general condition has much improved. Tonsillitis, sore mouth and swollen glands better. Temp. 99.4° F. Pulse fairly good. 6 pm. Temp. 99.6° F. Pulse fairly good, urine normal; appetite good.

1st Feb.– 8 am. Patient is favourably progressing to convalescence. She feels quite comfortable this morning and rapidly gaining strength Temp 98.8° F. Pulse good; urine normal

normal; discolouration of skin improved 6 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. Invalided and died Ar[illegible]er of the Gold Coast Hausa Force. Had been little more than three years in the Colony and the last was his second tour 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 June 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 p.m., he complained of weakness and lassitude, headache and nausea. Skin cool and moist Temp. 99° F. Pulse regular, full and compressible; urine high-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 poultice applied to the abdomen. Beef-tea, Brand's Essence, arrowroot and Champagne ordered.

19th June.— 8.30 a.m. Patient had a fair night, Complains of thirst and not passing sufficient quantity of urine. Bowels not oper. Temp. 102° F. Pulse febrile. 6 p.m. Skin perspiring freely Temp. 99° F. Pulse regular and weak. To take Pil Colocynth Hyosey gr IV.

20th June. Called up at 3 a.m. 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: Icteric tinge of conjunctivae and skin. To take fresh Milk and saüerbrunnen frequently: - Calomelos gr X and quinin Sulph gr XV administered at once. 6 am. 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, urine black; Temp. 103° F. A saline aperient draught administered 4 p.m. Rather restless. Bowels have 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 - vomited
matters are bright yellow; urine
black. Calomelos gr X given at once.
To take Iced 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 every thing 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 rectal feeding is temporily adopted
and so an Enema containing quinin Sulph
gr XV. Brandy ʒi and Beef-tea administered
to be repeated every three hours. Enema retained till
11 am when bowels moved once
Tongue

Tongue Cleaning. 6.30pm. Temperature normal, Pulse regular and weak skin Cool and moist; Four motives of the Bowels; vomiting incessant. vomited matters are green; thirst insatiable. An effervescing draught containing Acid Hydrogami Dil administered at once, afterwards Bismuth, Dover's powder, and Soda were also retained. 12 pm. Called up to see the patient who is restless and and complains of being unable to sleep. vomiting and retching have ceased. Injectio Morphiae Hypoderm administered, after this patient took about 4 ounces of Barley water and kept it down.

22nd June - 7 am. Patient had a quiet night after the Morphiae Injection. He is gaining strength, and has been able to keep down some Brandy and Barly water. Nausea and vomiting with headache have ceased; thirst is much less. Temp 102° 7. Pulse febrile; urine turned Bright-Yellow coloured and clear. 6. 30pm. Patient had a sound sleep in the forenoon and on waking up he took

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. 11.15 p.m. called up to see the patient who complains of sleeplessness. Inject Morphiae Hypoderm repeated.

23rd June.- 8 am. 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 pm.

24th June.- 9 am. Patient has much improved and is making satisfactory progress. Taking nourishment freely Temperature 100° F throughout the day

So

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. Patients progress is 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.

A.G.- European. Aged 28. Recovery. 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 Fevers but they

they were not such as rendered him unfit to attend to his work. On the 13th. September 1894 however, he has was 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, shiverings 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; Twice 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

Skin not discoloured but hot and dry; Tongue covered with dirty-yellowish fur; slight tenderness on pressure in the Hepatic region. Antipyrin gr XV every hour till 30 grains have been taken and then to be followed half an hour after by quinin Sulph gr XV To take Mist Pot. Acet, 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 quinine.

15th Sept.- 8 am. Patient had a good night. Feeling much better this morning Temperature normal. Pulse regular and weak; urine is increasing in quantity, clear and light coloured; Bowels free; Headache and vomiting have ceased. Thirst much less, quinin Sulph gr X every four hours. To take a teaspoonful of Brand's Essence frequently; 7.30 p.m. Temperature normal; Pulse fairly good; urine is now plentiful, clear and red - yellowish coloured. Antipyrin stoped.

16th Sept.- 8 am. 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°7. Pulse febrile and weak; urine plentiful and light-coloured: Bowels not open. Antipyrin gr XX administered at once to be followed in half an hour by quinin Sulph gr XX
6 p.m. Temp. 103.6°7. Pulse febrile and weak: urine high-Coloured. Bowels still not open: Skin hot and slightly

slightly moist. To take Calomelos gr v to be followed in the morning by a Saline aperient draught Containing equal parts of Sodii Sulph and Sodii Phosph.

20th Sept.- 8 am. Patient passed a very good night. Temp 101.4° F. Pulse regular and weak; urine normal, Complains of nausea and oppressive 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 Boorid and arrowroot. 6.pm 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. 7. 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. Patients 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.

J.W.H. European. Aged 50. Recovery. 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 1895 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 discolouration 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 urates etc, but no blood, bile, Sugar or tube casts. Bowels not open, vomiting of white frothy

frothy fluid substance
Antipyrin gr xx administered and followed in half an hour by quinin Sulph gr xx. To take Mist Pot. Acet Co every three hours. Fresh Milk and Soda ad. lib., and Brand's Essence of Beef. 12.30 pm. Perspiring profusely. Temp. 101.°7. Pulse 80, regular and full but weak; urine is still black and thick like Molasses. Calomel gr v twice daily. 6 pm. Patient complains of his mind being cloudy, another attack of shiverings with chilliness and vomiting came on at 3.30 p.m. Bowels have opened once – stool dark reddish coloured. About 15 Ounces of black urine passed Headache and Nausea better. Temp. 103.2°7. Pulse 80 rapid, irregular but fairly strong. Antipyrin and quinine repeated.

28th July – 8 am. Had a bad night shiverings 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. Jeterie, discolouration

discolouration of the skin is more pronounced. Tongue covered with dirty yellowish fur. Temp. 101°7. Pulse 55, intermittent and weak. Patient sponged down with tepid water and underclothings changed. Poultice applied to the Hepatic region and a Saline aperient draught administered. To take Ess 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°7. Pulse slightly regular and weak. To take quinin Sulph gr. XV. 7.30 p.m Improving but complains of weakness. Temp 100.8°7. Pulse 80, regular small and weak. Urine plentiful Colour has turned to dark reddish colour 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

29th July

29th July. 8 am. Had a very bad night but shiverings did not return. Temp 101.4° F. Pulse regular and weak; urine is clear and light-coloured 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 60 regular and weak. urine normal; Tongue clear, 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 Cinchonism 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

31st July - 8 a.m. Patient had indifferent night, woke up often. Symptoms of Cinchonism subsiding; urine normal; bowels not open; discolouration 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. Quinin Sulph gr 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. Mist Pot Acet. Co. Stopped. To take Chicken broth and Plane Mange Pudding. 6 p.m. Temp. 99. 8° F. Pulse good. Two stools - dark - reddish coloured, urine normal. Quinin Sulph gr X administered.

2nd Aug. - Had a very good night Kept very well and feeling much better and stronger. Twist 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 v and quinin Sulph gr x administered.

3rd Aug:- 8.am. Patient had a very good night and slept well. Bowels not open; Temp 99.4° F. Pulse good, urine normal; Quinin Sulph gr xv administered Brandy stopped and to take Champagne instead. 9 p.m. Temp. 100.4° F Pulse fairly good. Quinin Sulph gr xv 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. Pil. Hydrarg gr iii with Saline aperient draught ordered. 6 p.m. Two stools at 1 p.m. Temp 101° F. Pulse slightly febrile and weak. Quinin Sulph gr x 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

Temp. 99. 2° F. Pulse good. 6 p.m.
Temp. 100 °F. Pulse good. Quinin
Sulph gr X administered.
6th. Aug.- 8 am. 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 am. 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 portwine, quinin Sulph
gr V thrice daily. 7 pm. 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 (Negro) aged 48. Recovery
A native born and brought up on the Seaboard, stationed at Akuse – One of the most insalubrious and Marshy 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 deseases 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 1892 I was sent for to see the patient. On arriving at the Factory I was ~~sent~~ met on the varandah by the Principal European Agent Mr Asphi and Mr Reaser of the firm of Chevalier and Co who informed me that the patient had got Blackwater Fever. On seeing him he complains of nausea, 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 twistings on account of pains, legs drawn up, breathing slightly affected; breath offensive, Tongue covered with a leaden-yellowish fur, 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 105° 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 XXX administered to be

to be followed in half an hour by quinin Sulph gr XV. Enema containing Ol Ricini, ℥ij. opii sed and soap also administered at once and brought away very scanty and hard – shotty, black faeces; Poultice ordered to be applied to the whole of the abdomen. To take Mist Pot Acet. Co every three hours; Fresh Milk and Soda ad lib. q pm. Temp. 103.2° F. Pulse febrile and weak. Skin perspiring profusely. About 3 ounces of black urine 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 whatever 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 faeces. About 6 ounces of urine passed so black

black, Headache better. Pains are legs. To take Calomelos gr V and quinin Sulph gr X every fours hours 7 p.m. Temp. 103° F. Pulse febrile irregular and weak; urine passed is still black and scanty shiverings with chilliness came on at 3 p.m. Antipyrin gr XXX repeated. A tablespoonful of Brandy every three hours.

27th 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 any where in the body generally. 7 p.m. Temp 100. 8° F. Pulse regular and weak. Urine still black: Tongue cleaning. To take Pil Hydrarg. gr IV at once to be followed in the morning by a saline aperient draught Containing Sodii Sulph and Sodii Phosph.

28th Nov.- 8 am. 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 clear; 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; and discolouration of conjunctivae, nails, palms and soles - is improving; urine is plentiful and light-coloured; Spirit better. Temp. 99° F. Pulse fairly good. To have Arrowroot, Chicken soup and bread. 7. p.m Temp. 99·2° F. Pulse good. Slept for two hours in the afternoon.
30th Nov.. 8 a.m. Patient doing fairly well. He is gaining strength rapidly. Appetite keen. Patient's request to have peppered soup refused. Temp. 99° F. Pulse good - urine normal; Bowels regular; discolouration of Conjunctivae,

nails

nails, palms and soles better. Patient complains of soreness of mouth. Calomel, Mist. Pot. Acet. Co and poultice stopped. Mouth wash ordered. quinine reduced to 5 grains - daily. 7 pm Temp. 99° F. Pulse good.

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 patients progress was uninterrupted, and on the 10th Dec he had quite recovered. Sent 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 66. Death.

A native Merchant born and brought

brought up on the Seaboard and with the exception of occasional attacks of Intermittent Fever and Chronic Urethritis 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 Hypochondriac regions. Temp 104.6° F. Pulse rather rapid, small and weak; About 3 Ounces of black Coloured urine passed is like Molasses, Acid in reaction, sp. g. not ascertained, and contains a small amount of Albumen, heavy deposit of urates etc but no blood, bile or casts. Vomited matters are green

Coloured

Coloured like spinach.
Pil. Cloc at Hyosey 8 VI and Calomelos
8 X administered. To take Mist
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. Pains 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
Bowels not open; Jaundice of skin
and conjunctivae increased.
Milk and Soda, Arrowroot and
Rasea 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 pm. Temp. 103°F. Pulse febrile.

24th. Nov.— 8 am. 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; no pain or nausea; Bowels costive Calomel stopped; Enema ordered. To take Champagne frequently. 6 pm. weaker and listless, slight haemorrhagae from the nose; Temp 103°F. Pulse febrile and weak. Patient sponged down with tepid water; he refuses nourishment. Rectal feeding ordered. Antipyrin gr XX administered to be followed in half an hour by Quinin Sulph gr XV.

25th. Nov.— 8 am. Had a bad night, and is weaker. Temp 102.6°F. Pulse febrile and weak; urine still

still black and scanty.
discolouration of skin and conjunctivae pronounced. 6 pm. Patient is powerless and can hardly raise his head on the pillow. Urine 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 Beef-tea per Rectum.

26th Nov.- Patients Condition alarming Temp. higher - 104.2°F. Pulse running He is delirious; about 2 ounces of thick black urine drawn off which contains about one-fifth of Albumen but no blood, bile nor tube casts Dry cupping over the kidneys and foot-warmers applied to the feet with cold sponging of the head had not the slightest effect whatever on the course of the symptoms. At 3 pm, he has had three successive

Successive attacks of shiverings 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.

Synopsis of Cases

№	Nationality	Sex	Age	Occupation	Complaint and Condition of Patient	Condition of urine and alvine evacuations	Date of onset of Fever	Date of onset of Haemo-globinuria	Date of Cessation of Haemo-globinuria	Length of Residence in the Colony	First or subsequent attack	Treatment	Result
1	German	M	32 yrs	Missionary	Feeling hot all over the body; thirst, weariness, loss of appetite; pains in the back and waist; light headed and sleeplessness, Restless, Conjunchivae and skin jaundiced, almost lemon-yellow discolouration, Green vomits, Temp 104° F. Pulse 120 rapid, regular and compressible Tongue covered with dirty yellowish fur. — Tenderness over the liver and spleen.	Urine is scanty and black like muddy Portwine, and contains constituents of Haemoglobinuria a trace of albumen & and a heavy deposit of urates etc but no blood, bile, or tube casts. Stools are scanty and dark-reddish coloured.	1.1.90	4.1.90	6.1.90	2 years	First attack	Cold sponging of the Head, and application of foot-warmers; Quinine, Calomel, Draught containing Warburg's Tincture, Poultice to Abdomen, Bismuth and Soda; a draught containing Castor Oil, Sleeping draught, Egg flip. Fresh milk, Soups, Barley water, Champagne and Soda: Bitter Tonic.	Recovery. Sent to Europe for a change of air.

No	Nationality	Sex	Age	Occupation	Complaint and Condition of Patient	Condition of urine and alvine evacuations	Date of onset of Fever	Date of onset of Haemoglobinuria	Date of Cessation of Haemoglobinuria	Length of Residence in the Colony	First or Subsequent attack	Treatment	Result
2	French	M	28 yrs	Missionary	Restless, thirst, periodical shiverings with chilliness all over the body. Headache, a feeling of uneasiness in the lumbar regions but no pain, sleeplessness, loss of appetite and costiveness. Icteric discolouration of skin and conjunctivae, Eyes dazed, tongue covered with a dirty yellowish fur: Temp 105 F. Pulse 120 febrile, Incessant vomiting of at first white glairy fluid and mucoid fluid afterwards dark muddy, Dysuria, no tenderness over the abdominal organs	urine is scanty and black like molasses, acid in reaction and contains a trace of albumen, constituents of Haemoglobin, and a heavy deposit of urates etc but no blood bile, sugar or tube cast. <u>Stools</u> – are fluid and scanty, and dark-reddish coloured.	29.VII.90	1.VIII.90	7.VIII.90	one year	Second attack. First in June 1890	Cold. sponging of the Head and application of foot-warmers Poultice to abdomen, Antipyrin, quinine and Calomel. Bismuth and Soda Saline Draught. Sol mist pot acet co, Iodoph Co mouth wash; sleeping Draught. milk and Soda, slops Champagne and white wine.	Recovery. Sent to Europe for a change of air.

No	Nationality	Sex	Age	Occupation	Complaint and Condition of Patient	Condition of urine and Alvine evacuations	Date of onset of Fever	Date of onset of Haemo Globin-uria	Date of cessation of Haemo-globinuria	Length of Residence in the Colony	First or Subsequent attack	Treatment	Result
3	English	M	28 yrs	merchant	Incessant vomiting at first "Green" afterwards "Coffee" ground frothy fluid stools headache, thirst, bad mouth, weakness, pains all over the body especially in joints and back, constipation, cold and shivering occasionally; loss of appetite, pain in abdomen; difficulty of micturition and utter aversion to food. Restless, skin and conjunctivae very jaundiced, eyes slightly injected, tongue covered with dirty yellow fur, Temp. 101°7. Pulse weak. Tenderness to pressure in Hepatic and Lumbar (left) regions.	Urine is scanty about 2 ozs. drawn off is thick and black like molasses, contains albumen constituents of Haemoglobin, deposits of urates etc but no blood bile or tube casts. Stools scanty, scybalous dark-reddish colour.	9.10.88	10.10.88	15.10.88	1½ yrs	First attack	Quinine and Calomel Haust Sennae Co; an Effervesc. mixture containing Acid Hydrocyanic Dil: Inject. Morph. Hyp: Poultice to abdomen Barley Water; Kaping Draught, Enema of Castor oil and Soap: milk and Soda freely: Champagne. Beef-tea. Brand's Essence, Arrowroot and Chicken broth with Eggflip.	Invalided after convalescence to Mauritius for a change of air but had relapse on disembarking at Accra and died there.

No	Nationality	Sex	Age	Occupation	Complaint and Condition of Patient	Condition of urine and Alvine evacuations	Date of onset of Fever	Date of onset of Haemoglobinuria	Date of cessation of Haemoglobinuria	Length of Residence in the Colony	First or subsequent attack	Treatment	Result
4	French	M	25 yrs	Missionary	Chilliness with periodical shiverings, headache, lassitude, pains over the body, thirst, loss of appetite, constipation, weakness, oppressive feeling in the Epigastrium and fright from noticing his urine turned black. Restless skin icteric but not the conjunctivae. Tongue covered with dirty yellowish fur, vomiting green bile. Tenderness in Hepatic region. Temp 103.4° F. Pulse irregular and weak.	Urine scanty and black like muddy Portwine. Acid, Contains a trace of albumen, constituents of Haemoglobin, heavy deposit of urates etc but no blood bile nor tube casts Stools – scanty, fluid and black coloured.	12.6.92	12.6.92	15.6.92	6 months	First attack	Antipyrin, Calomel quinine, Mouth wash. mustard Poultice, mist Pot acet Co, Hepatic draught; Purgative draught; mist Sedative: Hot water bottles to feet; tepid water sponging, saline aperient, milk and Soda freely, Bovril arrowroot, Brands Essence, Chicken broth, toasted bread, Champagne and brandy.	Recovery. Sent to France for a Change of air.

No	Nationality	Sex	Age	Occupation	Complaint and Condition of Patient	Condition of urine and alvine evacuations	Date of onset of Fever	Date of onset of Haemo-globinuria	Date of cessation of Haemo-globinuria	Length of Residence in the Colony	First or subse-quent attack	Treatment	Result
5	Dutch	M	21 yrs	Merchant	Periodical attacks of Cold shiverings with headache, thirst, pains all over the body and eyes especially, Knees and back, Dizziness, light-headedness, sleeplessness, loss of appetite and inflamed Haemorrhoides Constipation with Faced flushed, rather restless, Tongue covered with thick dirty yellowish fur, vomiting green frothy fluid, Skin and Conjunctivae icteric. Tender to touch in Hepatic region. Temp 105.4° F. Pulse febrile.	Urine- Scanty and dark coloured like sherry at first, afterwards muddy Porturine with little deposit of urates etc, a trace of albumen at first but ½ albumen on 30/9/90, Constituents of Haemoglobin but no blood bile or cast. Stool- Scanty shotty hard and black coloured faeces.	21.9.90	24.9.90	There was no cessation of Haemoglobinuria before death	Six months	First attack	Antipyrin, Calomel, quinine, hotwater bottles to feet and tepid sponging of Head, Sleeping draught, Saline draught, Enema of Castor Oil and Soap. Poultice to abdomen Ung. gallae & opio to piles. Diaphoretic mixture Phenacetine. Blisters to the napes of the neck; milk and soda, Beef-tea arrowroot, Champagne and brandy.	Death from suppression in a state of Comatose Hyperpiexia

No	Nationality	Sex	Age	Occupation	Complaint and Condition of Patient	Condition of urine and alvine evacuations	Date of onset of Fever	Date of onset of Haemo-globinuria	Date of Cessation of Haemo-globinuria	Length of Residence in the Colony	First or Subsequent attack	Treatment	Result
6	German	F	25 yrs	missionary	Slight attacks of shiverings with headache, pains all over the body Chiefly in the abdomen, sleeplessness, terrible thirst but ejects fluid as soon as it is swallowed, loss of appetite, a feeling of oppression in the epigastrium, bad mouth nausea and constipation. Restless and groaning, light-headed, incessant vomiting of green frothy fluid, skin and Conjunctivae slightly icteric. Tongue covered with dirty yellowish fur. Tenderness over abdomen. Temp. 102.6°F. Pulse weak.	Urine. Scanty and black like molasses 1010, sp. g. 1020 with a trace of albumen constituents of Haemoglobin and a heavy deposit of urates etc but no blood bile, nor tube Cast. Stools- Scanty and black-Coloured faeces.	17.1.94	21.1.94	23.1.94	2 years	First attack	Turpentine stupes Antipyrin, Calomel quinine and Castor oil. Dover's Powder and Bismouth, mist Pot acet Co, and Cold application to head, sleeping draught; milk and Soda, Beef-Peptone. Beef jelly, arrowroot and Chicken soup. Greek wine. Brandy and Champagne Mouth wash. Bitter tonic.	Recovery subsequently left for Germany on usual leave of absence.

No	Nationality	Sex	Age	Occupation	Complaint and Condition of Patient	Condition of urine and alvine evacuations	Date of onset of Fever	Date of onset of Haemoglobinuria	Date of Cessation of Haemoglobinuria	Length of Residence in the Colony	First or Subsequent attack	Treatment	Result
7	English	M	28 yrs	Officer in the Constabulary	Chilliness and shiverings, pains in the back and legs, headache, thirst, nausea, not passing sufficient urine, loss of appetite, constipation, weakness, bad mouth. Restless, retching and vomiting of black ground coffee fluid, Tongue covered with dirty yellowish fur, Tenderness to pressure in the Hepatic region. Temp. 99°F. Pulse regular and weak Icteric tinge of skin and conjunctivae	Urine. Scanty, at first high-coloured but afterwards turned black and thick like molasses: Acid in reaction, very albuminous with deposit of urates etc and contains constituents of Haemoglobin but no blood bile or cast. Stools - Scanty, black coloured faeces.	18.6.91	20.6.91	23.6.91	3½ yrs	First attack	Quinine, Calomel, Pil Cloc Et Aposay saline aperient, Tea to suck, Poultice to abdomen, Generally, mist Pot acet cs, Dover's Powder, and Bismuth. Bland diet. Iced Champagne, brandy, milk and Soda freely. Rectal feeding adopted when stomach rejected.	Invalided after Convalescence to England but had relapse and died on the voyage from uraemic - suppression in comatose Hyperpyrexia.

No	Nationality	Sex	Age	Occupation	Complaint and Condition of Patient	Condition of urine and alvine evacuations	Date of onset of Fever	Date of onset of Haemo-globinuria	Date of cessation of Haemo-globinuria	Length of Residence in the Colony	First or Subse-quent attack	Treatment	Result
8	English	M	28 yrs	merchant	Pains all over the body, Illness and shivering, thirst, loss of appetite, Headache, oppressive feeling in the Chest, Insufficient quantity of urine which is black. Restless, light-headed, vomiting of green frothy fluid, Tongue covered with dirty yellowish fur, no tenderness over the abdominal organs nor skin and con-junctivae icteric. Temp. 105°7. Pulse small, regular and fairly strong.	Urine. Scanty and black coloured like molasses acid, a trace of albumen constituents of Haemoglobin and a heavy deposite of urates etc, no blood bile, sugar or cast. Stools. Faeces are dark reddish coloured	13.9.94	14.9.94	16.9.94	about 3 years	First attack	Antipyrin, quinine, Calomel, blue pill, Saline aperient, mist pot acet co, mouth wash, milk and Soda freely, Beef-tea, Chicken soup, arrowroot, Egg flip, Brand's Essence, Champagne Bitter tonic.	Recovery, Sent to the Sea-board for a change of air.

No	Nationality	Sex	Age	Occupation	Complaint and Condition of Patient	Condition of urine and alvine evacuations	Date of onset of Fever	Date of onset of Haemoglobinuria	Date of Cessation of Haemoglobinuria	Length of Residence in the Colony	First or subsequent attack	Treatment	Result
9	English	M	50	Merchant	Periodical attacks of chilliness and shiverings, pains in the back and joints, nausea, thirst, headache, Constipation, bad mouth, weakness, Restless, Skin and conjunctivae ie-tenic, vomiting of white frothy fluid, Tongue Covered with thin white fur, light-headed, Tenderness to pressure in the Hepatic region. Temp 104.2°F. Pulse 60, irregular but fairly strong.	Urine — scanty, thick and black like molasses, acid, and Contains a trace of albumen Constituents of Haemoglobin, heavy deposit of urates etc No blood, bile, sugar or cast. Stool — scanty and offensive peculiarly green-reddish Colour like Bruised spinach mixed with Palm oil.	25.7.95	27.7.95	29.7.95	Five years only twice absent from Colony	Second First attacks 2 years ago.	Antipyrin, quinine, mist Pot acet Co, Calomel, Saline aperient, mouth wash, milk and Soda freely, Chicken soup, arrowroot, Egg flip, and Brandy Essence, Brandy and Portwine. Bitter Tonic.	Recovery.

No	Nationality	Sex	Age	Occupation	Complaint and Condition of Patient	Condition of urine and alvine evacuations	Date of onset of Fever	Date of onset of Haemoglobinuria	Date of Cessation of Haemoglobinuria	Length of Residence in the Colony	First or Subsequent attack	Treatment	Result
10	Native (negro)	M	48	mercantile agent	At first gripeing pains in abdomen. Dysuria, Constipation; nausea, cold clammy sweat, afterwards periodical attacks of chilliness and shiverings. Thirst, loss of appetite sleeplessness, and headache, Restless, vomiting of dark-greenish fluid, Constantly in contortions and doubled up with pain, breathing slightly affected, breath offensive, Tongue covered with dirty yellowish fur, Conjunctivae and nails, Palms and soles icteric, Pain in Hepatic region, light-headed, Temp 103°7 Pulse weak and regular	Urine- Scanty and black like muddy Port-wine, acid, small quantity of albumen, Constituents of Haemoglobin deposit of water etc no blood, bile or cast. Stool- Faeces hard, shotty (scybalous) and black coloured.	23.11.92	25.11.92	29.11.92	All his life on the Seaboard. Five years in the interior of Colony	First attack	Sulfas, Antipyrin, Quinine, Calomel, Enema of Soap and Castor Oil with liq. Opii Sedativ; mist Pot acet Co, Saline aperient Mineral water and milk freely. Arrassa, Chicken soup, Brandy and Port wine.	Recovery. Sent to the Seaboard for a Change of air.

No	Nationality	Sex	Age	Occupation	Complaint and Condition of Patient	Condition of urine and alvine evacuations	Date of onset of Fever	Date of onset of Haemoglobinuria	Date of Cessation of Haemoglobinuria	Length of Residence in the Colony	First or Subsequent attack	Treatment	Result
11	Native (mulatto)	M	65	merchant	Pains in the back and joints, periodical attacks of chilliness and shivering with nausea, headache, thirst, constipation, sleeplessness, passing very little urine, aversion to food, and weakness. Tongue covered with brown yellowish fur, Icteric tinge of skin conjunctiva Tender to pressure in Hepatic and Lumbar regions Temp 104.6° F. Pulse weak.	Urine- Scanty and black, not unlike molasses, acid, and contains albumen and constituents of Haemoglobin with deposit of urate etc but no bile, blood, nor cast. Stool- Faeces are scanty, clotty hard, black coloured (scybalae)	18.11.87	20.11.87	no cessation of Haemoglobinuria before death took Place.	All his life on the sea-board	First attack	Poultice to abdomen, Calomel, Ol Coloc et Hyosey, quinine Enema of Ol. Ricini and Soap, antipyrin, mist and Soda freely, Chicken soups, Massa, — Champagne.	Died from Exhaustion in Comatose Hyperpyrexia.

specimens of Clinical Temperature Charts

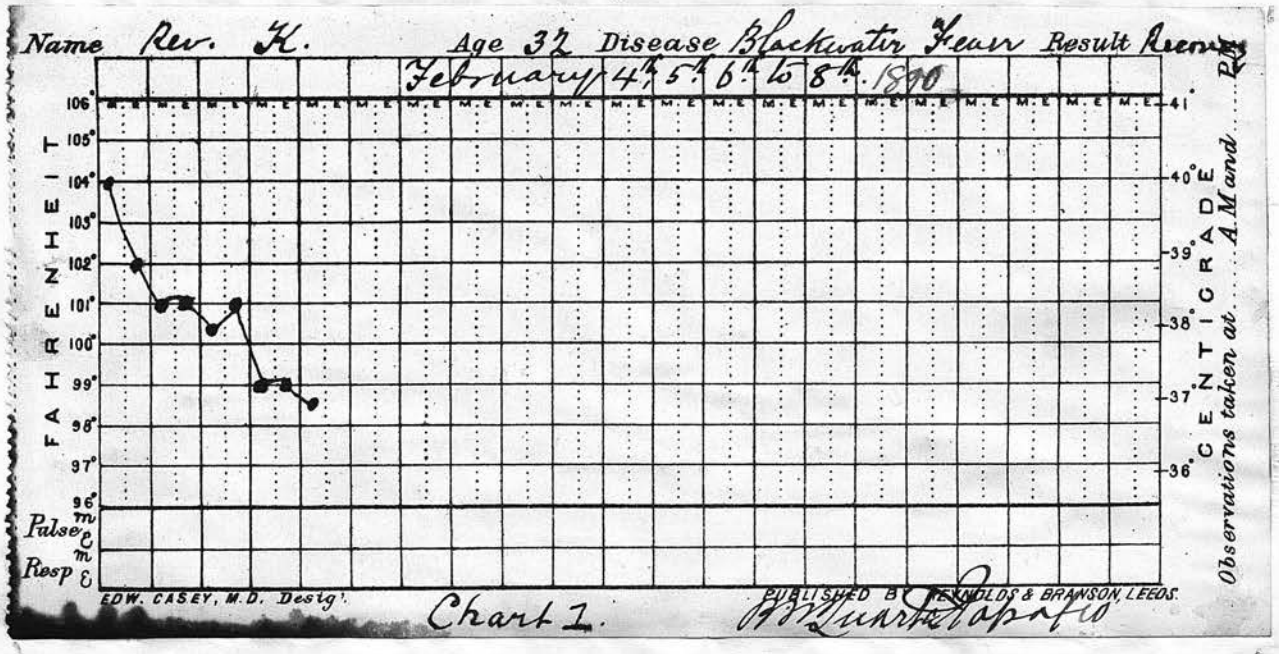


Chart I.

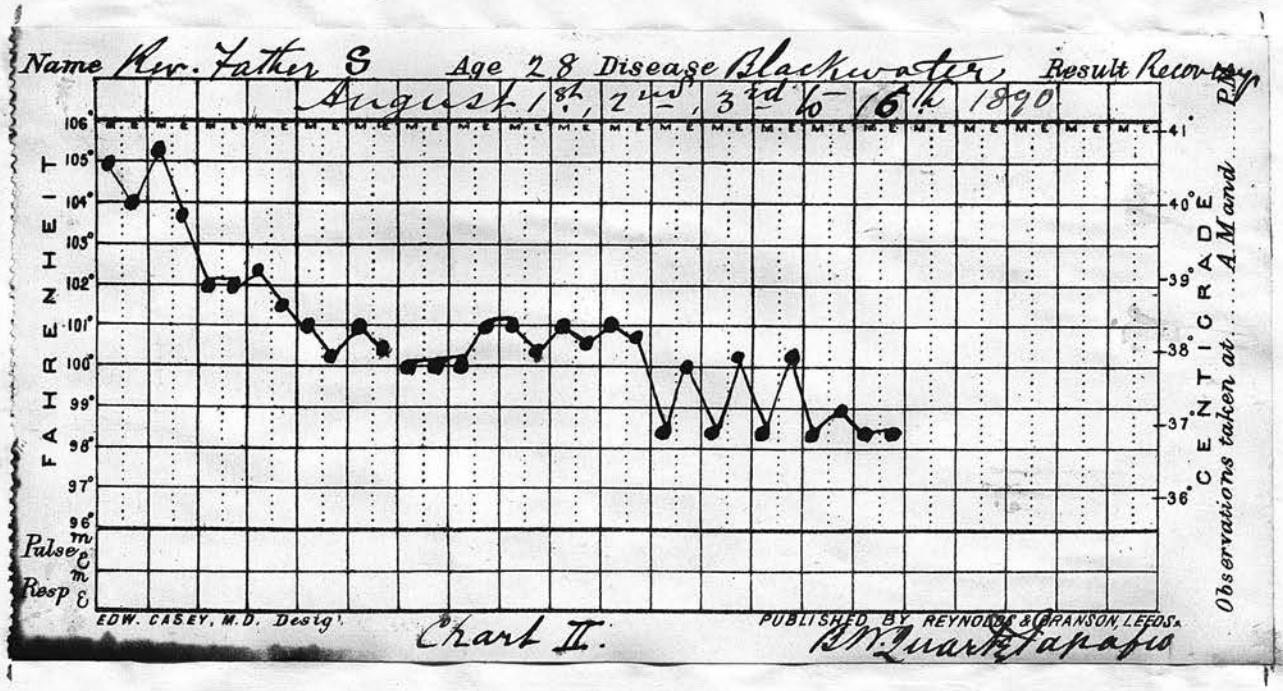
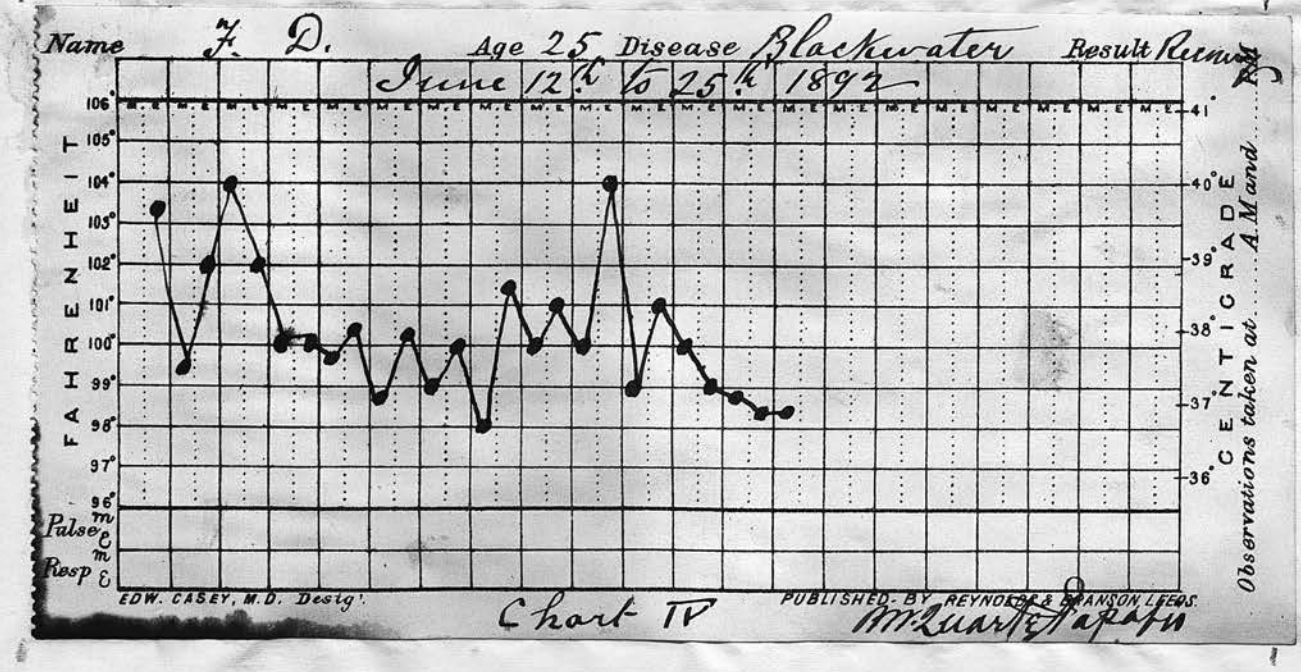
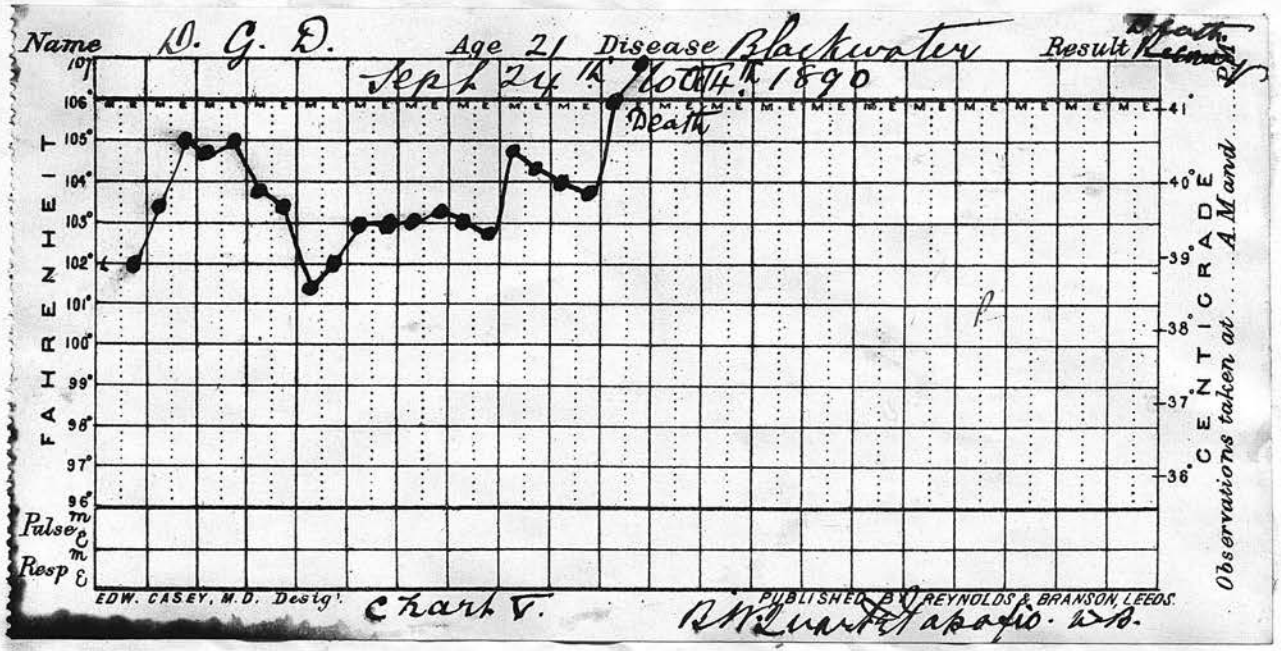
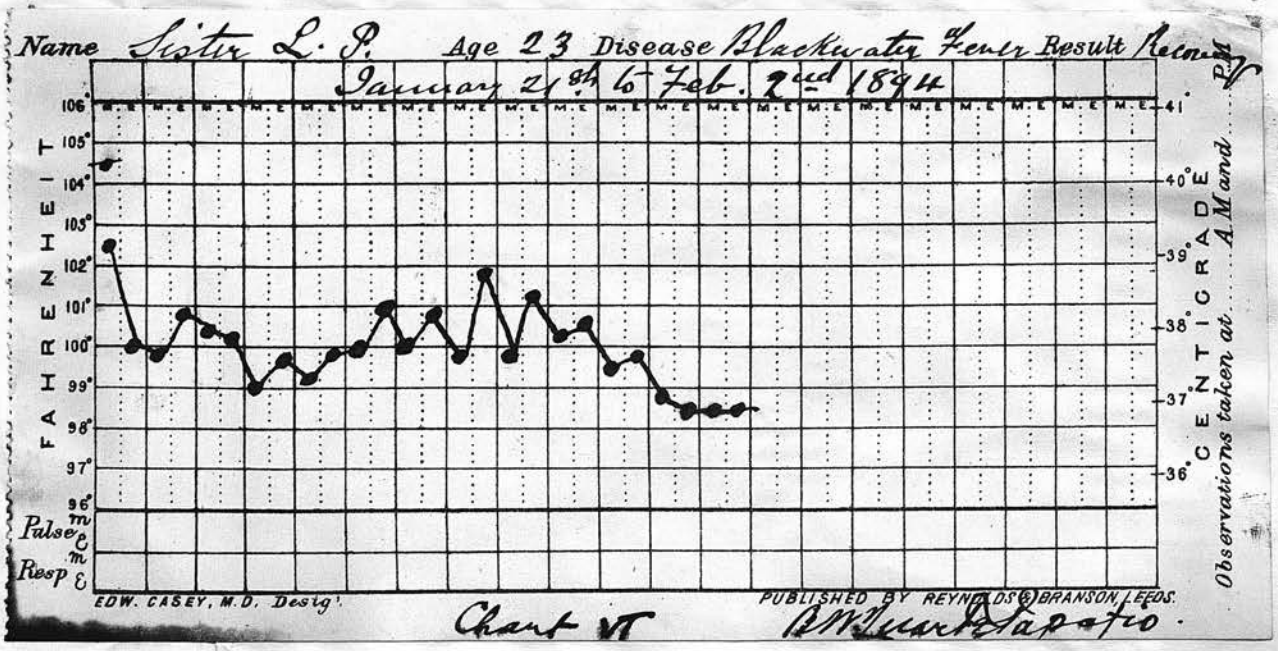


Chart II.


Name J. E. Age 28 Disease Blackwater Fever Result. Invalided
Oct 11th to 25th 1888
FAHRENHEIT
CENTIGRADE
Observations taken at A.M and P.M
Invalided
Pulse
Resp
EDW. CASEY, M.D. Desig.
PUBLISHED BY REYNOLDS & BRANSON, LEEDS.
Chart III.


Name J. D. Age 25 Disease Blackwater Result Recovd
June 12th to 25th 1892
FAHRENHEIT
CENTIGRADE
Observations taken at A.M and P.M
Pulse
Resp
EDW. CASEY, M.D. Desig.
PUBLISHED BY REYNOLDS & BRANSON, LEEDS.
Chart IV


Name D. G. D. Age 21 Disease Blackwater Result Recovd
Sept 24th to 4th 1890
Death
FAHRENHEIT
CENTIGRADE
Observations taken at A.M and P.M
Pulse
Resp
EDW. CASEY, M.D. Desig'.
PUBLISHED BY REYNOLDS & BRANSON, LEEDS.
Chart V.
R.M. Quartermain Capt. A.S.C.


Name Sister L. P. Age 23 Disease Blackwater Fever Result Recovd
January 21st to 7th Feb. 2nd 1894
FAHRENHEIT
CENTIGRADE
Observations taken at A.M and P.M
Pulse
Resp
EDW. CASEY, M.D. Desig'.
PUBLISHED BY REYNOLDS & BRANSON, LEEDS.
Chart VI
R.M. Quartermain Capt. A.S.C.

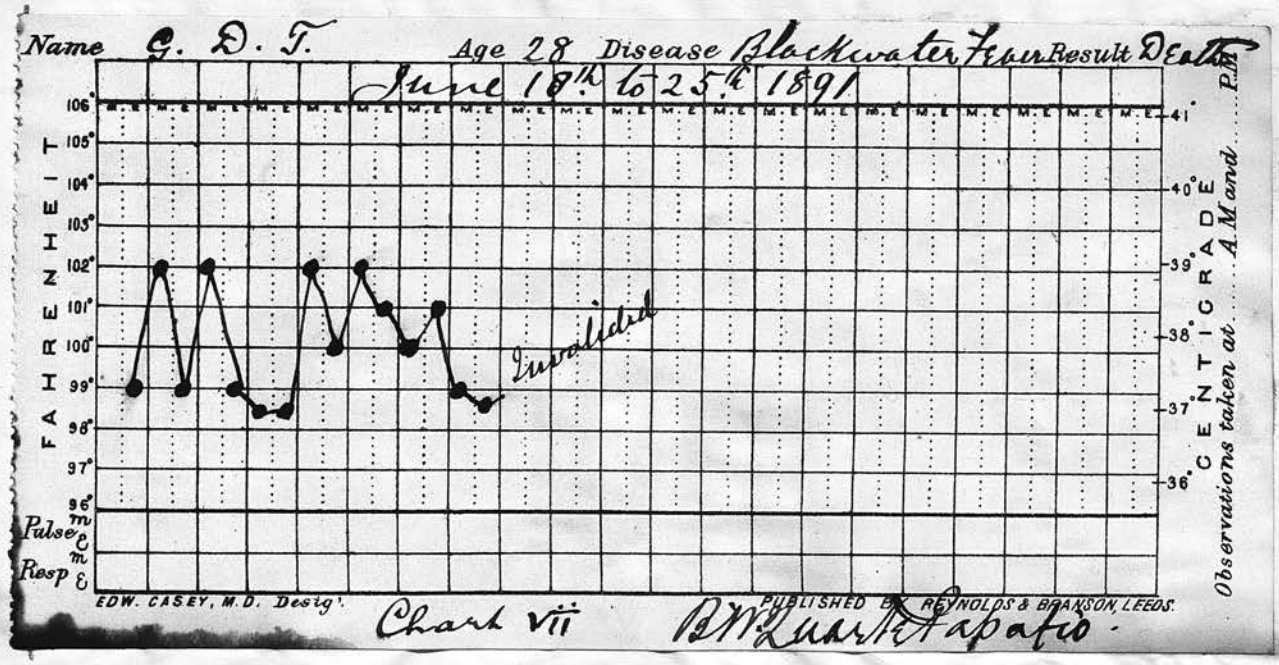


Chart VII R.W. Guard Tapaloo.

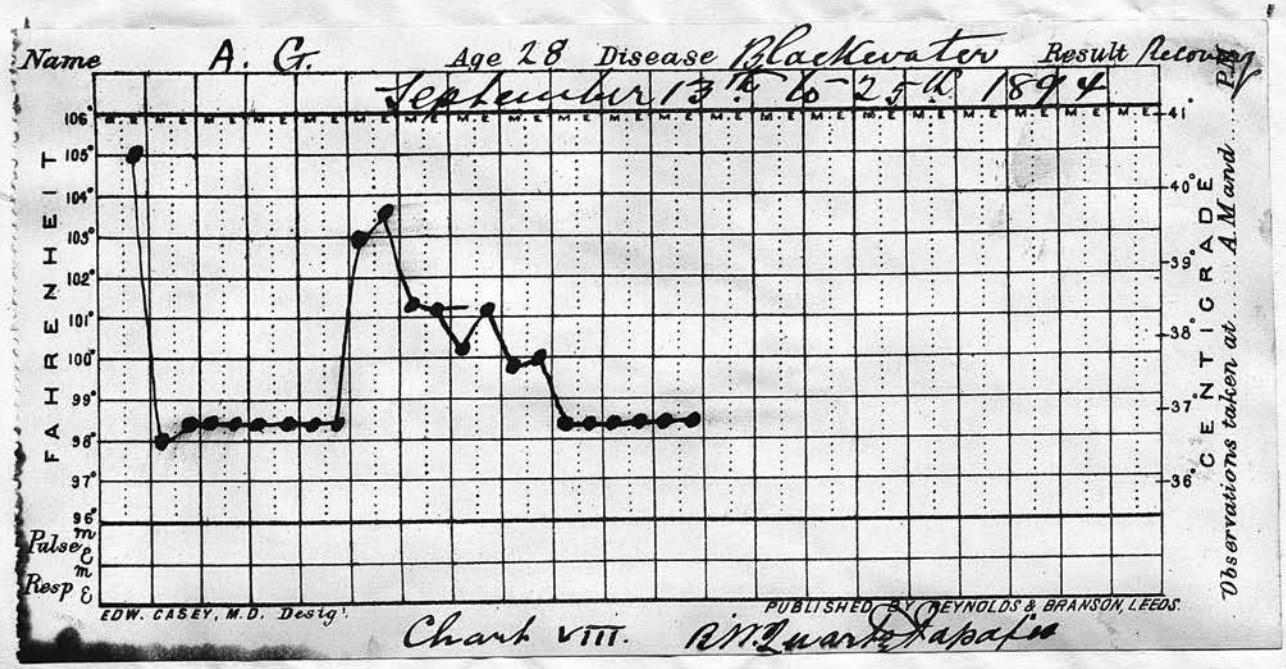
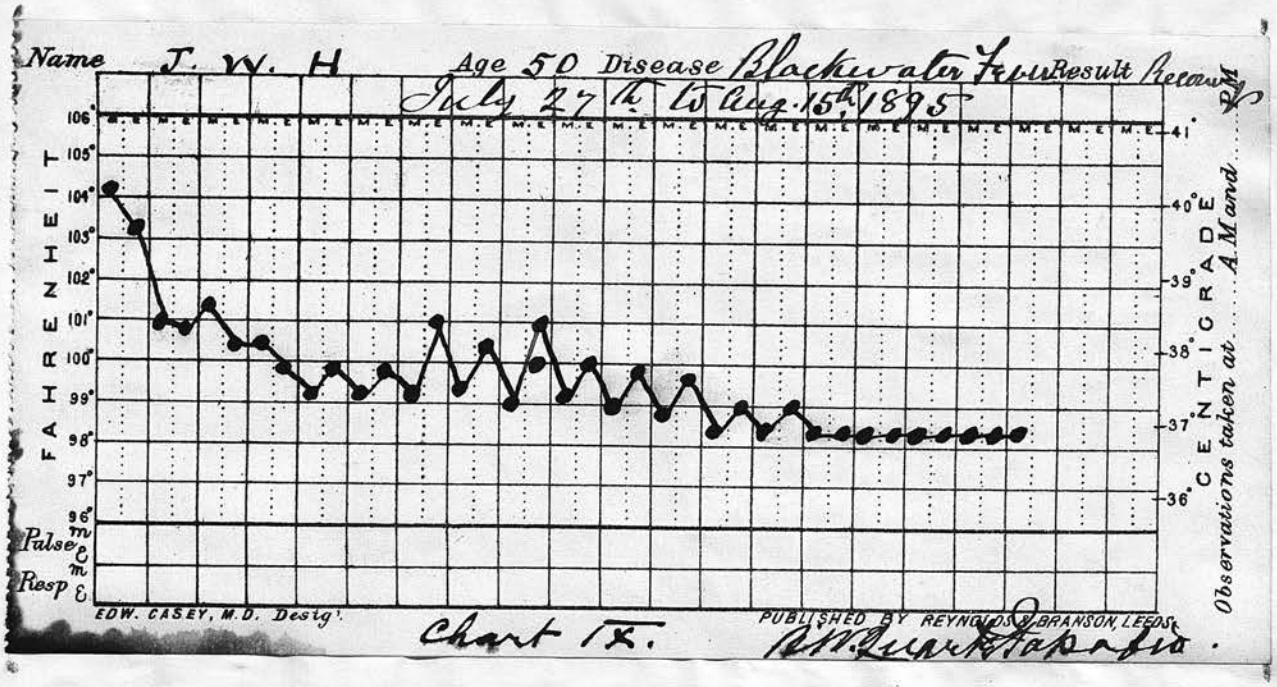
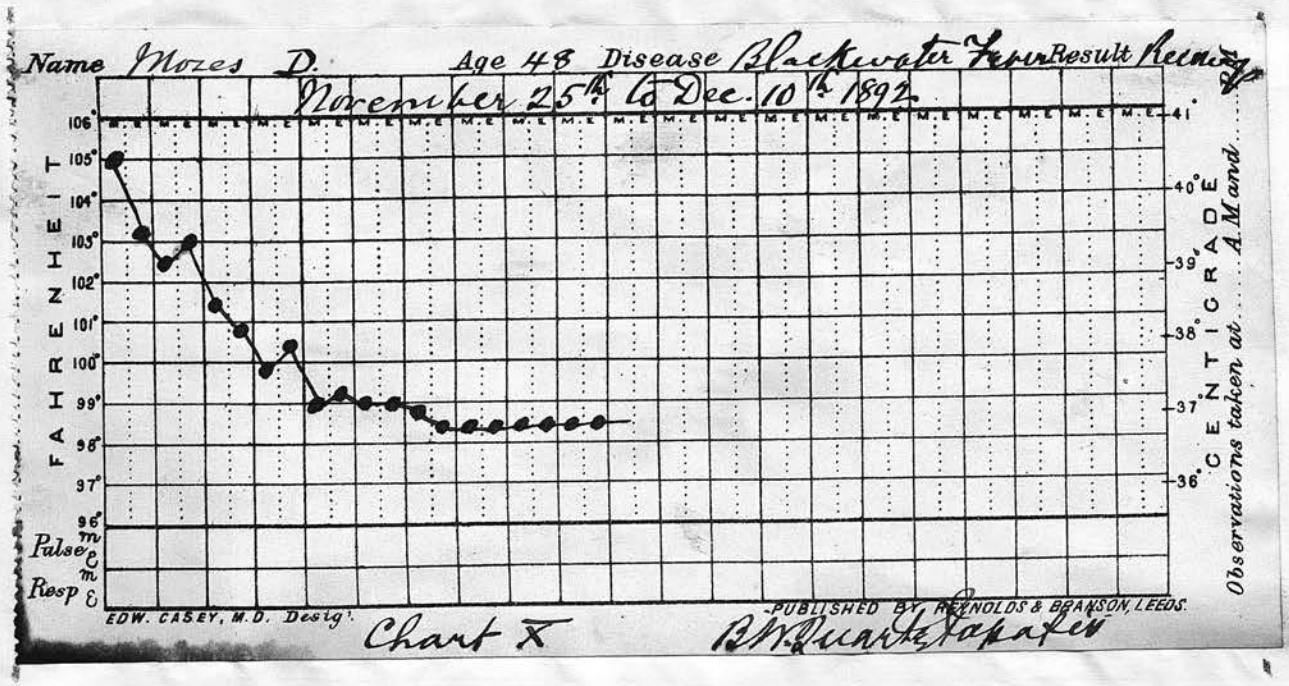
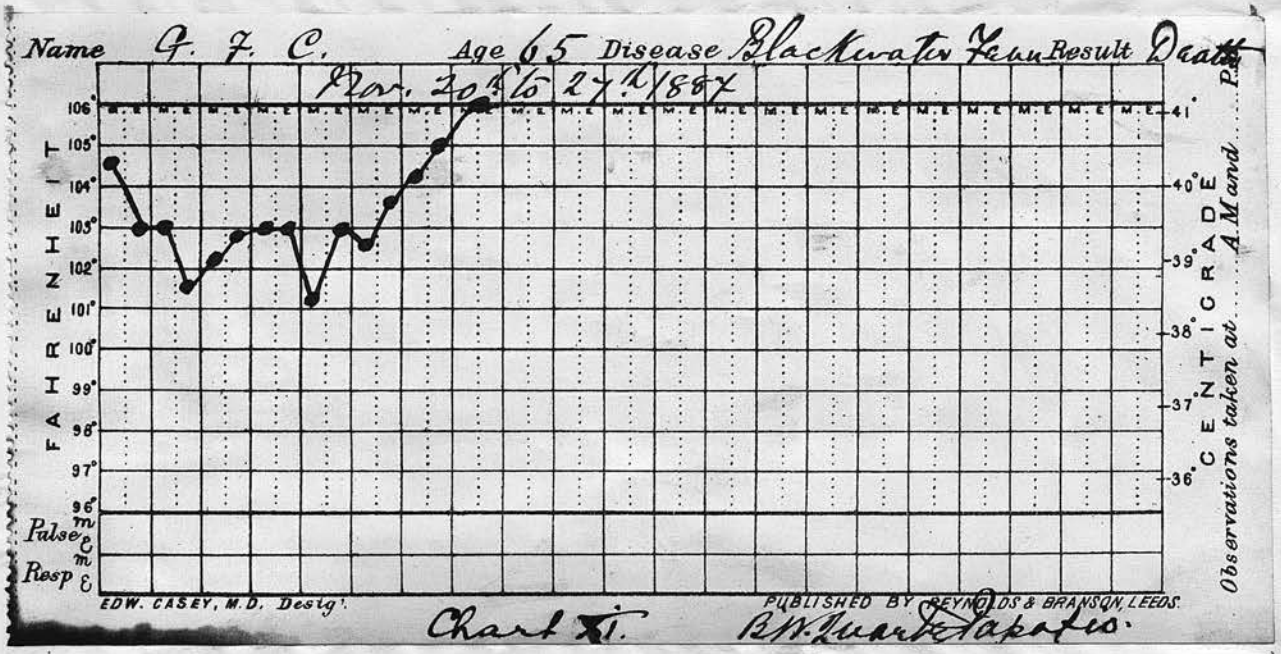


Chart VIII. R.W. Guard Tapaloo


Name J. W. H
Age 50 Disease Blackwater Fever Result Recovered
July 27th to Aug. 15th 1895
FAHRENHEIT
CENTIGRADE
Observations taken at A.M and P.M
Pulse
Resp
EDW. CASEY, M.D. Desig.
PUBLISHED BY REYNOLDS & BRANSON, LEEDS.
Chart IX.


Name Moses D.
Age 48 Disease Blackwater Fever Result Recovered
November 25th to Dec. 10th 1892
FAHRENHEIT
CENTIGRADE
Observations taken at A.M and P.M
Pulse
Resp
EDW. CASEY, M.D. Desig.
PUBLISHED BY REYNOLDS & BRANSON, LEEDS.
Chart X


Name G. F. C. Age 65 Disease Blackwater Fever Result Death
Nov. 20th 26 27th 1867
FAHRENHEIT
106° 105° 104° 103° 102° 101° 100° 99° 98° 97° 96°
CENTIGRADE
41° 40° 39° 38° 37° 36°
M. E.
Pulse m
Resp
Observations taken at A.M and P.M
EDW. CASEY, M.D. Desig.
PUBLISHED BY REYNOLDS & BRANSON, LEEDS.
Chart xi.
B.W. Duarte Lapates.