An incomplete description of the Malarious Fevers of Wynnad.

When I arrived in Wynnad at the end of February 1826, the so-called unhealthful season had already set in, that is to say, the Feverish season, which usually begins about the middle of February and continues until the Southwest Monsoon bursts, or about the end of May. This does not imply that this is the only period during which Fever prevails, for it exists throughout the year, but during the other months the number of attacks are few, and the character of the Fever generally is of a milder type. Altogether there is very little sickness, so that this portion of the year is very appropriately called the unhealthful season, in contradistinction to the three months above alluded to when Fever prevails everywhere and almost everyone is attacked once or oftener, and generally with a severe form of the disease which not unfrequently terminates fatally. This then is popularly styled the unhealthful season of Wynnad, when the district is strictly avoided by all who have to pay periodic visits, and the residents also (European & native) endeavour to get away for one or two months. Strictly speaking, the whole
of these three half months are not so very unhealthy for the period of fever; seldom expects longer than about eight weeks—i.e. during March and part of February or April, but varies according to the character of the season—sometimes setting in as early as January, and other years keeping off until after February; but during ordinary years the eastern side of the country begins to become very feverish early in February, and this malarious condition gradually extends westward toward the Ghats, where it continues somewhat later than on the eastern side of the country. Any great alteration of the seasons, such as the partial failure of the south-west monsoon or total failure of the north-east monsoon or even an excessive monsoon, will not only modify the period and duration of the unhealthy season, but have also given rise to very severe out-breaks of fever during other months, which has been attended with as large mortality as that of March.

Speaking in general terms of the climate of Wynaad it may be described as consisting of two seasons—the wet and the dry—the former extending from the last of June to the last of November, and the latter of course comprising the rest of the year. But during September there is generally
a break in the wet season of from one to four weeks, during which there is considerable sunshine, with occasional light showers each day, or sometimes no rain during three or four days. This is the interval between the breaking up of the South West and setting in of the North East Monsoons, and generally corresponds with the latter half of September.

The South West Monsoon (i.e. the Rain) begins about the first of June and continued, almost without interruption, until the end of August, but the quantity of rain that falls depends upon the distance from the western coast and varies (during ordinary years) from 200 to 300 inches along the western ghat to 50 or 60 inches along the Bombay frontier. And about 15 miles further inland it is reduced to an occasional light shower or about a half dozen during the 24 hours.

During 1882, when there was an Offshore SW. Monsoon, as much as 460 inches of Rain were registered at some coffee estates along the ghat. The North East Monsoon seldom lasts longer than three weeks, and as it has to pass over the whole continent of India before it reaches this ground, its influence here consists of two, three or half a day. Showers daily, and it generally ceases about the end of October, but occasionally continues until the middle of November. From this on till
End of February, or more frequently till about the middle of March, no rain falls, except a shower at the end of the year and this is more often absent than otherwise. About the middle of March the early or blossoming showers begin and are generally confined to 3 or 4 during the month with a fall of 1/2 to 2 in. of rain. April and May are showery - somewhat similar to the corresponding months in England, and the rainfall varies from 1/2 to 1 in. each month. During the heavy South West monsoon, for days together, the temperature remains the same throughout the 24 hours, or from 87° to 73° Fahrenheit. From November to middle of February the weather is decidedly cool - the temperature averaging from 60° to 63° at night and 71° to 75° at midday, and about the end of the year sometimes falls to 57° occasionally below 50°. During the hot season - or from 25 March till end of May the average temperature is 91.5° at night and 83° at midday. During the first two and half months of the year the wind is generally from the East & very dry and frequently very strong, but there is almost daily a light westerly or sea breeze for 1 to 3 hours at evening and this gradually sets in earlier as the season advances, so that during the latter portion of March it begins about 3 p.m. and in April at about noon, and is the prevailing wind during May. It comes...
June to November the wind is S.W. to W. with frequent squalls; and during the last two months the wind is light and easterly during the early part of the day and westerly during the latter portion.

Along the western side, except where filled in or affixed to, the land is covered with heavy forest; and along the eastern side of the plateau there is also a belt of forest from 5 to 20 miles broad, which is by far the most fertile part of Wynaad and during February and March is peculiarly savage and wild. All the Central portion consists of low flat-topped hills covered with grass and a little scrub jungle, with intervening flat land called paddie field on which rice is grown by flooding during the rainy season.

The geological formation of Wynaad corresponds with the metamorphic series of rocks and consists for the most part of Gneiss—generally in a decomposed condition on the surface, with a considerable show of Feldspar, some Hornblend, beds of Chalcedony, numerous beds of quartz and occasional beds of Sericite.

The country is traversed by several large and numerous small perennial streams and is everywhere well wooded.

The elevation of Manantoddy, which is about the average of the plateau, is 2550 feet, but some of the flat peaks rise to a height of 6762, 6806, 6797, 7864 only 7677 feet.
The Festival season then corresponds with about the middle of the dry season when the soil, after having been soaked with rain for about five months, has become thoroughly dry, and the degree of insalubrity depends upon the extent of this drying up process and the absence of rain: as soon as the showers of March and April have set in the climate becomes more healthy in proportion the range.

This brings us to the consideration of the source of the malarious poison and the manner in which it is conveyed into the system, but as these are subjects on which I have much to say and on which I hope some day to communicate my views to the profession, I shall now confine myself to a few statements only. No doubt air and water are the chief mediums by which it is taken into the system and while the majority of attacks are probably due to the former method, there can be little doubt, in my opinion, that the latter means, generally produces the worst or most violent form of the disease. After the monsoon rains have ceased the soil gradually dries, and as this continues the poison rises into the atmosphere, which becomes more and more charged as the drought continues and in proportion to the power of the sun rays in the drying up process. During Mr. Dickson's time the sun's power is less strong. The soil continues moist, and the atmosphere...
remains fairly healthy, while on the other hand the water in the smaller streams, during spring, often becomes contaminated to a degree which makes it dangerous to drink. Later on, as the sun's power increases the poison is generated more rapidly, and the atmosphere becomes so charged with the fever producing matter that almost everyone is attacked with fever—even those who never drink water or only after it has been boiled. With the first showers during March, the poison is washed down to the Davit, and the atmosphere is relieved of more or less of its deleterious matter, and becomes correspondingly less insanitary. On the other hand the water is not improved, but rather rendered more impure, by these light showers, and becomes supersaturated in some of the smaller streams—especially with a lengthy surface exposure & that it is almost fatal to drink. It may be however that the effect of the system of water thus contaminated is more often to cause diarrhoea & dysentery, either accompanied with fever or otherwise. Later on, i.e. during April & May, the few heavy showers washes these streams thoroughly out, and the water again becomes comparatively pure or drinkable.

During the Dowlj West Monsoon there is very little fever, but there is the one exception (in my experience) of 1882, when after an ordinary
Dry season, both as regards its character and healthfulness, there succeeded the heaviest SW. monsoon that had been experienced for at least half a century: during June and July the rain was almost continuous & very heavy. The Country was flooded; landslips were common; and the soil became so saturated that the surface was converted into a spongy mass with springs bubbling up everywhere; and during July there was as severe an outbreak of fever as generally experienced during the dry season. At first I was utterly at a loss how to account for this, but I think it was simply due to the escape from the soil of an unusual quantity of poison along with the pent-up waters, and not to any development of malaria, as in the dry season. Any such abnormal condition of the weather would in itself, or its influence on the system, without any increase of the poison, produce a greater number of attacks, but not of severe character, nor to the extent experienced on that occasion.

With regard to the origin of these gums, one might naturally suppose that the lands under wet cultivation—the so-called paddyfield—kept flooded for several months, and then left to become thoroughly dry—would be the most fertile source of the fever producing element, but such is not the case: on the contrary these lands are the most healthy of the District.
The condition most conducive to fever is a soil recently cleared of forest and thoroughly burnt over; and this probably explains why the eastern forest is commonly more unhealthy than other parts, as the jungle fires run through it during July & March and burn the undergrowth. When making a coffee estate it is a well-known fact that the place will be very unhealthy for some time after the felling has been burned; and this applies pretty equally to all parts of the district.

Popular opinion attributes fever to a variety of causes - conditions from the scent of the coffee blossom or wetting the head, to the action of evil spirits, but it is necessary to consider any of these at present. On the other hand, popular ideas regarding precautionary measures and principles of treatment are, in some matters, deserving of much respect, and I may here specially commend the custom of growing Plantains (Musa) about their dwellings as undoubtedly these trees do exercise a beneficial influence in rendering their habitations less unhealthy than elsewhere. Their drinking water is nearly always taken from wells, which is also a wise precaution—only the migratory portion of the population (which, by the way is rather numerous), drink water from running streams & suffer from fever in a larger proportion.
than the permanent residents. The general custom of change of locality as a remedial agent in obstinate fevers is also worthy of imitation, as it is often attended with most beneficial results, even when the distance is very short, and fever prevailing there to as great an extent as at the place itself.

Another interesting thing in regard to the origin of malaria is that the same locality is not always the most feverish. Within throughout the season or from year to year, a fact a place that is most unhealthy one season is often much less so or even comparatively healthy during another season. On the other hand the fever throughout the district usually carries much the same general character at the same time, although it varies immensely at different periods of the year or from season to season.

I should have explained with regard to the use of the word fever that it is universally employed here to signify malarial fever, and this habit has probably arisen from the circumstance that almost no other fever is known in the district. During the 17 years I have been in Wynned I have not seen a case of dysentery or typhoid fever. I have not infrequently had cases of remittent fever with typhoid symptoms, but never anything approaching real typhoid.
Another interesting study with regard to the action of malaria is that some individuals have resided here for several years without the slightest attack of fever, but such persons are very often attacked with fever of a severe and obstinate description on change of residence—especially during or similar climate. Some persons who escaped fever for years afterward became the most susceptible to attack; any shock to the nervous system sometimes to be followed by fever, if residing in the place for any length of time; accidents are always followed by malarial fever, and this circumstance has to be taken into consideration in major operations. Even during the healthy season, I first treat the patient for fever if time will admit, and if not I alone administer quinine in suitable quantity. For an attack of malarious fever, if at all severe, and generally it is both severe and trying) is of course very liable to prove fatal in the weakened state of the system and serious by first intention cannot be expected. While not infrequently there is temporary suspension or stopping of the part: I have had many patients who have been struck down with severe fever on receipt of bad news. Sudden changes in the weather is attended with similar results; and I need scarcely add that any abuse of the system such as the taking of

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is alike conducive to an attack of fever. I may say, in a general way, that those of a nervous temperament are the most susceptible to the influence of malaria.

With regard to the period of latency, this completely depends upon the quantity of poison taken into the system, and varies from a few hours to several days, but there is a local opinion, which prevails somewhat, that assigns to it a period of 12 days. When I arrived in the country early in 1868 the fever season had fully set in and attacks were numerous, so that I first saw it in its worst form. Generally, there was no trouble in its diagnosis as intermittent fever, but what astonished me was the peculiar and powerful influence exerted on the alimentary system. Generally there was the most obstinate constipation, which could only be overcome with the most powerful drastic purgatives & enemas combined; and from the beginning of the cold stage until the moist stage set in, there was incessantconsticing of the most violent description and as uncontrollable as sickness, which at times lasted for 6 to 10 hours, the patient thoroughly exhausted. The symptoms generally were first a feeling of unnatural debilitation, then acute pains (often very severe) in the muscles, especially...
of the extremities back and paining the chest, and after about two to four hours, there was a feeling of chilliness which rapidly increased to severe agitation. Nausea supervened, quickly followed by the ejection of a little mucous some biliary matter, and then the most severe retching every 3, 5 or 10 minutes. Whenever anything was taken into the stomach, sometimes a considerable quantity of biliary matter was brought up, but in the majority of cases the vomited matter consisted only of a little mucous each time, unless fluids were taken which were at once ejected. Sometimes the mucous was tinged with minute specks of blood, and after three or four severe paroxysms the vomited matter was of a dark color and occasionally brownish black. Though presenting coffee grounds it had an unpleasant smell, which was always an symptom. After a half to three hours a reaction set in: The skin became hot and dry or rough, a feeling of tightness across the chest, oppressive breathing, severe headache and general aching pains. Vomiting increased. Extreme thirst, and the brain more or less affected. Frequently there was delirium during the greater part of or throughout the hot stage which usually lasted 3 to 12 hours. At first a slight chilliness would appear on the head and neck, and almost at once the vomiting would cease, and fluids in small quantity would be gradually
tolerated by the stomach. Then the skin of the body would begin to act and extend to the extremities, and within half an hour or so the whole body would be bathed in perspiration. Generally, the excessive sweating would not exceed one or two hours, and a less copious sweating would continue for some time longer. As soon as the moist stage began, the delirium subsided, or rather changed into a deep sleep, which continued for several hours.

During the presumptory symptoms the pulse was not much affected, or only a little accelerated, but during the cold stage it sometimes fell to 60 beats per minute, and at other times occasionally rose to 120 or 130. In both cases small feathery sharp. During the hot stage it rose to 110 or 120. When the skin was full of exuding, except in longstanding cases, or the brain was much affected, when it small, weak or contracted, pressuring. During the cold stage, the tongue remained natural or slightly pale in color, or with a little curdy coating down the centre, while during the hot stage it became dry and sometimes fissured, and in bad cases, black at the tip, but rarely, much coated; and the lips were dry and parched—often deeply chapped.

After a severe attack, the patient was too weak to leave his bed, but in the milder cases in which the burning was not prolonged, after
perspiring for some time the patient was
sponged with tepid water containing a little
vinegar and after partaking of a cup of
chicken broth the patient (or a cup of
pepper water) he was able to rise and move.
In most cases the bowels could not act
on until after the paroxysm; in consequence
of the irritability of the stomach; and
when they did act the stools were generally
dark-colored and offensive. It was important
to have the bowels acted on as dark as possible
otherwise the influence of the quinine was
greatly impaired. The length of time interval
between the paroxysms varied in ordinary
cases from 8 to 20 hours during which the
pulse was slightly accelerated. The type
therefore was quotidian, but frequently the
fever did not return on the day following
in consequence of the lengthy period
occupied by the previous attack. Occasionally
there was a case of tertian or quartan fever;
but these were rare during the fever season
and still more seldom were two distinct
paroxysms within the 24 hours.
This irritability state of the stomach was the
most distressing feature of the fever. Very
unpleasant for the doctor, because of the
difficulty in controlling it; and in prolonged
attacks when summoned two or three times
and treated by the patient's friends to do
something to stop the vomiting, as he could
But endure it much longer, and the patient himself would beg to be given something that would either relieve him, or put him out of such suffering, it was poor consolation to both patient and friends to be told that it must run its course, would cease as soon as the moist stage set in. However it was seldom that at least some relief could not be given, and sometimes one thing succeeded another, but occasionally nothing had any effect whatever. I need not here enumerate all the different remedies employed on these patients, but I may say that everything was tried which had been heard of or science could suggest to me as likely to afford any relief. The principle of treatment adopted was mainly to induce action of the skin, and to this end flannel or warm whitewash water were applied to the extremities and body as fast as could be borne. I changed frequently: a moist cool napkin to the head, a bit of ice (if available) was swallowed occasionally, and a drink prescribed consisting of lime water—containing a small quantity of Bicarbonate of Soda—fresh milk, and Soda water in equal quantities: make a tumbler full—a sip to be taken occasionally: and a full dose of morphia was administered hypodermically. These were generally followed within a half hour with slight perspiration.
Sometimes propep - and the stomach would be relieved so as to admit other remedies being given.

To those who would take it (and generally it was preferred to anything else, I best tolerated by the stomach), a half a cupful strong pepper water was given; after a short time quinine could be administered - in small doses of 3 to 5 grm. every half hour to three hours, and in solution if possible, and by preference, in a mixture somewhat such as the following:


An oz. every hour, or

An oz. every two hours

The mist pepper mix. consists of 1/2 oz. black pepper in 1/2 oz. water and boiled for 20 minutes.

Some people could not be induced to take quinine in solution, and for these, sometimes for children, it was prescribed to be taken in milk.
as about the best vehicle for disguising
the taste. At the first I frequently presented
it in the form of a pill, but this mode was
not found satisfactory; and there are several
objections to giving quinine in an
undissolved state, and more so in the form of pill.
By even a moderate moist stage was induced
the fever generally passed off and did not return
for some hours, but occasionally, after keeping
a few minutes, the fever & vomiting would
return as severe as before. If the patient
became delirious the vomiting did not
cease until a comatose state was arrived at.
Very rarely this coma would gradually
increase or become deeper until life ceased,
but generally the moist stage followed in
due course — even when no remedies were
administered — and consciousness returned
or more strictly speaking the coma changed
to a deep sleep from which the patient could
easily be roused.
When quinine could not be given by the mouth
it was frequently administered instillation by
the anus with success, — especially when the vomitus
In cases of obstinate vomiting I tried
giving quinine in milk at once. Often
it was instantly rejected, but after repeated
attempts the fever was subdued & the vomiting
arrested. It was however very seldom the
patient could be induced to persevere in this
mode of treatment.
The great object in view during the intermittence was to keep up the patient's strength by giving a little strong chicken or mutton broth occasionally, and to get as much urine into the system as possible until the ears were affected. But notwithstanding all that could be done, sometimes the fever would continue to increase, that is, each paroxysm would be more severe than the last; but this was simply due, in my opinion, to the absorption into the system of a very large quantity of the poison all of which did not come into operation at once, and if no remedies had been given the fever would have been even much more intense. This I believe has been borne out by experience.

In the case of children the greatest danger arose from convulsions and unless measures were at once adopted death generally ensued: sometimes these were so severe at the first that death took place within a few minutes, but more frequently the first attack passed off, and they returned again after 10 or 15 minutes, and if nothing was done the child died during the second or third seizure; or if they did not return that day the convulsions might be expected to recur with greater violence during the next paroxysm of fever, and probably...
The majority of deaths were during this second attack. They almost always occurred during the cold stage. Generally, the patient could not be seen in time and the public were instructed to put the child's feet into water as hot as could be borne, with a little mustard added, and the legs bathed briskly. Simpson's (according to age) to the calves, neck of neck and other parts of the body. Cold applications included a brisk enema of castor oil & tepid water, if bowels were not relaxed, and oil by the mouth if no vomiting; and Quinine in doses proportionate in a little milk or syrup, or with the oil. It was important to act on the bowels as quickly. To administer Quinine at once.

The fevers were much the same each season, and this vomiting was such a distressing feature, and each year fresh means were employed to combat it. And, during 1871, I was determined that no effort should be spared. Considerable preparation was made by ordering apparatus (such as vapour baths etc.) and every reputed remedy from Rome. But when the season of 1872 came round, I found to my surprise that they were not required, as the character of the fever had completely changed. The cold stage was generally short, duration sometimes absent,
And there was very little perspiration. There was nausea, but vomiting was unusually slight. The aching pains were slight, not much headache. The bowels were often unaffected, and the pulse was not so rapid nor so prominent, and these features became more prominent the next following years. On the other hand the malaria seemed to exercise a more direct influence upon the brain & nervous system. There was great irritability of temper—often uncontrollable—so that the party would fly in a rage with the slightest provocation or often without any cause. There was a general state of nervous restlessness & feeling of fear, so that the patient could hardly be induced to sit anyone. Not infrequently there existed a fancifulness and hypochondriasis; and in certain instances mental aberration, which sometimes developed into permanent insanity. If the patient were asked when the fever began he would reply that he did not know, as it seemed to set in gradually, while another would answer that he seemed to have it always—an inward fever, which never left him. At other times he would say he had no fever, or none that he was aware of. There was no coldness nor perspiration, and seldom any high fever, rarely any aching pains.
No nausea: Bowels generally natural, or more often relaxed than constipated; often a little copious throughout. A feeling of lassitude & mental weakness—especially in regard to the memory: Sleepless nights, or more generally sound sleep from 10 P.M. till 1 or 2 A.M., and restless till 5 or 6, when drowsiness would return, and he would rise at 9 A.M. with a feeling of exhaustion, as if he had not slept: Always weak or severe indigestion, and sometimes cramp in the stomach: Stools dark colored & offensive: Urine scanty, high colored & deahling: Thin & dry & rough, & mostly the time hot, but more so for a certain period each day; and then the pulse generally rose, but rarely above 80 or 90, and of fair size but firm; while, during the greater portion of the day, the pulse would be slower, & often below 60, and at times less than 50 beats per minute: And small & rather sharp—often tending to thread: The tongue usually slightly coated: occasional cramps in the muscles & tendons—especially of the extremities. The treatment generally consisted in precisely a mixture of the Cinchona alkaloids, and Hydrochloric acid, nitre, piperine; arseniate of soda & Hymenodictyon; and Phosphorus with myronica, Belladonna & digitalis in the form of a pill: A little brandy & water,
of much depression, or a whisked egg
of 19 with a little brandy & milk—popular
called "Tiger’s milk."
Frequently there was anaemia,—and the
description of malarious fever seemed
to induce this condition very rapidly,—
and then a Quinine-Iron mixture was
substituted.
For the insomnia, camphor bromidrate
probably gave best results, but ammon.
Bromidrate with Sine & Indian Hemps was
about as efficacious. This was however
a most difficult disorder to remove, and
very often a sea voyage was necessary
was always satisfactory, as it was also in cases
of mental derangement.
If the bowels were relaxed a mixture of
Quinine, Sulphuric or Nitric acid, Nuxvom.,
Sulphate of Iron with Anthrachoticum or Cathartics
with Logwood, and sometimes a leadup
pill twice or thrice daily, were generally
successful. If the fever was accompanied
with Dysentery, the Quinine & Iron mixture
was used, and 15 to 20 grs. of Stryphnum
two or three times daily. Sometimes an
dissolution of terpentine & castor oil was
most effective, but nothing exercised
much influence on the bowels until
the fever was subdued by the other antipersis
twith regard to these Complications, in
A short article such as this, it is necessary to confine ourselves to a few of the most prominent, and perhaps the most common. Of these has been Pneumonia; and throughout, it has also been by far the most fatal. If the patient was seen during the early stage of the or before the inflammation became extensive, and the fever was not severe, the treatment was generally successful, and recovery was often very rapid if the party was in fairly robust health. But if there was much malaria in the system, the inflammation extended rapidly, and unless the fever was quickly subdued, the disease usually ran a rapid course to a fatal issue. Probably in no other disease could there be a nicer discernment exercised in the employment of remedies, than in the use of Quinine in these cases. With the return of the fever the lung disease advanced, whatever was done to check it, while as soon as the fever was subdued, the lung affection improved, under fairly favourable circumstances. It was necessary then to administer Quinine freely from the first, but in small quantities at short intervals, rather than in large doses occasionally, which was most unfavourable in my experience, and its effect watched.
So as not to depress the system unduly; and only in sufficient quantity to prevent the fever. As soon as the ears are affected, it should be at once stripped or given only in very small quantities, and the patient examined frequently for any return of the fever, so as to anticipate an attack, for in many cases a single return was fatal to the patient; and, as already shown, the pulmonary symptoms were slight and often altogether absent in this description of fever. In almost all cases stimulants were necessary from the first—strong broths, or beef tea, & whisked egg brandy; and if the stomach were much disturbed nourishing enemata were required. I need not describe the symptoms and course of the disease, as these are much the same as in ordinary pneumonia; only the disease runs a much more rapid course—often terminating fatally in 24 or 36 hours; and on the other hand, recovery is also rapid in those cases in which the inflammation has not proceeded far. During the first few years that this disease became so common, i.e. after 1872, most of the cases were fatal, and I became quite disheartened in trying to contend with it; and I attribute my succeeding success to the employment of Arnica and the administration of Quinine hypodermically.
Instead of by the mouth. In my experience the influence of Arnicia on the inflammation has been as marked, as the effect of Quinin on malarial fevers. I usually prescribe it in 10 to 15 minims every 2 hours, in division of Ophthalmitis along with Vitriols Ether Vesta of Ammonia. — Rx Fine Arnicia 3 dr 1/2 1/2 act nit fit

Lig. amm. act iii

Dose Ophthalmitis 1/2 dr

20 minims every 2 hours.

In some special cases I have also been employed. For some years I could not employ Quinin hypodermically, in consequence of the extension of dyspepsia it produced, and these only were not alarming to the patient, but they were also most difficult to bear with frightful fears. But its employment in this manner was, in my opinion, so desirable that I persisted in the effort, until I succeeded in producing a solution, with Acid Vitriol Potassa — containing 197 in 2 M — which could be used with safety, and I now give Quinin in this manner (in 5 to 10 grains), in all severe attacks of fever. When there is much arrangement of the stomac or great distaste for the drug, it was not only important in cases of Pneumonia, but also when the patient was in a constitutional condition. — I wish it had been available for trial on the genus prior to 1872, and I would have used it at the beginning of the Paroxysm.
Every year during the Fever Season patients have frequently been brought to Hospital in a coma-like state with jaws locked. And formerly it was almost impossible to get sufficient Quinine into the System by the Mouth. Hence, to subdue the Fever, and these cases were generally fatal; but, after injecting into the arm 20 minims of the hypodermic Solution of Quinine with 250 c.c. of hypodermic Solution of Morphia a few times, the patient recovered consciousness & rapidly improved.

The most common accompanying symptom of these fevers has probably been Dropsey with suppression of urine; the quantity sometimes not exceeding 5 oz. in the 24 hours; and when left to itself, this disorder rapidly terminated fatally; but if brought under treatment within any reasonable time, a favourable prognosis might be entertained. I have had patients recover in whom the Dropsey was general, and so great that the extremities were several times natural size: the abdomen enormously distended; and great oppression & difficulty of breathing; the face & swollen that the features were gone; and only 3 or 4 c.c. of urine passed in the 24 hours. The treatment employed has
been turpentine emulsion (10 to 15 ml twice or thrice daily), and Cinchona bark, Iron, and Opium. I must say I at first entertained grave doubts about using turpentine in these cases, but I soon found it was not only safe but attended with the best results, while without its use, the disease was frequently fatal. The greatest aim, however, in all these cases should be the removal of the fever.

My time is too short to enter upon many other complications or secondary affections, and permanent derangement of organs produced in certain organs; nor to discuss the relative value of various antiperiodics, the merits of which have been tested; nor of several other matters connected with malaria; but I cannot pass over a most troublesome and distressing ailment, evidently of a miasmatic origin, which has always been more or less common in this part of the country and which, although it has not been attended with any serious result, it is a gratification to me to have brought under the influence of medical treatment. The coryza I refer to has been accompanied with fever or otherwise, but more frequently there has been slight fever, and I do not remember it being associated with a severe attack of either intermittent or
The fever would be only once attack, while on other
occasions it would be only after delirium. During
the season or after several years it would
frequently be brought on by a fever. During
these times the delirium was usually followed by
some fever. Generally speaking, it might be
called a great misfortune. The fever
the season of the year, would last a long time. The
derby, and finally the delirium. Although we
knew of the fever in the family, it
occurred at that stage in which almost anyone
was exposed to the pandemic. It
was greatest among those who were
exposed to it.
of possessing; and such persons, having failed to relieve themselves, and the Doctor having been called in, expect to see convincing proof of the soundness of his advice, or unpalatable results from the remedies prescribed; and, if he fails to afford perceptible relief quickly, he is regarded (often in the most kindly spirit), as possessing a very imperfect knowledge of his profession, and is heavily to be trusted under any circumstances. This is more especially true in a purely local disorder such as this, where the patient feels quite well and able to attend to his duties, but is confined to his room simply from incessant dripping and discharge from the nostrils. Generally, the eyes are unaffected—at least for some time, being slightly and not congested; no headache or other pain, and the pulse little or not at all altered. In fact, in the majority of cases, the serous membrane alone seemed to be affected; and if the discharge continued long, the mucous membrane remained red and sore for some time. At first it thoroughly puzzled me: Some medical men thought it was Asthma, but it mainly differed from this, in that there was no asthma. At first I thought it was due to the action of the Sun, or a kind of Sun Fever. To the mean...
raw or adulterated spirits. It disturbed
the stomach, &c., but I very soon came
to the conclusion that it was caused by
some kind of miasma. I do not know
what remedies I did employ, but none
of them seemed to have much effect
except Quinine - at 12 p.m.; and the result
of this was to keep the patient from his
work for one day, longer at least. Although
I used many things locally, for a long
time, it did not occur to me to try
Quinine, which I found acted like a
charm. It may be used alone, but I have
preferred combining it with a little morphia
in finely powdered form. Generally, one or
two pinches were sufficient, and rarely a
second application necessary.
Eucalyptus oil (m.e.) also gave fair results, or
perhaps equal to the Quinine draught.

With regard to the antiperiodic properties
of the Cinchona alkaloids, I may say that
Quinidine, Cinchonidine, Cinchonine
Amorphous Quinine, had little effect
upon the fevers prior to 1872, while, on the
fevers since that date, their action has
been nearly, if not quite as satisfactory
as that of Quinine; and for some time
I have ceased to prescribe Quinine, except
for hypodermic injection. And that
Quinine is so cheap, their employment did
not so much an object of consideration, but when Quinine was Rs. 12 and Rs. 14 per oz., it was, in a poor country like India, beyond the means of the majority, and a cheap, efficient substitute, was of national importance. The "Chinchona Febrifuga" (mixed alkaloids), manufactured at Howrah, by the Government of Bengal, is, of course, a very good antiperiodic, but I suppose very few would pronounce it pleasant to take. In fact with the majority of patients, it is almost useless, when given simply, or in the ordinary way, from their inability to retain it in the stomach. In this respect, it is about on a par with Amorphous Quinine, and in the treatment of the fevers prevailing at present, their influence is about equal.

When the price of Quinine was so high, I was compelled to try, by every means possible, to make these antiperiodics more palatable, and I think the combination with Black Pepper has been fairly successful—25 cts. of the Mist. Piper nigr. in 12 oz. of mixture, and sometimes it is advantageous to add 1/2 cts. of Mentha.

Thus prescribed I have had little or no difficulty in making use of these cheaper products of the Chinchona bark, in fact they are generally tolerated
by the stomach nearly as kindly as Quinine, and for some years past, I have
prescribed either Cinchona Febrifuge or
Aroniophorous Quinine, almost exclusively,
at the Hospital & Dispensary, and to a large
degree in private practice.

For children I prefer Cinchonine to any
other of the alkaloids.

Infusion of the bark of Hydromedicty
Scelsum, which is found in the local jungles,
is quite as efficaceous as Infusion of Quinin
and is more readily taken; and is an
efficient substitute in mixtures.

A. Ewerton Esq

Manawatody
12 June 1887