Sothr

An ~~incomplete~~ description of the Malarious Fevers of Wynaad

When I arrived in Wynaad at the end of February 1886 the so called unhealthy season had already set in, that is to say, the Feverish season, which usually begins about the middle of February and continues untill the South west 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 unhealthy 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 unhealthy season of Wynaad, when the district is strictly avoided by all who have to pay it 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 severe fever seldom exists longer than about six to eight weeks, - i.e, during march and part of February & 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 fevrish 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 1st of June to the 1st 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 continues, almost without intermission, 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 & 300 inches along the western ghats, to 50 or 60 inches along the Mysore 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 exceptional S.W. monsoon, as much as 460 inches of Rain were registered at some Coffee Estates along the ghats. 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 Coonoor, its influence here consists of two, three or half a doz. showers daily, and it generally ceases about the end of october, but occasionally continues up till the middle of November. From this on to the

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 & 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 3 in. each month. During the heavy South West monsoon, for nearly days together, the temperature remains the same throughout the 24 hours, or from 67° 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 54°, occasionally below 50°. During the hot season - or from 1st march till end of may the average temperature is 71.5° at night & 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 midday, and is the prevailing wind during may. From

June to November the wind is S.W. to W.by.N. 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 Ghats, except where filled for Coffee Estates, 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 feverish part of Wynaad and during February & March is scarcely safe to enter. All the Central portion consists of low flat-topped hills covered with grass and a little scrub jungle, with intervening flat land called paddyfield 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 Hornblende, beds of Steatite, numerous veins of quartz and occasional beds of Laterite.

The Country is traversed by several large & numerous small perennial Streams and is everywhere well watered.

The Elevation of Manantoddy, which is about the average of the plateau, is 2250 feet, but some of the Ghat peaks rise to a height of 6762, 6806, 6797, 7364 and 7677 feet.

The Feverish 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 & April have set in the climate becomes more healthy & in proportion to the rainfall.

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 (when I have time to devote to them) to communicate my views to the profession, I shall now confine myself to a few statements only. No doubt air & 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 virulent 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 & more charged as the drought continues, and in proportion to the power of the suns rays in the drying up process: During Nov. Dec & part of the suns 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 Jany, often becomes contaminated to a degree which makes it dangerous to drink. Later on as the suns 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 earth, and the atmosphere is relieved of more or less of its deleterious matter, and becomes correspondingly less insalubrious. On the other hand the water is not improved, but rather rendered more impure, by these light showers, and becomes so noxious in some of the smaller streams — especially with a lengthy surface exposure &c, that it is almost fatal to drink it. I may say however that the effect on 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~~ showers washes these streams thoroughly out, and the water again becomes comparatively pure or drinkable.

During the South 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 & healthiness, there succeeded the heaviest S.W. monsoon that had been experienced for at least half a century: during June & July the rain was almost continuous & very heavy: the country was flooded: land slips 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 out-break of fevers as is 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 miasm 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, by its influence on the system, & without any increase of the poison, give rise to a greater number of attacks, but not of so severe a character, nor to the extent experienced on that occasion

With regard to the origin of these fevers one might naturally suppose that the lands under wet cultivation - (the so called paddy fields) that is, - 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 denuded of forest and thoroughly burnt over; and this probably explains why the eastern forest is so much more unhealthy than other parts, as the jungle fires run through it during Febry. & 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 washing the head &c, to the action of evil spirits, but it is unnecessary 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 & they 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 they left.

Another interesting thing in regard to the origin of malaria is that the same locality is not always the most feverish — either throughout the season or from year to year: in 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 displays pretty much the same general character at the same time, although it varies immensely at different periods of the year & 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 19 years I have been in Wynaad I have not seen a case of Typhus or Typhoid fever. I have not unfrequently 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 or obstinate description on change of residence – especially to Europe or similar climate: Some persons who escaped fever for years, afterward became the most susceptible to attack: any shock to the nervous system is certain 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 at once administer quinine &c in suitable quantity; for an attack of malarious fever, if at all severe, (and generally it is both severe & unyielding) is of course very liable to prove fatal in the weakened state of the system; and union by first intention cannot be expected, while not unfrequently there is extensive suppuration or sloughing of the part: I have had many patients who have been stricken down with severe fever on receipt of bad news &c: Sudden changes in the weather is attended with similar results; and I need scarcely add that any abuse of the system such as debauch &c

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 inter-
mittent fever, but what astonished me
was the peculiar & powerful influence it
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 incessant vomiting
of the most violent description and as
uncontrollable as seasickness, & sick and
sometimes lasted for 6 & 10 hours & left
the patient thoroughly exhausted.
The symptoms generally were, first a feeling
of unnatural exhilaration, then aching
pains, (often very severe) in the muscles, especially

of the extremities & back and yawning & stretching
and after about two to four hours, there was a
feeling of chilliness which rapidly increased
to severe ague: 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
mucus each time, unless fluids were taken
which were at once ejected. Sometimes the
mucus was tinged with minute specks of
blood, and after three or four severe paroxysms of similar
the vomited matter was of a dark color, and
occasionally brownish black & thick, resembling
coffee grounds & of an unpleasant smell,
which was always an unfavorable symptom. After a
half to three hours a reaction set in: the
skin became hot & dry or rough: a feeling
of tightness across the chest & oppressive
breathing: severe headach & 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 moisture
would appear on the head & neck, and almost
at once the vomiting would cease, and fluids
in small quantity would be gradually

tolerated by the stomach: Then the skin on 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 profuse perspiration would not exceed one to 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, if undisturbed, continued for several hours.

During the premonitory 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 86 or 90. It was in both cases small & rather sharp. During the hot stage it rose to 110 or 120 & even 140, & was full & bounding, except in long standing cases, or the brain was much affected, when it was small & weak or contracted & resisting.

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 & sometimes fissured, and in bad cases, black at tip, but rarely much coated; and the lips were dry & 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 vomiting was not prolonged, after

perspiring for some time the patient was sponged with iced water containing a little vinegar and after partaking of a cup of Chicken broth & bit of toast (or a cup of pepper water) - he was able to rise & move about. In most cases the bowels could not be acted on until after the paroxysm, in consequence of the irritable state of the stomach; and when they did act the stools were generally very dark colored & offensive. It was important to have the bowels acted on as early as possible otherwise the influence of the quinine was greatly impaired. The length of time intervening 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 or weekly, but these were rare during the fever season and still more seldom were two distinct paroxysms within the 24 hours.

This irritable 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 entreated by the patients friends to do something to stop the vomiting, as he could

not 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 & 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 & sometimes another, but occasionally nothing had any effect whatever. I need not here enumerate all the different remedies employed or the results, 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 flannels wrung out of hot water were applied to the extremities and body, as hot as could be borne, & 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 quantity to 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 profuse – and the stomach would be relieved so as to admit of other remedies being given.
To those who would take it, (and generally it was preferred to anything else, & best tolerated by the stomach), a half a cup of strong pepper water was given; & after a short time quinine could be administered – in small doses of 3 to 5 grs. every half hour to three hours, and in solution if possible, and by preference, in a mixture, somewhat such as the following –

℞ Quinine Sulph. gr xxviii
Acid Hydrochl dil ℳ xxviii
Tinct Nucis vom ʒiss
" Hyosciam. ʒii
Potass nit gr xxxii
Mist Piper nig. ℥iii
Liq Sodae arsenit ʒiss
Infus Hymenodict ad ℥viii
Terebene ℳ xxiv
or Eucalyptus

An oz. every hour.

or.

℞ Quinine Sulph gr xl
Tinct Ferri Perchl ʒiss
" Nucis vom ʒii
Aq. mist Pip. ad ℥viii
Liq Sodae arsenit ʒii (or not)

An oz every two hours

The mist piper nig. consists of ½ oz of black pepper (in fine powder) in 10 oz of water & boiled for 10 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 prescribed 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 es in the form of a pill. If even a moderate moist stage was induced the fever generally passed off and did not return for some hours, but occasionally after perspiring 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 in solution by the arms with success, — specially when there was coma.

In cases of obstinate vomiting I tried giving Quinine in Milk at once. Of course 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 intermission, was to keep up the patients strength by giving a little strong Chicken or mutton broth occasionally, and to get as much Quinine 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 to say, 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 from Convulsions and unless active 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 Childs feet into water as hot as could be borne, with a little mustard added, and the legs bathed briskly: Sinapisms (according to age) to the calves, nape of neck and other parts of the body: Cold applications to the head; a brisk enema of castor oil & tepid water, if bowels were not relaxed, and oil by the mouth, if no vomiting; and Quinine & Laudanum in doses proportionate to age in a little milk or Syrup, or with the oil: It was important to act on the bowels as quickly as possible, & to administer Quinine at once. The Fevers were much the same each season; and this vomiting was such a distressing feature that it required the utmost consideration; 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 bath &c), and every reputed remedy from home; 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 unusual: 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 pronounced 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 restlessness & often stately nervousness & feeling of fear, so that the patient could hardly be induced to see anyone: not unfrequently there existed a paucipulness and Hypochondriasis; and in several 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 so 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 ~~a~~ fair apetite 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 8 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 & scalding: Skin dry & rough, & most of the time hot, but more so for a certain period each day; and then the pulse generally rose, but rarely above 90 or 100, 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 thready: The Tongue usually slightly Coated: occasional cramps in the muscles & tendons - especially of the extremities.

The treatment generally consisted in prescribing a mixture of the Cinchona alkaloids, acid Hydrochloric, mist. piper nig., arsenate of soda & Hymenodictyon; and Phosphorus with nux vomica, Belladonna & Digitalis in the form of a pill: a little brandy & water,

of much depression, or a whisked yolk of Egg with a little brandy & milk - popularly called "Tiger's milk".

Frequently there was anaemia, - and this description of malarious fever seemed to induce this condition very rapidly - and then a Quinine-Iron Mixture was substituted.

For the Insomnia, camphor monobromide probably gave best results, but Ammon. Bromide with Zinc & Indian Hemp 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, Henbane, & Sulphate of Iron with Andrographis, or Catechu with Logwood, and sometimes a Dover's 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 Ispaghul seeds two or three times daily. Sometimes an emulsion of turpentine & castor oil was most effective, but nothing exercised much influence on the bowels until the fever was subdued by Quinine or other antiperiodics.

With regard to these complications, in

a short article such as this, it is necessary to confine oneself 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, 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 run 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 each 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 quantity 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 subdue the fever: As soon as the ears are affected it should be at once stopped 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 very many cases, a single return was fatal to the patient; and, as already shown, the premonitory symptoms were slight & 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 to disorganize. 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 & the administration of Quinine hypodermically

* It has been much less common during the past 3 or 4 years.

instead of by the mouth. In my experience the influence of arnica on the inflammation has been as marked, as the effect of Quinine on malarial fevers. I usually prescribe it in 10 to 15 minims every 2 hours, in Decoction of Ispaghul ~~a~~along with Nitrous Ether & acetate of ammonia. — ℞ Tinct arnicae ʒiii
Spts aeth nit ʒii
Liq amm. act ʒiii
Decoc Ispaghul ad ℥vii
Tinct Lavandul Comp ʒß
M
an ℥ every 2 hours.

In some special cases Salines have also been employed.
For some years I could not employ Quinine hypodermically in consequence of the extensive & deep ulceration it produced, and these were not only alarming to the patient, but they were also most difficult to heal & left frightful scars: But its employment, in this manner, was, in my opinion, so desirable that I persisted in the effort, untill I succeeded in producing a solution, with acid & Liquor Potassa — containing 1 gr. in 2 M. — which could be used with safety; and I now give Quinine in this manner, (in 5 to 10 grains), in all severe attacks of fever, & when there is much derangement of the stomach or great distaste for the drug. It was not only important in cases of Pneumonia but also when the patient was in a comatose condition. — I wish it had been available for trial on the fevers 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 comatose state & the jaws locked; and formerly it was almost impossible to get sufficient Quinine into the System, by the mouth & anus, to subdue the Fever; and these cases were generally fatal; but, after injecting into the arm 20 minim of the hypodermic Solution of Quinine with 2 to 4 M. of Hypodermic Solution of Morphia, a few times, the patient recovered consciousness & rapidly improved.

The next most common accompaniment of these fevers has probably been Dropsy 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 dropsy 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 so swollen that the features were gone; and only 3 or 4 Oz. of urine passed in the 24 hours. The treatment employed has

been terpentine Emulsion (10 to 15m twice or thrice daily), and Quinine with Iron and Opium. I must say I at first entertained grave doubts about using terpentine 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 several other complications or secondary affections, and permanent derangement of or lesions 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 & 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 light fever; and I do not remember it being associated with a severe attack of either intermittent or

remittent fever. It was generally confined to the daytime: at least, as soon as the party got to sleep, it ceased; and usually it did not return until the following day. Sometimes there would be only one attack, while on other occasions it would return at about the same time day after day for three or four days or a week; and not unfrequently the individual would have a return at varying intervals throughout the season, or for several months. Some persons suffer from it every year during the fever season, while others have only been troubled with it one year, or not again for some years, although residing in the same locality all the time. Generally speaking it might be taken for granted that an attack would be followed by others during the season. For several years this was a great worry to me, and possibly also, the cause of some annoyance: Most Europeans in India make the science of medicine the subject of considerable study, and very often arrive at that stage in which their knowledge of diseases & their management is, in their opinion, almost perfect, or far greater than anyone more experienced in the practice of medicine, would think

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 unfailing results from the remedies prescribed; and, if he fails to afford perceptable relief quickly, he is regarded (often in the most kindly spirit), as possessing a very imperfect knowledge of his profession, and scarcely 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 & able to attend to his duties, but is confined to his room simply from incessant sneezing & discharge from the nostrils. Generally the eyes are unaffected - at least for some time, only slightly, and not congested: No headache or other pains, and the pulse little or not at all changed: in fact, in the majority of cases, the Schneiderian membrane alone seemed to be affected; and if the discharge continued long, the mucous membrane remained red & sore for some time. At first it thoroughly puzzled me: Some medical men thought it was Hay Fever, 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 use of

raw or adulterated Spirits: To derangement of the Stomach, &c.; but I very soon came to the Conclusion that it was caused by some Kind of miasm. I do not know what Remedies I did employ, but none of them seemed to have much effect except Quinine – 8 to 12 grs. –; 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 Starch. Generally one or two pinches were sufficient, and rarely a second application necessary.
Eucalyptus oil (mxv), 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. Now that Quinine is so cheap, their employment

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 "Cinchona Febrifuge" (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 singly, or in the ordinary way, from their inability to retain it on 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 — 2 to 3 oz. of the Mist. piper nig. in 12 oz of mixture, and sometimes it is advantageous to add ℥ii of Tinct. of Henbane.

Thus prescribed I have had little or no difficulty in making use of these cheaper products of the Chinchona barks — In fact they are they are generally tolerated

by the stomach nearly as kindly as Quinine; and for some years past I have prescribed either "Cinchona Febrifuge or Amorphous Quinine, almost exclusively, at the Hospital & Dispensary; and to a large extent in private practice.

For Children I prefer Cinchonidine to any other of the alkaloids.

Infusion of the bark of Hymenodictyon excelsum, which is found in the local jungles, is quite as efficacious as Infusion of Cinchona and is more readily taken; and is an efficient substitute in mixtures.

A. Hewston B.A., M.B., C.M. &c

Manantoddy
12 June 1887