

AND

INAUGURAL DISSERTATION,

ON

*The Malarial Type.*

SUBMITTED TO THE

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FOR THE DEGREE OF

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BY

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To

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In the  
University of Nashville,

This Inaugural dissertation

Is respectfully inscribed,

By his

Grateful friend,

The Author.

The Malarial Type  
or  
Simple Intermittent Fever.

Intermittent fever is a specific disease, requiring a specific medicine for its relief; it is characterized by febrile paroxysms recurring at stated intervals, and by absence of the fever between the paroxysms.

Before proceeding to give an account of the cause producing this disease, and the treatment principally resorted to for its relief - I think it not out of

place, to give a short topographical sketch of the district in which we have had occasion to see this disease in the last few years in all of its varieties—thereby aiding us to some extent; in forming correct views in regard to its predisposing cause.

Topography—The river is a beautiful little stream, receiving its origin in the Cumberland mountains, running thence a serpentine course principally south west, through a picturesque and densely populated country, and emptying its waters into the Tennessee river, at the head of the muske shoals in north Alabama,

Its banks are generally low and densely shaded, with a thick growth of timber of various kinds; extending back into a level plain, varying in width from

six hundred yards to one and even two miles; the greater portion of this bottom land has been cleared and is now in a fine state of cultivation.

In travelling through these bottom lands, as they are termed; we frequently find marshes, ponds, and branches, that scarcely have descent enough to drain themselves at a low stage of water - further on we find these level lands terminating suddenly by high ridges.

The inhabitants of these ridges, flattered themselves that their localities are free from all miasmatic emanations, and all other supposed causes of disease, from the erroneous idea long entertained among the common people, that low grounds are unhealthy; therefore high lands must of necessity be healthy, which

proved not to be altogether the case during the visitations of this disease; although they did not suffer so materially as did the inhabitants of the valley beneath them. High localities, are not entirely exempt from the causes which produce this disease, as was shown by its frequent occurrence in such places — yet it did not occur in a form so malignant, and yielded much more to proper treatment.

The soil of these low lands, is deep and very productive, consisting of sand and alluvion, and is highly valued for its power in producing, Corn, Cotton, Tobacco, Wheat, Rye, Oats and Barley, which are the chief products of the country.

That portion of these lands not in cultivation is heavily timbered with

such growths, as are peculiar to rich lands,  
viz; Ash, Beech, Hickory, Maple, Black, Red  
and White Oak.

As previously stated, the banks of this  
river are generally low, and very subject  
to overflow in the winter and especially  
in the spring; this has occurred suc-  
cessively every year within my recollection,  
and as the water recedes into its proper  
channel, it leaves all the basins which  
have been overflowed, filled with water  
with no outlet whatever; so that it  
must of necessity remain until it is  
absorbed by the earth.

Probably two or three months elapse be-  
fore this takes place, when a wet sur-  
face is left exposed to the direct rays  
of the sun, which surface dries very  
rapidly, especially of a dry summer,

and forms a hard figured crust with  
water beneath it,

Causes— The causes of this disease, are  
divided into predisposing and exciting— the  
exciting causes are debility, intemperance,  
previous disease, exposure to Cold &c.

The predisposing cause is malaria.

Malaria is a specific poison, producing  
specific effects upon the human system.  
It consists of certain invisible effluvia  
or emanations from the surface of  
the earth.

It is utterly imperceptible to our senses,  
but we suppose it to exist in a gas-  
eous form involved in the atmos-  
phere arising from the earth's surface,  
Its existence is perceptible only by its  
obnoxious effects upon the system,  
which effects seem to produce certain



specific diseases, such as intermittent, remittent and congestive fevers, and some are disposed to attribute epidemic dysentery to this cause.

Malaria, I believe, has never been traced further north than the fifty sixth<sup>o</sup> of Latitude, and it is supposed a temperature above sixty<sup>o</sup> of Fahrenheit's thermometer is required for its production.

Thus, we seldom have malarial diseases in temperate climates during the winter season, and the further south we proceed the more malignant do we find them.

It is a curious fact that a remittent contracted in a warm climate, will upon the removal of the patient to a colder one become an intermittent: thus, we have them as the cold season of this climate comes on, degenerate

into intermittents, and finally, disappear as winter approaches; therefore we would infer that he is emphatically a southern gentleman and of the first family of the predisposing cause of southern diseases.

Little or nothing seems to have been known of malaria until about sixteen hundred and ninety five, when Lancisi, an Italian physician, put forth distinct views concerning the cause of malaria, which seem to be the prevailing theory up to this time.

He would have us believe that it is utterly impossible to generate malaria without the decay of vegetable matter.

As we believe this theory to be erroneous, and as it is essentially of great importance that correct views

upon this subject should be taken and disseminated by medical men, I will mention a few facts detailed by Dr Ferguson, who was the first to dispute the point with our Italian friend, together with those under our own limited observations.

In a paper on the nature and history of marsh poison, Dr Ferguson remarks:—  
“In August 1794, after a very hot and dry summer, the British army in Holland encamped at Rosendaal and Oosterhaut.”

“The soil in both places, was a level plain of sand, with perfectly dry surface, where no vegetation existed, or could exist, but stunted heath plants.”

“It was universally percolated to within

a few inches of the surface, with water which, so far from being putrid, was perfectly potable."

<sup>20</sup> Here fevers of the intermittent and remittent type appeared among the troops in great abundance. It is interesting to observe that the soil in Malcherin is precisely similar. Sir Gilbert Blane describes it as consisting of a fine white sand, known in the eastern counties of England by the name of silt, and about a third part clay."

<sup>20</sup> It was after a hot and dry summer, also, that the British army suffered in that island from the endemic fever, to a degree which Mr Ferguson speaks of as being almost unprecedented in the annals of warfare."

<sup>20</sup> Pools of water still remained here and there among the rocks, so pure

that the soldiers were anxious to bivouac near them for the sake of using the water."

"Several of the men were seized with violent remitting fever before they could move from the bivouac the next morning?"

"Till then (says Mr Ferguson) it had always been believed amongst us that vegetable putrefaction (the humid decay of vegetable) was essential to the production of pestiferous miasmata; but in the instance of the half-dried ravine before us, from the stony bed of which (as soil never could lie for the torrents) the very existence even of vegetation was impossible; it proved as pestiferous as the bed of a fever?"

"After the battle of Talavera, the army retreated along the course of the Guadiana river, into the plains of Estremadura."

"The country was so arid and dry for want of rain, that the Gaudiana itself, and all the smaller streams, had in fact ceased to be streams, and were no more than lines of detached pools in the courses that had formerly been rivers."

"The troops there suffered from remittent fevers of such destructive<sup>ve</sup> malignity, that the enemy and all Europe, believed that the British host was exterminated."

"The river Tagus is at Lisbon, about two miles broad; and it separates a healthy from a very unhealthy region. On the one side is a bare hilly country; the foundation of the soil, and the beds of the rivers, being rock, with free and open water courses among

the hills. This is the healthy side."

"But the Alentejo land, on the other side, though as dry superficially, being perfectly flat and sandy, is most pestiferous."

"Moreover, in and near Lisbon there are numerous gardens, where they keep water, during the three months, absolute drought of the summer season, in stone reservoirs."

"These reservoirs, containing water in the most concentrated state of foulness and putridity, are placed close to the houses and sleeping rooms; the inhabitants literally live and breathe in their atmosphere."

"Yet no one ever heard or dreamt of fever being generated amongst them from such a source; though the most

ignorant native is well aware that were he only to cross the river, and sleep on the sandy shores of the Alentejo, where a particle of water at that season had not been sun for months, and where water, being absorbed into the sand as soon as it fell, was never known to be putrid, he would run the greatest risk of being seized with remittent fever."

Many facts precisely similar to the above, could be brought forward to show that the decomposition of vegetable matter is not essentially necessary for the production of malaria; but we think that the above will be sufficient to prove clearly to an unprejudiced observer, that malaria has been produced without any decomposition of vegetable



matter; therefore it cannot be argued that it is one of the essential elements of malaria.

We have been taught that the chief points known with regard to the source of malaria are, that it arises from the operations of the Sun's heat on marshy grounds which have a clay foundation, or on the banks of tide rivers, or in other words, heat and moisture, with some intervening substance are alone essential to the production of malaria, and that vegetable decomposition has nothing to do with it, although it may occur at the same time and place.

This theory is sustained by our own limited observation.

Thus, in the country we have described,

we have heat, water below the surface of the soil, resting on a firm clay foundation, which holds the water as would a basin, while the sandy soil is the intervening substance.

Here we have malaria when vegetation is exuberant, and as soon as the fall rains and frost commences it disappears, and vegetable decay goes on rapidly.

Symptoms - Intermittent fever consists of three stages, first the cold stage.

This begins with chillings and constriction of the whole body; the nails are blue, the skin is rough (Cutis anserina), and there are violent shiverings and chattering of the teeth, pain in the back; head aches; quick small pulse, a sense of oppression in the precordial region,

and sometimes vomiting.

After these have lasted sometime, the second or hot stage, comes on; beginning with flushes of heat, which gradually increase, until the skin is hot and dry, the face is flushed, and the temples throbb with full and frequent pulses.

This stage may continue from three to six hours; then the third or sweating stage supervenes, usually commencing about the head and face, increasing until it becomes profuse over the whole body.

After this stage passes off, the patient feels well, but weak, until the next paroxysm which generally comes on in this climate the third day.

Sometimes, the paroxysm will recur on the next day, sometimes not until

the fourth day, and, sometimes again, it does not return until the seventh or fifteenth day, when the paroxysm recurs on the next day it is called quotidian, when on the third, tertian and when it recurs on the fourth, quartan form.

Prognosis— Our prognosis in this disease should always be favorable— when properly treated we can prevent a return of the paroxysm.

Treatment— According to the usual practice little or nothing is required to be done during the cold stage, we generally put the patient to bed, give him as much covering as he wishes, place hot bricks to his feet and back if he desire it, but we do not think they will do any good.

In the second or hot stage, we would

give him forty or sixty drops laudanum,  
to arrest this stage and bring on the third,  
we have seen this remedy used frequent-  
ly and usually attended with the hap-  
piest effects.

Generally it put the patient to sleep,  
and in a few minutes perspiration  
commences and becomes profuse, and  
in an hour or two the patient will  
awake considerably revived; or you may  
combine quinine with the tinct. opii,  
say six grains quinine to forty drops  
tinct. opii.

Then in about two hours we would  
give six grains quinine and repeat  
it four or five times as may be deem-  
ed prudent.

Generally this will prevent the re-  
turn of the paroxysm whether it be

of the quotidian, tertian, or quartan variety.

About the seventh day, as the disease is liable to return at this time, repeat the quinine in six grain doses every three or four hours until eighteen or twenty four grains are taken, and continue every seventh day for three or four periods.

This treatment we think will be sufficient in any case of simple intermittent fever.

In concluding this paper, we have to remark, that it is conceded by all intelligent practitioners of medicine, that in the malignant form of malarial fever, of which simple intermittent fever is the type, cold water applied externally will produce reaction

in the cold or congestive stage, by increasing the inherent irritability of the muscular fibre and causing the system to respond to our stimulant remedies,

Therefore it has occurred to us that this remedy, is equally applicable in the cold stage of the simplest form. Surely if cold ablutions will cause reaction in the more malignant, it certainly will in this the simplest form. It might be argued that in this form of malarial fever it would be unnecessary to use any remedy to cut short the cold stage, as it generally terminates in a few hours without treatment. But as the more malignant forms generally proceed from the simplest, and as in most instances we can-

not tell when a patient is seized with  
a chill, whether it will be common or  
congestive, we think it would be ad-  
visable to cut short the cold stage as  
soon as possible, since we can effect  
it so easily without any danger to  
the patient, and by so doing may  
prevent the malignant form of  
this disease altogether,