AN
INAUGURAL DISSERTATION
ON
Malaria

SUBMITTED TO THE
PRESIDENT, BOARD OF TRUSTEES, AND MEDICAL FACULTY
OF THE
University of Nashville,
FOR THE DEGREE OF
DOCTOR OF MEDICINE.

BY
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OF
Tennessee

March
1857

W. T. BERRY & CO.,
BOOKSELLERS AND STATIONERS,
NASHVILLE, TENN.
Malaria

At no time since the commencement of my professional career, have I set down to a task, with such depressing emotions, as now weigh down my spirits; nothing, but a sense of duty to the requirements of a law long enforced, from which there is no refuge, could induce me, to undertake a task so arduous; that of writing an acceptable thesis. And while I consider the subject, "Malaria," these too, are many startling facts, that stare me in the face. These may appear, to be, something presumptive, in the idea of an embrio in the profession, choosing a subject, that has long exhausted the
skill and energies, of the ablest, and most profound, literary and scientific men, of all ages, Climes and Countries; in trying to detect the course from which Malaria emanates. In selecting this as a subject upon which to write a Thesis, I can but ask the indulgence of my readers for any deficiency in style or completeness of execution.

Malaria is known to exist in the atmosphere from effects produced upon the animal economy. By the aid, however, of the most powerful microscope or scientific chemical process, its presence has not, as yet, been detected. We therefore, can but theorize. The most
general received opinion among our ancient brethren and many of the present day, is, that it is created by the decomposition of vegetable matter; that it is particularly, of putrid animal or vegetable matter, dissolved, and suspended in aqueous vapor. This is only conjecture, as shown above, by nothing of the kind having been detected in the atmosphere by the most delicate, chemical or microscopic test; it appears to differ in no essential particular from the most soluble airs, be that as it may; it must be transmitted to the human subject through the medium of the atmosphere.

That malaria is produced in
great abundance in districts where there is a luxuriant growth of vegetable products, and even decomposition of that matter going on; we doubt not, and we may go further; it may, to some extent act as an auxiliary, but that it is essentially necessary, in order to its production, we have good grounds to doubt. In all those localities where we find it produced in any great abundance, we find the four elements which we think requisite in the production of this poison: earth, air, heat, and moisture; a certain degree of heat and a certain degree of moisture are necessary: earth and air are also essential. Neither
one, two, or even three of them would produce it; but requiring all four of the elements, as above named, in the production. We do not find the fever prevailing among sailors, who are out at sea, where the last three of the elements are found at certain seasons, and in certain climates; but it is when they touch upon the coast, or land, that we find it prevailing among them.

In support of the position assumed above we would refer you to a few facts adduced by Dr. William Ferguson, published in the Philosophic Transactions of Edinburgh on the history and nature of marsh poison.

1st. That of an army encamping...
at Rosendaal and Costerhout, after a hot, and very dry summer. The soil in both places were a plain of sand with a perfectly dry surface where no vegetation existed, nor could exist, except a few stunted heath plants. He also states that this plain was universally percolated within a few inches of the surface, with water, not of an impure kind, but of the purest quality. Here among the troops these malarial fevers prevailed to an alarming extent, being almost unprecedented, in the annals of warfare.

F that of an army in 1809 encamping in a hilly ravine, where there had been a water course, but
in consequence of a drought, had 
dried entirely up, with the exception 
of an occasional pond of water, 
along its course among the rocks, 
do thus that the soldiers were an-
rious to camp near them for the 
purpose of using the water, which 
was accordingly done: The consequence 
being, that a number of the sol-
diers were seized with a violent 
form of intermittent fever before 
removing from their encampment 
in the morning. No trace of vege-
table matter could be discovered, 
nor could there any exist upon 
the half dried, stony bed of the 
savine. Several other instances 
of a similar character as related 
by him. One other, however, I cannot
Refrain from mentioning; that of the river Tagus at Lisbon depicting a perfectly healthy from a justipero region. On the side upon which Lisbon is situated is a hilly country, the beds of the streams being rocky and unobstructed in their course among the hills; also, in and near Lisbon during the three months absolute arid, they keep water in reservoirs for the purpose of watering their numerous gardens. These reservoirs retaining water of the foulest, and most putrid kind, are placed near their houses and sleeping apartments, without any dilatious effects from breathing the atmosphere. No fires of any kind was generated from this sou-
ose. While on the other side, with a perfectly arid, sandy plain, it is most pestiferous. Even the most ignorant of the inhabitants knowing that where they to cross the river, and sleep on the sandy shore, they would probably be sti-
ged with a violent form of inter-
ritant fever.

Now, these facts, and many more,
that might be adduced, like them,
go to show most conclusively, that
the decomposition of vegetable mat-
ter is not essentially necessary
in order to the production of Mal-
aria.

In many marshy districts, and
countries where there is a luxuriant
growth, of vegetable matter produced
we know malaria does exist, but from the fact of its being produced and in great abundance, in places and countries, where there is not the least trace of vegetable matter, we must set it down as attributable to another cause, or to the four elements above named, which are always present when it is produced, in any great abundance.

We find, also, many districts and countries where this vegetable matter is produced in great abundance and decomposition, as in the former case, going on but without the same results, having none of the form of malarial fever. In the high upland piney corn
-tries (some portions of them) we do not find Malarial fever existing from the fact, of one of the essential elements being absent, that of water, the soil being of that peculiar quality that will not hold the water or moisture.

In the district where I reside, (Marshall County Tenn) we had the past season an uncommon amount of "Malarial" fevers, not owing as I conceive to any greater amount of decomposing vegetable matter that season than usual, but to an inundation of the country with water in the spring. Afterwards, say in June, a remarkable drought set in, and continued very warm and dry for a consider-
able Time; Thence, punguing the surface of the earth, and causing a greater amount of the poisonous effluvia to arise. We had two, in this district a large pond of water, probably containing fifty acres of land, during the winter and spring season; but in the course of a very dry season, which was the case this, the water was all absorbed or evaporated, leaving the surface, formerly covered with water, dry and exposed to the scorching rays of the sun; the consequence being, that not one family, there being about fifteen families residing around and near said pond, and in fact hardly any one of any of the
families, escaped some form of the Malarial disease, ranging from the mildest to the most malignant form; commencing about the first of July and prevailing until Autumn, at which time, which is not usually the case, it subsided, or at least was not prevalent, with but an occasional case or relapse, which is characteristic of the disease, without the almost constant use of the specific, except the turn, or some other antiparoxysmic medicine.

The influence of Malaria upon the animal economy is various under varied circumstances, not effecting the same individual in the
same way under different circumstances, even in the same locality; nor will it effect different individuals in the same locality under the same circumstances in the same way; owing probably to the physiological state of the animal economy, of idiosyncrasy, temperament, predisposition and accidental external causes. We see it attacking, simultaneously, persons in the same district, but not with the same form of disease. One will be attacked, with intermittens, the mildest form of Malarial fever; another, under the same circumstances, will have a higher grade, assuming the remittent form, and a third may take on the Malignant-
forms.
The class of diseases produced by Malaria, are almost innumerable; if we take into consideration their various modifications.

Besides the many fevers; assuming almost an endless diversity of character, in different localities, seasons, and climates; we find it, Malaria, producing various other effusions; both local and general. We may enumerate Dysentery, Cholera, and Diarrhoea, as diseases produced by it, affecting the alimentary canal. Among the diseases affecting the nervous system, and different branches of nerves; we may enumerate Hemiplegia, Paresis, Neuralgia, and Sciatica;
all of which are by no means uncommon in our own climate.

The primary Physiological lesion of Malaria on the animal economy in the present state of our science, is not very well understood; as well as, many other things in regard to Malaria. Under circumstances of this kind, every physician is at liberty to bring forward the hypothesis that may suit his own peculiar views of the subject. I, therefore, assume the ground, that the primary effects of Malaria are upon the nervous system.

We do not visit a patient affected with any of the Malarial diseases; but we see, I might say, an actual demonstration of the
fact. We will take for instance: a person on the verge of a spell of intermittent fever; he experiences a sensation of debility, becomes listless, weak, languid and it is with difficulty he makes any bodily or mental exertion; begins to sigh and yawn, and soon feels chilly, particularly along the back and course of the spine, soon these sensations become more decided, and generally the subject becomes very cold; their respirations are quick, and anxious. All of which is owing to an undue impression made upon the nervous centers, which reign over the respiratory and circulatory organs.

The early Cerebro-Spinal Man-
manifestations are obvious to every observer in these diseases.

Through the medium of the blood, this undue impression may be made upon the nervous centers, without manifesting any particular tendency to change or alter the condition of the blood. The physiological standard of the blood is materially altered after a lapse of time, but this is, as we conceive, only the secondary effect.

We have many instances of medicines acting upon the nervous centers in this way (viz.) Chloroform, Aconite, Prussic Acid, and Morphia.

Now, if these medicines, taken into the blood through the respiratory organs, act in this way; if it, but
Reasonable to expect that the same effect may be produced by this peculiar poison, "Malaria" inhaling in the atmosphere, notwithstanding it exists in so small a quantity that it cannot be detected by any Microscopic or Chemical Test.

We will not dilate further on the, Modus operandi of Malaria, as its physical or chemical constituents so little understood. But in obscure matters of this kind, we will always find those who prefer to bring forward some hypothesis, however frail, rather than be content and remain quietly in the dark on matters which, by their nature, are difficult or even incomprehensible. Jan. 13th 1857. John Baxter