

AN
INAUGURAL DISSERTATION

ON
Epidemic Dysentery,
As it occurred in Warren County Tenn.,
during the summer & fall of 1851

SUBMITTED TO THE
 PRESIDENT, BOARD OF TRUSTEES, AND MEDICAL FACULTY
 OF THE

UNIVERSITY OF NASHVILLE,

FOR THE DEGREE OF

DOCTOR OF MEDICINE.

BY

Thos. Springs

OF

Warren County Tenn.

1851.

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

Gentlemen,

In giving you a history of Dysentery, as it existed as an Epidemic in Warren County Tennessee, in 1831. I have thought a few remarks on the topography of this section, may not be exception-able; especially, as it is a section about which little is known abroad; and it will altho the better enable you to determine, whether my views relative to the cause of the Epidemic, be correct.

Warren County is a part of a table land, ~~extending~~ extending across the State, from Kentucky, to Alabama, running parallel with the Cumberland Mountain, which constitutes its eastern boundary, & it is bounded on the west by the Caney Fork Ridge, Short Mountain, Stones River, and Duck River Ridges.

The Latitude of McMinnville the County City of Warren County, is about $35^{\circ} 48'$ North, and ^{the Longitude,} about $8^{\circ} 48'$ West from Washington, Its altitude above the sea, as given by the Barometer, is 761 feet, & I think its height, above the common level of the Counties of Smith, Wilson, Puthersford, Bedford & Lincoln, cannot be less than 250. or 300 feet.

This region is called the Mountain District; The middle and southern portions of which, has

have a gently undulating surface, which is occasionally broken by spurs of the Mountain, which sometimes extend several miles.

These spurs, are not quite so high as the Main Mountain, but they sometimes attain an altitude of 500 or 600 feet. In their Geologic composition, they resemble the Mountain, with the exception of Coal, which so far as my knowledge extends, has not been found in any of them. The rocks are principally Calcareous, Silicious, & Ferruginous. The Calcareous forming the base, and the Silicious & Ferruginous the top. The timber is generally large & more abundant than on the Mountain.

The soil at, and near the base, is fertile, near too, and on the top, it is more sterile. The water is of four kinds, Limestone, Greenstone, Rotten Limestone, and Chalybeate. The Limestone being at the base, and the Greenstone & Chalybeate at the top.

South of Caney Fork river, this table land is divided by an elevation, scarcely appreciable when traveled over, which extends from north to south, midway between the Mountain and the Ridges before mentioned, and is called the Dividing Ridge because it divides the waters of Elk & Collins rivers, and

Barren Fork, from those of Duck and Stones
rivers & Smith's Fork.

That portion of this table land which constitutes
Warren County, lies principally between this dividing
ridge, and The Mountain, & is consequently the eastern
portion, ^{The area of which, does not exceed 60 or 80 square miles,} its surface is more undulating & rocky,
it is better watered, and the soil much more fertile
than that portion west of the ridge, which consti-
-tutes what is called the Barrens.

In the southern portion of the County, there is a
stream called Hickory Creek, running from
south towards north, which was originally a beautiful
stream, with a brisk current, but in consequence of
numerous mill dams thrown across it, its current
has been greatly impeded, and its waters rendered tur-
-bid. It empties into Barren Fork, a very beautiful
stream, the general direction of which, is from west
to east. The water clear, & current brisk. On this stream
McMinnville the County City is situated, a few
miles north of the Barren Fork, and running in
the same general direction, is Charles Creek;
a short stream with rapid current. North of
this stream and but a few miles from it, & nearly
parallel with it, runs Mountain Creek, which

has a very rapid current. In the eastern portion of the County, between a long spur and the main Mountain, through a narrow & very fertile valley, runs Collins' River. The current is strong, and the water during the greatest portion of the year is clear. It empties into Caney Fork, which is the largest stream in the County, & constitutes the northeastern boundary.

There are but ^{few} Lagoons, or ponds, connecting with these streams. but they overflow their banks to some extent every spring, and there are many acres of alluvion, ^{through which they run} the forests are dense. timber large, thick underwood, and heavy annual foilage, on the low grounds and margins. Although there is a great variety of forest trees, the Oak constitutes a large majority, of which there are no less than fifteen varieties.

West of the dividing ridge, the surface is almost an uninterrupted plain, the greatest peculiarity of which is, numerous basins of wetland called swamps. These basins are covered with a dense undergrowth, and in their center there is generally a pond or small lake, the area of which does not usually exceed, two or three acres. The subsoil of these basins, is to a considerable

extent impervious to water, and consequently
~~and consequently~~ during the heavy rains in the Spring
they become the receptacle of a large amount of
water. Much of which cannot ~~be~~ drain off, and
is therefore removed only by evaporation, which is
usually effected by the first or middle of June,
the surface from which the water has been
removed, is generally covered with a luxuriant
crop of grass & plants - there are ponds however
which seldom, & some which never, dry up.

The climate is mild & salubrious in general,
The temperature seldom exceeding 100 degrees
Fahrenheit; and seldom falling lower than
10° below zero - It is not therefore so cold, as
the altitude and proximity of the Mountain
would indicate - During the cold weather
in January this year, the Thermometer at my
residence, 8 miles south of McMinnville, fell to
only 2° below zero, and was at the same in
McMinnville.

Last winter it will be recollected, was un-
usually mild, and there was in the Hickory Creek
neighborhood (the one in which I live) more than
an ordinary amount of disease, consisting of

Pneumonia, Pleurisy, Intermittent Fever, a few Cases of Typhoid Fever, and a very severe form of Catarrh, which continued until after the commencement of Dysentery, which was in May.

The history of Dysentery, as it existed in Warren County last season, so far as its origin & progress is concerned, does not differ materially I presume, from its history in other sections - It was however the most severe & fatal epidemic we have had in this section for 20 years.

I am informed by Drs. Hilly Smart, A. Paine, & J. Barnes, of McMinnville, (to whom I am indebted for important information, relative to the commencement and progress of this epidemic,) that the first Case within their knowledge, occurred in the Pleasant Cove, between Collins River, and the Mountain six miles east of McMinnville, on the 22^d day of May, the first ^{Case} in McMinnville, occurred on the 25th of May. From this ^{time} it spread I think gradually, over every neighborhood in the County - It was not until the 1st of

June that I saw a case, which was at the foot of a spur of the mountain, 11 miles south of McMinnville. On the 22 of June one month from the time it commenced. I saw two cases, one at the foot of a very tall spur of the mountain, 6 miles east, and the other on the top of the same spur, 3 miles S. E. of McMinnville. The first & third of these cases were malignant. The second was a mild case. For several days it seemed to be confined pretty closely this spur & vicinity. For it was not until the 7th day of August, that I saw the first case on the Hick Creek - and not until the 11th day of the same month, that I saw the first case in the Bonans. About this time, I think it had become general in the County, and had attained its maximum severity.

The opinion of the medical gentlemen I have mentioned is, that Dysentery existed here as an epidemic, for 5 months, ~~and~~ my own observation fully corroborates their opinion, and sporadic cases have occurred up to the time of writing this article.

It is perhaps worthy of remark, that although children were most obnoxious to its attacks, yet aged persons, and those of broken down Constitution were not more liable to be attacked than those of middle age and of robust Constitutions, nor were their cases more liable to prove fatal.

I have no very accurate means of ascertaining the extent, & force, of this epidemic - Unfortunately not one of us who were engaged in the practice, kept a diary, and therefore we cannot give the precise number we were called upon to treat. But were I in possession of every case treated by physicians in this County, still, I think I am justifiable in saying, they would not constitute more than one half, of the cases which occurred.

The total population of this County, is set down at 10179. The population of McMinnville, is about 600. In the number of attacks & ^{the} malignancy ⁱⁿ the Town, was about a fair average ^{in the County} some neighborhoods suffering more, others less. From the best

information I have, there were 13 deaths from
Typhenteria in McMinnville - Now, if we assume
that five per cent, of all the cases which occurred
in the County, both mild and malignant,
proved fatal, which I believe will be found
to be a very near approximation to the truth,
then we shall have in McMinnville, 260
Cases, and 13 deaths - and in the County,
4400 Cases, & 220 deaths - This estimate I
am sure is not too high - If it ess, it may
be in placing the mortality too low. In
some neighborhoods, the mortality fell far
short of this calculation, but in others, it ex-
ceeded it, amounting to 10 per cent, & in a few
places more - But where so great mortality
existed, it was in consequence of either prej-
udice, empiricism, or inconvenience to a
physician preventing, timely medical assistance.

The mortality was much greater among
children under two years of age, than older
children & adults - The younger the child the
more danger it was in - A Lady of veracity, living
on Collins' river, 15 miles east of me, assured
me that so far as her knowledge extended,

not one child under two years of age had recovered in that section,

The Cause of this epidemic, I believe to have been Malarial, and my reasons for believing so, are the following, 1st It commenced in those sections which are of all others in the county, most capable of producing Malaria, and consequently the very points where we would expect an epidemic to commence, the cause of which would be Malaria. 2^d Perhaps a more weighty reason will be found in the fact, that it was for a considerable time, confined pretty much to the neighborhoods in which it commenced, and its malignancy, was always greatest, where there was the greatest amount of vegetable matter in a state of decay.

But Thirdly, The most weighty reason to my mind is, that the premonitory symptoms were those, which are the result of malarial poison.

I know there are some who doubt the malarial origin of this disease; & some who believe it to have been contagious,

It is not to be expected that in a paper like this, I should answer all the objections which might be urged. One however I would notice, "That the cause could not be malarial because, many cases, and some of them quite malignant, occurred in those who reside on the Mountain & its Spurs".

I answer that I saw no case in either of those localities, (and I doubt whether any other person did,) where there was not a farm on which, there was not a large amount of decaying timber, generally, fields just cleared near the residence, and every one acquainted with this subject knows, that such fields are among the most fruitful sources of Malaria.

I would also remark, that from the time I saw the first case, I made close observation with regard to its being contagious, and I am satisfied beyond all question, that as it existed here, ~~it was not~~ not contagious.

The symptoms in the incipient stage, were languor, a sense of fullness of the head,

Slight chilly sensations generally in the forenoon,
Loss of appetite, Slightly furred tongue, tympanites,
uneasy sensation in the bowels, griping &c.

These symptoms were variable in their duration,
Sometimes continuing for two or three days, at
other times only a few hours, preceding the
Paroxysm, which was generally made in Malignant
Cases, by a distinct chill, followed by
more or less febrile reaction, mostly accompan-
ied with pain in the head and back, tenderness
of the Epigastrie, Iliac, and Hypogastrie regions,
Tongue dry & slightly furred, Thirst urgent -
Skin dry & hot, in some cases - in others the
head and chest only were preternaturally
warm, while the extremities were cool, pain in
the bowels, especially in the Rectum, extending
as high as the sigmoid Flexure of the Colon, &
in some instances to the whole extent of the Colon,
The alvine evacuations were sanguinolent, or
Mucos-sanguinolent - Urine scanty & highly colored,
with some nausea, when there was considerable
griping & a very frequent desire to pass stools.
At the commencement, the Respiration was not
ordinarily much affected, unless the bowels

were spasmodically effected. The pulse comes
flooded with the febrile action, this was properly the
^{stage of excitement.}

As the disease advanced, and the second
or inflammatory stage set in, the symptoms were
all aggravated to a very great extent. The thirst
was now almost insupportable. The Tongue
absolutely parched. Soreness had advanced
to extremely painful tenderness. The pains in the
bowels, ^{being} lacerating in the extreme, producing
either Nausea, or Syncope, or both. The griping of
the Rectum now amounted to Torment, and the
most distressing Dysuria, frequently existed.
The dejections from the bowels were generally
small & mucous. Sanguinolent or sero-sanguinolent,
which very much resembled the washing of
fresh meat, (not much odor. Extremities gen-
erally cool, Head and Thorax hot, pulse quick
& frequently corded, appetite entirely gone.

In the Third and last stage. The Syncope was
increased. extreme debility, and the most distressing
Dyspnoea, would frequently ensue, alvine evacua-
tions more copious, highly offensive, dark or muddy
hue. Dysuria increased, quick febrile pulse. Restless
anxious countenance, (a dangerous perspiration,

Collapse and death.

There was one symptom peculiar to small children, which so far as my experience extends, was invariably a mortal symptom - It was starting suddenly, throwing up the feet and flexing the thighs over the pelvis, so as to very nearly approach the abdomen, and at the same time, screaming violently for a few moments.

The symptoms of the mild form of this disease, I think unnecessary to mention, as they did not differ materially from those cases which occur sporadically every season.

The Diagnosis of this Epidemic, was attended with some difficulty, for notwithstanding Dysentery is ordinarily easily distinguished from any other form of disease, unless it may be some form of Diarrhea. yet, in consequence of those existing at the same time, many cases of a very severe form of Catarrh, having almost the same purulent symptoms, and not unfrequently determining to the bowels forming Catarrhal Diarrhea, it was not therefore always an easy matter to determine in the incipient stage, whether ~~the~~ ~~case~~ a case would terminate in Catarrh or Dysentery.

When however, the alvine evacuations became sanguinolent, or Mucro-sanguinolent, The true character of the disease was at once developed, and could no longer be regarded as doubtful.

The Prognosis was also attended with difficulty. For although in ordinary Cases of Dysentery, the prognosis may be regarded as of minor importance, because the disease under such circumstances generally terminates favorably. Yet, such was the Malignancy of many of the Cases, and such the insidious manner of its attack, that no prudent Practitioner ~~should~~ ^{would} venture any other than a conditional opinion, as to the result of even an apparently mild case.

There were many Cases apparently mild, which ~~many~~ notwithstanding every reasonable effort was made early in attack, to arrest them, nevertheless kept steadily on to a fatal termination. While many others apparently malignant in the commencement, yielded very readily to prompt treatment. So that the greatest precaution was necessary in giving an opinion, as to the probable termination of a case.

The duration was variable, nothing like uniformity. - Some cases apparently violent would terminate, ^{favorably} in a few days. Others lingered for several weeks and proved fatal at last. I should think more died between the 6th & 12th days, than any other time. The crisis was usually from the 6th to 9th day. - but I saw it occur as early as the third day, in several cases, & in others was not effected earlier than the 22nd day, and a few continued longer than that, who ultimately entirely recovered, while some passed into the chronic form which has been continued almost without intermission up to this day.

The treatment, adopted by those who practiced & ~~who practiced~~ in this epidemic, was not by any means uniform. - Each physician adopting that course which the symptoms seemed to him to demand. - The Mild Form yielded very readily to the remedial agents ordinarily used in this disease, while the Malignant Form would frequently resist every means, we were capable of bringing into requisition.

Dr. Hill and Smart, a firm in Greenville, informs me, that ^{they} were more successful with "Blue Mass, Ipecac and Opium, as an Anodyne."

and Sulph. Magnesia as a purgative given every other day "than any other means they tried".

Dr. B. Paine of the same place, informs me, "that in the early stage he relied on Blue Mass, Opium & Ipecac, in alterative doses, (having used Calomel in but two cases and derived no advantage from it in either). In Cases of extreme exhaustion derived considerable advantage from the use of chalk Julep, given freely. Also Rhubarb & Magnesia, & a solution of Gum Arabic drank Cold, Let blood in some cases with advantage, & derived great benefit from cupping & leeching, also in an advanced stage, from blisters on the abdomen."

Dr. Barnes & also of Mcminville, informs me, "that he found the use of the Sulph. Magnesia as a purgative, with injections of Laudanum Starch and Spirit Turpentine, poultices all the time to the abdomen, and Laudanum and Turpentine as an anodyne, the best means he tried".

In my own practice, I endeavored to adapt my remedies to the demands of the case, being governed by the symptoms alone,

regardless of the name.

During the first stage I used the Salino & Senebenthinate purgatives, alternated, generally every two or three hours, until the stools ceased to be bloody, or mixed with blood. Then gave Hydrargyri Cum Creta. combined with an opiate, *provenata*. Scarified and cuped the whole abdomen, would have used Leeches if I had had had them. But singly, I believe the Cup to be superior to the Leech - Always using hot water applied to the surface of the abdomen, either by sponges or cloths previous to the applications of the cups - & warm fomentations over the scarified surface immediately after the use of the cups - In this stage also I found the pyroxylic spirit or Wood Nettle, a very valuable article - This plan of treatment I found to be potent indeed, so much so, that at one time I was almost ready to congratulate myself, with having discovered a plan of treatment, which if at all skillfully administered, would very seldom ever fail, but the loss of three cases in quick succession all of which were treated on this plan. convinced me that

my hopes were delusive, although I had previously cured, ^{with this plan alone,} 32 Cases in Succession, without the loss of one.

In the second Stage, in addition to the treatment I have detailed I use of warm baths, from which I derived considerable advantage, and if active inflammation existed hot water, or heat & moisture applied to the abdomen in some way for many hours, with scarcely any intermission, until the soreness & pain were removed. I regard the application of hot water properly applied, as one of the most potent means that can be used to subdue intestinal or peritoneal inflammation, Is it not because it diminishes the irritability of the muscular fibre, and consequently, not only relaxes the parts, so as to prevent spasmodic action, but also prevents so great an afflux or determination to the part? To relieve the Yermia, I used Mucilage of Gum Arabic, Flax seed, or Slippery Elm, & Opium, injected into the rectum. And occasionally I found Sugar Lead, or Yermia very useful.

In the last stage I found Quinine, Camphor,

Colembos, Sugarplum, Lannin, Blisters, and in
those cases attended with great gastric irritation,
nitrate of silver to be more efficient than
any thing else I could use.*

If there is a specific
in the whole Materia Medica for this dis-
ease, I frankly confess I am ignorant of
it. For although I endeavored to observe closely
the physiological condition of the patient, &
to study the pathology of the disease,
still I was unable to procure a never fail-
ing remedy.

I am Gentlemen, very respectfully
Your obedient humble
servant,
Thos B. Springs.

Decy. - 1832.

I did not resort to venesection, being deterred
by either the coolness of the extremities, or the
debility of the patient. In this however it is likely
I erred, especially in those cases attended with
strong arterial action and delirium, a symptom
which I observe I have omitted to mention.