

AN  
INAUGURAL DISSERTATION

ON

*Typhoid Fever*

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BY

*W. A. Hoden*

OF

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# Typhoid Fever

Typhoid Fever, Enteric Fever, Nervous Fever, or Continued Fever, as it was designated by our ancestors, is an idiopathic fever occurring in all habitable latitudes; and especially in those regions which are not infested by that subtle poison, called at the present day, Malaria. It occurs under several different forms, and, consequently, produced much perplexity, until the time of Louis, who demonstrated its anatomical, in connexion with its physical symptoms, placing the identity of the several forms, beyond a doubt. In those localities which are free from Malaria, it is said to come on, as a general thing, slowly and insiduously—the patient often being unable to date the precise period of attack. A sense of drowsiness, indisposition to move, and general debility often lasting for several days before the patient is confined to his bed.

In the Malarial districts, however, it is usually ushered in by a set of symptoms more violent and sudden, and often assuming so nearly the form of Intermittent, or Remittent fever, that the most experienced practitioners are not able to distinguish it from them. Indeed, so certain are they of its character, that in many instances they place the patient upon a course of active treatment; and hence one cause of fatality in those districts arises. After a lapse of five to eight days, a new set of symptoms arises by which the intelligent physician is able to recognize the disease. The chills cease, the exacerbations are less violent, the remissions less distinctly marked, and the fever becomes continued. The pulse rises to 100, or 120, and with slight remissions once or twice in the day, remain almost stationary till convalescence sets in, or until the fatal termination rids the unhappy patient of his life. The skin is dry, hot, and pungent; The Tongue narrow, and pointed,

its edges and tip fiery red, a thick, brown or dark coat traversing its center from near its tip to its root; The mouth and fauces dry; The thirst insatiable; The appetite entirely gone; more or less gastric disturbance; constant pain in the head, and more or less pain in the back and extremities; Tenderness on pressure in the right iliac region, and sometimes over the whole abdomen; Tympanites and borborygmi come on with a general giving way of the physical and vital powers.

If the case proceed, petechiae appear upon the neck and upper part of the thorax, and sometimes upon the abdomen and inner and upper part of the thighs; Sordes collect upon the teeth; The diarrhoea, which is generally attendant from the commencement of the disease, increases; The abdomen becomes more distended with the gas that constantly collects in the colon; The rumbling sounds in the intestines appear to be also in the thorax; The urine may be retained and the feces involuntarily discharged; hemorrhage from the bowels not

unfrequently occurs; subcultur tendinum, and great nervous and cerebral disturbance is added; The hebelude of mind is converted into low muttering delirium; The patient sinks into utter prostration, coma supervenes, and death closes the scene.

In the last stage of the disease, not unfrequently, the parotid glands inflame, suppurate, and another source of suffering and annoyance is added. Owing to the depression in the vitality of the integument, sloughing ulcers form upon the back and other parts which sustain the weight of the patient. And he slips, or gravitates to the foot of the bed.

From the time the second stage of the disease sets in, there is lividity of countenance; sharpness of features; and contraction of the upper lip, so as to exhibit in some cases, the teeth. Very often the conjunctiva is injected, and the hearing obtunded;—sometimes, however, the cerebral disturbance is great, the nervous system is unstrung, the hearing very acute—

The slightest noise giving excruciating pain - and there is at such time great intolerance of light. Epistaxis is said by Prof. Wood of Philadelphia, to be present at the commencement of a majority of cases; and he regards it as a sign of much value in making out a diagnosis; but in the few cases I have seen in the Malarial districts of the South, it has not occurred, and I am persuaded it is not of much value to us in the south; for it is not only often absent in this disease, but it is often present in remittent and intermittent fever.

With one exception, the anatomical characters are very unsatisfactory. Where the disease has continued for a length of time - or, in other words, where the fatal termination has not taken place until after the third stage has set in - the lesions are so numerous and extensive, that we would be inclined at the autopsy, to conclude that the patient had suffered from inflammation of almost every organ in the body. The liver,

The lungs, the spleen, the kidneys, and the chylopoietic viscera, all manifest the presence of inflammation.

And, hence, we are enabled to account for the diversified symptoms which arise in the progress of the disease.

The brain, it is said, presents no pathological appearance which would account for the nervous phenomena which are always present in the development and progress of this affection. The brain may not present any striking lesion, yet we can, I think, account for all the perversions of the nervous system. The extensive lesions which have taken place in the important organs to which the nerves are distributed will satisfactorily account for many of the phenomena, I think, upon the principles of reflex action; while the remainder may be attributed to sympathy... The lesion which is characteristic of enteric fever, consists in the inflammation and suppuration of Peyer's glands. Louis found in the many cases which he examined, either inflammation or inflammation and suppuration in, at least, a number of these glands.

From comparison and analysis he concluded that those patches of glandulae situated in the ileum nearest the ileo-caecal valve, are the first to become inflamed; and that as the disease advances, more and more of them are involved, until most of them, and sometimes the solitary glands of the colon, together with the mesenteric glands are affected. There are other organic lesions enumerated by the authors, but as they are present in other affections, I do not think they should be placed with the characteristic changes which take place in the structures during the progress of this disease.

The diagnostic signs as presented by Prof. Wood are merely an enumeration of all the signs which attend the different periods of the disease in its various forms; but I think we should mention only those symptoms which are constantly attendant. In the first period it is so protean in its character that we have but few, if any signs by which we are able to recognize it. Perhaps, the most reliable are the inability of the



patient to date the precise period of attack; The general physical and mental debility; The susceptibility of the bowels to the action of cathartics; The continued febrile excitement without the presence of inflammation; and The defiance it offers to the exhibition of Quinine and other antifebrile remedies. In the second period, we are relieved from this incertitude and embarrassment, by signs, which, to the well read, or experienced physician, are unmistakable. Between the sixth and tenth day the tongue and fauces become dry; the tongue narrow and pointed, red upon the tip and edges with a dark or brown coat traversing its central portion and growing darker towards its root; a general diminution of the secretions; Tenderness in the right iliac region; sometimes tympanites and borborigoni; The rose colored eruption; the sudamina; hebetude of mind; obtundity of the sense of hearing or the reverse; and the belief on the part of the patient that he is better. Most of these symptoms will be present in every case

where there is no complication. These symptoms are present in the third stage also, but more decidedly marked, while, in consequence of the low state of vitality in the peripherical tissues, extravasation of blood takes place beneath the integument, and we have formed, what are called petechiae. The patient becomes extremely feeble, emaciated, and careless of his situation.

In making out a prognosis, we will not be governed so much by the early symptoms, as by the constitution, temperament, and idiosyncrasy of the patient. If he have a sound constitution, free from hereditary taint of all kinds; unenfeebled by dissipation; and unembarrassed by a hemorrhagic diathesis;—and if he possess a bilious, or nervous-bilious temperament, and have no peculiarity of constitution, we shall reasonably expect, by proper means—such as every physician has at hand—to conduct the case to a favorable termination. But, on the other hand, should he be affected by any hereditary taint; his constitution

naturally weak; debilitated by previous disease, dissipation, or loose habits; by a chronic affection of any of the glandular organs; or by previous occupation, we cannot reasonably prognosticate a favorable issue. Yet, many such cases do recover, and may recover, and though we dare not say any of them will get well, we should not despair of the most desperate case until the patient is in articulo mortis.

So far as the cause or causes of this fearful disease is concerned, a variety of opinions obtain among the profession; but none of them satisfactorily account for the organic lesions and nervous phenomena which attend it. Prof. Wood inclines to the idea that the effluvia arising from decaying vegetable and animal matter - or the exhalations from the skin and lungs of a large number of men crowded together for a long time in a small room badly ventilated - will produce it. He brings forward some evidence to sustain his position; as for example

when he states that most of the cases admitted into  
 The Pennsylvania Hospital are emigrants from the  
 East, who have been confined in the hull of the ship  
 during their voyage. This is plausible, but, is it  
 not more rational to suppose that it acted as an  
 excitant rather than as a producer? Numerous cases  
 are on record, where a large number of men have been  
 crowded together for a length of time, without one  
 of them being affected with Enteric fever. Rokitan-  
 ski and others in Germany think that the blood is  
 diseased and deposits, in the glandulae agmanati,  
 and other organs, a typhous matter, just as it deposits  
 tuberculous matter in the lungs in the progress of  
 phthisis pulmonalis. It may, say they, be deposited in  
 the lungs, the spleen, mesenteric glands, intestinal  
 mucous membrane, and the liver. But they do not  
 tell us what produces this morbid condition of the  
 blood which gives rise to this deposit;— whether it be  
 hereditary, or engendered by noxious effluvia.

These depositions it appears to me, are merely the result of the disease, and by no means explain the cause. What we desire to know is, the ultimate cause whether it occur as the result of transmission, or as the result of a peculiar condition of the system, produced by the agency of external causes operating upon the blood or the nervous system; so that we may use such prophylaxis as will ward it off; or such remedies as will relieve the system if it be already affected by it.

From what I have seen of the disease and what I have read of it, I am certain it is generally restricted to particular localities - or if not to particular localities, to the inhabitants of them. It may occur in not subject to it, but it will be confined to those who have lived, at some period, in a typhoid district; and never, I think, in those who have not visited those typhoid regions. This is one step towards finding the cause.

Now, if upon examination, we find no local cause - such as decomposing vegetable or animal matter - no river, lake, or marsh - adequate to its production in these localities, we are forced to seek for it somewhere else - in exhalations that arise from some other source. The idea of analyzing the atmosphere is suggested, but this poison is so subtle that it eludes the nicest tests of the chemist; so that we are compelled to rely upon reason and analogy. Reason teaches us that the disease is dependent upon a peculiar poison, and analogy suggests that this poison is confined to particular localities - localities differing with those that are exempt from the disease. The next step is to compare the soil, geological formations and vegetable productions of one of the districts subject to this fever, with the soil, geological formations, and vegetable productions of a district in which this disease is not known; and compare the soil &c. of a number of the districts whose inhabitants are visited with

This frightful malady. By this means we may arrive at a knowledge of the difference in the exhalations which take place from the earth in the districts that are subject to enteric fever and those which are not subject to it, and thus at the ultimate cause of this self limited, intractable fever. So far as my limited observation extends, it is confined to the more elevated localities of which the soil is of a fine mulatto colour superposed upon a red, joint clay. Minerals abound usually - gold, silver, copper, or all of them, in connexion with sandstones, slate, and limestone. The growth is for the most part luxuriant; consisting of hickory, chestnut, oak, beech, and maple. Now, what the nature of the exhalation which arises from such localities is, or in what respect it differs from the exhalation arising from those localities which are exempt from the disease, I am not able to say; but that the disease depends upon such exhalation for its origin, appears much more probable, than the

causes assigned by any of the authors I have examined.

The disease being confined to the inhabitants of given districts, and there being no manifest objective cause, I do not see why scientific men have not sought for the cause as above stated;— especially those who are familiar with the origin of malarial fever. I hope the day is not far distant when such investigation will be made, and we shall know the cause and its antidote as perfectly as we now know the cause and the antidote of Remittent fever.

In the commencement of the disease the treatment consists in the administration of a purgative to unload the bowels, and, thereby, remove all mechanical cause of irritation of the intestinal mucous membrane. This should be followed by Quinine and Dover's powder, alternated, if much thirst, heat, and pungency of the skin exist, with the citrate of potassa. This course, as it effectually removes all Malaria from the system, will be followed



by as happy results as any that can be adopted before the second stage of the disease sets in. After this period supervenes, the treatment will have to be modified according to the condition of the patient; his temperament; previous habits; violence of symptoms &c. In the first place, whatever may be the indications, the utmost care should be taken to have the room of the patient well ventilated; all unnecessary furniture removed; the room scrupulously cleansed; the bed furniture and the patients garments fresh from the laundry; and his person thoroughly ablated. This being done, directions should be given to have the patient washed with soap and water, and clean garments put upon him every day. His bed furniture should be changed every other day. All persons should be sent from the room except the nurse, and kept from it, that he may be disturbed as little as possible. He should now be placed upon the use of a neat turpentine emulsion, exhibited so as to give

from four to six drops every four hours. If tympanites be present, cataplasms, composed of a strong decoction of hoarhound or sage and wheat bran, saturated with oil of Turpentine, should be applied continuously to the abdomen. Should much thirst exist, and the skin be pungent, small doses of the citrate or carbonate of potassa may be given alternately with the emulsion. If these means be put in requisition and persevered in, there will, in most cases, be a manifest improvement in a few days. The tongue will clear off and become moist; the thirst will diminish; the tympanites disappear; the appetite return; and convalescence set in. But, should these means fail to arrest the fever, if not contraindicated, a large blister plaster should be substituted for the cataplasms; the emulsion and potash continued; and the valerianate of Morphia given at proper intervals to quiet the nervous system and procure rest. Should the diarrhoea become colliquative; or should hemorrhage from the bowels come on, small

doses of pulverized opium and acetate of lead will generally arrest it. If this does not control the hemorrhage, enemata of ice-water must be used.

In the mean time, the patient should be made as comfortable as possible, by sponging his body with cold or tepid water - whichever is most agreeable to him; by frequently changing his clothes and shifting his bed furniture; and by allowing him to drink freely of cold water or lemonade.

His diet - should consist of arrowroot, boiled milk, well cooked rice, and half boiled eggs. According to my observation and according to the alleged experience of the most successful practitioners in the South, this is the most approved treatment in the second period of the disease.

Prof. Wood speaks favorably of the exhibition of Calomel in this stage of the disease, and assigns as a reason, the fact, that the secretions are suspended. Calomel will excite the secretions; but will not this

excitation of the secretions prove injurious? Considering the inflamed condition of the mucous surface of the alimentary canal- especially of Peyer's glands- we must infer that the acrid secretions of the liver will greatly irritate it, and rapidly increase the intensity of the inflammation. In this affection the fibrin is decreased, and calomel would only increase this diminution- another objection to its use. Again, I have observed inflammation of the parotid glands to occur only in those patients who had taken mercury or arsenic. Those who have been long in the practice, tell me the same thing when I call their attention to it, and I am compelled to believe that it results from the exhibition of these sialagogues. Hence, I should never give mercury or arsenic, notwithstanding the high sanction such practice receives. I have seen physicians prescribe Fowler's Solution and Donovan's Solution; but with unfavorable consequences. The patients to whom I saw it given, all died- a circumstance

not likely to place these, or similar remedies very high in my estimation. Indeed, I would not give either of the above prescriptions.

In the third week, or last period of the disease, there is always great prostration, much nervousness, and much cerebral disturbance. The patient should be made as comfortable as possible by all the means directed for that purpose in the second stage; his strength should be sustained by beef tea, boiled milk, and wine whey; or the pure port wine or good brandy. To relieve the petechiae, subsultus tendinum, and hebetude, there is nothing so effectual as the oils of Turpentine and Valerian. They may be given in the form of emulsion, two parts of the former to one of the latter. If it be not convenient to prepare an emulsion, they may be mixed in the proportions designated above, and administered in Eelm water, four to six drops every three or four hours. To procure rest and sleep at night, the valerianate or

sulphate of morphia should be exhibited. The former I think preferable, in as much as it does not affect the mind so much. If hemorrhage occur it must be restrained by appropriate means; and if the bowels are troublesome, the remedies recommended in the treatment for the second stage of the disease should be used, together with astringent injections. Should gangrenous ulcers appear upon the parts exposed to pressure, they may be treated by embrocations, and pillows so prepared as to take the pressure off the inflamed parts. Tincture of camphor, or brandy alone is as good an application perhaps as any thing. If other untoward symptoms arise, they must be met promptly, by such means as the condition of the patient and their nature require.

I will remark here, that if in the progress of the disease, the bowels become constipated, as they sometimes do, a gentle cathartic should be exhibited, or an enema given; for, although, the quantity of food taken by the patient

be very small, yet if the bowels be confined, the secretions will accumulate and irritate the inflamed glands.

After convalescence is established, the oils of Turpentine and Valerian should be used for some time; and very great care should be observed not to allow the patient to indulge his appetite; to exercise too much; nor to expose himself in any way. It requires several weeks and sometimes several months to recover from the effects of this fever; and if a relapse occur it is almost sure to terminate fatally. A generous diet, moderate exercise in the open air, and good, cheerful society will accelerate the convalescence.

Whether this disease is contagious or not is yet a question with the profession. There is much controversy upon the subject—some high authorities contending with much plausibility that it is, while others with as great a show of reason contend that it is not. It is a question that must remain unsettled till the cause of the disease is ascertained. My opinion is, that it is just about as contagious as the common intermittent fever of the South.