

AN
INAUGURAL DISSERTATION

ON

Enteric, or typhoid fever.

SUBMITTED TO THE

PRESIDENT, BOARD OF TRUSTEES AND MEDICAL FACULTY

OF THE

University of Nashville,

FOR THE DEGREE OF

DOCTOR OF MEDICINE.

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OF

Tennessee

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JOHN YORK & CO.,

BOOKSELLERS AND STATIONERS,

NASHVILLE, TENN.

To the Medical Faculty
of the University of Nashville

Enteric, or typhoid fever.

As this disease has lately become so important that almost all cases of fever, especially such as prove fatal, are pronounced "typhoid", I have felt more interest in investigating the peculiar characters of this, than those of any other disease with which the physician has to deal, in this climate.

I have lately had an opportunity of observing an epidemic of a very fatal character, in an adjoining County, which is an additional inducement to write on this very common subject, since my opportunities of observing disease at the bedside for myself have been limited, since I became

- a pupil of medicine.

The symptoms of enteric fever are in the beginning rather obscure. The subject of an attack of this disease generally feels a peculiar dullness, languor, or depression for several days, - sometimes a week, or more previous to confinement to bed:

So that he may be said to go "moping about," feeling rather indisposed, though not enough so to feel it necessary to take to his bed.

The indisposition complained of consists usually of weariness, slight headache, painⁱⁿ the back and extremities, with chilly sensations alternating with heat. In other cases, however, the premonitory symptoms are not thus prolonged: but the disease begins abruptly, with a chill; and this is the case especially when the disease seems to prevail in the form of an epidemic.

The reaction after the rigors is not altogether as high as that succeeding the rigors in the beginning

of our common autumnal fevers: the same lassitude complained of previously, continuing during the reaction: Nor does the febrile movement abate with profuse diaphoresis, as in the latter.

But the symptoms in very many cases of typhoid fever differ but little in the forming stage from the ordinary remittent, or bilious fever.

Indeed I have known each mistaken for the other by the most discriminating practitioners.

Such as sweariness, headache, pain in the back and loins, soreness, or numbness of the extremities, loss of appetite, and general uneasiness, are symptoms common to fevers in general: no less to one than another in the inchoative period.

At a later period, however, it is not so difficult to distinguish the different varieties from each other.

When this disease is fully developed, the symptoms noticed above undergo a considerable increase, while others peculiarly characteristic are superadded

The pulse becomes more frequent; the surface dry and hot; the face is flushed, and of a peculiar dingy or dusky hue; the tongue becomes coated with a whitish yellowish fur - tip and edges red.

Painⁱⁿ the head, is almost a constant attendant: Though it is not usually severe, and mostly of a dull heavy character. It is worthy of note, that this last symptom is, in a measure, proportioned to the severity of the case.

Complete loss of appetite: thirst: and considerable general, with much restlessness, and want of sleep.

Haemorrhoea is a very common symptom of this disease.

In a large proportion of cases, this symptom is present from the very beginning, and ^{persists} more or less obstinately throughout the whole progress of the disease. In other cases it does not supervene until the disease has made considerable progress - more commonly, however, in the earlier periods; and the discharges are in most cases very offensive. Bleeding from the nose - epistaxis - is highly characteristic of zutric fever, - a tendency

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to which is manifest very early in most cases. The hemorrhage is profuse in some instances, even requiring the plugging up of the nose: generally it is of little consequence, except "as a sign". I do not remember to have ever seen a case of this disease in which epistaxis did not occur, sooner or later.

The stomach, though often retentive, is sometimes irritable. Transient pains are often felt in the abdomen - increased by pressure - especially in the right iliac region, where "a gurgling sound may always be heard," - due to the passage of gas through the illeo-coecal valve.

Further on in progress of the disease, the symptoms detailed in the preceding pages undergo an increase in intensity, and others probably more characteristic occur. The pulse becomes more frequent and fuller, until it often reaches as high as 120-30 - and even as high as 150: the skin becomes so dry and hot to impart a prickling sensation to the touch.

The tongue, previously presenting but little alteration

in appearance, except being coated, and its tip and edges reddened, now becomes remarkably pointed, elongated, dry and of a peculiar colour much darker than usual, and marked by transverse fissures, which sometimes extend deep into the structure of the organ.

Flocks of, what appears to be disintegrated mucous membrane, lining the surface of the tongue, are frequently thrown off, leaving the surface of the organ smooth, red and shining, which is soon re-coated with a similar substance, to be again exfoliated as in the first instance.

Sympanitic distention of the abdomen is always present to a greater or less degree. There did not occur a single case in the epidemic to which I allude in the premises, in which this symptom was not present in a marked degree, to such an extent in some instances, that the abdomen presented a convex surface from the ensiform cartilage to the pubis; and occasionally the abdomen was so enormously distended as to interfere with respiration, by encroaching upon the diaphragm. This is the source of much

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annoyance to the patient. The distention is due to the generation of gas within the colon, the small bowel being free from the distention. In general it bears some proportion to the severity of the disease, being moderate in mild cases, and greater in the severe. It is scarcely ever observable before the seventh day.

The "rose-coloured eruption" mentioned by Louis, & others as being one of the most characteristic phenomena of enteric fever, I have noticed for in several cases, in most of which, I detected it very readily. In ten cases, I detected it in seven or eight.

"This consists of small red spots, usually roundish, and about a line in diameter, though sometimes larger, often slightly prominent, and disappearing under pressure with the finger, to return with the removal of the pressure" The eruption is never present at the commencement of the disease, but commonly between the seventh and fifteenth days. They appear in general first and numerous on the abdomen, extending afterwards to the chest, and

occasionally also to the extremities, and even to the back and face, though very rare in the last mentioned positions. I have seen them abundant on the upper and inner part of the thighs, and confined to that place.

The number of these spots varies greatly, sometimes there are only a few, and sometimes being countless.

"They appear in successive crops, each lasting three or four days, and then gradually fading out; and the whole period of the eruption varies, according to Louis, from three to fifteen days."

These spots are not likely to be confounded with petechiae, which would hardly come under the head of "eruption", but consist merely of an extravasation of blood into the texture of the skin. They are of a more livid colour, and do not disappear under pressure, as in the case of the rose coloured eruption.

Petechiae are often observed in typhoid fever, though they are not peculiar to it. When observed they are indicative of much prostration and debility.

Hæmorrhage from the nose has already been noticed as a symptom of this disease: that from bowels, and, in females, often from the uterus, is of frequent occurrence, and not unfrequently to a fatal extent, as I have in several instances observed. This usually takes place in the more advanced stage of the disease, and according to my observation always augurs unfavorably.

"In some instances the blood is red and but little changed in others it is blackish and disintegrated."

But there is another train of symptoms wholly unlike those detailed in the preceding pages, which are equally valuable as diagnostics, if not more so.

These have been very properly denominated "Nervous symptoms;" and I have seen them uppermost, even in the beginning, and continue through the whole course of the disease: though it usually, in the more advanced stage that they become prominent.

Headache has already been alluded to as a constant attendant; and this is sometimes about all that

is complained of. The patient manifests little concern about his condition, Talks but little, and seems wholly indifferent to surrounding objects.

The countenance loses its natural intelligent expression, and appears vacant and blank, or dejected.

The mind is frequently 'absent' and wandering, - requiring an effort of the will to fix it upon any particular subject, but when especially directed to a subject, usually acts correctly. When left to itself, however, the strangest fancies, and the most whimsical notions are conceived: Thus the patient imagines himself from home, or he may converse with some individual whom he imagines to be present, &c &c

This is noticed more particularly on the patient's waking up from sleep, and when he begins to feel a disposition to sleep. Watchfulness and catching at imaginary affects are common.

Delirium usually succeeds to such symptoms.

This does not observe any particular form, or degree:

in most cases, it more commonly of the low muttering character, and, apparently, due more to a want of power in the brain, than to irritation. In some cases, the delirium is violent, indicating strong sanguineous determination to the brain.

Occasionally, the two varieties alternate with each other, ~~but~~ the former is much more common, and is nearly always accompanied with sub-cultus tendinum, and it supervenes at a later period, generally speaking, than the latter variety.

In some cases, somnolence, in a remarkable degree, is present, in others the opposite state obtains.

The organs of special sensation are often perverted. Stullness of hearing is particularly noticable in the advanced stage. I have noticed it invariably in all cases that run a tedious course:— it seldom amounts to total and permanent deafness, yet the patient requires to be spoken to in a loud voice, to be able to understand what is address to him: I have no where seen this

phenomenon spoken of in "the books" as being prominent in any other fever: it does not occur except in the more advanced stage, and is indicative of impairment in nervous sensibility, and energy, generally.

A tendency to swelling about the angle of the inferior maxilla is manifested in many cases, and often with formation of abscess.

Sloughing of the skin in situations remote from the center of the circulation, and in parts exposed to constant pressure from the position in bed - constituting bed-sores - is not uncommon in the more protracted cases. The general sensibility of the patient is so obtunded as to prevent him from perceiving the injury certain parts undergo from a failure to relieve them by change of position, and hence it is nothing more than we should expect. But there is sloughing from other causes: as, for example, where it is necessary, on account of local congestions, to resort to counter-irritation, as blisters &c.

The blood being so impoverished that there is scarcely

- plastic material left to repair the injuries thus inflicted upon the skin.

I do not pretend to have detailed the symptoms and signs of this disease in the precise order in which they occur: nor as they are laid down in the books, but have jined them down just as I could recall them to mind, and without any special reference to any authority at the time.

I have also omitted a good many symptoms and phenomena, which are mentioned by Authors as occurring sometimes in the progress of the disease, but which are rather incidental than peculiar to it.

Anatomical Characters

Brain,- from the cerebral manifestations constantly present during the progress of this fever, we should expect considerable organic lesion: such, however is not often the case,- though slight signs of inflammation, and effusion upon the arachnoid membrane, is sometimes detected. Lungs,- the air cells are sometimes

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found to be obliterated in spots, resembling the solidification resulting from Pneumonitis: though the solidified spots are tougher, and usually more circumscribed, than in the latter affection.

Aorta is usually observed to be flushed, and reddened on its internal surface.

The heart is usually found to be softened and flaccid, together with most of the organs and tissues, depending probably upon the impoverished condition of the blood, which in most cases presents the appearance of a dark, homogeneous mass, the corpuscles apparently being dissolved in the liquor sanguinis.

The Spleen usually much enlarged - sometimes to four or five times its natural dimensions, and its structure softened so as that it may be readily broken down with the finger. This may often be detected while the individual is living, by proper examination.

The Stomach usually undergoes little change, and suffers but little disturbance in function.

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Intestinal Canal, - It is difficult to think of typhoid fever without associating with it, inflammation, and ulceration of the glands of Peyer. These glands are most numerous in the ileum, about its caecal extremity, but may be found much higher up in the canal; and on the surface of the mucous membrane opposite to the mesentery. They are minute ductless glands - found solitary in the upper part of the bowel - *glandulae solitariae*; and occurring in elliptical patches - *glandulae agminatae*, about the caecal extremity of the ileum. The ulceration of these bodies occurring so invariably in all cases as to be necessary to the making out a case of typhoid fever in post mortem examinations, has induced many to subscribe to the idea that, this fever is of a reactionary character, and depending upon the peculiar inflammation and ulceration in question. Though the majority of writers hold to the contrary, and that these lesions occur in the course of the

disease, the fever being in no wise depending upon such lesion. No one, however, ever had an opportunity of examining the condition of Peyer's glands in the beginning of the fever, it seldom proving fatal so early. The ulceration of these bodies about the cecal extremity of the ileum, at first presents distinct points, but when the process is complete, the whole patch presents the appearance of one ulcerated surface. In some instances, the floor of the ulcer is the muscular coat of the bowel; in others, in consequence of the destruction of that tissue, it is the peritoneal coat; and this occasionally is found penetrated, so as to form a communication with the peritoneal cavity. Of fifty five cases examined by Louis, eight presented the phenomena of perforation. The opening was in the center of the ulcerated patches, and always in the vicinity of Coecum

"The perforation is produced either by the progress

of the ulceration, by mortification of the unco-
vered peritoneal membrane, or by its rupture
from force applied within the bowel."

Perforation of the intestine under such circum-
stances, must always be regarded as an unfortu-
nate accident, though I believe not necessarily
fatal. Yet the presence of the contents of
the bowel escaping into the cavity of the
peritoneum, sets up an inflammation so intense
as to prove speedily fatal, in most cases.

The mesenteric glands are as constantly involved in
the disease, as those of Peyer. They are reddened,
enlarged, and softened; and sometimes exhibit traces
of pus, though very rarely in such quantity as to form
an abscess. The lymphatic glands elsewhere, are
sometimes enlarged, and reddened, but less frequently
and in less degree, than those of the mesentery, correspon-
ding with the glands of Peyer. Other portions of the
Alimentary Canal are not unfrequently diseased

The pharynx was found by M. Louis, in one sixth of the cases he examined, ulcerated, coated with false membrane, or infiltrated with pus.

The oesophagus was found ulcerated about as frequently, the ulcers being small and sometimes numerous. But it would be impracticable to describe all the lesions observed in different cases by writers. in an article of this kind. Indeed, there is scarcely any organ in the body that does not, in different cases, present some evidences of inflammation, or other lesion; and this is nothing more than we should expect, when we take into consideration the unusual length of the febrile. It is one of the peculiarities of fevers generally, to develop local phlegmasia; and it is this circumstance that causes us to dread the accession of enteric fever. In no case that has fallen under my observation, did I ascribe the fatal termination to any other cause than that of local inflammation of some

important organ: and, but for the supuration of these local phlegmasiae, I believe no case ever need prove fatal. The tendency of the lesions of Peyer's glands, described as being pathognomonic, is to heal, as is proven by dissections.

Cause.— Of the remote cause of enteric, I believe no definite idea has obtained. It has been ascribed to a peculiar specific poison, generated without, which getting into the system predisposes the individual to the disease.

As to the precise nature of said poison, I have never heard an opinion expressed. It certainly must be very unlike the poisons arising from the ordinary sources of putrilence; in these particulars, if not in others:—

It is confined to no particular locality; nor does it depend upon any certain season of the year, or atmospheric constitution for its production.

The disease prevails in low marshy districts, and in high, dry situations; in large cities, and in rural districts indifferently. It hovers about the mansions

of the rich as well as the hovels of the poor.

The source of the poison has been ascribed to human excretions undergoing the process of decomposition.

It certainly is often generated in situations where persons are crowded together, with insufficient, or unwholesome food, and in badly ventilated apartments; and where little attention is paid to cleanliness of persons. The disease is always more grave under such circumstances.

It has been long observed that persons removing from the country to large cities are more apt to contract the disease than the older residents.

The disease is thought to be confined to young, and to the middle aged; or, at least, to be of very rare occurrence amongst those in advanced life.

So far as my observation extends, this remark holds good. I do not remember to have ever seen a case of typhoid fever in an individual beyond thirty-five or forty years of age; and I have seen it

attack of families, and, after going the rounds with all the younger members, leave the aged parents unscathed from its ravages. Now whether it is that age destroys the natural susceptibility, or whether that susceptibility ever existed in the first place, I do not pretend to say. Perhaps those who are subject to the disease, being constantly exposed to its cause, take it before arriving at old age, else it would occur to the old as well as to the young. For I do not think it admits of reasonable doubt that, ~~some~~ individuals, from their peculiar organization, ⁱⁿ constitution, or temperament, are more liable to this form of disease than others of different constitution, &c. Just as one individual may be more obnoxious to rheumatism, or another to gout, and another to tuberculosis. We all have our inherent, or aquired predisposition to certain forms of disease, which may be developed, or called into action by the various exciting causes, - perhaps

by any cause capable of producing any considerable disturbance of the vital functions

The exciting cause or causes of Enteric or Typhoid fever are very various. Fatigue; mental anxiety; insufficient or unwholesome food, exposure to extremes of heat and cold, &c are set down as common exciting causes.

It is contended that enteric fever may be propagated by contagion, and many examples have been arrayed in support of this view of the subject. It is generally conceded that the disease does not occur but once in the same individual; and this fact has been urged as an analogical argument in favor of its contagiousness. It is well known, and universally acknowledged of those fevers that known to be contagious, ~~that~~ as, for example, the exanthemata, that they do not occur, except in isolated cases, a second time to the same individual

I am not entirely decided upon the question of its contagiousness. I know that isolated do occur which preclude the idea of such agency; and yet I have seen the disease introduced into neigh- borhoods hitherto entirely free from it, and a fearful epidemic ensue. I know a striking example of this kind last spring, in an adjoining county - Wilson. - A negro girl, returning home from a distance of fifteen or twenty miles, where she had been waiting on a family afflicted with typhoid fever, was attacked by the disease shortly after her arrival. Case after case occurred until the whole of family were stricken down.

Now not only were the family of her master free from the disease previous to its introduction in the manner described, but there was not a case in the vicinity for miles around. The disease did not stop here, but attacked neighboring families, and connexions, among whom regular visits were

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interchanged. This, and other examples which have fallen under my observation, have induced me to believe that the disease is in some degree contagious: though I do believe it may occur independent of any such influence.

The disease is more prevalent during the winter season, or in early spring. It is confined to no particular climate or latitude, but is found to some extent wherever people are to be found.

Diagnosis.— Many diseases have been mentioned as being likely to be confounded with typhoid fever. I have never noticed any difficulty in diagnosing typhoid fever from any other disease except our common autumnal, or bilious fever; and the difficulty here is soon removed when the disease is fairly developed. The situation, and season of the year will aid us not a little. Bilious fever prevails more in the latter part of summer, and in early Autumn, typhoid prevails more in winter, and

in early spring. Bilious fever prevails also in those marshy situations which are known to be the sources of malaria, and in which, some of the various forms of malarial fever, are nearly always present in the seasons to which I alluded.

Bilious fever may in almost all cases be recognised by the gastric symptoms, - such as excessive nausea, and vomiting of bilious matter: a tendency to daily remissions, and exacerbations, ichthroid hue of the skin, conjunctiva &c

The incubative stage is shorter, and is never characterized by so much general depression &c, as in typhoid fever.

The slow, and insidious mode in which enteric fever makes its attack: the heavy, dull expression of the countenance, and dusky hue of the face: sluggishness of mind, and incapacity for mental exercise: Diarrhoea - often beginning with the disease, or supervening very early: and epistaxis, will, all assist in the diagnosis. The tendency to daily

missions, if it exists at all, is not so marked as in billious fever: nor is the stomach so often harrassed with nausea, and vomiting. Afterwards, the phenomena are more distinct. "Cough, and bronchial rales," which should have been mentioned in the Catalogue of symptoms, as being common in typhoid fever: the peculiar appearance of the tongue: The general diminution of the secretions: the rose coloured eruption, tympanitic distention of the abdomen dulness of hearing, and the condition of the brain - the patient being either in a state of stupor or delirium, are sufficient to determine the existence of typhoid fever.

Prognosis. This disease, from what I have seen of it, is certainly to be regarded as a very serious one: though it appears that is not looked upon by the more recent authors, as being very fatal, under ordinary circumstances, but certain epidemic forms prove exceedingly fatal.

Most of the statistics which I have had opportunity of examining, are derived from hospital reports, and are not therefore to be taken as a standard of the mortality of the disease. It is easy to conceive how much more fatal a disease of this character would prove in hospital, where cleanliness, and ventilation - two important elements in the treatment of enteric fever, are not so strictly observed, than in ordinary private practice.

But even the statistics from these sources, and especially in this country, do not represent the disease as being so fatal as we should expect, when we come to consider the unusually long course which it pursues, and the various complications which seem to await every step of its progress.

Again, I believe it is the opinion of the profession generally, that we possess no remedy capable of arresting the disease, or shortening its duration, but all agree, that it will run its course, and that

most we can do, is to palliate the symptoms, and obviate the complications. Then I cannot, from these facts, and from what I have myself seen of the disease, but regard it as being more serious than the statistics from some of our northern hospitals would lead us to believe.

I have noticed with much interest every case of typhoid fever that has fallen under my observation since I became a student of medicine, and I have not seen such variety in the grade of severity as is spoken of by writers. I have seen none of those light attacks which require but little attention, and from which the patient recovers without an untoward symptom: but, on the contrary, a uniformly grave, and tedious, and very often fatal disease. Though I have seen many cases that, for sake of convenience, or something else, were called typhoid fever, that were remarkably manageable: but were in reality no akin to the disease.

Treatment. A few words will comprise all I have to say on this part of the subject. I look upon typhoid fever as a specific, self limited disease: by which, I mean that I do not believe there is any remedy or remedies, known to the profession, capable of arresting its progress: but that it observes a certain definite course in all cases, and cannot be diverted from such course by the interference of remedies.

Admitting this view of the subject, it is very obvious that we should refrain from those active measures which are so commonly employed in most of our fevers, but, on the contrary, strive to husband the resources of the system, so that the patient may be enabled to bear up under the long siege before him.

Unless the disease is complicated with local inflammatory action, or there is irregular

determination of blood to some important organ threatening inflammation, general bloodletting is inadmissible. Even in this case, if the case is clearly made out to be typhoid, unless the patient is very plethoric, I should prefer to combat the local complication by local measures such as leeching, or cupping, and the other local applications usually resorted to. I have witnessed the disastrous consequences of general bloodletting so often in this disease, that I am almost induced to say, I would not resort to it under any circumstances. I have learned to have a perfect horror of it.

My treatment for an ordinary case of typhoid fever would be the following—

Have the patient removed to an airy apartment, his skin washed with soap and water, at least every other day, and his linen, sheets, &c changed as often; surface sponged with cold, or tepid water to abate the fever: using at the same time oil of

terpentine, at first, in small doses, increasing as the disease progresses, or as the symptoms become more grave. If the bowels are torpid, castor oil may be added to the terpentine so as to procure an evacuation daily, being careful to avoid all irritating, and drastic cathartics. If diarrhoea is present, it is sometimes necessary to employ opiates, or astringents; though it will, for the most part, yield to the steady and persevering use of the terpentine.

Hæmorrhage from the bowels may be arrested by the application of cold water to the abdomen, or injected into the bowels:— that from the nose sometimes requires plugging of the nares.

If perforation of the gut occur, the indication is to keep the patient perfectly quiet, by large doses of opium. In the latter stage of the disease, the system requires to be sustained, by the use of stimulants, tonics, and nutritious diet.

Respectfully Submitted,

Nashville, March 1st 1857 } A. Wash Muddleston