AN INAUGURAL DISSERTATION
ON
Enteric, or Typhoid Fever.

SUBMITTED TO THE
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OF
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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 in interest in investigating the peculiar character 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 dulness, 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, pain in 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 lactitudinal complaints 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 weariness, 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 lies to one than another in the incubation 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 un斂 adore
The pulse becomes more frequent; the surface dry and hot; the face is flushed, and of a peculiar dingy or dusty hue; the tongue becomes coated with a whitish yellowish fur. Lip and edged red. Pain in the head is almost 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.

Hiccough is a very common symptom of this disease. In a large proportion of cases, this symptom is present from the very beginning, and 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 discharge is in most cases very offensive. Bleeding from the nose—epistaxis—is highly characteristic of enemie fever, a tendency
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 ileo-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 feeble,
until it often reaches as high as 130–30—and even as
high as 150: the skin becomes so dry and hot to impart
a pricking 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.

Plates 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 recrusted with a similar substance, to be again desquamated as in the first instance.

Sympathetic distension of the abdomen is always present to a greater or less degree. This did not occur a single case in the epidemic to which I allude in the previous, 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 uniform 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
conagance 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 even ob-
ervable before the seventh day.

The "Rose-Coloured eruption" mentioned by Louis, t
others as being one of the most characteristic phen-
omena 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 now present at the commencement of the
disease, but commonly between the seventh and fifteenth
days. They appear in general first and numeraely on
the abdomen, standing afterwards to the chest, and
occasionally also to the extremities, and even to the back
and face, though very rare in the last mentioned position.
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.
Necrochage 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 is 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 defective. 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 self from home, or he may converse with some individual whom he imagines to be present, etc.

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

Delirium usually succeds 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 saucyious
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 subcutaneous
thrombosis, 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 perveted.
Stunness of hearing is particularly noticeable 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 addressed 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 congestion of 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 fixed 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 character

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 cell can sometimes
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.

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 dissol
ved 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.
Intestinal Canal.—It is difficult to think ofTyphoid fever without associating with it, inflamma-
tion, and ulceration of the glands of Roux.
These glands are most numerous in the ilium, about-
it's caecal extremity, but may be found much higher
up in the canal; and on the surface of the mucous
membrane opposite to the meatiary. They are minute
ductless glands—glandulae solitariae in the upper part of the
bowel—glandulae solitariae; and occurring in elliptical
patches—glandulae agminatae—about the caecal
extremity of the ilium. 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 reactive or 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 elevation of these bodies about the coloreal 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 ileum 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-three 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 uncoined peritoneal membrane, or by its rupture from force applied within the bowel."

Perforation of the intestine under such circumstances, must always be regarded as an unfortunate accident, though I believe not necessarily fatal. Yet the presence of the contents of the bowel escaping into the cavity of the peritoneum, set up an inflammation so intense as to prove rapidly fatal, in most cases.

The mesenteric glands are as constantly involved in the disease, as those of Pyen. 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 in enlarged, and reddened, but less frequently and in less degree, than those of the mesentery, corresponding with the glands of Pyen. Other portions of the alimentary canal are not unfrequently diseased.
The pharynx was found by Mr. Louis, in one sixth of the cases he examined, ulcerated, coated with false membrane, or infiltrated with pus. The esophagus 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 an 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 disease. It is one of the peculiarities of fevers generally, to develop local phlegmata; 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 describe the fatal termination to any other cause than that of local inflammation of some
important organ: and, but for the supposition of these local phlegmasiae, I believe no case would prove fatal. The tendency of the lesions of Peyer's glands, described as being pathognomonic, is to heal, as is proven by dissection.

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 patience; in those particular, 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 looks about the mansions
of the rich as well as the bovds of the poor. 

The source of the poison has been ascribed to human excretions undergoing the process of decomposition. It certainly is oftener generated in situations where persons are crowded together, with insufficient or unwholesome food, and in badly ventilated apartments; and when little attention is paid to cleanliness of person. 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 old 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 was 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 seem to the old as well as to the young. Nor do I think it admits of reasonable doubt that, some individuals, from their peculiar organization, constitution, or temperament, are more liable to this form of disease than others of different constitution, etc. Just as one individual may be more obnoxious to rheumatism, or another to gout, and another to tuberculosis. We all have our inherent, or acquired, 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 Enuric or typhoid fever are very various. Fatigue; mental anxiety; insufficient or unwholesome food; exposure to extremes of heat and cold, etc., are set down as common exciting causes.

It is contended that Enuric 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 analogous argument in favor of its contagiousness. It is well known, and universally acknowledged, that those fevers that are known to be contagious, that as, for example, the scarlet fever, that they do not recur, 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 cases occur which preclude the idea of such agency; and yet I have seen the disease introduced into neighborhoods hitherto entirely free from it, and a fearful epidemic ensuing. I knew 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 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 connections, among whom regular visits were
in exchanged. This, and other examples which have fallen under my observation, has 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 jaundice, nausea, and vomiting of bilious matter; a tendency to daily remissions, and exacerbations, ichthyode 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 oppression of the co-continence, and dusky hue of the face; sluggishness of mind, and incapacity for mental exercise. Diarrhoea, often beginning with the disease, or surmounting any early, and epistaxis, will, all assist in the diagnosis. The tendency to daily
Drunkenness, if it exists at all, is not so marked as in bilious fever; nor is the stomach so often harassed 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 feces: the rose-coloured eruption, tympanitic distension 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 it 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 hospitals, 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 attend 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 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
unfavorable 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
mangeable; 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 obeys 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
destruction 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, etc. changed as often; surfaces spunged with cold, or tepid water to abate the fever, using at the same time ice 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 opiatus, or astringents. Though it will, for the most part, yield to the steady and persevering use of the terpentine.

Hemorrhage 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 occurs, 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,

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A. Nash Huddleston