

AN
INAUGURAL DISSERTATION

ON

Typhoid Fever

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BY

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OF

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So

Prof. W. R. Bowling,
As a slight testimonial of
appreciation for his many excel-
lent qualities of head and heart,
these pages are respectfully in-
scribed by
The Author.

Typhoid Fever

Among the many maladies to which the human family are liable, there is none more obstinate and intractable than the one under consideration; this together with its wide diffusion and the fatal consequences with which it is frequently attended, makes it a subject of great importance to the medical man, & one with which he should be most intimately acquainted. I will however premise in the beginning, that it is not my intention to trace the disease through all its minute ramifications and changes, but shall only notice its more characteristic and diagnostic

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symptoms. Typhoid Fever is evidently a disease of very extensive geographical prevalence; its limits are wider than those which circumscribe the prevalence of any other strictly idiopathic non eruptive fever. as to the cause of this very peculiar fever there has been a good deal of speculation, but we must confess that as to the real actual producing efficient cause, we know nothing; we know that it prevails most frequently and most extensively in high localities, with a gravelly or sandy sub soil, or in places where there is but little malarial fever; it is also generated or prevails extensively in places where people are very much crowded, with insufficient and unwholesome food, examples of which we have in large cities, ships, badly ventilated, hos-

pitals &c, we have also abundant reason to believe that some people have an inherent predisposition to this disease, which is liable to be called into action by various exciting causes; by any cause that is capable of disturbing the vital functions, such as fatigue, exposure, changes of weather, mental disturbances &c.

This predisposition is generally exhausted by one attack of the disease; hence people are rarely affected but once with it. We know also that age exerts a considerable influence over this predisposition. as it most frequently attacks people between fifteen and twenty five years of age, but occasionally both previous and subsequent to that time.

The disease has been variously named by different authors from the time of its

first description, to quadrate with the peculiar views which they entertained in regard to its pathology; but it is now I believe universally recognized by the name of Enteric or Typhoid Fevers; and with this name I shall proceed to treat of it. Owing to the predominance of malarial diseases in the South this disease imbedded as it were in a malarial diathesis, differs very materially from the same disease in more northern districts.

Pathology. The anatomical lesions observed in persons who have died of this disease are various, but they may all be arranged in two groups, viz. Characteristic and incidental. The former being the most important I shall treat of them first and most minutely. First

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There is a tendency to softening in all the tissues of the body. The Small intestines are generally distended with flatus, their contents consisting of mucus and of liquid bilious matter. The color of the membrane ranges from a rose tint to a very dark red; its consistence is also diminished. The duodenum is rarely implicated though it is sometimes reddened, softened and occasionally, slightly ulcerated; but the invariable and characteristic lesion found in the Small intestines is the affection of those Small elliptical plates in the ileum, denominated Peyer's glands.

This is now regarded as a post mortem test of the existence of the disease.

The first observable change that these glands undergo, consists in being thickened, reddened, softened and elevated. Some-

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what above that of the surrounding mem-
brane. These lesions are invariably found
most advanced and most strongly marked
at the lower end of the ileum, near the ileo-
cecal valve. In most instances this simple
hypertrophied condition of the plates contin-
ues to augment in intensity until ulcer-
ation takes place. These ulcerations may be
superficial or they may proceed until perfora-
tion takes place. When perforation occurs it
is usually single, and near the termination
of the ileum. There is another peculiar app-
earance of these glands, consisting in the
submucous cellular tissue being converted
into a substance of a yellowish color, desti-
tute of organization presenting when cut,
a glossy appearance, and in consequence of
these conditions they have received the names
of hard and soft. The same patch frequ-

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ently exhibits both the forms referred to
and in various stages of ulceration.

The isolated follicles or Brunner's glands
are subject to the same changes as have
been described in connection with Peyer's
glands, only they are less seriously and less
constantly affected. The mesenteric glands
are also more or less implicated. In some
of them there are small yellow points, of
a purulent deposition but they correspond
pretty much with the altered elliptical
plates, being most changed in proportion
to their proximity to the ileo cecal valve.

The same may be said of the other lym-
phatic glands of the body, with the excep-
tion that they are not so constantly, or so
seriously implicated. The large intestines
are more or less involved in this disease,
being distended with flatus and in some

rare instances ulcerated. When ulceration takes place they are smaller and more superficial than in the small intestines, and are found most frequently in the Coecum, though not confined to this portion of the intestine. There are now some incidental lesions which require a brief notice.

First the brain and its membranes are sometimes involved; their lesion consisting of a serous effusion between the Arachnoid and pia mater; a rose tinge of the cortical substance, and an infection of the medullary portion of the brain.

The epiglottis is frequently the seat of disease, ulceration sometimes extending through its investing membrane into the fibro cartilage itself.

The mucous membranes of the pharynx,

oesophagus and stomach are sometimes softened, thickened, mammellated and occasionally even ulcerated, but this is a very rare occurrence.

The mucous membranes of the larynx, trachea, and bronchial tubes are sometimes slightly reddened, though they are very rarely the seat of any unequivocal lesion. The most characteristic lesions produced in the lungs are recognized by the names of carnification, or splenization, and hepatization. The portion of lung that is carnified is of a bluish color, destitute of air, and readily sinks in water. This lesion occupies a portion of one or both lungs.

The second stage, hepatization, is not indicated by any prominent symptom during life; other changes sometimes occur, such

as inflammation, violet red spots, circumscribed abscesses, &c. but these are very rare. The heart becomes soft and flabby, and there is generally found in post mortem examinations, a fibrinous clot in the right ventricle; this in former times was thought to be the cause of death, but it is now generally conceded, I believe, that this clot is formed in articulo mortis, and is a consequence rather than a cause of death. The spleen is almost invariably reduced in consistence and very much augmented in volume, sometimes acquiring four or five times its usual size; its color is also darker than natural, being of a bluish brown, and sometimes of an almost black color. The liver is also softened and otherwise variously altered. The Kidney's

are similarly affected, but not to so great an extent. The pancreas, salivary glands, urinary apparatus, &c. are so seldom and so slightly implicated that I deem a description of their occasional lesions unnecessary.

The blood is also slightly changed, there being a diminution in the amount of its fibrin from the beginning to the end of the disease, in consequence of which the blood from a patient affected with Typhoid Fever does not coagulate so readily as healthy blood.

Symptoms

In most instances the patient complains of being unwell, "goes moping about" without being able to attribute the disease to any particular part.

It has a longer forming stage than

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any other fever, so much so that it is frequently impossible for the patient to say definitely, when the disease commenced. The change is so very gradual that the patient can scarcely realize the disease. There is invariably a feeling of mental and bodily languor, accompanied with an indisposition or inability to perform customary labor.

The patient may in the incipient stage have rigors, alternating with febrile sensations, these rigors gradually augmenting in intensity, finally become concentrated into a chill. Immediately following the chill, there is an increased heat of the skin, with other febrile symptoms; this heat of the skin varies in intensity; sometimes it is moderate and uniformly diffused over the body; most

frequently however it is not equally diffused, one side of the face may be flushed, while the other is paler than natural, or the body may be warm, while the extremities are cool, & vice versa; and as the color and heat subside in one part, they cross over and affect the opposite side in the same manner. In some cases the skin is constantly dry, in others there is more or less moisture; sometimes this moisture is confined to particular parts of the body, whilst in others it extends over the whole surface and exhibits rather an acid odor.

There is a very profuse perspiration sometimes connected with this disease, denominated washer or man's sweat, causing the hands and feet to assume a corrugated appearance, parts of the cuticle generally peel off, and the hair comes out. There is also headache

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This occurs most frequently on rising in the morning; its duration and degree are various; most frequently it is dull, heavy and throbbing; in a few others it is acute, it is usually situated in the forehead and temples, but sometimes extends over the whole head.

Headache is almost always accompanied with pain in the back and limbs, which generally disappears with it. The pulse is accelerated and otherwise variously modified, its frequency in the whole disease ranging from 70 to 140 in a minute; but varying very much with the severity and danger of the disease. The least average pulse of patients that terminate favorably being 80, and the greatest 112 in a minute, whilst in cases that terminate fatally; the number very much exceeds this. In the second week the tongue becomes coated with a

yellowish glutinous fur not quite so moist as in health; in a few days this coat becomes dry, and a black stripe is formed in its middle, and it becomes red at its tip and edges; still later than this, it becomes dark all over, glazed, stiff and crossed by cracks and fissures; this dark crust then peels off in flakes, leaving the mucous membrane denuded. This coating & denuding may be repeated several times during the progress of the disease.

If the mucous membrane has a shining appearance, it is a sign that it will be renewed again; on the other hand when it is denuded for the last time, the tongue will have a natural, healthy appearance; Sometimes there is a whitish exudation upon the tongue and other portions of the mucous membrane. The tongue is also

sometimes swollen, tender and occasionally even ulcerated; the lips are also often cracked and the teeth near the gums covered with a dark tenaciousordes.

There is also generally some uneasiness in the bowels, attended for the most part with diarrhoea, which is usually in proportion to the severity of the disease.

Late in the disease the discharges frequently become involuntary and without the consciousness of the patient, and sometimes mixed with blood. Hemorrhage from the bowels sometimes occurs occasioning some pain; this varies from a dull head ache to a severe griping, its principal seat being in the iliac fossae, the hypogastrium and around the umbilicus. Flatulent distension of the abdominal parietes is in proportion to the severity of the disease, it varies from

a slight rigidity to the utmost distension of the abdomen. Another valuable symptom is the gurgling sound which is produced by pressure on the abdomen over the region of the caecum. The respiration is accelerated in direct proportion to the febrile excitement; sometimes it is accompanied with delirium or stupor, the respiration becomes irregular, noisy and hissing, & sometimes there is a peculiar whistling sound produced when the patient breathes through the nose, and when asleep the mouth is generally open producing a somewhat stertorous sound. Dyspnoea very rarely occurs in this disease; sometimes there is a slight cough which is frequently unnoticed by the patient. The expectoration is very small, tenacious and colorless.

Epistaxis occurs at different stages of the

disease, most frequently however at the commencement; it is generally small in quantity, though sometimes copious.

Desire for food is almost invariably absent from the beginning of the disease.

Thirst is in proportion to the intensity of the febrile excitement; Nausea & vomiting are sometimes present, the former presenting itself at the commencement of the disease, vomiting at a later period.

The patient is frequently impatient and irritable, or he may be indifferent. This state of the mind may continue throughout the disease, or may be lost in delirium, or stupor. The patient is sometimes in constant motion, picking at his bed clothes, pulling them about and drawing them tightly over his head, and sometimes if not restrained, he will rise suddenly from his

bed and wander about the room. Distinctly
 maniacal delirium is very rare,
 though sometimes in the most dangerous
 cases the patient will declare that he is not
 sick, but on the other hand is very well.
 The expression of the countenance is gener-
 ally dull, vacant and listless, the eye heavy
 and languid, or marked by sadness, anx-
 iety and distress. Somnolence presents
 itself in proportion to the severity of the
 attack. Vigilance presents itself more
 commonly in the early than in the later
 periods of the disease, the patient is watch-
 ful & restless, interrupted sometimes
 with a transient and unrefreshing slum-
 ber. The senses are frequently perverted,
 there is dizziness, ringing in the ears, dull-
 ness of hearing and sometimes the hearing
 is otherwise perverted; the patient imagines

that he hears voices and sounds when nothing of the kind exists. There is also sometimes imperfect and perverted vision; this with the ringing in the ears occurs most frequently while the patient is sitting up in bed. The sense of taste is always more or less obtunded.

Spasmodic contraction of the muscles sometimes occur, most frequently however in the fingers and wrist, to which the term subcutaneous tendinismus, has been applied. It sometimes occurs also in the diaphragm producing by its action hiccup.

The urine as the disease advances becomes more highly coloured, and as the disease begins to decline it lets fall an abundant sediment.

The cutaneous eruptions are of two kinds, viz rose coloured spots and sudamina,

the former are small spots slightly elevat-
 ed above the surrounding skin, of a
 bright red, or rose color; they readily
 disappear when pressed upon by the
 finger and immediately return when
 the pressure is removed. The most usual
 period of their appearance is during the
 second week of the fever; they vary very
 much in number; sometimes there are
 only eight or ten; in other cases they are
 sprinkled abundantly over the whole
 body, but they are usually confined to
 the abdomen and chest; they come out
 successively, and after remaining seven or
 eight days, gradually fade away and
 disappear. The Sudamina consists in
 transparent vesicles, formed by the pres-
 ence of a limpid fluid elevating the
 cuticle somewhat above the surrounding

skin. Their most common situation is upon the side of the neck and about the shoulders and axilla, though they are scattered extensively in some instances, over the body; they appear usually about the twelfth day, and remain for several days & gradually disappear.

Treatment

This should be as simple as possible; the room which the patient occupies should be thoroughly cleaned and well ventilated; the patient's clothes and bed clothes should be kept perfectly clean and shifted frequently, and his body sponged and washed frequently with soap and water; prevent as far as possible all mental and bodily labour. Give diluent drinks and use very light diet; let it consist chiefly of farinaceous food; an indul-

gence of the appetite should be sedulously guarded against &c

It is customary I believe to begin the treatment with some kind of a cathartic, but owing to the disposition of this disease to diarrhoea, and the great susceptibility of patients to cathartic medicines that I deem the use of them unnecessary, unless they are indicated by constipation; when this state of things ^{exists} it is best to give a gentle laxative, as castor oil, or Sudley powder, after which the condition of the bowels should be carefully attended to, and kept daily open, but active purgatives should be avoided. Should diarrhoea occur it is best not to interfere with it unless it becomes excessive or exhausts the patient too rapidly, under which circumstances we should resort to

remedies to arrest ^{it} for this purpose Creosote given in conjunction with gum Arabic is a very good remedy it is sometimes necessary however to add Camphor and Opium. The most popular and perhaps the most potent medicine used in the treatment of this disease is oil of turpentine. It may be employed through the whole course of the disease. The following is a very eligible formula for administering it.

R Mucil Gum Arabic ℥iijss
 Comp. sp. Lavender ℥ii
 Oil Turpentine ℥ii

M give one tea spoon full every three hours. Attention should be paid during the progress of the disease to any complication that may arise and remedies addressed to them accordingly. There should active congestion or infl-

=animation of any part occur, as in the
 cerebrum, thorax or abdomen, it is best
 to abstract blood locally, by leeches or cups;
 but sometimes it is necessary to apply
 blisters. Refrigerant diaphoretics should
 be employed from the beginning to the termi-
 nation of the disease, for this purpose
 acetate of ammonia or citrate of potassa,
 in the form of an effervescent draught
 may be very advantageously employed.

If severe pain occur in the abdomen
 with flatulent distension, small local
 bleedings, warm fomentations, emollient
 cataplasms and sometimes blisters may
 be resorted to with great advantage.

If however the pain should persist, or
 tenderness be found to exist, large mucil-
 poultices should be applied over the whole
 surface of the abdomen, and kept there

for several days. If nervous symptoms, such as restlessness, agitation and slight delirium present themselves, they may usually be quieted by sweet spirit of Nitre, Hoffmann's anodyne, or opiates if not contra indicated.

The debility attendant upon this disease in the advanced stages frequently requires the use of Stimulants or Tonics.

The period at which it becomes necessary to resort to these remedies varies in different cases. The most suitable stimulant is wine whey, but when the strength becomes very much reduced it is sometimes necessary to add carbonate of ammonia, and sometimes it is even necessary to give pure wine or brandy, but when the debility is not very great Tonics alone will be

sufficient. When coldness of skin exists in connection with debility, rubefacients and stimulants should both be put in requisition. In cases of obstinate delirium or Coma, the head should be accurately shaved and a blister applied over the whole surface.

In excessive subcutaneous jactitation & antispasmodics should be used; for this purpose Muste or Asafoetida & Camphor are very good remedies.

If hemorrhage from the bowels occur, it may be arrested by giving opium & using at the same time injections of cold water. If copious epistaxis should occur and the ordinary measures fail to arrest it, a rag tampon, greased on the outside should be introduced into the nostrils and allowed to remain there

for some time. If Somnolence occurs the patient should be aroused occasionally and kept awake and not permitted to sleep all the time, as it is their disposition to do under such circumstances.

If on the contrary vigilance occurs it may be allayed by some mild preparation of Opium, or doses powders.

For the profuse sweats with which the disease is often attended, the patient may be rubbed occasionally with mustard and salt and at the same time give sulphuric acid internally.

If prostration should occur the only hope is to be placed in large doses of Opium.