Thesis

upon the

Relations of Enteric Fever

by

William Broadfoot
Ferndale
Martha Brae
Greenock
Scotland.

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 – 1346

Not a very satisfactory argument, but also not without merit & originality. WBS

Thesis
upon the
Relations of Enteric Fever

Ever since the publication of Sir William Jenners views upon the nature of the old Continued Fever towards the middle of this century, few diseases have perhaps received more attention at the hands of the Profession than that variety of it, to which Louis first applied the name of Typhoid Fever, and which at the present day is usually known as Enteric. As at present understood, it may be shortly described as a Fever running a definite course of from three weeks to a month or more, beginning insidiously, attended with more or less tenderness in the right iliac fossa, and in the great majority of cases with some looseness of the bowels; having in about two thirds of the cases a scanty eruption of small round rose coloured spots

upon the abdomen, and invariably presenting after death indications of inflammation and ulceration of Peyers glands, with a number of other less constant symptoms and post mortem appearances which vary according to the circumstances of the cases. Of these symptoms above enumerated, those which indicate the presence of the affection of the mucous intestine are considered the most important, and so much weight is usually attached to them that it is upon the presence or absence of these the diagnosis may be said to turn.

Such then is a description of Enteric Fever as usually given in our most popular text books, and any departures from this type are either entirely ignored, or mentioned so slightly as to lead one to suppose that their existence is doubtful, or their occurrence so rare as to acquire but little attention.

And yet however applicable this sketch

many to cases occurring in hospital practice from which these descriptions are usually taken, we may be pardoned for asserting that in private practice (especially in the country) departures from this particular form are far from uncommon - may more, are so far as our short experience can enable us to judge, as common as that form which has well marked abdominal symptoms; so that it would almost seem as if the poison which generates Enteric, were capable of producing symptoms as numerous and varied as that of Gout, or any other blood poison, and that the Enteric Fever of to-day is but one of a number of diseases all due to the same cause - viz. - the introduction into the blood of some morbid material generated by the decomposition of faeces excrement. In advancing this view then, we are only drawing conclusions which in the following observations

we hope to show are warranted both by the teachings of Physiology, and by analogy with other diseases.

How to begin with with what? - We have in the human subject as in all other vertebrates a circulating fluid (the blood), passing through the body with material to the various organs, and tissues, by the consumption of which they are able to perform their various functions, receiving back what has been already used, retaining what is meet for this purpose, and conveying these back to other organs where they are elaborated for further use, or discharged from the body in the form of the various excretions, as being no longer of any service. Yet notwithstanding all these changes constantly going on, so evenly balanced are the functions of the various organs in their relations to the blood and to one another, that the composition of the former may practically be said to remain unaltered.

And it is well that such should be the case for if from any cause the constitution of the blood should be suddenly changed by an excess of materials normally present in it, or by a deficiency of such, or it may be by the introduction from without of some noxious materials as we see in gout, anaemia, syphilis etc., then the result is disease in which not only one organ, but all organs in the body may suffer more or less, although in many cases the disease may seem to involve one organ or tissue more than another. Thus for example, those who suffer from the Uric Acid diathesis no doubt in the great majority of cases are at first affected with inflammation of the smaller joints of the body. ~~Hoc exemplo~~. Yet this is by no means the most serious of the morbid changes produced by the presence of this Acid to excess in the system. So not the pressure of the blood

increased, the arteries put upon the stretch, and changes produced in their walls and in the heart, leading to aneurism etc. The kidneys are constantly irritated. Attacks of gravel are far from infrequent, and ultimately chronic nephritis with all its attendant evils becomes established. The lungs and bronchial tubes also suffer, and we have but to enter the wards of some of our London hospitals, and enquire into the family histories of the patients there who suffer from bronchitis, asthma, etc. to find our astonishment excited by the large proportion in which we can find evidences of the gouty taint. Skin diseases are of frequent occurrence among the gouty and attacks of true podagra, erysipelas and bronchitis have been known frequently to alternate with one another. And last of all the testes may become the seat of obstinate inflammation excited by nothing but an accumulation of this acid in the system in which it is

normally present in minute quantities.
Here then we have a number of different diseases, all due to the circulation in the blood of a poison? the exact nature of which has been clearly demonstrated.
We donot in a large proportion of these cases the seat of disease is in the foot, and by many even in the present day the term of articular gout as meaning those cases only. Yet it may be questioned if after all the cases generally recognised as being but varieties of gout were collected, those which affect the feet would be found to predominate to the great extent which some suppose.
And as it is in Gout so is it in Enteric fever. We have a disease which, though in a great many cases it attacks the solitary and agminate glands of the intestine yet this is so frequently attended by morbid conditions of other organs, and even by affections of these organs alone - the intestines

offering no evidence of disease during life - that it may be questioned whether it is any more correct to apply the term Enteric fever to these cases, than it would be to designate as pyodagra all the various ailments which we have seen may be caused by this acid. But it may be objected on the one hand that there can be no comparison between a disease caused by the accumulation of this acid in the blood, and one caused by fermentation started by some materies morbi introduced from without; and on the other that the disease in question presents points of resemblance more closely allied to the eruptive fevers such as measles etc., in which we have certain lesions peculiar to the disease, and following the absorption of the poison as certainly as would coma the consumption of one drachm of morphia.

To the first of these objections we can only say that it has not yet been satisfactorily

proven that so called Enteric Fever is due to fermentation, and even admitting that it is, that the immediate cause of the phenomena is not some chemical agent produced by such fermentation which the resources of science have as yet failed to isolate. And to the second, we reply that the eruption of measles etc. is by no means constant, and cases are not infrequent in which the bronchial or pneumonic affection alone are present, and that too even after the patient has lived long enough for them to appear. And thus so far from weakening our case seems to strengthen it. For if in a disease like measles in which the symptoms are so constant, the essential feature (the eruption) should sometimes be absent, how much more likely is that to be the case with the intestinal affection of Enteric Fever, in which the

symptoms are so varied in the frequency of ~~their~~ occurrence, as for example the eruption, the sore throat etc. But we go further than this, and maintain that the bowel lesion is not only sometimes, but is very often absent, its place being taken by a number of other diseases of a more or less inflammatory character, or it may be running an uncomplicated course as simple Continued Fever without any apparent local lesion. Of the diseases which may thus take the place of the bowel affection the first we will consider is Pneumonia: and by Pneumonia we mean, not that which occurs sometime after the commencement of the disease, and which is usually looked upon as a complication, but a primary affection becoming established in the early stages and depending as much upon the changes in the blood then existing as does the inflammation and ulceration

of Peyers glands in the ordinary cases.
The first case of Pneumonia of this kind which came under our observation was that of a middle aged man who began with nausea, vomiting, and other symptoms of gastric disturbance which at the time were (attributed to over-indulgence in stimulants, and treated accordingly. Notwithstanding however strict instructions to keep the house, the patient went out on the third evening, feeling as he said almost well again. On returning home about eleven o'clock somewhat inebriated, he complained of pain over the left side, extending back beneath the ~~scapula~~, which continued ~~bad~~ night and all the next day. On being summoned to him upon the evening of that day, he was found to be suffering from all the symptoms of acute Pneumonia. There was the usual cough (dry at first), rapid respiration, with all

the other physical signs characteristic of the disease. From this time onwards until the completion of the third week, the lungs were more or less affected. At the beginning of the fourth improvement was observed in the local symptoms although the temperature varied between 99.0° and 100.0° until near the end of this week, when we were enabled to pronounce him convalescent. In connection with this case, the principal points of importance were the unusual duration of the case and the violence of the delirium, resembling in some respects delirium tremens, both of which peculiarities we attributed to his previous intemperate habits. The disease might thus have been considered ordinary pneumonia of a somewhat asthenic character, occurring in a patient whose constitution had been shattered by intemperance, and at the time it was so regarded

3

ed by us. Moreover in taking this view we felt all the more justified, in as much as every precaution was taken to exclude the possibility of their being any other disease present, especially Enteric, being stimulated in our efforts by the close supervision of a neighbouring clergyman, who had some considerable knowledge of medicine, and whose questions there was sometimes considerable difficulty in answering.

It was not long however before reasons arose for doubting the correctness of this view. The previous patient was just able to go about, when his son, a lad of seven years was laid up with a simple fever of a somewhat remittent type, which lasted for about ten days. Bearing in mind the close connection if not positive identity of Paroxysmal Remittent, and Enteric,

the drains were examined. These were found in a most unsatisfactory state, the inclination of the sewer in the direction of the river being so slight, that when in wet weather it became at all high, the drainage regurgitated into the back court, and soaked into the very foundations of the house. With such sanitary arrangements, and a case of simple fever occurring so closely upon the previous case above related, we think that there are good grounds for supposing that the cause was the same in each, and the disease from which the father suffered was in reality Pythogenic Pneumonia, and that its peculiarities were due rather to the poison evolved from decomposing sewage, than to the influence of chronic alcoholism as formerly supposed.
No doubt there are many who would suppose in this a case of Enteric Fever without

diarhoea, contenting themselves with the assumption that had the patient died, more or less ulceration of Peyer's glands would have been detected. Such an interpretation however is wholly unwarranted, and can only be equalled by the dogmatism of those, who on the strength of finding ulceration of the small intestine after death unhesitatingly pronounce the case to have been one of Enteric Fever, even when there were no febrile symptoms during life!! But instead of being one of a number of diseases caused by Putrid Emanations, the wonder is that this form of inflammation of the lung should not be the prevailing lesion, as the cases of ordinary Enteric are and indeed are without symptoms of bronchial catarrh or other affection of the chest are absent, and as is well

?? All this seems to me a presumption very much of the kind referred to above. The identity of bronchitis & pneumonia is a cause before known. We are quite every day

known the causes of Bronchitis and Pneumonia are very closely allied, if not identical. But in holding this view, we are not alone. Older writers about the beginning of this century observed that certain epidemics of Continued Fever were attended by an undue preponderance of inflammatory affections of the chest, which they attributed to epidemic influence, thus seeking to explain these in the same way as they sought to explain the prevalence of ulceration of the small intestine in other epidemics. Since that time much has been done to elucidate the true cause of the difference in various epidemics, and as that variety which we now call Enteric has been shown by the researches of Budd, Murchison and others to have its origin in decomposing faeces, it is surely not going too far to suggest that many of the epidemics both low

Typhoid pneumonia & even hypostatic pneumonia may be admitted without admitting at the same time its identity with dothienenteritis; or even with ulcerative & organic lesions. Indeed recent researches tend to show the dependence of most cases of pneumonia on a microbe.

inflammation of other organs, may have had a similar origin. A good instance of the connection in question is given by the late Dr. Geo. B. Wood of Pennsylvania, in a foot note of the first Volume of his Practice of Medicine (Page 97). Here he describes an outbreak of Pneumonia, attended by manifestly adynamic symptoms occurring in an institution for the deaf and dumb at Philadelphia, in which no fewer than thirty inmates were attacked and the asthenic character of which epidemic he attributed to the pernicious influence of the effluvia from the contents of a privy which had flowed into the cellar in consequence of a rupture in its walls. Had this been written after the dependence of bacteria upon bad drainage had been clearly established, it is just possible that the interpretation might have been greater

cally modified. So far however as we are concerned, we are inclined to think that the decomposing excrement from the privy was not only the cause of the adynamic symptoms, but of the Pneumonia itself, which may thus have taken the place of the bowel affection, as no mention whatever is made of it - a thing not likely to occur with such a distinguished Physician as Wood had it been present.

A few years ago we ourselves witnessed an outbreak of a somewhat similar character in a small country village in Lincolnshire, of about two hundred and fifty inhabitants, of whom no fewer than five died within one fortnight. At the time it was believed by the medical men in attendance to be acute Pneumonia, but looking at it now in the light of further experience, we feel convinced that it was of the same nature as the

× That is very probably so

epidemic of Professor Wood above alluded to, and that the neighbours were perhaps not so very far wrong when they described it as a fever? the character of which the doctors did not quite understand. × Perhaps however the most remarkable example of this form of disease which we have yet seen, was that of a young woman who formed a centre of infection, to which were traceable no fewer than eight other cases of illness in her own and the adjoining house, all differing remarkably in their symptoms, and which we have divided in the following pages into two classes A. and B. for the sake of convenience. As the case of this young woman was undoubtedly one of Pythogenic Pneumonia we will relate it at length, more especially as our failing to recognise its true nature sufficiently early was the reason why precautions were omitted to prevent its

spread at the commencement.

Class A. Case 1. Elizabeth G. -aged 25- was seen for the first time on the evening of the 13th November 1881. She was then complaining of pain on the right side near the angle of the scapula, which had come on that morning early. The breathing was rapid -about 48 per minute-, pulse about 120, and temperature 103.5°. Upon Auscultation there was distinct friction and some small crepitation at the seat of pain over the base of the right lung, and also impaired clearness on percussion. Two days previously she had left her situation, complaining of a General feeling of uneasiness, shiverings, headache, pain in the limbs, loss of appetite, with some thirst, and a slight cough, all of which symptoms she stated, came on about four days before being seen, viz. on the 9th of November. A mixture of Ammon. Carb. Pin. Spirae, and Digitalis was prescribed with half grain Opium pills every four hours

to relieve the pain, while linseed meal poultices were applied to the back of the chest every two or three hours. On the morning of the 14th, the pulse had fallen to 120 per minute and the temperature to 103.0°. The pain over the base of the right lung was less, but the respiration was still hurried. Friction sounds could still be heard occasionally. The small crepitation had extended its area and in addition sibilus was manifest over the base of the left lung. The skin was moist, and the bowels normal. On the 15th the breathing was more hurried, ~~The percussion~~ and to the symptoms of congestion of the lung were added those of ~~Bronchitis~~ as indicated by the large moist râales, heard all over the chest. The expectoration was of a thick, gluey character, somewhat rusty and now and again streaked with blood. The tongue was dry and brown, not the white moist tongue of Enteric.

On the 16th the patient had had a very restless night and the expectoration continued thoroughly Pneumonic in its character. On the 17th the pulse was up to 130 but smaller than before, the temperature 102.5° and the phlegm more easily expelled from the mouth. The dullness and vocal resonance were scarcely so distinct at the base as before, though the râles continued to be well marked all over the chest and the cough rather troublesome. The patient having now had but little rest for two nights a draught of Pot. Brom. and Chloral. Hyd. was administered, with good effect, and the Ammon. Carb. mixture repeated. On the 18th there was practically no change. On the 19th dullness was still diminishing, though there were crepitating râles all over both lungs. Pulse 120 Temp. 102.8. Sordes were now observed forming about the teeth and as the patient had been wandering much

a draught of Chloral and morphia was cautiously given. On the 20th the cough was less troublesome, and the chest rather clearer. She now complained of sore throat which was found upon examination of a dull, dusky red colour. On the 21st the patient was found to have passed a bad night, being highly delirious. The speech was thick and indistinct and there was also slight deafness. The chest was in much the same state as on the 20th, though the mother stated that at times the breathing was very hurried and the cough troublesome. The bowels since the beginning of the illness had been moved but twice in the twenty-four hours, and (the stools) were normal in appearance etc. Nevertheless bearing in mind our former experience, suspicions began to arise within us that this might possibly be allied to Enteric.

The iliac fossa was accordingly examined ~~for any~~ for any tenderness, but no pain could be produced by pressure, beyond what a patient suffering from a severe, and long continued febrile attack ought to be expected to feel. The temp. was 103°.0, and pulse about 130. A chloral draught was again ordered for the evening. On the 22nd she was found to have passed a good night, the pulse having fallen to 110 and the temp. to 102.0°. The throat and chest remained unaltered. No spots were seen upon the abdomen. The deafness however had increased. Brandy, beef tea, and chicken broth were now ordered. On the 23rd there was no further improvement. A powder of Quinine (gr.10) and Digitalis (gr.1) was administered in the evening, and repeated the following morning. On the 24th she had passed a good night. The pulse had fallen to 90, and the temperature to 100.2

On the 25th, the pulse was 110, and the temp to 101.0°. The thirst was less troublesome, and a fair amount of support was being taken. There was also an inclination to sleep. The Bronchial catarrh still continued, and a mixture of Am. carb., Pot. chlor., and digit., was given with Syr. of Senega every four hours. On the 26th she felt very much better. She had slept well. The throat was not so sore. The deafness was not so noticeable. The tongue was cleaner, and altogether there was decided improvement.
On the 27th, the pulse had fallen to 100 per minute, but rose rapidly if the patient sat up in bed, or was in any way disturbed. The temperature was normal, and the expectorant mixture was again repeated. The 28th saw improvement still going on, and the bowels not having been moved,

a small dose of Castor oil was taken.
On the 29th, the pulse and temperature were both normal. The tongue was perfectly clean, moist, but rather red. The throat was well, and the dyspnea was all gone. The patient felt hungry and seldom asked for drink. The bowels had been moved twice since the previous evening, being but the second occasion on which this had happened within twenty-four hours since the beginning of the illness. On the 29th, the expectorant was changed for iron tonics. On Dec. 1st she was practically convalescent. Light food was given only. There continued however some tenderness across the roots of the toes, which was relieved by fomenting with hot water for about two days.
On the 3rd Dec. she was able to sit up but complained of difficulty in grinding her hands, which we attributed to

weakness (Paralysis?), and which was treated with Nux Vomica. On the 6th she could move about, and so far as she was concerned our attendance terminated. In this case then, we have given a second example of a form of disease which we believe to be of frequent occurrence in general practice. In hospital practice they are no doubt of exceptional, but this is the result not of their rarity but of their true nature being overlooked. Thus a medical man goes to a patient and finds him feverish, with some diarrhoea, and tenderness in the right iliac etc. etc. The case is unmistakeably Enteric Fever, and as presumably the sufferer is in poor circumstances or so situated that the treatment cannot be conducted at home, he is forthwith sent to the hospital. In a short time however another case turns up, let

† I throughout this work a narrative of facts not of hypotheses.

its suppose in another locality. This patient complains of pain in the side, shortness of breath etc. The pulse is quick temperature high, and the tongue furred. There is no tenderness however in the iliac fossa, or diarrhoea; but instead there is a troublesome cough with the expectoration of thick, glairy mucous of a rusty colour. In this case, the diagnosis is as clear as in the first. The group of symptoms which we are accustomed to consider as peculiar and essential to Enteric Fever, are absent and their place taken by those which are characteristic of Pneumonia. The disease is therefore diagnosed as an diffuse inflammation of the lung, and as that disease is in no way communicable the patient is retained at home, while his neighbour is taken off to the hospital, the result of this being, that by a process of selection the wards become filled with

those who suffer from bowel symptoms, while those suffer from inflammatory affections of the chest, and others ~~affections~~ diseases, are excluded.

It is not wonderful then that a group of symptoms which is no doubt a common manifestation of poisoning by decomposing faecal matter should come to be looked upon as by far the most prevalent form of disease arising from that cause, and that by overlooking the other varieties, a method of procedure should become established, which exposes the public to great risks, and may increase the death rate to an extent which it is difficult to estimate. (Of the truth of these views we feel convinced. Of course intrinsic poison is not evidence) We have again and again seen cases of Pneumonia as clearly traceable to bad drainage as the most marked case of Enteric, and have known cases

X. These are the facts that ought to have been recorded in detail. Case 1 for eg proves nothing at all. But in connection with what follows it might in some way be shewn an association both of pulmonary & enteric phenomena with

discovered as Pneumonia by consultant, while the early occurrence of cases of pure Enteric within the same house have shown to be of psychogenic origin. X

Even while writing this paper we have a friend lying ill with Enteric, whose brother is just convalescent from a prolonged attack of Pneumonia, and is being attended by one of the best known practitioners in the neighbourhood. (Dr Fox. 1894)

The second form of disease which we believe to have an origin closely allied to, if not identical with Enteric, is membranous sore throat. That this form includes all cases of what is usually called diphtheria, we will not at present attempt to maintain. But that a very large number of the cases of membranous sore throat which we meet, and which commonly come under the category of diphtheria, arise in this way,

by the same causes; only the whole argument would rest upon detailed investigation of the evidence for which I should find the requisite data,

we think, there are good grounds for supposing. In the more defined forms of Enteric Fever, presenting all the marked symptoms of that disease, we know that sore throat is of common occurrence. This is usually, no doubt unattended by the formation of false membrane, but such in some cases does occur (Budd), and to diagnose, say an isolated case of Enteric with membranous sore throat, from one of Diphtheria with some looseness of the bowels, ~~would be~~ or again say a case of Diphtheria without membrane (Jaccoud) from one of Enteric with simple sore throat, and little affection of the bowels would be a work of the greatest difficulty, & perhaps impossibly. In the case of this, the illness of Mr Faucett was a striking instance. In this gentlemans case, the disease was diagnosed ~~as~~

by several eminent practitioners as Diphtheria. Subsequently, a consultation having been held with Sir William Jenner, that gentleman pronounced it Enteric. At the time the patient was believed to be suffering from both.
Now what was the real nature of the case? Was it Diphtheria? Was it Enteric? Or was it a combination of both?
If we accept the last supposition we are under the necessity of supposing that the patient was passing through an attack of two diseases, differing in their nature and origin; a combination which must be very exceptional. On the other hand, if we receive the second view which was that of Jenner, and which no doubt has the authority of Budd to support it, we are under the necessity of rejecting the opinion of other authorities equally eminent. For the face then of such

86 There seems no good reason why two persons may not have been in Speaker together than in Mr Fawcett's case. But if Farmer eight suffered typhoid fever for the symptoms, I should at least presume the existence of ulceration of Peyer's patches.

conflicting testimony, the only way of getting out of the difficulty would be to deny the correctness of many of above views, and simply look upon the disease as a combination of symptoms due to poisoning from sewer gas for which we are at present unprovided with a name, but which is neither Enteric fever, nor yet Diphtheria in the strict sense in which those terms are usually applied.

In the Winter of 1881-1882, about one year previous to the illness of the above Gentleman, a case very much like it occurred to ourselves, and but for the fact that it existed in the same house as Case 1. would probably have been diagnosed as diphtheria.

Class A. Case 2. Shortly after having completed our attendance on that case, and while visiting next door, we were requested to step in and

over the mother of the girl E.G., a woman of about 60 years of age. For about three days previously, viz. since the 12th of Dec., this woman had been complaining of a feeling of illness attended with thirst, loss of appetite, with a soreness about the throat. On the day of our visit (15th Dec.), she had a temperature of 101°.0, with a pulse of 100 per minute. The throat was rather red, but no membrane. The patient, who was sitting up, was accordingly ordered to bed. On the 16th small grey patches were visible on the uvula, soft palate, and tonsils, which had extended over the throat on the 18th. On the morning of the 19th the throat was found raw and red, with a small patch at the back of the pharynx, an appearance which was explained by the patient's voluntary statement, that she had coughed up a piece of skin during the night.

On the 20th, the patches had increased but little, and the appearance of the throat was less angry. On the 22nd the throat was entirely free from membrane, and the patient could swallow with but little effort. During all this time, the bowels were never moved oftener than once in 24 hours, and there was not the slightest tenderness in the iliac fossa, nor indication of an eruption. The temperature varied from 100.0 to 102.0, and the pulse from 100 to 102. From this time on to the 31st of December, the symptoms continued slowly to improve, and at this date all feverishness left her. She continued however weak until the 5th of January, when she could sit up.

The next case was that of a grand daughter of this woman, and whose symptoms only differed in them greater severity, and in the bowels being rather

lower. As it would occupy too much space to relate this illness in full, we will content ourselves, by giving it in outline only.

Class A. Case 3. On the 22nd December 1881, E.M.G. a child of about 5 years old was taken ill with general malaise, quick pulse (120) high temperature (102.0) etc. just exactly one week after the mother began, and consequently while she was still under treatment. On the third day of the illness, she complained of sore throat, which was found to be of a dusky red color. On the fifth day this was found covered with membrane. From this time on to the end of the second week, the exact condition of the pharynx could not be ascertained owing to the unstable state of the patient. From the general progress of the case however, I have but little doubt the membrane continued to be formed. Her condition then was

one of great prostration. The glands of the neck and also the parotids were enormously swollen, the former being almost level with the cheeks. The tongue was brown, ~~and~~ the teeth covered with sordes, and from the nostrils there was a constant discharge of disagreeable, ichorous matter. The temperature was generally from 103° to 104.5°, and the pulse upwards of 140. The motions were passed in bed, and also the urine, so that no opinion could be given as to the presence of albumen. Solids could be swallowed with the greatest difficulty, much of the Port wine and beef tea which she was receiving, regurgitating through her nose. Just before death things had attained this pass, the disease seemed to have reached a climax. The temperature gradually fell, the pulse became stronger and less frequent, more support could be

I do not think there is much reason to doubt that all the groups of symptoms here referred to may arise from infective Causes of one kind or another. The question is Are they all the same?

taken, and some refreshing sleep obtained. Henceforward the advance was slow but sure, and on the 20th of January 1882, she was quite convalescent. Were these last cases then, Diphtheria, or Enteric? Taken in connection with other coexisting cases, it is highly probable that the general opinion would be in favour of Enteric. Had they however occurred sporadically, it is not improbable that they might be looked upon as Diphtheria. * and why not so, all the more on that account?

The fourth case of this class through there were no diphtheritic symptoms may be recorded here as it was the only case of the whole group which was purely Enteric, and which showed immutably the family to which the other diseases belonged.

Class A. Case 4. This patient was a younger sister of the first case, who was taken, and was about 14 years of age. She was first taken ill about the 16th Dec.

1881, and was therefore under treatment the same time as the other patients The bowels were not moved oftener than twice, or three times in the twenty four hours, and on some days only once. They were however rather loose, and in addition there was the usual tenderness in the iliac fossa, with characteristic rose spots about the second week. The most remarkable point in this case was the state of the pulse, which was slow, full, and regular never being more than 90, and very often normal. The temperature varied from 99.5° to 103°.0. There was remarkably little constitutional illness, as towards the middle of the disease, she got up and dressed.

The third form of disease which may be included with those which we are now considering, is Acute Albumin-

ria. Whether this is of itself a common result of bad drainage, it is at present impossible definitely to say, and we therefore content ourselves simply with the suggestion. Two things are however certain, and these are:- First: In that variety of this family of diseases which is usually attended by ulceration of the intestines, albuminuria is by no means infrequent, and secondly in ordinary diphtheria, which we believe at present to include a large number of those cases of membranous sore throat which we have attempted to show to be related to that variety, albuminuria forms one of the most important symptoms. When it does occur in such cases, it has been attributed to the changes induced in the blood by the disease. It is however not impossible that it is due to an active hyperaemia of the kidney similar to that which is

present in the lungs, throat or other parts. If then it may be present so frequently in cases with well marked derangement of other organs, may it not exist by itself in other cases as the only apparent local lesion? And if so, how difficult would it be to state definitely whether the tuberculous affection was the cause, or the result of the general symptoms - in other words whether it was primary or secondary. As an illustration of this, I will relate the following case

Class B. Case 1. Mary G., - a young girl of fourteen, was taken ill with her mother, while we were attending the previous patients. She lived in the next house, and was seen by us on the 9th December 1884. Her only complaint was of pain in the back, and as she had never menstruated, her mother thought that if we

could give something to induce that she would soon be well. The appetite was a little impaired, though she never had been a hearty eater. Beyond this, the subjective symptoms were negative. With the other cases in the adjoining house however it was thought advisable to take the temperature, which was found to be 101.0°, while the pulse was but little over 90 per minute. The urine was clear, of normal amount, and not more frequently passed than usual. In order to clear up the cause of the backache, it was examined, and rather unexpectedly found to contain albumen to the extent of about one third. She was accordingly ordered to bed, and put upon milk diet with a diaphoretic mixture. In this state she continued for about a fortnight, with slight variations in the height of the temperature, which on one occasion

rose to 103°.6. At the end of this time, the albumen began to diminish, and the patient insisted on getting up, although it was not until the conclusion of the third week of attendance, and the fourth of her illness, that the albumen had entirely disappeared. Throughout the case, the bowels were normal, there was no gurgling in the iliac fossa, and what is perhaps more remarkable, there was no oedema of any part. Generally speaking, the patients feelings were not in proportion to her illness, and but for informing her of the risk she ran, she would have been going about as usual.

About a couple of years previous to this, we had a patient suffering from albuminuria, which came on about a week after convalescence from an attack of well marked Enteric, with an eruption of rose coloured spots all

over the body, including the face, and during which the patient stated that she felt exactly as she had done during the fever. Were these cases simply the result of cold, or were they of Pythogenic origin?

The fourth disease, which we will mention in connection with this subject, is Simple Continued Fever. When the division of Continued Fever into its four great varieties was made, this was looked upon as a disease as distinct from Enteric, as that was from Typhus. While acknowledging therefore that a great many of such attacks are occasioned by cold, heat etc., & by no means inconsiderable number have an origin identical with Enteric. Indeed this is the character which the latter disease usually assumes in aged persons, and so mild are the symptoms, and so different from what is usually known as Enteric, that

the disease is frequently not diagnosed, and symptoms due to defective drainage are attributed to cold, or some other agency. This has given rise to a belief that Enteric Fever is a rare disease among old people, and if by that we mean a disease due to ulceration of the bowel, no doubt it is, but if we include under that term a number of diseases which have a similar origin, it seems proportionately as common as other epidemic diseases. Of this, the two following cases form examples.

Class B. Case 2. Mrs Joseph G. a woman of about - 2 years, was seen by us on the same day as her daughter, viz. (the 9th December 88) & she complained of pains all over, headache, chilliness, thirst and loss of appetite. The bowels were normal, the tongue slightly furred, and occasionally there was a troublesome cough. The temperature was 102°.4, and and the pulse about 104 per minute

The patient being naturally a strong woman, and never having had any previous illness, attributed her ailments to a slight cold, and was very reluctant to go to bed, especially as she was rather sleepless at nights. By the next day, she was not much altered in her condition, although she had passed a good night, having been previously furnished with a few doses powders. In the course of about three days, the cough had almost disappeared with the use of expectorants. The feverishness however continued for some time longer, and it was not until the 22nd of the month that all symptoms of fever had disappeared, the case having thus lasted for about sixteen days.

Class B. Case 3. About a fortnight after this, the husband, a man of about the same age as his wife was taken ill with almost precisely the same symptoms, and

treated accordingly. He however could not be prevailed upon to take to bed, although his temperature varied from 100.0° to 102.5°. As in the preceding case, there were no abdominal symptoms, the attack thus resembling a severe cold, for which it would no doubt have been mistaken but for the associations. But while maintaining that this is the most prevalent form of Enteric in people of advanced years, it is by no means confined to them. We often meet with similar mild attacks in young patients, and while attending the father and mother, the daughter, a girl of about 23 years, was under the treatment for the same symptoms save the cough. In young children however the poison of Enteric produces somewhat different symptoms from the adult, and so marked indeed is this that in case, that it is only within the last few years that these have been shown to

have a common origin. Instances of this are so commonly met with, that it would serve no good purpose to record any here. In classes A & B we have thus a series of nine cases of illness differing entirely from one another in their symptoms, and yet having an identical origin. One had a marked lung affection. Two were of the nature of a bad cold with some bronchial catarrh. Another had only albuminuria. A fifth had well marked Eczema, and the sixth simple febricula. The remaining two had membranous sore throat. All of them occurred within two months, in one house in the country, standing completely isolated, and in which the people had been remarkably healthy until the outbreak of this disease. What then was the cause of this great difference in the symptoms? It could not be due to the importation of any

fresh poisonous matter, as from the commencement, there was but little communication with the external world. Assuming then that the poison was that of Enteric, (Case 4. Class A. being an undoubted case of this fever) might it be due to some peculiarity in the system of each individual patient; to some alteration in the nature of the poison ~~engendered~~ in its passage through the system of the first patient, analagous to that of small pox in passing through the cow; or finally to the conditions under which the patients may have been placed during the period of incubation? To the first alternative, it may be objected that it is questionable whether individual peculiarity could exercise such influence, as to cause the great differences among all the cases. To the second, the order in which the cases occured is sufficient answer.

8/

X. This is a very large conclusion on a very small basis of facts

It is therefore to the conditions under which the patient is placed during the period of incubation, that we are inclined to attribute the various forms which we have related. X Thus for example when the body is exhausted by fatigue or any other cause we know that it is peculiarly liable to be affected by external agencies. Let us suppose then that a number of people are exposed to a cold wind after prolonged exertion. Of these, many will take nothing. Others however will suffer from various inflammatory diseases as nasal catarrh, tonsilitis, Bronchitis, Pneumonia, Rheumatism etc. which will vary depending to the amount of fatigue undergone, the degree of cold, the suddenness of the change, and also no doubt on the state of the patients system, or of the organ attacked. And so in the period of incubation of Enteric, we have a poison in the system, depressing the vital powers to as great an extent as would fatigue,

from any cause, and rendering it as liable to be affected by external influences.
If this during such a state a person were to be exposed to such conditions as under ordinary circumstances produces Pneumonia, what is more likely to happen, than that the hyperaemia of the lung should direct the blood away from the bowels, on the same principle that counter irritation relieves internal congestions, or it may be prevents them. And as Pneumonia acts so may the other inflammatory diseases mentioned. But it may be said there is no depression during the period of incubation, people often feel-ing as well as when in ordinary health.
On the other hand it must not be forgotten, that a person's system may be depressed from a medical point of view, without himself being at all conscious of any change in his condition. Thus, how often do we find a patient accuse a simple wound

which heals with difficulty, or becomes attacked with diffuse inflammation, without himself being conscious of being out of health. And yet wounds much more severe have healed both before and after this in a wonderful manner? But if external influences so affect the form of illness that may arise from the poison of Enteric, how do they not do so with that from Scarlatina, or Measles? For the reason we believe that the period of incubation is so much longer in Enteric, and the commencement of that disease so insidious, that in a climate such as ours there is ample opportunity for external agencies to have free play. And as cold or other agency may be the secondary cause of the varieties of the disease we have just been considering, so it is not improbable that agents which under ordinary circumstances produce a flow of blood to the intestines

may, if acting during the period of incubation, or very early in the disease, be the secondary cause of the ulceration of the bowel in the common enteric variety. As for example, the abuse of strong purgatives, unripe fruit, heat, impure water (not necessary foul sewage), etc., any of which, especially the latter, may explain to some extent, the prevalence of the bowel form of the disease in the Summer and Autumn months. What are the exact changes which go on in organs which become diseased, we are at a loss to say. It is not unlikely that they may be analogous to the changes which go on in the skin in infants affected with Erysipelas; that is: there is capillary dilatation, with diminution in the rapidity of the current of blood, and inflammatory effusion, but no actual stasis. Indeed the eruption on the skin is probably in a manner similar to what is going on internally in the lungs, kidneys, muscles etc.

Yes, but that is just the point. Dr Jenners original investigation of the causal differences of typhoid & typhus in Vol 33 of the Med. Chir. Transactions you will find no such symptoms as you have made here

Assuming then the correctness of the above cases to be correct, the conclusion necessarily follows that Enteric Fever is but one of a number of diseases having a common origin. To apply the term Enteric Fever to all such cases would therefore be misleading in as much as it directs attention to the bowels, when there are no reasons for supposing these to be affected in the slightest degree. In order therefore to escape from the difficulty thus met, would it not be better to discard the term Enteric Fever altogether, and employ the adjective, Pythogenic, first suggested by Dr Murchison affixing some substantive to express the morbid condition of the particular organ affected in each individual case, as Pythogenic Enteritis, Pythogenic Pneumonia, Pythogenic Pharyngitis etc. and restrict the name Pythogenic Fever to that form of the disease in which there are no local lesions, but simply an elevation of temperature, with other evidences of fever

but a thorough & careful inquiry on a basis which makes it impossible not to admit that the fever with rose spots is a separate & distinct disease. The cases here recorded go a very small way indeed towards [illegible]

pure and simple. Or again we might employ the term Pythogenia, as including the whole class of diseases arising from putrid sewage, in the same way as the surgeon employs the term Septicaemia as including all the local diseases which may arise from the introduction of poisonous matter through wounded surfaces. There are those no doubt, who would say that the term is uncouth. It is not however more so than Syphilis or Rheumatism, and far more expressive of the real nature of the disease to which it is applied. Or it may be objected, that it supplants a term which has been comparatively recently introduced. But surely this latter objection can have but little weight, if we consider that by its use, the erroneous impression could be corrected that drain poison always causes inflammation of Peyers glands, and that the other dis-

cases, which we have spoken of, are not so occasioned, simply because such inflammation does not exist. And further, that the public would be protected from the danger of attaining such cases in thickly populated districts, under the impression that they were in no way communicable.

To sum up the contents of this paper:
We have in the first place attempted to show that what is usually considered as the poison of Enteric Fever may give rise to a number of ~~diseases~~ other diseases, differing entirely from one another in their symptoms etc, and yet each capable of producing itself, or its fellow in much the same way as Enteric. Whether the list we have given may be enlarged is a matter of opinion. We are of opinion that it may, and think that there are grounds for believing that many cases of acquired phthisis, or what some are inclined to call contagious phthisis, really belong to

this category.
Secondly: We have seen how prone to recognise this connection, may be the means of allowing an outbreak of an epidemic, and it may be, even fatal disease; that which forms the basis of this thesis being a striking instance.
Thirdly: We have hinted that the local pathological changes in those instances, in which such occur, are of the nature of active hyperaemia with effusion, rather than the more advanced condition of actual inflammation, a view which will be seen to resemble, though not to be identical with that which Broussais and others of the French school took of all fevers.
Fourthly and lastly: We have suggested how the confusion arising from the use of the term Enteric may possibly be avoided, by employing a modification of Murchison's nomenclature; how a clearer idea of the diseases

changing this conclusion, or even towards weakening in any degree the evidence adduced by Jenner. On the other hand, they present a fair statement

in question may thus be obtained, and how the health of the people may to some extent be preserved.

Such are the impressions which our experience of this disease has made upon us.

In giving expression to them some of the points might have been enlarged upon with advantage, and a greater number of cases cited in support of the views stated. These however would only have resembled the examples given, and would have extended the length of the paper, without adding any corresponding advantage. In the meantime then, we may say that though it is now sometime since this sketch was drawn out, a more extended acquaintance with the diseases under consideration has rather confirmed than shaken us in our opinions.

W.P.

amounting to probability (not more) that under certain circumstances sewer gas and other pythogenic causes may give rise to 1. Pneumonia. 2 Diphtheria 3. Albuminuria & perhaps other forms of disease besides enteric fever, either singly or in combination.

Beyond this, the evidence adduced cannot carry us. and even to establish so much (though highly probable on other grounds) would require a great deal more & more exactly investigated, details than are here adduced.

JJB