

M—R
1850

If in the long catalogue of "the ills that flesh is heir to" there is one disease the rise, progress, effects and termination of which are more interesting and attractive than of another, — the writer is of opinion that fever in its continued form is that one. Its origin and propagation are mysterious — but, its effects are plain and palpable. — The rationale of the morbid processes — the "modus operandi" of the essence of the disease — in other words the proximate and ultimate cause of the disease itself: has not as yet been ascertained; but conjecture has supplied what could not be proved, while uncertainty and doubt still hang over the group of symptoms which characterize the ailment. It is this very obscurity which makes it interesting.

When morbid actions are understood. — When a particular symptom or succession of symptoms are known to be the result of known changes — when a certain effect follows — as a matter of course — a certain specific intelligible cause — when there is no longer room for speculation and theory — for observation or discovery — those diseases which were wont to puzzle — exercise and delight the mind, to attract and call forth the most strenuous mental exertion — become disregarded, uninteresting and stale, and this but a

natural result. In such a case there is no room 2.
for exertion to an inquiring mind and consequently it
seeks to gratify its curiosity by directing its attention
to deeper subjects, and more obscure research. Such a
subject is Fever - Its origin is mysterious - but its
effects are obvious - its first reception may be un-
known but it soon declares itself. - the operation
of its cause is unintelligible, but the symptoms are
marked and unequivocal - The cause is applied - we
may not be aware of it - but the cold, the heat, the
pain, the thirst, and the tossing to and fro are
symptoms which cannot be mistaken, and declare
plainly that some unseen and unknown agent has
operated, and still operates, on the living body, and
in it - causing a total overthrow of the balance and
equality of vital operations, and producing a state
of universal systemic derangement, and functional dis-
order. -

1850

Discarding altogether those forms of idiopathic fever 3.
which are generally admitted to arise from causes, pre-
disposing, and exciting, independent of the action of
poisonous agents on the living body we come at once
to consider in a general way some points connected
with fever - continued in its form and contagious
in its nature. - And at the outset the writer begs to
state that he is well aware how difficult a sub-
ject the one to be considered is, even to the most ex-
perienced, and to those who have grown grey in the
Medical profession - and how doubly dangerous to
him is the ground on which he treads who has
seen comparatively few cases of fever and cases
perhaps entirely limited to one epidemic. He does
not profess to speak from experience, but still
he may - nay, must profit from the experience
of others, his sole object being to collate, so far as
he can, their opinions and form his own.

On looking into the history of
continued fever, the first feature of its character
which attracts one's attention is its want of uniformity
and sameness. - No two epidemics have been exactly
similar, each has had its peculiar character - each
has formed a peculiar type. - Nor are the individual
cases of particular epidemics in all points alike

in all points although an epidemic constitution may 4.
characterise the disease. One epidemic may be remark-
-able for its mildness - another for its severity - One takes
-takes on an inflammatory character - another a typhoid -
- one yields to treatment or rather runs a safe and
-harmless course - another is remarkable for its fatality -
- in one a particular organ is affected most - in another
- a different, and the head, the chest and the abdomen
- each at different times suffer accordingly. It is not
- therefore a cause of wonder that opinions should
- vary so much. Each writer has seen a par-
- ticular type and formed his own ideas on that
- type. He alone is most likely to arrive at just
- notions concerning fever who has witnessed a suc-
- cession of epidemics, for he learns by experience how
- vain is the attempt to draw universal conclusions
- from limited facts.

We believe that many of the epidemics
- thus witnessed have been epidemics of specific diseases
- - diseases varying as much in essence as those gen-
- erally ranked among the *mathemata*, and that
- although they all agreed in being infectious - com-
- municable from one person to another - yet that
- they differed as essentially from each other as
- do small pox - Measles and Scarlatina. In other

words we are much inclined to the belief that the disease usually denominated "continued fever" is not one disease assuming different forms, but several diseases - each distinct in itself - arising from a specific cause and being alone able to propagate its kind

We do not mean to assert that "continued fever" can be proved to be in reality not one but many diseases, and that the forms which are usually looked upon as mere varieties of degree, and intensity, are, in every case, in essence distinct diseases, but we think, judging from the many authentic accounts of epidemics once prevalent that just as scarlatina and Measles are continued fevers varying chiefly in the character and seat of the eruption and yet universally acknowledged to arise from distinct poisons, so the maculated typhus and the petechial fever of this country are continued fevers with their own specific eruptions - distinct diseases - arising from distinct causes and the one incapable of propagating the other. - Doubtless there are fevers often enough observed in which from first to last no eruption can be detected, and which in general symptoms may either resemble typhus or the other

petechial fever referred to, and although we would 6.
not presume to assert that these cases, were cases
of another distinct disease, yet it appears more
reasonable to do so, than to class them as a
matter of course with the other diseases, and re-
gard all, as one disease.

The eruption of measles does not always appear,
neither does that of scarlatina, and yet in certain
circumstances no one would fail to recognise
these diseases, or hesitate to name them although
the most ordinary accompaniment was wanting.

So it may be presumed it is with maculated and
petechial fevers.

The eruptions regarded as characteristic of each,
may be absent in either, and yet from the general
symptoms and the character of the prevailing disease,
the particular case may reasonably be classified

Dr. Southwood Smith in his volume on continued
fever page 171. remarks "The more we investigate the
subject, the more satisfied we shall become that
continued fever is one disease and only one, however
varied, or even opposite the aspect it may present:
but that it differs in intensity in every different case
and that this and this alone is the cause of the dif-
ferent forms it assumes." Regarding fever as one

disease he thinks it sufficient to divide it into two forms. — "Mild, and severe," — All the forms that continued fever can assume, and all the individual cases that can occur under either, must be mild, or severe, and, therefore, must readily find its place under one or other of these divisions. The only real difference in the disease being a difference in degree, it is proper that the principle of the division by which the varieties it presents are classified should be founded on this, the only true distinction of which it admits." He then proceeds to divide all continued fevers into fevers without and fevers with an eruption — in the latter including Measles — Small pox — Scarlatina &c all one disease because continued — that is, one in nature, — one in causation — one in danger, because, if one in nature and only "differing in intensity" and "never" as he affirms "differing in nature" then as a matter of course, the mild can propagate the severe and vice versa — Small pox can propagate Scarlatina — Measles, Typhus, — Typhoid, Scarlatina.

To distinguish minutely the different forms of continued fevers, or as we are inclined to say — the distinct continued fevers, may be of little practical value, and generally speaking, it may do very well to treat all forms as one disease varying only in degree, but it

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does not therefore follow that fevers obviously so distinct as the eruptive exanthemata should be jumbled up as one, simply because continued. The thing is absurd, ridiculous, and most unphilosophical, and we are much inclined to the opinion that this observation applies to those continued fevers not usually considered eruptive, or in other words, that some of those fevers generally considered as simple continued fever ought in reality to be classed among the exanthemata. — Unless it be supposed that every distinct eruption indicates a different disease, we must come to the absurd conclusion that a disease can be in essence the same, and yet present essentially different symptoms. — that continued fever although one disease can yet manifest itself by different and even contrary symptoms. — Dr. Perry of Glasgow in the Dublin Medical Journal vol: 10. page 385. says "I have for some years entertained the opinion, founded upon an extensive series of observations, that contagious typhus is an exanthematous disease, and is subject to all the laws of the other exanthemata; that as a general rule it is only taken once in a life time, and that a second attack of typhus does not occur more frequently than a second attack of small pox, and judging

from my own experience, less generally than an attack
of Measles or Small pox." 9.

Dr Perry considers the period of convalescence
from typhus to be the stage in which the disease is
most likely to be propagated and thus in another point
resembling the exanthemata "From numerous observations
and experiments I am satisfied, that it is not contagious
before the ninth day, perhaps not till a later period
of the disease. Among many circumstances which
establish this opinion, I may mention one experi-
ment which I made upon a pretty extensive scale.

The fever wards of the Glasgow Royal
Infirmary are each capable of containing twenty
patients. The beds are arranged in two opposite rows,
and are pretty near each other. While the patients
are in the acute wards, they are not allowed the use
of their clothes, though they may be able to sit up.
Into the fever-house are admitted cases of Measles—
scarlet fever and Small pox, and patients are very frequently
sent in labouring under Bronchitis, Pneumonia,
Erysipelas and other inflammatory affections. I
found by experience, that when the latter class of
patients were sent to the convalescent ward, where
they necessarily mixed with the others, almost all those
who had not a previous attack of typhus fever were

either seized with it before leaving the house, or returned soon after their dismissal labouring under it; the period intervening between the time of their being sent to the convalescent ward, and the attack never being less than eight days. Although means were taken to keep those recovering from small pox, Scarlatina &c in a separate room from those convalescent from typhus, the rooms being adjoining the non-intercourse was incomplete, and the result was that these diseases spread among the typhus convalescents, and the convalescents from small-pox and scarlatina caught typhus. In consequence of these observations, I adopted the practice of not sending as formerly, to the convalescent wards, those patients affected with inflammatory disorders, unless I ascertained that they were secured against the disease by having had a previous attack of typhus, but kept them in the acute fever wards till many were so far recovered as to go to their own homes, and the result was (and the practice was continued for several months), that not one of those detained in the acute wards caught the disease while there, or returned with it afterwards. From the above and other observations, I have adopted the opinion, that typhus, like measles, small pox &c is chiefly

spread during the period of convalescence."

11.

Dr. Graves in reference to these observations remarks—"connected with the question first raised by Dr. Perry whether maculated typhus should be considered as an exanthema, the fact is deserving of notice, that children exhibit the eruption much less frequently than adults, although they are quite as liable to the fever when it is epidemic. This fact is the more remarkable, because in Measles, Scarlatina &c. the true exanthemata, the eruption is the more constant in children than in adults." [Clinical Medicine vol: 1. page 109.]

It is a well known fact that Maculated typhus confers more immunity on those affected by it, and that it is more contagious than any other form of continued fever—in these two points therefore approximating rather to the exanthemata.— If typhus be placed among the eruptive fevers, we may justly advance a step further and place other continued fevers also, in the list which present peculiar eruptions.

The Measley eruption generally considered characteristic of typhus cannot be seen in other fevers, neither can the various petechiae be seen in this, the two are therefore distinct, and although the general symptoms may in certain extreme cases so closely approach

each other as to be scarcely or not at all discernable, 12.
yet the marked difference in the eruption, chalk
them out as distinct in essence. If then it can
be proved that certain continued fevers, invariably
present a certain anatomical character, ^{and that anatomical character} a peculiar
eruption, there can be no hesitation in placing
these fevers among the exanthemata.

Dr. Jenner of London in a published
analysis of sixty six fatal cases of continued fever,
has we think satisfactorily proved that typhus
and typhoid fevers are essentially distinct diseases.

We are not aware that such an elaborate
statement of facts has ever yet been made on this
subject, or that the cause and symptoms of fever
have ever yet been so carefully observed and minutely
recorded. His observations tend to prove, that
although for the most part, the general symptoms
differ in each, yet that, as in some cases, they
insensibly graduate into each other - no single
symptom can be relied on, but the presence of
the peculiar eruptions he has observed, for "in
distinguishing the two diseases by the eruption alone,
not a single error has been made so far as can
be proved by examination after death of the fatal
cases, ~~either~~ or by the progress of the non-fatal

Cases after their diagnosis were recorded" { Edinburgh
Monthly Medical Journal April 1849 } 13.

"On what grounds" he asks do we assert that they
(Scarlatina and small pox) are two diseases?

"First.— In the vast majority of cases the general
symptoms differ.

Second.— The eruptions, the diagnostic characters if
present, are never identical.

Third.— The anatomical character of small pox is
never seen in scarlet fever.

Fourth.— Both being contagious diseases, the one
by no combination of individual peculiarities, atmospheric
varieties, epidemic constitution or by hygienic condi-
tions, can give rise to the other.

Fifth.— The epidemic constitution favourable
to the origin, spread, or peculiarity in form or severity
of either has no influence over the other excepting
that which it exercises over disease in general."

On these grounds he asserts the typhoid and typhus
fevers are distinct. Dr. Jenner's remarks on the prac-
tical importance of arriving at the truth regarding
the identity or non-identity of typhus and typhoid
fevers are just — "If continued, ^{even} be one disease, the
essential treatment must be the same in every case,
modified only by the presence of local complications,

if two diseases, then the essential treatment may be totally 14.
different ~~from~~ ^{for} the one, from that required by the other -
and this is without regard to local complications. -

The very ground work of the treatment, so to speak, may
for the one, be diametrically opposed to that necessary
for the other. -

The eruption considered by him as characteristic of
typhoid fever with the abdominal affection has the
following characters - viz - rose coloured spots, circular,
papular, gradually fading into the surrounding skin,
disappearing on pressure, and re-appearing on removal
of the finger, they were ^{not} therefore petechial nor did
they ever pass into that character. Each remained
three or four days and were then succeeded by new
ones. When they ceased to appear the disease general-
ly declined which was about the thirtieth day -
they were observed on the abdomen, thorax, back,
and occasionally on the extremities; When a relapse
took place the eruption re-appeared.

The measles eruption of true typhus fever is
designated by Dr Jenner as a "Mulberry rash" the
spots first elevated slightly, dark pink in colour,
irregular in outline and fading insensibly into the skin,
disappearing entirely on pressure. In the second stage
the ~~spots~~ hue was darker and more dingy - the

spots were not elevated - and only faded on pressure. In the third stage the centre of the spots became dark purple and remained unaffected by pressure, or the whole of the spots became purple and were converted into true petechiae.

That there are other eruptions seen in continued fevers besides the two already mentioned no one can call in question and it yet remains to be proved whether these eruptions are each diagnostic of essentially distinct fevers. -

Dr. Christison in his article in the Library of Medicine / page 144/ describes three forms of eruptions which he had observed in continued fever.

First. - Pale brown, lenticular spots unelevated and much resembling freckles.

Second. - Small, round, dark reddish-black, well defined, unelevated spots.

Third - Rose red, irregular, not distinctly circumscribed diffuse, slightly elevated spots.

The last of them he has observed invariably to attend a severe, and often a fatal attack of fever. - They are probably the spots considered by Dr. Jenner as characteristic of typhoid fever. - The other two forms are evidently distinct eruptions. -

Dr. Graves of Dublin seems inclined to the belief that

petechiae are nothing more than accidental accompani- 16.
ments of fever and never essentially connected with it.

He says "I myself have never seen petechial fever epi-
demic in Ireland" He cannot account for so many ob-
~~servations~~ servers testifying to the opposite except by
supposing their observations to have been inaccurate, for,
adds he, "although true petechiae are rare, true flea-bites
are common in Ireland"

We can say nothing of the petechial fever of Ireland
which, although described by authors is doubted by Dr.
Graves - but we do say that if that fever resembles
in its eruption the petechial fever which is so com-
mon among the lower Irish resident in this country
the spots are incontrovertibly petechial in the strictest
sense of the term - These may be "very rare" in Ireland
- not so in Scotland.

We do not call in question the fact that true flea-
bites are common in Ireland, since in this country
the Irish seem by no means free of the vermin which
give rise to them, but the two spots which Dr Graves
has so much difficulty in recognising as distinct
possess characteristics so marked that we feel at a loss
to account for any confusion in the matter, and
again and again we have had the opportunity of view-
ing the two spots in the same individual - If.

therefore it be granted that there are several eruptions
in fever besides the measles, and that these eruptions
present well marked and distinct characters — the
presumption appears to be, that each is characteristic
of its own fever.

Dr. Jenner has made observations on, from a thou-
sand to two thousand cases of continued fever, and he
thinks it probable that in this country there are at
least four distinct continued fevers — He does not
mention whether his belief rests on the number of
eruptions observed. — * * * * *

What is fever? — "Fever is a disease which affects
the whole system; it affects the head, trunk, and ex-
tremities, it affects the circulation, absorption, and
nervous system, ^{it affects the body} it affects the mind; it is therefore
a disease of the whole system in the fullest sense
of the word term. It does not, however affect the
various of the system uniformly, and equally, but,
on the contrary, sometimes one part is more af-
fected than another" — So writes Fordyce and his view is
becoming now to be considered the true one. —

Dr. Christison has ably advocated this view in his
excellent essay in "^{the} Library of Medicine" and Dr. Graves
one of the most shrewd, practical men of the day,
likewise subscribes to his statements. They view

fever as an essential disease — a disease *per se* — 18.
not symptomatic of any local disorder — but a disease
which when witnessed in its purest form runs its
course without any particular ailment either as mani-
fested by symptoms during life or recognised by
appearances after death.

The local affections so often seen during
the progress of the disease are regarded as merely ac-
cidental complications, and rather caused by, than
the cause of, the general disturbance. In support
of this view the following are the principal argu-
ments advanced:—

That many fevers run their course without any
local disturbance proving itself to be present either
by symptoms during life or post mortem appearances —
that the local disturbance is not sufficient to cause
the general symptoms; — that similar local disturbances
are often witnessed without the constitutional symp-
toms noticed above: — that the local affection
often continues after the fever has abated; that
these affections are amenable to treatment in
a remarkable degree — that a great variety of organs
are affected; — that the changes in the blood are dif-
ferent from inflammatory blood: — that certain
symptoms — as the appearance of the tongue —

19.
the secretions - and the rise progress and termination
of the disease are totally different from inflammations
- to which may be added - that if fever is once admitted
to be contagious, it must be the consequence of the
specific poison - therefore essential and not a
cause of local inflammation.

Such however cannot be said of the typhus of continental
writers, at all events it cannot be said that there is
no constant local affection.

This disease seems to be invariably connected
with a local affection of Peyer's glands either as
a consequence or cause of the general affection.

Robitzsky looks on this local disease as an
"expression of a constitutional affection which itself
may be either primary or secondary" The following
is a summary of what he describes as the "typhus pro-
cess" in the mucous membrane of the small intestine
{ Sydenham trans: vol: 2. p 68 }

It presents four stages viz the congestive stage,
the stage of deposition of the typhus product -
of typhus infiltration - the crude stage of the deposit;
the stage of ~~the~~ softening and rejection of the typhus
deposit; - The stage of the genuine typhus ulcer.
In the first stage there is congestive swelling
and slaty discolouration of the mucous membrane

of the small intestines - not equally throughout, but for the most part increasing from above downwards as far as the caecal valve.

In the second stage there is less, the injection and reddening for the most part corresponding now with Peyer's agminated glands or occasionally with solitary follicles - rounded tumefactions, plaques, foveae, which result from the deposition of a peculiar substance in the tissue of the Peyerian plaques and of the submucous cellular tissue" These are surrounded by a zone of vessels - are grey or tawny - hard and resilient - these characters however may vary somewhat. The corresponding peritoneal vessels are varicose. The common seat of this affection is the lower third of the small intestines opposite the insertion of the mesentery increasing in number towards the ileo-caecic valve - vary in form from a sixpence to half-a-crown.

"Near and between the patches we find single, round, nodulated tumours of the size of a hemp-seed or pea, surrounded by a similar vascular wreath, these represent the typhus infiltration of a solitary follicle."

The deposit is pale-red in colour and fibro-cartilaginous in texture - is deposited in the submucous tissue

and does not involve the muscular coat

In the third stage there is a return of "violent congestion" to the small intestine - the vessels of the mesentery are filled with dark blood - the typhus patches and the mesenteric glands soften - the deposit is converted into a greyish-red medullary mass which undergoes a peculiar kind of sloughing process minutely described by Rokitausky. The mesenteric glands also undergo a change at this time.

In the fourth stage "after the morbid product has been detached, a cavity remains on the internal surface of the intestine, which represents the true typhus ulcer" This ulcer presents the following characters: - { Rokitausky. Syd: trans: of Path: p: 72 }

Firstly. - Its form is elliptical when it corresponds to the infiltration and detachment of a larger patch of Peyer's glands, it is round when it corresponds to a ^{solitary} follicle or a rounded patch, or to the partial detachment of a glandular pleura; and, lastly it may also be irregular or sinuous when corresponding to a partial detachment.

Secondly: - The size or circumference of the ulcer varies from that of a hemp-seed or pea to that of a half-a-crown

Thirdly: - The position is peculiar in reference

to those of an elliptical shape; they are placed opposite 22.
to the insertion of the mesentery and their long diameter
is always parallel to the longitudinal axis of the
intestine; the typhus ulcer never forms a tone; at least
we have only seen once this occurrence in many
hundred cases.

Fourthly: The margin of the ulcer is invariably
formed by a well defined fringe of mucous mem-
brane which is a line or more wide, detached, freely
moveable, of a bluish-red and subsequently of a
slaty or blackish-blue colour.

Fifthly - The base of the ulcer is formed by a deli-
cate layer of submucous tissue which covers the
muscular coat, like the marginal substance, it
is void of morbid growth.

Sixthly - The small intestine is the seat of the
ulcerative process, and the lower third is most
liable to be involved - the number and size of
the ulcers increase as they advance towards the
cecal valve." Such is nearly the substance
of Rokitański's observations on the
subject.

It can scarcely be doubted the fever of which
this "typhus process" seems to be, the anatomical
character is a disease per se - a distinct fever - Stand:

ing alone in the list of continued fevers. As to whether ²³
this local affection be the cause of the constitutional
symptoms, or merely one symptom of the fever, we
are not prepared to say. The latter however is pre-
sumed, and it seems highly probable that just as
the poison of scarlatina affects the throat in a
remarkable degree - so does the poison in this disease
affect the mucous membrane of the small intestines.

The Dothinentute therefore is no exception to the
essential character of fever, for it will scarcely be
held that the local affection is the cause of the
general symptoms although in this form of
fever alone is a local affection, akin to in-
flammation present. "The knowledge we possess
of the pathology of typhus fever, is of a negative
character. Pathology teaches us what typhus is
not, rather than what it is, it shows us that it
is neither Cerebritis, Meningitis, Pneumonia, pleurisy,
gastroitis or enteritis, for it may exist without
any of them, and they may exist without typhus
fever; but it also shows that one or other of these
cessions arises in the course of that fever and these
require special attention." / Graves XI. P. 105 /

If fever be not symptomatic of local inflam-
mation - of what is it the effect, and where is its seat?

Previous to the time of Hoffman the doctrines of Humoralism were invariably held, and fever was regarded as a consequence of the diseased condition of the blood, and fluids of the body. — The doctrines of Solidism with Hoffman as their first propounder then gained ground, and Baglivi, Cullen, Boerhaave and others joined his ranks, although at the same time modifying his tenets to suit their own tastes and fancies.

A partial re-action has taken place in our own time in consequence of the views and observations of Dr Stevens who looks on the morbid state of the blood as the cause of all idiopathic fevers, and although there is perhaps much in his volume that may be considered at least, as extremely problematical; yet we believe that there is more truth in Dr Stevens views than is generally imagined, and that there is perhaps a feeling of prejudice against his opinions because humoral pathology being now considered ancient and out of date, it may perhaps be regarded as a step backwards to return to views in the main so stale, — views held when medical science was but in its infancy. Such an objection however need only be mentioned to show its absurdity.

The following is a general statement of Dr Stevens'

doctrine - Page 274. " a vitiated state of the blood, producing functional disease in all the solids, derangement in all the secretions, and sudden variations in the temperature, not merely of the part but in the whole system, is I believe in every instance the very essence of fever "

Now on this point it must be confessed, that the blood in most if not in all cases, of idiopathic fever undergoes a change both in its chemical and vital properties, and therefore this change is the most invariable pathological or anatomical character present. - At the same time it does not follow that this change is the cause of the general symptoms, for, as it must be admitted that the aggregate symptoms of fever from a diseased action throughout the system induced by a cause similar to that of certain poisons, so it must be admitted that this cause may act primarily and at once on the nervous system before any change has been wrought on the blood. That a depressed and poisoned state of the blood exists in all infectious fevers can scarcely be doubted, when the nature of the secretions and excretions are borne in mind - we cannot see how in any other way one could

account for morbid changes in the mucous secretions - 26
- the dry brown tongue - theordes &c. the generally
corrupt nature of the feculent discharges, and the
acid nature of the urine

In a general disease like fever when there
is a general derangement of the secretions - we must
look for a general cause - and that cause in this
case can only exist in the blood, it being the
source of all the secretions - still the question
recurs, whether is the nervous system or blood
primarily affected by the remote cause of fever?
and it does not follow that because the blood is
changed almost throughout the whole course of
the fever, that therefore it is the primary seat
of the essence of the disease. This doctrine must
rest on other grounds, for the same changes
might take place in the blood after the affection
of the nervous system.

We believe however, for the following reasons
that in all ~~changes~~ cases of infectious fever,
the poison whatever it may be which excites
the disease, must in the first instance be ab-
sorbed into the blood even it can give rise to
any of the symptoms peculiar to fever,
although at the same time we do not affirm

that the poison must appreciably alter the blood previous to the outset of the ailment. 27.

1. The outset of the disease and the cause of the symptoms after known exposure to the disease when there can be little ~~doubt~~ if any doubt, that the poison was then received, tend to prove that the poison was absorbed into the circulating fluids of the body — multiplied itself there to a greater or less extent — produced when intense enough a greater or less degree of nervous depression manifesting itself by debility ^{feebly} of the pulse — paleness of the surface — rigors — which depression is followed by reaction, kept up until the favourable or unfavourable crisis, the blood becoming more and more vitiated every day, which could not be the case were its remote cause affecting the nervous system merely. —

2. At the decline of the disease when the secretions are restored, the disease is admitted to be more contagious than at any other period, which can only be accounted for, by supposing that the morbid matter is eliminated from the blood and which cannot be accounted for, if the changes in the blood are regarded as a consequence of the nervous disorder.

3. Small-pox - Cow-pox - Measles - Erysipelas &c can 28.
be produced by inoculating a healthy person with the blood or matter peculiar to the disease, which can only be explained by supposing that the small quantity of poison introduced, so multiplies and corrupts the entire circulating current as to produce the general systemic disturbance peculiar to these diseases. It appears out of the question to talk of a nervous impression here - except through the medium of the blood.

4. It has been proved by Dr Stevens that in the yellow fever of tropical climates and in the African typhus, the blood becomes sensibly changed in properties before the outbreak of the disease, showing that at least in this case, the blood is the primary seat of the poison, and that through this medium the solids are affected; - and at the same time tending, if not to prove, yet to lead to the presumption, that such is also the case with our eruptive fevers, more especially as it has never been proved to the contrary. This argument therefore is from analogy simply - It is not enough to say that the blood in British typhus is not

sensibly altered at the commencement of the disease, 29
for notwithstanding it may be so in reality, while
no one denies the after changes.

We do not believe implicitly in Dr Stevens view
of the diminution of the salts in the blood, but
still we cannot but feel struck at the fact, that
in the treatment of our fevers, the use of the non-
salutative neutral salts is often followed by the
best effects, and that those who decry the doctrine
of Dr Stevens most lustily, are among the first
to use his saline Medicines, and admit the
benefit resulting

The analysis of the blood in typhus abdominalis
are according to Simon, very contradictory, pro-
bably on account of the blood varying in the
various stages of the disease. He states that
in the period of excitement it may incline to
hyperinosis, but that in the stage of depression
the fibrin gradually decreases, while in the stage
of collapse the solid materials and blood
globules decrease so remarkably that the
blood in consequence of the liquor sanguinis
being too watery and deficient in salts assumes
the state of Spasmodia, or extreme poverty of
blood. The same appears to occur in Petechial

typhus. The presence of inflammatory symptoms of course modify its constitution. He states, that the blood in typhus is deficient in fibrin, and frequently in albumen, that it coagulates imperfectly, and often remains in a semifluid state presenting a clot which is soft, friable, of a very dark or blackish-red - rarely having a buffy coat, and soon becoming putrid [Syd. Han. 1: p. 288]

The most comprehensive analysis of the blood in typhoid fever are those of Andral and Gavarret, and the following is the summary of their results.

They never found fibrin perceptibly increased above the normal standard in true typhoid fever - that it was often normal - more often under the natural proportion, and the more as the disease advanced - thus contrasting remarkably with the blood of ~~the~~ inflammation in which the fibrin increases with the disease - When convalescence commenced the fibrin gradually returned to its normal quantity - The corpuscles are not diminished as in the inflammation, but at the outbreak of the disease are often increased, and in the advanced stages if they do not exceed, they at least came up to the normal standard.

"During the early period the diminution of the fibrin

is not absolute; it is only relative in relation to the corpuscles, but as the disease approaches its height the diminution becomes absolute"

They consider that the residue of the serum and solid constituents gradually approximate to the normal standard - similar results however have not been obtained by other observers.

Secanu thinks that the corpuscles are diminished and not more abundant. - Chomel does not look upon a diminution of fibrin essential to the disease, but, it would appear that the blood in cases analysed by him was taken in an early stage of the disorder, and that in some the buffy coat, was present leading to the suspicion of some local inflammation.

The following is according to Jenner the appearance of typhoid blood: - In the first - the stage of depression the blood is thick and dark - coagulates rapidly, forming a large, soft, dark-colored clot. In the second stage - that of vascular and nervous excitement - it is of a scarlet colour - flows regularly - coagulates more slowly and makes a more solid clot, sometimes presenting a buffy coat - In the third stage or that of collapse, it is thin and watery - flows readily

- is of a dark colour, presenting a loose and flocculent 32
clot and occasionally appears more like a sediment
of colouring matter, than as a clot.

Dr Armstrong says that in the thoroughly de-
veloped typhus he found the blood drawn from
the temporal artery as dark as that of a vein.

Dr Reid Clanny thinks that the salts are
materially diminished in typhoid blood. That the
watery portion of the blood increases with the
intensity of the disease, and that not merely the
solid constituents generally, but the salts, and the
carbonic acid are diminished. The water begins to de-
crease and the solid constituents to increase in
favourable cases, after twelve or eighteen days.

Simon states that the blood in continued fever
is much the same as in typhus, except when
complications are present.

The following is Jenner's analysis of the blood of
a girl, aged fourteen labouring under continued fever.

Water	856.0
Solid Residue	144.0
Fibrin	2.0
Fat	3.0
Albumen	37.0
Blood Corpuscles	91.0.

Extractive matter	3.0	33
Alkaline salts	3.8	
Earthy ..	1.0	

The principal variation from healthy blood in this analysis is in the quantity of fibrin - albumen and salts, all of which are diminished.

In a similar analysis by Simon, Ancelet, Gavaunt, Lecanu, Becquiel, Rodier & results somewhat alike have been obtained, so that generally speaking they agree in representing a diminution of solid matter and salts generally, but not in a very marked degree.

In the exanthemata the blood presents nearly similar changes as in continued fever, but the tendency is rather towards hyperplasma than hypoplasma, probably in consequence of the local cutaneous inflammation - On the whole nothing very definite or satisfactory has been obtained from the various analysis of the blood, for although the changes in the constituency are undoubted and important, yet the relation of ^{these} changes to the disease itself - as cause or effect - seem still uncertain and undetermined; - at the same time if these changes have not been proved

to proceed the disease, neither have they been prov- 34.
-ed to follow it, for although they unquestionably
become more marked and unequivocal as the
fever advances, yet it has not been ascertained
that these are a consequence of the fever, any
more, than that the fever is a consequence of
those. The two go hand in hand - arise - ad-
vance - and decline together.

Every day we see cases in which the blood is
diseased and corrupted, either from the intro-
duction of a known poison as that of Syphilis,
or from the use of food, deficient in quantity -
or defective in quality, or from the inhalation
of impure air, cases in which eruptions appear on
the skin, the tongue gets foul and the bowels
disordered, - and when all that is necessary to
effect a cure is to use the proper means of re-
storing the circulating fluid to its normal
state; - and yet no one calls in question the
seat of the disease - the blood - and the cause
~~being the seat~~ of the blood being the seat - the
absorption of a poison or impurity.

If in such cases general symptoms are seen
to arise from a peccant in the blood - corrupt-
ing and vitiating the whole current - we

cannot see why a similar deprivation of this fluid should not produce the various forms of fever— for when the blood is regarded as the "Materia Morbi" symptoms can be accounted for— if the derangement be a consequence all seems mysterious and unaccountable. * * * * *

The writer regrets that he has been compelled by unavoidable circumstances to cut short, and abruptly to close, his Thesis. The original intention was not only to have considerably extended the dissertation, and to have included the most important points in the treatment of the disease, but to have made a rough sketch of the whole and then to have re-written and thrown the subject into a more systematic arrangement.

Having been unable to follow out this plan, and being compelled to present his essay in its crude condition, he thought proper to mention this circumstance, as, so far apologetic for the brevity, and imperfection of the performance.

James Macfarlane.