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A

PRACTICAL ESSAY

ON

Cholera

TYPHOUS FEVER.

By NATHAN SMITH, M. D.

*Professor of the Theory and Practice of Physic and Surgery
in Yale College.*

NEW-YORK:

PUBLISHED BY E. BLISS & E. WHITE,
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SOUTHERN DISTRICT OF NEW-YORK, SS.

BE IT REMEMBERED, That on the seventh day of January, in the forty-eighth year of the Independence of the United States of America, *E. Bliss & E. White*, of the said district, have deposited in this office the title of a book, the right whereof they claim as proprietors, in the words following, to wit:

"A PRACTICAL ESSAY ON TYPHOUS FEVER. By *Nathan Smith, M. D.* Professor of the Theory and Practice of Physic and Surgery in Yale College."

In conformity to the Act of Congress of the United States, entitled "An act for the encouragement of Learning, by securing the copies of Maps, Charts, and Books, to the authors and proprietors of such copies, during the time therein mentioned." And also to an act entitled, "An act, supplementary to an act, entitled an Act for the encouragement of Learning, by securing the copies of Maps, Charts, and Books, to the authors and proprietors of such copies, during the times therein mentioned, and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints."

JAMES DILL,

Clerk of the Southern District of New-York:

ML

P R E F A C E.

THE following Essay was written under the constant pressure of professional business, and during a more limited period than I was desirous of devoting to it. This is the reason, if not apology, for any carelessness of style, or inattention to arrangement, which may be observed in it. Should I find sufficient leisure, I hope, at some future period, to enlarge the work and add more facts in illustration of its principles.

N. S.

THE END

The following is a list of the names of the persons who have been associated with the work of the American Society for the Propagation of the Gospel in Foreign Parts, since its organization in 1793. The names are arranged in alphabetical order, and are given as they appear in the original records of the Society. The names of the persons who have been associated with the work of the Society in the United States are given in italics, and the names of the persons who have been associated with the work of the Society in foreign parts are given in plain type. The names of the persons who have been associated with the work of the Society in the United States are given in italics, and the names of the persons who have been associated with the work of the Society in foreign parts are given in plain type.

TYPHOUS FEVER.

TYPHUS is a word of Greek derivation, which signifies *smothered fire*, or *stupor*. As applied to disease, it is doubtful whether it was originally meant to indicate internal heat, or whether it was used to denote a fever particularly affecting the mind, and producing stupor and coma.

Derivation
and meaning
of the word
Typhus.

With regard to the history of this disease, we have no account of its first appearance; on the contrary, it is always spoken of by the older writers as an affection well known. And from the additional circumstance of its having received its name from the Greek physicians, it is probable that it has occasionally afflicted mankind from time immemorial.

Its early history.

From the descriptions given of it by European writers, there cannot be a doubt but that the disease called Typhous Fever in

Has the same
name in Eu-
rope and
America.

Europe and especially in England, is similar to the one known by the same name here.

Its first appearance among the European emigrants to America.

I have not been able to ascertain with much certainty, at what period it made its appearance among the Europeans, who first emigrated to America. For an hundred and fifty years after their earliest establishment, there were few if any books on medical science published in this country, and no medical journals made their appearance till a still later date. Of course all we know of the diseases of that early period has been collected from historical records, which casually mention times of sickness, but give us no descriptions, or at most imperfect ones, of their appearances and symptoms.

Soon known under various names.

We have reason to believe, however, from these imperfect and broken accounts, and from oral tradition, that it was not long after the first settlement of the country, before the inhabitants were afflicted with what is now called Typhus, but which was then known by the various names of long fever, slow fever, nervous fever, putrid fever, &c.

Whether the Typhous fever was originally

a disease of this country, I have not been able to ascertain. But although I have made particular inquiries in various parts of the country, and especially near the borders of the Indian possessions, I have never found an instance of an aboriginal inhabitant having suffered from this disease.

Whether originally a disease of America.

I have likewise consulted several physicians, who have lived many years in the vicinity of Indian tribes, and who have often visited them in sickness; they have all informed me, that they have never seen a native attacked with Typhous Fever.

I do not think, however, that my inquiries have been sufficiently extensive, positively to warrant the conclusion, however probable it may seem, that Typhus has never made its appearance among them.

Whether this disease is of universal occurrence, or is confined to any particular climate or latitude, as has sometimes been suggested, is a question which I am not prepared to decide; but I have every reason to believe, that it has prevailed in every part of the United States.

Whether confined to particular climates or latitudes.

A late writer in one of our periodical journals, has advanced the opinion, that Typhus does not prevail in the warm season of temperate climates. This conjecture is unfounded, as I have seen it attended with all its characteristic marks in every month, and, I believe I may say with truth, in every day of the year. This fact might be attested by the whole medical faculty of New-England.

Liability of
the two sexes.

With regard to the liability of the two sexes, I am disposed to think there is not much difference in the number of each attacked, but more females are cut off by it than males, in consequence of its appearance during pregnancy and soon after parturition.

Attacks all
ages.

As to age, I have never seen a child nursed at the breast affected with it, but other physicians have ; and those in whom I could place confidence have assured me that they have met with infants suffering under this disease ; and if so, it may be said to attack both sexes and all ages, from the cradle to the grave.

Sometimes
wholly disap-
pears for
some time.

Notwithstanding its general occurrence throughout the country, long periods of time

have elapsed, in which it has not existed in particular sections of country of considerable extent.

When I commenced the practice of physic in 1787, in Cornish, N. H., a town situated on the banks of the Connecticut river, I was informed by physicians, as well as the inhabitants who had resided many years in that part of the country, that about twenty years previous, a fever, which they had called *nervous*, had prevailed in that vicinity,—had soon after disappeared, and, for the twenty years next succeeding, had not returned in a solitary instance. It was eight years after, during which time I visited the sick pretty extensively in that and the adjacent towns, before I saw or heard of a single case of Typhous Fever. I was then called into a family, one member of which had died of this disease, and another then lay sick of it. Soon after, I left this portion of country, and was absent for about eighteen months, and was in consequence unable to trace the course of the disease; but in 1798, a year after my return, it made its appearance in the village surround-

Its appearance on Connecticut river in 1787.

Is absent for 20 years.

Its reappearance in 1798.

ing Dartmouth College, twenty miles distant from Cornish, and in several neighbouring towns simultaneously. From that time to the present, a lapse of more than twenty-five years, I have never so far lost sight of the disease, as to be unable to follow its changes from one place to another, and to tell where it was prevailing.

During this same period, it has appeared in all the New-England states, and as far west as my knowledge extends. Indeed it seems to possess a migratory character, and travels from place to place, and, after remaining in one village for a longer or shorter time, as, from one year to two or three, it ceases and appears in another.

Influence of
situation.

I have not observed that situation has any influence either in producing or preventing this disease. It affects alike persons living on mountains and in valleys, on plains and the banks of rivers, and on the borders of lakes and stagnant ponds.

Influence of
occupation
and habits.

And I have not perceived that occupation or habits of life make any difference in their liability to receive this disease, nor has it in

this country been confined to the poor and filthy; but affects nearly alike the rich, the poor and middle classes.

That the Typhous Fever is contagious,* is Is contagious.
 a fact so evident to those who have seen much of the disease, and who have paid attention to the subject, that I should have spared myself the trouble of saying any thing with regard to it, did I not know that there are some physicians in this country, who still dispute the point; one, which I think can be as fully demonstrated, as that the measles, small-pox, and other diseases universally allowed to be contagious, are so.

The arguments usually brought against this Arguments against this opinion answered.
 opinion are, that in certain cases, we cannot trace the contagion to its source, and that many persons exposed to it, do not contract the disease. These objections might be advanced with equal truth against the contagiousness of all diseases; as it frequently

* Without going into a discussion upon contagion and infection, I would observe, that by a contagious disease, I mean simply, one that can be communicated from one individual to another.

happens, that one or more individuals in a family will escape an attack, though equally exposed as those who suffer from it.

A few instances, which have fallen under my own observation, would alone be sufficient to determine the question.

Case in proof
of its conta-
giousness.

A young man, a pupil of mine, was attacked with the Typhous Fever, from which he recovered with difficulty. Some of his family, who lived about forty miles distant, came and took care of him during his sickness. Upon his recovery, they returned home in good health, but soon after sickened with the same disease, and communicated it to others, who had not been exposed in the first instance. From this, it spread to numerous other families in the vicinity, who had been exposed to the contagion. In the whole town where this occurred, there had been no case of Typhous Fever for many years, till brought there by the circumstances above related.

Second case.

During the prevalence of the Typhous Fever in Thetford, (Vt.) a woman went there from Chelsea, about ten miles distant, to visit and administer to a sister sick of this disease.

Upon her return, she was herself attacked by it and soon after died. Others of her family contracted it of her; and in about four weeks, there were thirty persons taken down with Typhus, all of whom had been exposed to the contagion.

A young man belonging to Plainfield, (N. H.) Third case. who had left his friends, and resided for some time in the western part of the state of New-York, returned to his father, who had a numerous family. He found himself unwell before he reached home—was immediately confined with Typhus, and soon sunk under the disease. In about four weeks after, I was called into the family, and found nine members of it sick of the same fever.

With a knowledge of these facts, and many Not so readily communicated as some other diseases. more, equally to the point, it is impossible for me not to believe this fever contagious, though it may not perhaps be so certainly and readily communicated as some other contagious diseases.

Some physicians admit that Typhous Fever Opinion that it sometimes arises from is often communicated from one person to

accidental
causes, com-
mented on.

another, who nevertheless suppose that it is frequently produced without any contagion or specific cause; that is, that it arises in many cases from errors in diet or exercise, from the effects of temperature, or what Sydenham would call an epidemic state of the atmosphere, from marsh miasmata, or confinement in close and crowded apartments. This is a difficult subject, and it is not easy to demonstrate that it is never produced by some or all of these causes, and perhaps the circumstance of analogy is all that can be adduced against the assumption.

However, the fact already noticed, of the absence of Typhus in a large section of country, for an interval of more than twenty years, would lead us to doubt the possibility of its being produced by any of the accidental causes above enumerated; for in such an extent, and among so many people, it is impossible but that some of these circumstances should have occurred—and the disease of course be produced. Besides, if it can be communicated from one person to another, it has a specific cause, and I know no disease

that arises from a specific cause, that can be produced without the agency of that cause.

It has been suggested that Typhus occasionally arises from marsh miasmata,* the same which under certain circumstances, produce intermitting and remitting fevers. A fact, which I shall here adduce, is strongly opposed to this hypothesis. On the Connecticut river, from Northampton, in Massachusetts, to its source, a distance of more than two hundred miles from north to south, and on all its tributary streams, on both sides, for an hundred miles in width; there has been no instance of any person's having contracted the intermitting fever, from the first settlement of the country to the present time; and yet the Typhous Fever has prevailed more or less in every township within that tract of country.

The Typhous Fever, as far as my experience, which has been considerable, enables me to judge, is a disease *sui generis*, exhibiting as little variety in the different individuals affected by it, as some of the diseases which

Its rise from
marsh mias-
mata doubted.

Is a distinct
disease, and
not a state of
fever.

* Good, *Study of Medicine*, Vol. II. p. 188.

are acknowledged always to arise from contagion. If its duration is not so uniform as some of the contagious diseases, it is less irregular than others, which spring from specific causes, as for instance the intermitting fever.

Rarely affects
the same per-
son twice.

There is another marked point of analogy between Typhus and the common contagious maladies, which is, that it rarely affects the same individual twice. Those, however, who do not consider it a distinct disease, but only a state of fever, will probably differ from me in opinion on this point. For it is evident, that if we make the name of the disease depend on the presence of one or two symptoms, or on that indefinite thing or state called debility, we shall be liable to misname it, and that this is actually done, and in very many instances, there can be no doubt. Indeed, within the last year, I have been consulted in several cases of disordered secretions of the digestive organs,* which were called low

* "Acute disorder of the digestive organs" of Hall—On Diagnosis, part 2, p. 102.

nervous or low typhous fever, merely on account of the presence of a furred tongue, loss of appetite, and some degree of thirst. Several of these patients told me, that they had had one of these "low fevers" every year, for several years in succession. It is obvious that those physicians who have such vague and indefinite notions of fever, as to call a stomach affection, Typhus, would be equally liable to call other febrile complaints by the same name, and may imagine they detect its existence in the same individual many times.

My own personal experience is strongly in favour of the opinion I have advanced of the non-liability of the same individual, to a second attack of Typhus; for during the twenty-five years since I first attended patients in this disease, and in that time I have visited many hundreds, and have witnessed its prevalence several times in the same village, I have never known nor heard of its recurrence in the same person.

I once attended a numerous family, every member of which was sick of Typhus, except two, who escaped at that time; but two years

Cases in support of this opinion.

afterwards, when the disease again appeared in that neighbourhood, those two individuals of the family, and those alone, were attacked.

In another family, which I attended, consisting of eight persons, five of the eight had the disease during the autumn, and early part of the winter, and recovered. The next summer, the remaining three and another person, who had been added to the family after the former sickness, were attacked by it, while all those previously affected escaped.

The experience above spoken of, in addition to these cases, and numerous others equally in point, forms a strong presumptive proof, that in this respect, there is an analogy between Typhus and the common contagious diseases.

Remarks on
the change of
Typhus into
inflammatory
fever, &c.

Some late writers, have described a fever beginning inflammatory, and ending typhous, and vice versa. Upon this point, I would observe, that in many if not all acute diseases, there is a marked difference in appearance between the rise and decline of the same

disease, whether it terminates in death or recovery, and generally, the early part of all febrile affections is attended with more symptoms of inflammation than the latter. This is undoubtedly the case with Typhus; but such difference of symptoms in its different stages, should not induce us to give the disease different names.

As I consider Typhous Fever as arising from a specific cause, if it begins Typhous, or arises from such specific cause, I believe it to continue Typhous through its whole course. Variations, in severity or mildness, can make no specific difference in the disease.

With regard to the combination of Typhous fever with other diseases, the opinion has been often, and confidently advanced, that two diseases arising from specific causes could not exist in the same individual, at the same time. But however dogmatically it has been stated, it is nevertheless without foundation, since I have myself seen the Hooping-Cough, and the most malignant dysentery

Combination
of Typhus
with other dis-
eases.

Combines
with dysente-
ry :

coexisting in the same person.* It has been stated by Mr. Harty†, that Dysentery and Typhous Fever often combine, and I can add my testimony to the same fact, for I have often seen a patient taken sick with all the characteristic marks of Dysentery, and after some time the dysenteric symptoms have wholly subsided, while those of Typhus have continued for many days, so strongly marked as to leave no doubt on my mind of the truth of Mr. Harty's position.

And with epi-
demic catarrh.

I have likewise often seen this disease attack persons under the influence of epidemic

* *Extract of a letter from Daniel Sheldon, M. D., of Litchfield, Conn.*

"In the course of the year 1807, the mumps, hooping-cough and measles were all prevalent in this town, at the same time. The children of the Rev. Dan. Huntington, then a resident here, were subject to these complaints. One of them had the mumps, hooping-cough and measles at the same time ; another, the measles and one of the other complaints, which I do not now, accurately remember. In each child, the peculiar symptoms and appearances of each disease were exhibited and strongly marked ; and, so far as I observed, progressed together, without any mitigation or suspension of either. Each of the children, after the abatement of their disorders, had an inflammatory swelling about the neck, of considerable size, which suppurated and was opened."

† Observations on Dysentery and its combinations, by William Harty, M. B. London, p. 57, et. seq.

catarrh, and the symptoms of both diseases continue perfectly evident for some time.

From the view of this subject above taken, and the facts there stated, I consider Typhous Fever a disease *sui generis*, arising from a specific cause, and that cause contagion, and seldom affecting the same person more than once.

The diseases with which it is liable to be confounded, and for which it is often mistaken, are pure unmixed catarrhal fever, the acute stomach complaints above referred to, and those bilious affections, which take place in the latter part of summer, and the commencement of autumn.

Diseases with which it is liable to be confounded.

I have seen many cases of all these affections, which have been considered and treated as Typhus, by those who consider it as a mere state of fever, and not as a distinct disease, dependant on a specific cause.

It will be observed, that simple inflammatory fever is not mentioned as one of the diseases with which it may be confounded. The reason is, that no such disease has ever fallen under my observation.

Observation on simple inflammatory fever.

Not found in
New-England

Although I have practised physic and surgery for thirty-five years pretty extensively in all the New-England states, except Rhode-Island, and have lived in New-Hampshire, Vermont, Connecticut and Maine, I have never witnessed a single case of continued fever, except Typhus, which was not either the effect of contagion, as the small-pox, measles, &c. or evidently connected with local inflammation, and dependant upon it.

Typhus is
sometimes
connected
with local in-
flammation.

I do not mean to assert that Typhus is never connected with local inflammation; indeed I know that the reverse of this has been the opinion of some men of great observation, and that there are many phenomena, which serve to corroborate it; but if so, it differs essentially from that kind of sympathetic fever, attendant on phlegmonic inflammation, and on attentive examination, this difference will be sufficiently obvious.

Has a natural
termination.

Typhus, like the other contagious diseases, has a natural termination, and if it does not end fatally when uninterfered with, it gradually exhausts itself and disappears;

at the same time, unlike those diseases, it is not restricted in its duration to so narrow limits.

So far as I have observed, it has rarely terminated under fourteen days from its commencement, and seldom exceeds sixty. In a few rare instances, it may have terminated earlier or continued later. In one case I visited, the patient had been confined an hundred days, and the symptoms still resembled Typhus, but the specific character had probably been changed, and these symptoms were rather the effect of the disease, than an evidence of its then actual existence.

Seldom terminates under 14 days, nor often exceeds 60.

With regard to the remote and proximate causes of this fever, which have been so often and diffusely described by the learned, if the remark made above be correct, contagion may be considered as the antecedent to all which follows its application, and that without it, no effect would be produced. But how this cause operates upon the system, or on what part it makes its first impres-

Remark on the remote and proximate causes.

sion, or how this first impression produces the ultimate effects, we are wholly ignorant. As for the proximate cause I know not how to separate it from the disease itself. Since the disease is known only by the phenomena it exhibits, these phenomena may be considered as constituting the disease, or all we know of it.

Febrile diseases first affect the circulation :

According to our late nosological arrangements, the Pyrexia, or febrile diseases, affect principally the circulatory system; if so, the affections of the other functions, are the consequence of the change first induced in this system. But as all the different parts of this system, are destined to perform different functions, it may happen that a disease may primarily affect one part only, and the change produced in the rest of that system, may be the consequence of a change produced primarily, in another part.

Or some one part of it.

Proper functions of the heart, great arteries and capillaries.

In the sanguiferous system, the proper function of the heart seems to be nothing more than to receive the blood from the veins, and throw it into the arteries, which may be

considered as living canals, intended to convey the blood from the heart to the system of capillaries. Here all the functions belonging to this system are performed, such as nutrition, reparation of the body, absorption, secretion and the production of animal heat. Of course, the functions of the heart and great arteries must be considered wholly subservient to those of the capillaries, which in reality, perform all the great and essential offices of the circulating system.

As this fever is supposed to make considerable change in the action of the circulating system; the question presents itself, what part is first affected? does the increased action of the heart and great arteries, cause the increased action in the capillaries, or *vice versa*?

In cases of local inflammation, which produce symptomatic fever, it appears very evident that the capillaries are first affected; the action of the heart and great arteries is not changed till symptomatic fever is produced; and that this symptomatic fever, seems to commence in the capillaries, is evinced

Capillary vessels first affected in Typhus.

by the paleness of the skin, and the chills with which its first appearance is accompanied.

Cause of inflammatory and febrile action the same.

The analogy between the inflammatory and febrile action is so great, that we may with confidence rely on the similarity of cause.

Explanation of the chill.

The paleness of the skin, and the sense of cold spoken of above, which attend inflammation, and precede the attack of fever, or the developement of those phenomena to which we usually apply the name, and which is followed by an increase of the action of the heart and arteries, I explain in the following manner. Before the diseased action can take possession of the capillary vessels, the natural and healthy one must cease, unless disease is a mere increase of the healthy action, which we have abundant reason to believe is not the case. It is during this interim, that is, between the interruption of the natural healthy action, and the complete establishment of the diseased one, that the patient feels the chill.

Something of this kind is observed in cases of local inflammation, which still continues

G. P. Palmer

to extend itself. A few lines beyond the discoloured part of the skin, between that and the portion which still retains its natural tint, there is a pale circle, evidently showing that the action of the capillaries in that part is suspended.

When local inflammation proceeds so far as to produce symptomatic fever, a degree of paleness accompanied by chills, precedes the increase of heat.

Upon the whole, whether we consider Typhous Fever as dependant on local inflammation or not, it is probable, nay, it is very certain, that like all other febrile diseases, the morbid action commences and continues principally in the capillary system, and that the change which we perceive in the action of the heart and great arteries, is symptomatic of the disease existing in that system.

Morbid action in Typhus, commences in the capillary system

Affection of the heart and great arteries symptomatic.

The most violent affections of the heart and large arteries, as in palpitation, do not produce the slightest symptoms of fever, which serves to show that these two parts of the circulating system have diseases as distinct

and different from each other, as their functions.

The symptoms of this disease, may be divided into such as affect the functions of animal life, and those of organic life.

Symptoms recurring in animal life.

The changes produced in animal life, may be referred to affections of the mind, of the organs of sense, sensibility and voluntary motion.

Those in organic.

Those occurring in organic life, to changes produced in the respiratory, circulatory and digestive systems, to secretion and excretion generally, together with its effects on the animal heat.

Pains in the head, back and limbs.

Amongst the earliest symptoms belonging to the first class, are dull, aching pains in the head, back and limbs, usually commencing in the head and back, but in some cases in the lower extremities, attended generally with a sense of lassitude and fatigue. The patient's flesh, as they often express it, is very sore.

Symptoms appearing in the nervous system.

The symptoms, as they appear in the nervous system, are a disinclination to make any mental exertion, forgetfulness, inability to

measure time, total incapacity to pursue any train of thought, or to attend to business. As the disease advances, delirium often makes Delirium. its appearance, sometimes continuing day and night, at others, it is present in the night only. In a still more advanced stage coma Coma. supervenes, but not often so profound that the patient cannot be roused from it by speaking loud to him, although upon ceasing to speak he immediately falls back into the same state.

In a few instances, I have known patients in their delirium impressed with an idea of some persons having abused them; and this idea has continued till after they have recovered, and was even then obliterated with difficulty.

In two cases which I have met with, instead of delirium, a kind of insanity appeared Insanity. pretty early in the disease; and in both, as the insanity came on, the peculiar symptoms of Typhus abated.

In one instance it was of a playful childish nature, in the other there was a display of great wit and humour.

In both it continued about four weeks, and as it then gradually subsided, a restoration to health took place.

Memory impaired.

There is in this disease not only a forgetfulness of the lapse of time and of occurrences that have recently happened, but though the patient appears sensible, and gives rational answers through the whole course of the disease; yet after his recovery, the whole time elapsed, and all the circumstances that have taken place during that period, are entirely blotted from the memory, and are never after recovered.

Hearing affected.

The hearing is often impaired almost from the commencement of the attack. Sometimes false hearing occurs, and the patient imagines he perceives voices and sounds when nothing of the kind exists.

Sense of vision.

The sense of vision is not so much impaired as that of hearing; and blindness, I believe, never occurs till near the point of dissolution. But false, double, and distorted vision sometimes arise.

Appearance of the eyes.

To an observer, the eyes present a peculiarly heavy and languid appearance and are

a little watery, but in the beginning of the disease, there is not much evidence of inflammation. The red vessels however on the conjunctiva are often a little enlarged, and appear more numerous than in a state of health. In the latter stage they become more turgid and of a darker colour.

The secretions of the mucous membrane of the eye are often considerably affected, become thick and viscid, and accumulating in its angles, dry and put on the appearance of scabs.

There is sometimes a considerable increase of sensibility to light.

The voluntary motions are unsteady, the tongue trembles when an attempt is made to protrude it, and the patient's hand shakes when he attempts to bring it to his head.

Organs of voluntary motion affected.

There is often more or less starting of the tendons, and the muscles of the face are agitated, especially when asleep, so as to produce momentary distortion.

Subsultus tendinum.

The voice is altered, from the beginning. Early in the disease it is usually rather plaintive and small, but as it advances, and more

The voice is altered.

particularly in bad cases, it becomes guttural, and at last truly sepulchral.

Position of the patient.

The patient is generally inclined to lie on his back, and he insensibly slides down towards the foot of the bed.

Moral principle sometimes affected.

It has appeared to me in some instances that the moral principle has been affected. One patient in particular, who had been extremely sick with this disease, after his recovery had a strong propensity to steal, and did in effect take some articles of clothing from a young man to whom he was under great obligations for the care he had taken of him during his sickness. He at length stole a horse and some money, was detected, and punished. I took some pains to inquire into the young man's former character, and found it good, and that his family were respectable.

The pulse quickened—

The symptoms of Typhus indicating a disturbance of the functions of the circulatory system are an increased frequency of the pulse, without fulness, or usually any considerable degree of hardness, from the commencement of the disease.

The pulse is generally rather easily compressed, and when the disease is severe, has often a peculiar, undulating stroke or a second small beat following each full one.

But easily compressible.

The animal heat is always deranged in this disease. In the commencement, there is generally some degree of chilliness felt by the patient, although his skin feels warm to the touch. This sense of cold often continues at intervals for three or four days.

Animal heat deranged.

The heat on the surface of the body varies in intensity at different times of the day, and is greatest during the exacerbations, of which there are generally two in the course of twenty-four hours. They do not however appear regularly at the same hour each day, but vary both in the times of their appearance and in their severity.

Exacerbations.

In the commencement of the disease the most marked exacerbation occurs oftenest in the evening.

The heat is ordinarily very unequally diffused over the body; sometimes the head and trunk will be excessively hot, while the extremities are cooler than natural; at others,

Heat unequally diffused.

the extremities will be preternaturally hot, when the body is but moderately so. One cheek will often appear of a deep red colour and be very hot, while the other remains pale and cool; as its colour and heat subside, they seem to cross over and affect the opposite cheek in the same manner. This colour and heat usually extend so far as to include the ear of the affected side.

Hæmorrhage. Hæmorrhage is not an uncommon symptom in this disease. In a majority of instances in which it takes place, it arises from the intestines, not unfrequently from the nose, and more rarely from the kidneys.

In females of adult years it is often from the uterus.

This symptom is most apt to show itself at about the height of the fever.

Spots on the skin, &c. Livid spots occasionally appear on the skin, and blistered surfaces sometimes become black and gangrenous.

Secretions are changed. The effect of Typhous Fever on the secretions is sudden and universal; they are all changed either in quantity or quality from the very commencement.

The saliva is generally diminished in quantity, becomes glutinous and produces great thirst; but in some cases its secretion is augmented and the patient spits great quantities of frothy mucus, without any desire to take liquids as in the other case.

Saliva is generally diminished:

Sometimes increased.

The tongue in the commencement of this fever is covered with a white fur, which as the disease advances assumes a yellow tinge, and from that gradually changes to a brown, which eventually becomes almost black. Arrived at this state, it cracks and peels off, leaving the tongue smooth, dry and very red. It is then again renewed and again comes off, making these changes, in severe cases, several times in the course of the disease.

Appearances of the tongue.

The teeth are often incrusted with a brownish matter, which adheres to them closely near the gums.

Teeth and fauces coated with thick mucus.

The fauces are covered with a thick tough mucus, which is sometimes thrown off in large quantities.

The urine is changed both in quantity and quality. In the commencement of the fever it is not high-coloured and is considerably copi-

Urine is changed.

ous, being often above the natural quantity, and deposits no sediment. In voiding it into a vessel it often foams like new beer. As the disease advances, the urine becomes more highly coloured, and as it begins to decline, lets fall an abundant sediment. In very severe cases, the patient evacuates his bladder but seldom, allowing the urine to accumulate there in very large quantities.

Power of digestion lost.

The changes produced in the functions of the digestive apparatus are a vitiated taste, want of all appetite and desire for food, and a total loss of the power of digestion in the stomach. Sometimes nausea and vomiting take place; whether this last is spontaneous or produced by art, the matter discharged shows, that the secretions of the stomach are entirely changed.

Secretions of the stomach altered.

Sometimes, the matter thrown up consists wholly of vitiated mucus, at others, it is mixed with bile of an unhealthy colour and consistence.

Peristaltic action deranged.

The peristaltic action of the intestines is sometimes suspended and at others preternaturally increased, and whether the stools

appear naturally or are solicited by art, they are always liquid, generally of a dark colour and have an unnatural and excessively fetid odour.

The latter stage of all severe cases of Typhus is attended with diarrhœa; the stools are frequent, copious, liquid and extremely fœtid. The bowels are often tympanitic, the flatus not passing off with the liquid stools.

Diarrhœa occurs :

The danger of the disease is in proportion to the violence of the diarrhœa; when the patient has not more than four or five liquid stools in the twenty-four hours, it is not alarming, as it does not seem to weaken him much, but if they exceed that number, serious consequences may be apprehended.

Prognosis may be drawn from it.

I have never lost a patient, whose bowels continued constipated through the whole course of the disease, and have never known a fatal case of Typhus, unattended by diarrhœa.

The respiration is always affected in a greater or less degree. There is generally a correspondence between the state of the respiration and that of the pulse, which is

Respiration always disordered.

frequent and undulatory, when the breathing is hurried and unequal, or accompanied, as it frequently is, by occasional long and full inspirations like sighing.

After the patient has been sometime sick, if the disease proves severe, there is a peculiar whistling sound produced when he breathes through the nose, and when asleep or lying in a state of coma, the mouth is generally kept open and the breathing has somewhat of a stertorous sound.

Perspiration
is affected :

In some instances, there is no sensible perspiration for several days succeeding the attack of the disease, in others, there will be more or less sweating about the head, face and superior part of the body, while the other parts remain dry and hot.

Occasionally, the patient will sweat, during a part of the twenty-four hours, almost from the beginning of the fever.

Is sometimes
very profuse.

In fatal cases there sometimes appears, what has been called the *washer-woman's sweat*, which is extremely profuse over the whole surface of the body and extremities, standing in large drops on the face, and giv-

ing to the cuticle, on the palms of the hands and soles of the feet, a corrugated appearance and a light colour, as if it had been long macerated in water. In such cases, the perspiration is warm till a short time before the patient expires. I have never seen an instance of recovery after this kind of sweating.

After the fever begins to decline, the perspiration becomes universal, especially while the patient sleeps; in this case it is not very profuse and produces a cooling and not unpleasant effect. Is sometimes general.

The skin has a peculiarly dirty appearance, and feels harsh and dry except when covered with perspiration. In some instances the surface of the patient's body communicates to the touch a sense of scalding, or a certain kind of pungency, which is difficult to describe, but, when we are accustomed to it, readily distinguished from the sensation given in any other fever, which would perhaps equally affect the thermometer. Colour and feel of the skin.

In the advanced stage, it is not uncommon for boils to appear; if they have a bright red colour and proceed to suppuration, it is a fa-

vourable symptom. Sometimes there appear eruptions about the mouth, these are considered by most physicians as a good indication, and I think I have generally found them so.

Peculiar
odour arising
from the pa-
tient.

There is a remarkable odour arising from a person affected by this disease, so peculiar that I feel assured that upon entering a room, blindfolded, where a person had been confined for any length of time, I should be able to distinguish it from all other febrile affections. This is an additional circumstance in favour of the existence of the specific cause assigned above; as several other diseases which arise from contagion are attended by an odour peculiar to each, which, when once fixed in the mind, enables a person to recognise their presence ever after. This is strongly evinced in small-pox, measles, malignant sore throat, &c.

Absorbent sys-
tem slightly
deranged.

The absorbent system is perhaps less affected than any other, in consequence emaciation takes place rapidly. This is rather a good symptom, for I have observed that patients who emaciate rapidly are more likely

to recover, than when they retain their ordinary degree of fatness, or when the face appears full and bloated. This last symptom, occurring after the disease has existed some days, indicates great danger.

In some instances, the power of absorption in one of the lower extremities is in a degree lost, and one leg and thigh become enlarged. As the fever abates, the cellular substance appears to be loaded, the muscular power is weakened, and the limb feels heavy and unwieldy.

Absorption diminished in one extremity.

In some cases, it is eventually restored, in others, the enlargement continues through life.

After the fever has subsided entirely, and the appetite is perfectly restored, the patient generally gains flesh very fast, and often acquires a greater size and weight than he possessed before the attack.

Patient on recovery gains flesh rapidly :

This increase in size takes place much earlier and more rapidly than the acquirement of muscular strength.

More so than muscular strength.

In cases where the disease has been very severe and the patient has recovered, the hair

Hair sometimes falls off.

comes off from the head, and is succeeded by a new growth; this happens more frequently with those who have much and long hair. The new hair, however, never acquires so great a length as the old.

Cuticle is separated.

After a very severe attack, the cuticle peels off from the palms of the hands and soles of the feet, and sometimes from the whole surface of the body; as is perceived when the skin is rubbed by the hand when in a state of perspiration.

The cuticle never separates in this way till the diseased action diminishes and the patient begins to recover.

Critical days.

As it respects critical days, much has been said and written from the earliest physicians to the present time; for my own part, I have never been able to determine that any exist, or if there are, they can be of no use, in a practical point of view, for two reasons; first, the disease attacks in such a gradual manner that we hardly know on what day to fix its commencement; and second, when it terminates favourably, it often happens that the patient

remains a week or more in such a situation that the practitioner is unable to decide, whether he is mending or failing.

If the pathology of Typhous Fever we have just laid down, be correct, if it arises from a specific cause and has a natural termination, it may be a question, how far we are to attempt a cure of it, or if we possess the power, whether we can with propriety cut it off in its commencement and by art prevent its running its course.

Question how far we should interfere in its treatment.

Physicians in this country are divided in opinion on this subject, some imagine they have often cured it immediately after its first attack, nipped it in the bud, as they say, while others of perhaps more experience will tell you they are not certain they have ever arrested this disease by medicine.

Physicians divided upon the point.

I confess the subject is a difficult one, and that it is next to impossible to demonstrate the truth of either the positive or negative side of the question, and as absolutely so to those who have already made up their opinions on

the subject, as to that still larger class, who have yet to learn to doubt their own skill and mistrust the powers of medicine.

When a person is taken unwell, has a pain in the head, takes medicine, and the next day recovers, if the attending physician is disposed to consider it a case of Typhous Fever, we can bring no testimony to prove that he would not have had the disease, had he not taken the remedy.

In such cases we can only make the truth probable, and what appears so to one, may not to another.

Difficult to decide, from the early symptoms of typhus resembling those of other fevers.

In the first place, Typhus in its commencement exhibits so many symptoms in common with other febrile affections, that is not easy for any one, especially the unexperienced, to determine whether the disease is truly Typhous or not; even those, who hold to the opinion that they often cure it suddenly, have confessed to me that they cannot distinguish it from other febrile affections upon its first attack, and never positively, till the disease has, in a considerable degree, developed itself.

This confession is alone sufficient to render the correctness of their previous opinion doubtful.

Opinion, that the disease can be arrested, probably unfounded.

Again, these very physicians, or at least a portion of them, have acknowledged that when the disease is fully formed, that is, when the patient has the Typhous Fever, it cannot with any certainty be interrupted or cut off, as they express it.

Besides, we have to oppose to the opinions of those, who think they often cure this disease in its commencement, the belief of others of quite as much experience, who think they have never interrupted its course in a single instance.

Indeed, I am myself of this latter opinion, for during the whole course of my practice I have never been satisfied that I have cut short a single case of Typhus, that I knew to be such; nor have I seen a solitary instance of its having terminated within fourteen days from its first attack.

Author's opinion upon the question.

Cases have occurred to me often where the distress and sufferings of a patient have been alleviated in less than half that time; but the

morbid action has not ceased, nor the healthy one of the secreting surfaces been established, and a natural appetite restored, within the time above-mentioned.

Does not follow from this opinion that we should neglect remedies.

It does not follow, because we have no expectation of arresting the disease, that we are to neglect doing any thing. In cases of the other contagious diseases, which are destined to run a certain course, as the small-pox, we often prescribe early in the disease, and with evident good effect, but not with a view to stop or cut off the disorder; for whatever we do, we expect it will pass through all its regular stages, and our prescriptions are calculated only to render it milder and safer, and enable the patient to live through it.

Treatment should be like that of other specific diseases.

With the same views, I prescribe for Typhus, both at its commencement and through the course of the disease; for Typhus has a natural termination like other diseases, which arise from specific causes.

The existence of the disease alone does not show that medicines are required.

On the other hand, it does not follow of course, that this disease in all cases requires remedies, or that a patient should necessarily take medicines because he has the disease.

In other specific diseases, we proceed on the principle of withholding our remedies unless they are called for by particular circumstances, and thus many cases of measles, hooping-cough, and other contagious diseases go through their course to their natural termination without medicine.

In cases where the disease is going on regularly in its course, without any symptom denoting danger, and without any local distress, it is presumable that medicines, especially powerful ones, would be more likely to do harm than good. Although Typhous Fever is a more formidable disease than measles or hooping-cough, yet there are many mild cases, and in such cases, I apprehend that the use of powerful means, with a view of curing the disease, is liable to do great mischief.

Where the course of the disease is regular, active remedies probably injurious.

I have seen many cases, where persons in the early stages of this disease were moping about, not very sick, but far from being well, who, upon taking a dose of tartrite of antimony with the intention of breaking up the disease, have been immediately confined to their beds.

Consequences of an emetic in the early stage of Typhus.

In fact, I feel well convinced, that all powerful remedies or measures, adopted in the early stage of Typhous Fever are very liable to do harm, and that those patients, who are treated with them in the beginning, do not hold out so well in the latter stages of the disease.*

If it is determined that something must be done at or about the commencement of the disease, the question is, what that something shall be, and the first thing usually suggested is blood-letting.

Notions of the existence of debility in Typhus, taught by Dr. Cullen.

From the time Dr. Cullen published his "First lines of the theory and practice of Physick," till very lately, students were generally taught to believe, that Typhous Fever was

* Happening in company with a physician with whom I was slightly acquainted, he observed that he had adopted a new method of treating Typhus, which I was aware had been prevalent in the vicinity where he lived, and stated that it had proved very successful. Upon my inquiring into his peculiar mode of treatment, he informed me that it consisted in giving his patient milk and water, and nothing else, through the whole course of the disease, and affirmed that he had treated quite a number of patients, and had not lost a single one since he had adopted this mode of treatment.

I take this to be a confirmation of my opinion, that powerful remedies are not properly used in this disease, unless called for by particular circumstances, and these circumstances are more rare than is generally supposed.

produced by some weakening power, and was, in effect, a disease of debility.

Dr. John Brown enlarged upon this theory, and inculcated a notion in accordance with it, that it should be treated by the most powerful stimulants. He considered bleeding and all other modes of depletion as highly reprehensible, because Typhus was placed at the lower end of his scale of diseases, that is, below the standard of health.

His theory extended by Brown:

This theory was carried into practice by many, and those, who might not have been converts to Brown's peculiar doctrines, not having sagacity enough to perceive that this debility was the same thing as specific disease, were nevertheless cautious about bleeding in a fever, which they considered Typhus, or possessing what they called a Typhous type. The most approved English authors since Cullen have held this doctrine till within a few years.

And for a long time practised upon.

Very lately several writers* have ventured to recommend bleeding in this disease.

Blood-letting recommended by some late authors.

* Armstrong, Pritchard, &c. &c.

Some of them have advised this practice in certain cases, where there appeared to be more than an ordinary degree of excitement in some particular organ, in the brain or lungs for example, while others have recommended it, simply because the disease was Typhus, without waiting for any particular symptom, or set of symptoms to indicate its necessity.

Practitioners differ with regard to its propriety.

The practitioners of medicine in New-England, have been divided on this subject; and while one part have become converts to the doctrine of blood-letting to a high degree in this affection, the other have condemned it *in toto*, and, as though opposition had produced a kind of reaction on their part, they have had recourse to the most powerful stimulants both internally and externally, such as opium, wine, alcohol, and the most acrid stimulants, as Cayenne pepper, arsenic, &c. Indeed, individuals of this latter class have carried their prejudices to such an extent, as even to boast of having made their patients swallow three pints of strong brandy, accompanied with large doses of laudanum and cantharides.

I have myself seen a written prescription, in which opium, wine, alcohol, cantharides and arsenic, were all directed to be taken several times in the course of twenty-four hours.

It is remarkable, that though the practice of these two sects, for such they seem to be, is as opposite as possible, each considering the other's mode of treatment as highly deleterious, yet all boast of success and enumerate various cases, which have fallen under their care, with scarcely the loss of a single patient, yet notwithstanding these two highly improved modes of treatment, it is a notorious fact, that Typhous Fever often proves fatal.

There are but two ways of accounting for the equal success of these two opposite modes of cure, for as far as I can judge there is not much difference in the success, which attends them, either the disease is not so much under the control of blood-letting as they would have us believe, or these two extremes produce about an equal degree of mischief; for it is not conceded, that if a patient does not re-

quire bleeding, he stands in need of opium, arsenic, cantharides, or alcohol.

When, blood-
letting should
be practised.

It has been observed that in certain cases of Typhus, there is great pain accompanied with a sense of fullness in the head, and in other cases, the patient complains of severe suffering in the chest, which is increased by a full inspiration.

Under these circumstances, the loss of blood, to the amount of from twelve to sixteen ounces, often mitigates these troublesome symptoms, and probably may not only alleviate the patient's suffering, but may enable him to go through the disease with more safety.

So far as I can judge from my own experience, bleeding does not generally produce any considerable change in this disease; the pulse is not rendered slower by it, and after the faintness, if there is any produced by the operation, disappears, the heat is not perceptibly diminished.

In some cases, in which I have resorted to this expedient, I feel confident that the pulse became more frequent and the temperature

of the body higher, in consequence of the loss of a pound of blood.

As hæmorrhage sometimes makes its appearance in Typhous Fever, and generally at about the height of the disease; the advocates for indiscriminate bleeding have imagined that taking blood early in the disease will prevent its occurrence. Upon this subject little need be said, since it is next to impossible to disprove the assertion; for my own part, I have never seen any evidence of its truth.

Supposed to prevent hæmorrhage.

In the autumn of 1812, Professor Perkins, now of New-York, and myself, attended between fifty and sixty cases of Typhus in the vicinity of Dartmouth College, and many of them students of that institution.

Of the whole number, which came under Case. our care, one only was bled, and that on account of a sense of fulness in the head, of which he complained.

This patient had afterwards a hæmorrhage from the bowels, which was pretty profuse, but he eventually recovered.

This symptom did not occur in any other of our patients, of whom we lost but one.

I am sensible that it is not safe to rely on one fact alone in making up an opinion on a practical subject. This case is mentioned only to show that bleeding does not always prevent hæmorrhage; and from the success of our practice, it would seem that blood-letting is not so essential, as some would persuade us to believe.

Loss of a moderate quantity of blood not dangerous.

That patients often recover from this disease after blood-letting has been practised is an unquestionable fact, and the inference which should perhaps be drawn from it, in conjunction with the facts mentioned above, is, that the loss of a moderate quantity of blood in Typhus, is not of itself dangerous, and in a majority of cases, may be allowed with impunity. There are cases however in which it may be essential to the patient's safety, while in others it may prove highly injurious. The judgment and skill of the physician is necessary in each individual case to determine the propriety of its adoption, as well as the quantity which should be abstracted.

I have never seen any benefit from blood-letting in Typhous Fever, where there was no local inflammation or congestion, that particularly called for it.

The symptoms, which would induce me to bleed, are uncommon pain in the head, accompanied with great heat in that part, a sense of fulness, and a throbbing of the temporal arteries, or marks of congestion in the viscera of the thorax, such as pain in one or both sides of the chest, increased by a full inspiration.

Symptoms indicating its necessity.

The state of the pulse also should be considered before we bleed; a very frequent one does not indicate blood-letting, on the contrary, in such cases I have seldom or ever seen this evacuation attended with advantage.

Many of the French physicians prescribe leeches instead of general bleeding, and where they can be procured, the remedy may be tried with safety, as there is less to be apprehended from the loss of an equal quantity of blood by leeches than in any other way.

Blood-letting by leeches.

The blood, drawn in Typhus, seldom shows a buffy coat, and as far as I can judge, is found

rather darker coloured than in ordinary cases of active inflammation.

Evacuations
from stomach
and bowels.

Emetics and evacuants from the stomach and bowels are generally prescribed after the question of the propriety of blood-letting has been decided.

From what has been said on the subject of attempting to interrupt or arrest Typhous Fever, it will be readily understood, that I do not deem it necessary in every case to give either emetics or cathartics; but as these remedies are often necessary, it is important that we should point out, if possible, the circumstances which demand their use.

In cases of simple mild Typhus, where there is no nausea at the stomach, no pain in that region, where the heat is moderate, and the pulse not greatly altered in frequency, I am clearly of opinion that we had better leave the disease to cure itself, as remedies, especially powerful ones, are more likely to do harm than good. In such cases, the patient gets along better without medicine than with; all that is required is to give him simple di-

luent drinks, a very small quantity of farinaceous food, and avoid as much as possible all causes of irritation.

The symptoms, which require the use of emetics, are nausea, sickness and oppression at the stomach; and when required, it may be an important question what kind of emetic should be given.

Symptoms indicating the necessity of emetics.

The tartrate of antimony is an old remedy in the commencement of fevers, and when active inflammation exists, there is no one with which we are acquainted, that possesses so powerful an effect in suppressing it.

Tartrate of antimony

As some consider Typhous Fever a local inflammation, or an affection of the circulatory system dependant upon it, preparations of antimony would not seem inappropriate remedies. I will not take upon me to say that this fever is never connected with local inflammation, but if so, it is not with that kind which we generally denominate phlegmonic, or that, which tends to suppuration, nor that, which has been called sthenic, as is conclusively proved by the effects produced upon it by blood-letting, since this evacuation possesses

a controlling influence over the one, while it has but a slight power over the other.

Though it may in certain cases obviate some of the troublesome symptoms of Typhus, and perhaps render the disease safer, yet it does not cure it, and in many cases is highly improper. So likewise, as far as I have been able to judge, tartar emetic should not be used in this affection, even at its commencement, and in the later stages of the disease, it is sometimes followed by fatal consequences.

Other emetics. From the bad effects, which I have seen result from the use of antimony in this complaint, I have long since neglected it in my practice, and have substituted for it the ipecacuan, eupatorium, or the sulphate of zinc.

The use of this sort of medicines has generally been confined to the commencement of the disease, but they are frequently proper and useful in its later stages. The articles, which I have just mentioned, either simple or combined, may be given, with safety and often with advantage, at any period when the symptoms are such as to demand an emetic.

Cathartics are recommended in almost all Cathartics. febrile diseases, and in many cases, much dependance is deservedly placed upon them; their general use, however, should not be indiscriminately recommended. In this, as in similar cases, we should consider the necessity of their administration, and whether they would probably produce the desired effect, not neglecting the particular means to be employed, and the extent to which we consider ourselves justifiable in carrying those means.

There are no remedies capable of doing much good, which under certain circumstances and in certain doses may not do harm, and I am persuaded that powerful ones of this class are always injurious.

Costiveness often occurs in the commencement of this disease. This kind of costiveness, is however, of a very different character from that which is habitual with some individuals, and which we so often meet with in stomach and bowel complaints, where the stools are unfrequent and the fæces hard and indurated. Peculiar kind of costiveness.

The stools in this disease, except at its commencement, when there is generally an accumulation in the great intestines, are always liquid and possess a peculiar colour and odour.

The costiveness, therefore, consists only in the unfrequency of the discharges, and not in their consistence.

If a strong drastic cathartic be administered, it is often followed by a diarrhœa, which, though not always injurious when moderate, is always liable to become so.

Laxatives.

I have never known a patient die of Typhus whose bowels were slow and required laxatives to move them, during the course of the disease. Laxatives therefore and not purges are required in this affection; and the milder they are, if they have the effect to excite the bowels to throw off their contents, the better, and even these should not be used too freely. If the bowels are shut up too long, their contents become offensive to the intestines, stimulate them violently and a diarrhœa is more likely to follow, than if the bowels had been excited by a gentle laxative.

Laying aside the strong purgative drugs, we have a considerable number of mild cathartic ones to select from; epsom salts with senna, rhubarb, alone or with a very small quantity of calomel or ipecacuan given in small and repeated doses, are amongst the best articles of this kind.

Blisters have long been employed in fevers Blisters.
under the general impression that they were useful, without any very definite notion of the mode by which they produce a good effect, and without waiting for any particular symptoms indicating their use.

So far as my experience extends, they do not produce any very considerable influence on the disease; like bleeding, they will sometimes relieve local pains, when applied near the part affected, as on the forehead or back of the neck when there is pain in the head—on the breast, when the chest is affected.

In most cases if they do no good, they produce no bad effect; but when there are petechiæ, or a disposition to hæmorrhage, indicating great debility in the system of capillary vessels, they are liable to do harm, for in such

cases, the blistered surface often becomes black and gangrenous.

Upon the whole, we cannot consider blisters as possessing much influence in Typhous Fever, and they may in most cases be dispensed with.

Diaphoretics. With regard to the perspiration, there can be no doubt, but that a great quantity of aqueous fluid escapes from the body in the form of vapour in Typhous Fever; but it does not become so condensed, during the hot stage, as to show itself in the form of a liquid on the skin, till there is some abatement of heat on the surface.

As there is more or less of sweating in the decline of most febrile diseases, and as a general perspiration is often accompanied with other symptoms of amendment, it has been looked upon as the natural cure of the disease. Under this impression, it has been a pretty universal practice to encourage sweating; but with respect to the grounds upon which this practice is founded, it is a question, whether the effect has not, in this case, been mistaken for the cause; that is, whether the

sweating is not the effect of the amendment, rather than the cause of it; and if so, it is still more questionable, whether sweating, produced by art in the beginning of the disease, would be attended with good effects.

In all cases, where I have seen this sweating External heat. regimen adopted, especially when much external heat has been applied, the practice has been obviously injurious.

There are some medicines in the class of diaphoretics, which may be given with impunity, such as the ipecacuan, contrayerva, and the Virginian and Seneca snake roots, though they seldom or ever produce any sensible perspiration till the disease has formed a crisis, and then the patient will perspire freely without their assistance. When stimulating remedies are given internally and heat applied externally, to force a sweat, as it is called, the consequences are always bad at any period of the disease.

Opium in some form or other is often used Opium. in Typhus, and in many instances and under certain circumstances, may be useful, but is by no means an universal remedy, nor can it

be administered with impunity in every stage of the disease.

When the patient is hot and suffers from pain in the head, and throbbing of the temporal arteries accompanied with confusion of mind, opium is generally hurtful and seems to augment rather than diminish these troublesome symptoms. But after their violence is in some degree abated, and the heat has become moderate, it may be used, and when combined with ipecacuan, sometimes gives rest and quietness during the night; although in many cases it will have the opposite effect; and serve to make the patient more watchful and restless. Under such circumstances, if persisted in, it does harm.

Combined
with ipecac.
&c. in diar-
rhœa.

When diarrhœa occurs, opium combined with ipecacuan and camphor, is generally useful; and if it does not succeed in checking the discharge, does not appear to produce an injurious effect.

The use of this drug has also been advised in cases of great prostration of strength, that is, in cases where the morbid action is kept up in kind but has abated in force, owing to

the exhaustion of the sensibility and irritability of the capillaries. In cases of this description it has been prescribed as a stimulus to support the patient, and in such instances it must be acknowledged, that it is sometimes used with apparent advantage. But under the same circumstances, it does not always agree with the patient; and sometimes instead of quieting and giving him ease, produces a contrary effect, rendering him restless and watchful, and not unfrequently brings on or increases delirium, especially if given in large doses.

Upon the whole, opium may be used to advantage under certain circumstances in Typhous Fever, but cannot be considered as a specific in any stage, and is at best but a doubtful remedy.

A few years since mercury was, by many Mercury. physicians in this country, considered a specific in Typhus, and its influence over the disease explained upon the principle that two kinds of morbid action could not exist in the system at one and the same time, and it was supposed that giving mercury so as to excite

its specific action on the mouth, was substituting the mercurial disease, which was of short duration and safe, for the more dangerous febrile disease called Typhus. This ingenious explanation appeared very well in theory ; all that seemed necessary was, that the facts should be found corresponding. Had this desirable incident happened, we should have possessed a very easy and safe mode of curing this somewhat intractable disease, by simply putting our patient under a regular course of mercurial remedies so as to affect his mouth for a reasonable length of time. But unfortunately, we have as yet discovered no such sure and easy method of curing Typhous Fever.

It was always acknowledged by the advocates for this practice, that in some and very severe cases, and those in which medical aid was most necessary, the mercury would not have its usual effect, and ptyalism could not be produced, and it was further confessed that in such cases if the mercury was pushed to any considerable extent, it produced a

very bad state of the mouth, occasionally terminating in gangrene of the gums. Bad effects of mercury.

I have had several cases of necrosis of the under jaw, where I was compelled to remove a considerable portion of that bone, which had died evidently in consequence of an inordinate use of mercury during this fever.

In other cases, where calomel has been used early in the disease, and the mouth has been as favourably affected as could be wished, the disease nevertheless has run on forty or fifty days, and sometimes terminated fatally at a very advanced period. In some instances, after the mercury had affected the mouth, there has been a copious discharge of tough, ropy mucus from this part, which has been kept up for a long time after the other specific effects of the remedy had ceased.

This vitiated discharge of saliva is often accompanied with a vitiated secretion of the gastric fluid, and attended with a total want of appetite, and a constant ejection of every thing taken into the stomach.

Such patients have frequently recovered with difficulty, eight or ten weeks after the

commencement of the disease. I have been consulted in many cases of this description.

Upon the whole, mercury cannot be considered a specific in Typhus, but may be an useful auxiliary in certain cases, that is, the blue pill or a small portion of calomel, combined with some other medicine, may be used with advantage. A small quantity of calomel with opium has in some cases checked a colliquative diarrhœa; and a grain of the same, joined to five or six of rhubarb, has done very well as a laxative.

Cinchona.

Those physicians who consider Typhus as a disease arising from debility, have highly extolled the virtues of the Peruvian bark, and some have employed it through the whole course of the disease, while others have restricted its use to its later stage.

It is not from ingenious reasoning or fine spun theories, that we should estimate the value of a remedy, but from the effects actually produced by it in the majority of cases. Judging in this way, this remedy cannot be allowed a very high place, since as was before observed, the physicians just mentioned,

who treat this disease with tonics and stimulants, have not been remarkable for their success.

I have prescribed the cinchona in many cases, and as far as I am able to judge, when there was a considerable heat present and while the mouth was inclined to be parched and dry, and especially when there was pain in the head, its use was injurious. But in some cases, when there was a sense of coldness creeping over the patient and where there was hæmorrhage, it produced a good effect.

Upon the whole, the bark like mercury may be an auxiliary but cannot be considered an important remedy, much less a specific.

Bitter infusions may be used through the Bitters. whole course of the disease, such as the eupatorium, (perfoliatum,) chamomile, and various others. When taken in considerable quantities, though they do not cure the disease, they may assist in preserving the tone of the stomach in some degree, and in that way aid in conducting it to a favourable termination.

Alkalies.

Some twenty-five years since, the alkalies were proposed as remedies in febrile diseases, and for a time were considerably used.

They were introduced on the supposition that they possessed antiseptic properties, but they have not fulfilled the expectations of those who introduced them; nevertheless, I have occasionally seen them produce a good effect. Fever does not prevent the fluids from becoming acid in the stomach, and where this happens, the moderate use of the carbonate of soda or of potash removes the irritation and burning sensation in the stomach caused by the acid; and thus far they may serve as palliatives, but I could never perceive that they possessed any other power over this disease.

The alkaline carbonates given with some acid, so as to evolve carbonic acid gas in the stomach, are generally grateful to the patient, and perhaps sometimes useful.

Vegetable
acids.

Those physicians, who adopted the notion that alkalies were antiseptic, of course considered acids as septic, and proscribed their use; and there were not wanting instances of

their disagreeing with the stomach, especially the vegetable acids.

We have already mentioned, that fever did not prevent the fluids from becoming acid in the stomach, and I have, in several cases, witnessed a sensation of burning accompanied with an indescribable feeling of distress in that organ, coming on after taking lemonade and other vegetable acids; but such cases are rare. In most instances, the vegetable acids, diluted with water, will be found grateful to the patient, and may, in almost all cases, be taken with impunity.

The mineral acids have been used as remedies in Typhous Fever, especially the muriatic and sulphuric. I have oftener prescribed the former than any of the others belonging to this class, and have thought the moderate use of it aided in preserving the powers of the stomach; but it is not a medicine upon which much dependence can be placed. Mineral acids.

We were formerly taught to place some reliance on that class of medicines called refrigerants, viz. the acids and neutral salts. Refrigerants.
We have already had occasion to mention the

acids, their refrigerating power is very trifling. As for the neutral salts, some of them may be used as cathartics in the early stage of the disease, when the heat of the body is considerable. The sulphate of magnesia, and the tartrate of potash are the best ; but in the advanced stage of the disease, they sometimes produce an injurious effect on the stomach, and are apt to induce diarrhœa ; this is more particularly the case with the sulphate of soda.

Nitrate of
potash.

Nitre, or the nitrate of potash, was formerly a favourite prescription in fevers of all kinds. When this article is given in very small doses, it produces no perceptible effect, and if given in large, it does a positive injury to the stomach.

All things considered, we can place no dependence on internal refrigerants, and if we wish to produce this effect, that is, if we desire to diminish the temperature of the body, when above the ordinary standard, we must have recourse to cold water or cold air.

Cool air.

The heat may be lessened by covering the patient lightly, and admitting cool air into the

room, when the season of the year will admit of it, or by admitting the air in contact with the skin, by raising the bedclothes on one side of the bed, and bringing them down suddenly again; in this way we can cause a current of cool air to pass over the body, which will conduct off the heat and greatly refresh the patient.

But the most effectual method of reducing Cold water. the temperature of the body is by the use of cold water, which may be taken internally, or applied externally. When persons, sick of this disease, desire cold water to drink, it should never be denied them—they should be allowed to drink *ad libitum*. The quantity of heat abstracted from the body by the water which they will drink, however, is but small, and except in cases where, by its influence on the stomach, it produces perspiration, its effects are very trifling.

The only effectual method of cooling the body, in these cases, is by the use of cold water applied externally; by this means we can lessen the heat to any degree we please. Different physicians have adopted different

modes of making the application. Some advise to take a patient out of bed, pour buckets of water upon him and then replace him again; while others prefer sponging him with cold water. We have cases, where cold water would be of service, in which our patients are too much reduced to be taken out of bed and placed in a sitting posture without injury. In these cases a different management will be necessary. The method, which I have adopted, is to turn down the bedclothes and to dash from a pint to a gallon of cold water on the patient's head, face and body, so as to wet both the bed and body linen thoroughly. It is better that he should lay on a straw bed when this is done, it is not however essential. If his body should be very hot, he may be turned upon his side, and the water dashed upon his back.

Mode of applying cold water:

As soon as his linen and the bedclothes begin to dry, and the heat in the head and breast begins to return to the surface, the water should be again applied, and in this way the heat may be kept down to the natural standard or rather below, on the surface, so that

the skin may feel rather cool to the hand of a healthy person.

It is not very material what the temperature of the water is, if it is below blood heat, excepting the shock given by its first contact, which in cases where there is much stupor or coma, is of some importance; in general, the effect is produced chiefly by the evaporation. Its temperature.

All additions made to water used for this purpose, such as vinegar, spirits, &c. are injurious. The former, on being evaporated on the surface of the body, covers it with a thin pellicle formed by the sediment, which makes the skin feel stiff and unpleasant, and spirits evaporated about a sick person produce an offensive odour and likewise leave some impurities on the skin and clothes.

When water is used to wash the body, as is often necessary in this fever, soap, or the carbonate of potash may be added, but when used to reduce the heat alone, pure water will be found best.

When the temperature of the body is such, that it does not require the general applica- Partial application of cold water.

tion of cold water, still it may be occasionally applied with advantage to the head and face.

Whenever there is any dryness of the lips, teeth or tongue, it may be relieved by letting water, slowly squeezed from a sponge or cloth, fall on the mouth and over the whole face; this should be repeated often enough to keep the mouth clean and moist.

Breathing the vapour of water.

I have produced a good effect by laying a piece of thin loose muslin over the face, so as to have the air drawn through it in the act of inspiration, at the same time keeping it constantly wet with cold water; in this way, the vapour inhaled into the lungs, proves very grateful to the patient.

I could state many cases in which cold water was applied with the most unequivocal advantage.

Case in which cold affusion was made.

In the summer of 1798, the first year in which this fever occurred in my practice, T. B., a young man of about twenty-five years of age, was brought into my neighbourhood sick of Typhus, for which he had been bled before I saw him; the fever was severe, and his unfavourable symptoms increased for se-

veral days. In a consultation, it was agreed to put him into a warm bath, which was done.

He was a little delirious before he went into the bath, and when he came out, was raving. From this state, he sunk, in the course of the next night, into a low muttering delirium, with a great degree of coma and starting of the tendons, and with scarcely the ability to swallow. His pulse was irregular, but still possessed some force, and his heat was above natural. Twenty-four hours were passed in this situation, without any symptoms of amendment. The next day when I visited him about nine o'clock in the morning, the weather being very warm, (as it was in the month of July,) a young man, who had engaged to attend him that day, came in, bringing a gallon pitcher full of cold water, which he had just drawn. Finding the patient's pulse had some strength and his heat continued above natural, I stripped him naked as he lay on a straw mattress, and poured the gallon of water over him from head to foot. He seemed to feel the shock, but did not speak. The young man in attendance was ordered to repeat the affusion as

often as he began to grow dry and warm, which was punctually performed.

When I visited him a little after sunset, his heat was diminished and his pulse did not intermit as often as it had done. He was then taken off the wet bed and laid on a dry one, likewise of straw, with nothing but a linen sheet spread over him, the windows of the chamber were kept open through the night, and a dose of opium and musk was prescribed and taken. No other internal remedies were administered. The next morning there was no alteration. The affusion of cold water was renewed as the day grew warm and the heat was kept down through the day as it was the preceding one. Before night, the patient recovered so as to speak, called for more water, and said he wished to be put into the river. From this period he became convalescent, and recovered without the use of any other remedy.

Another case
of the applica-
tion of cold
water.

In the month of September, of the year 1800, I visited A. P. a strong robust man, aged between thirty and forty years. He had been sick about a fortnight, his head was not much

affected but the heat was great and his thirst urgent. My visit was in the evening. The body was stripped, that is, the sheet which was thrown over him was removed, and his shirt divided down before so as to expose his body, and about a quart of cold water was applied by sprinkling it on with the hand. The sheet was then thrown over him; and the water applied as often as he became dry and the heat began to return. A little peruvian bark, mixed with some nitrate of potash, was all the medicine taken. Previous to this he had drank, every night, two quarts of some diluent drink, for several nights in succession. After the first application of the water, that parched sensation of the lips and mouth, which urged him to drink so much, abated, and he lay the whole night without any desire to drink. The next day he was convalescent, and recovered without medicine.

I. B. a strong robust man, aged between thirty and forty, had been sick a fortnight when I first visited him; his pulse was frequent, his heat great, and his mouth exceedingly parched, so much so that he could not sleep but for

Third case of
the same kind.

a very few minutes at a time without being awakened by a sense of thirst. His feet were very cold.

This individual had been badly treated, and his friends had been prevented from changing his linen and bedclothes by the physician, who had fears that he would take cold!

The patient was first shaved, an operation which had not been performed for something like a fortnight, he was then slipped down in the bed so as to drop his feet into a vessel of warm water and soap, where they were rubbed till they became clean and warm. The bed and body linen were then changed and he was properly placed in bed. The affusion of cold water was commenced over the head and breast, and repeated sufficiently often to keep down the heat. The distressing thirst was removed at once, he became convalescent the next day, and recovered without any further medical treatment.

I could detail a great many additional cases, where the good effects of cold water were as apparent and as immediate as in the cases just cited; and in no instance where I have used

it, or seen it used by others, has it done harm. There are cases, however, where its application is not called for; at the same time there are but few in which it may not in some stage of the disease do good. It is always grateful when applied to the face and mouth, and its vapour is very salutary and refreshing to persons sick with fever.

It will be observed, that the first time I used cold water externally in fever, was in 1798, the first hint of which I took from Dr. Robert Jackson's work on the Fevers of warm climates.

With regard to diet, it is not necessary to Diet. say much; if patients were left to select for themselves, without the interference of nurses and friends, who are always afraid they will starve, they would generally decide right, since they would not often take any thing, that could be called food. The farinaceous and mucilaginous substances are the only articles of nutriment admissible, with the exception, perhaps, of milk largely diluted with water, or whey prepared from it.

All solid food is injurious, and all sorts of broths prepared from animal substances should be prohibited.

After the fever has formed a crisis, and the secretions of the mouth have become healthy, the appetite generally returns, and if we then allow the patient to choose for himself what he will eat, and take care that the quantity taken at first is very small, he will not often be injured by it. But it is not safe to let patients judge as to the quantity. Their minds are weak, and their appetites strong, and they would, if allowed, often hurt themselves by too much indulgence.

Drink.

With respect to liquids, I have generally let the patient choose for himself, provided he does not select any of the stimulants, such as ardent spirits or strong beer, which, however, is almost never the case. Cold water, or water acidulated with one of the vegetable acids, small beer or brisk cider are the drinks which are usually preferred. The infusion of the pleasant aromatic herbs may be always allowed.

Beside giving directions for the use of ^{General directions.} medicines, it is important that we should direct, what may be called the general management of the patient.

When an individual is first taken sick with Typhous Fever, we should expect a disease of considerable length, and make our arrangements accordingly. If the thing is practicable, he should be kept in a spacious room, the larger the better. His bed should be of straw or husks, especially if it is in the warm season; and it should not be placed in the corner, but brought out into the room. We should contrive to have a current of air pass over the bed by means of doors and windows. It is well to have a chimney and fire-place in the room, and in the night when the air is very still, (though the weather should be warm,) a small fire kindled with a little dry wood, so as to cause a current of air up chimney, and by that means often change the atmosphere of the room, will be found of service. In the warm season of the year, the windows should be kept open night and day. All the furniture

should be removed, except such articles as are required for the patient's use. The windows should be darkened, or something opposed to the light, in such a way as to still admit the air. The room should be kept as quiet as possible, since noise is injurious, and no more persons should be admitted than are necessary to take care of the patient, which will, if he is very sick, require the labour of more than one.

The room should not be carpeted, and the floor should be often washed with pure water, or soap and water, and in the hot season, it, as well as the walls, may be kept wet with water during the heat of the day.

Cleanliness is absolutely essential to the patient's comfort, and no dirty dishes or useless medicines or food should be suffered to remain in the room. All excrementitious matters should be removed immediately. In the warm season of the year, the bed and body linen should be changed every day, and in the cold, every other day at farthest.

The patient's body and limbs should be

cleansed every day with a piece of sponge and warm water or soap and water. If a male, he should be shaved every day or every alternate day, and if a female with long thick hair, it should be cut off or thinned, so as to leave but little of it the full length.

INDEX.

	<i>Page</i>
EARLY HISTORY OF TYPHUS,	5
Its first appearance in America,	6
Probably not originally a disease of this country,	7
Liability of the two sexes,	8
Its appearance on the Connecticut river in 1787,	9
Influence of situation and habits,	10
Is a contagious disease,	11
Its origin from marsh miasmata considered,	15
Rarely affects the same person twice,	16
Remarks on the conversion of other diseases into Typhus,	18
Its combination with other diseases,	19
Observations on simple inflammatory fever,	21
Termination of Typhus	22
Remarks on its remote and proximate causes,	23
Explanation of the chill,	26
SYMPTOMS OF TYPHUS,	28
Pains in the head, back and limbs,	28
Delirium, coma and insanity,	29
Memory impaired—hearing and vision affected,	30
Organs of voluntary motion affected,	31
Position of the patient, and state of the pulse,	32
Exacerbations	33
Hemorrhage and spots on the skin,	34
State of the secretions, and appearance of the tongue and fauces	35
Urine and digestion,	36
Diarrhœa, and state of the respiration	37
Appearance of the skin and peculiar odour arising from it,	38

Absorbent system,	Page 40
Hair and cuticle,	41
Critical days,	42
TREATMENT,	43
Probability of arresting the disease, considered,	45
Bloodletting,	49
Emetics,	56
Cathartics,	59
Laxatives,	60
Blisters,	61
Diaphoretics,	62
Mercury,	65
Cinchona,	68
Bitters,	69
Alkalies and acids,	70
Cool air,	72
Cool water,	73
Diet,	81
General Management,	83

THE END.











