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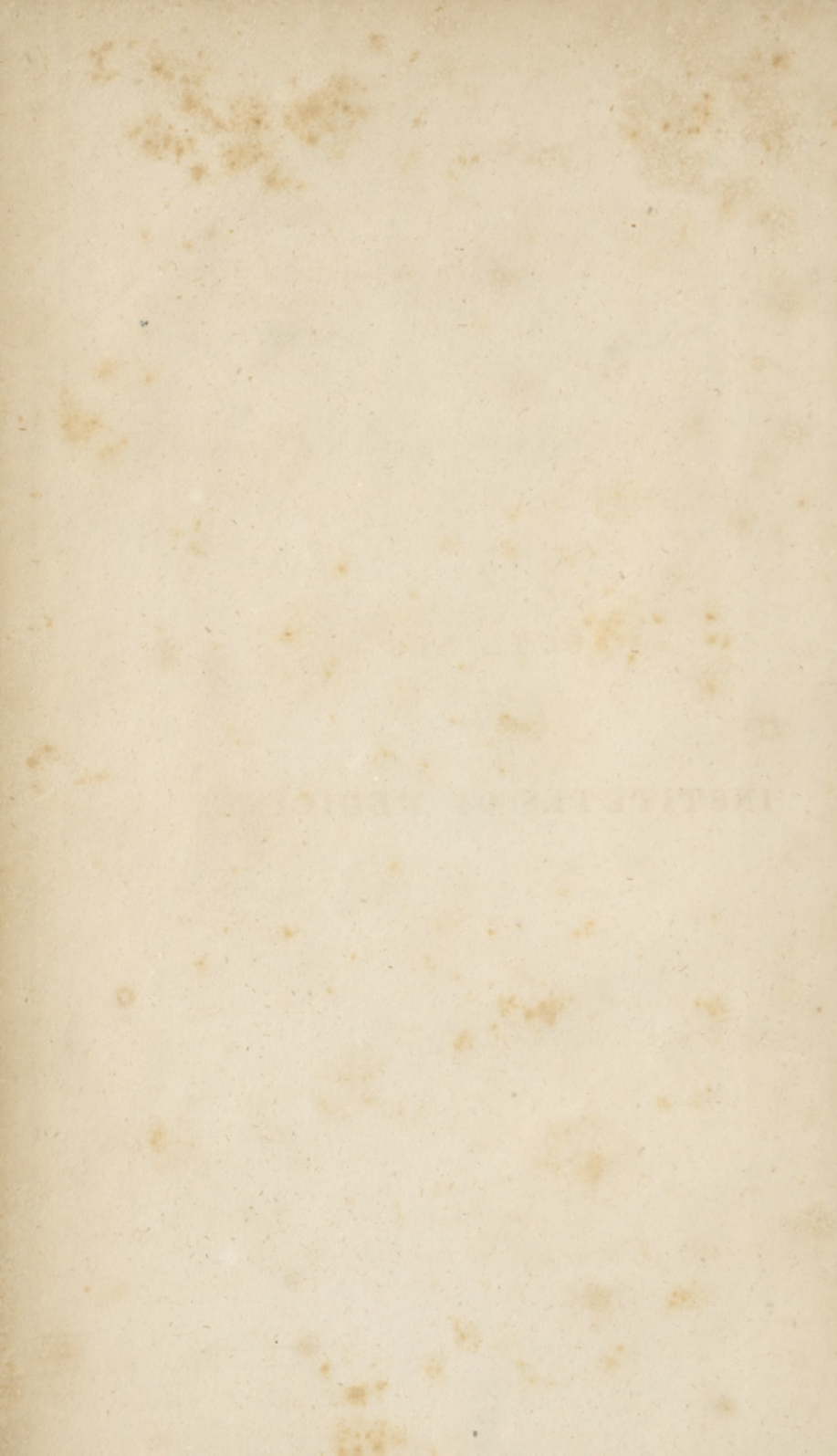


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INSTITUTES OF MEDICINE

THE PHILOSOPHY

OF MEDICINE

OUTLINES

OF THE

INSTITUTES OF MEDICINE.

BY JOSEPH S. GARDNER, M.D.

NEW YORK: G. P. PUTNAM'S SONS, 1892.

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OUTLINES
OF THE
INSTITUTES OF MEDICINE:
FOUNDED ON
THE PHILOSOPHY
OF
THE HUMAN ECONOMY,
IN
HEALTH, AND IN DISEASE.
IN THREE PARTS.

Should we build facts upon facts until our pile reached the heavens, they would tumble to pieces, unless they were cemented by principles.—RUSH.

BY JOSEPH A. GALLUP, M. D.

Author of Sketches of Epidemic Diseases in the State of Vermont; late Professor of Theory and Practice in the Vermont Academy of Medicine, and of the Clinical School of Medicine; Ex-President of the Vermont Medical Society; Hon. Member of the Medical Society of the State of New York, &c.

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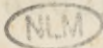
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PATHOLOGICAL ILLUSTRATIONS

IN REFERENCE TO

S E M E I O T I C E .

S E C T I O N X L I I .

SEMEIOTICE.

1. *Preliminary Remarks.*

HOWEVER "dark and difficult" the subject of semeiology may be esteemed, some attempts must be made towards its illustration; for, unless a view of the correspondence, or catenation of cause and sequence can be traced by, and between the external tokens, and the internal changes, these manifestations are lost, and we profit nothing by them.

Again, if the manifestations of the suffering tissues are not rightly apprehended, but misconstrued, there may be a fearful train of consequences as connected with the therapeutical applications. It behooves us, therefore, to proceed with caution in exploring the concealed conditions of the internal affected tissues, by their external indicators.

2. *Harmonies existing in Disease.*

Our expositions must chiefly have reference to the common morbid habit, and not so much to any particular state of disease; nor, indeed, to any isolated order of diseases. It is only by reviewing the phenomena of the common morbid

habit, that just conceptions can be obtained of the character of disease universally. The modifications emanating from this are numerous, and depend, 1st, on the character of the hurtful agents ; 2d, on the severity of the impressions made ; 3d, on the personal condition of the subject affected.

Each of these specifications admits of many varieties, both in kind and severity. Notwithstanding, we find many things in common, and a parallel of harmony existing in and running through all diseases of excitation. There are very striking analogies existing between what are called acute, and chronic diseases, and a similarity of phenomena are constantly presented, although differing in severity. The discoveries made by investigations in the living subject, in tracing the phenomena in a physiological manner ; or, by inspections of the ravages of disease in the lifeless, all conspire to prove an affinity of morbid changes, and that they are produced by agents having similar impressions and sequences, with trains of phenomena of much resemblance ; and yet, they have their peculiarities, as modified by time, and a greater or less degree of morbid force.

Not only a difference in the severity of the antecedent agents modify the phenomena, but they are varied by the locations in different tissues, on which the determinations may concentrate. Often in attacks of acute disease, and sometimes in chronic, the concentrations pass in rapid succession from organ to organ, and simulate the form of disease peculiar to such organs. So, a common attack of what is called gout, may migrate from one tissue or organ to another, and assume as many names as the number of organs it affects.

The same of the various conditions of fever ; the local affection may migrate in its forming state, or after it has lost a part of its severity ; every place the concentrations fall upon, they alter the condition of the organ, excite a new train of phenomena, and in a nosographic description the affection requires a new name. The same circumstances attend what

are called local inflammations. Indeed, the harmonies existing in disease are so numerous, that if we are not warranted in speaking of the *unity* of disease, we may be justified in dilating on the *affinity* existing between all diseases of excitation ; and, again, we scarcely know what constitutes disease, without a state of excitation.

3. *Anomalies of the Phenomena.*

The phenomena are liable to be irregular, and admit of many modifications. This has been so much the case that no invariable definition of fever, for instance, has ever been made out by the most scrutinizing pathologists. There is not a phenomenon in the groups attempted, but what may singly be absent, whilst yet enough are present to show its existence.

This has been a source of perplexity, and caused much speculation ; and yet, admits of easy explanation on the suggestion of its depending on the readiness of the repulsive susceptibility, existing at the time, to be excited. The three alleged phenomena of Boerhaave, shivering, frequent pulse, and heat, may, or may not be present, according as the repelling energies are free and intense, or otherwise. These phenomena may all be present ; yet, if the embarrassments are so severe that the recuperative force cannot be brought into exercise, they may be absent, or some of them only present. It is useless to attempt to establish an invariable series of phenomena in any disease, or any order of diseases ; only the most common need be noticed.

Notwithstanding, more or less of the phenomena of fever are present at the commencement to establish its existence, and others are soon developed ; and it may be insisted, that they very constantly indicate the condition of the internal tissues, when diligently examined, and by keeping the physiological derangements in view. On the subject of the anoma-

lies of disease we must make reference to Sect. xxxvi., and particularly article 5, on the subject of alternations of heat and cold as exciting disease, and with anomalous symptoms proving suddenly fatal. The cause, although plain to any one who will observe, is almost constantly overlooked as too familiar, and the relation between cause and effect on predisposed tissues, is not always duly appreciated.

The term *fever* is of very questionable import ; it is liable to mislead the mind from the real condition of the morbid economy. It had its origin in one of the most imposing phenomena, the presence of heat ; and yet, this is often wanting. It has been applied to a large proportion of the affections of excitation, whilst they ought not to claim the appellation any more than other states of disease specified by other names, in which heat may be present as one of the phenomena. They all have their local affections somewhere, in common ; but the term fever seems to be applied to the internal, diffused, membranous inflammations. The terms fever and inflammation must be employed at present in conformity to universal usage ; yet, it would be a gratification to use synonyms more expressive of facts.

4. *Contingent Phenomena.*

The phenomena attending disease may be very numerous on account of the ready susceptibility of the nerves of external relation, so freely interwoven with the tissues of the nutritive organs, in greater or less proportion. The nerves of sensation and motion, with their organs, are often affected in a secondary manner, and give occasion to many casual phenomena, which are not really necessary to the progress of the disease.

In Sect. xvi. 2, we have already attempted to show, that disease is seated essentially in the tissues destined to nutrition ; and although the nerves of external relation may be af-

fect, yet it is in a secondary manner. Their increased sensibility may be very useful by indicating the progress and amount of disease, yet not very essential to its existence, or course.

a. Convulsions may attend at the commencement and progress of disease, or not. Although often excited, they are not necessary to the character of the disease, and yet they aid the responding actions in re-establishing the lost balance of the circulation, between the centripetal and centrifugal capillaries. They often are a part of the responding processes, and assist in establishing an equal action; but the disease will progress whether they appear or not.

b. Syncope, and even an absence of pulse, *acrotismus*, are sometimes present. These, as well as many other phenomena, are dignified in nosographic arrangements as isolated diseases. Their presence is accidental, arising from a deprivation of vital force from changes in the nutritive tissues, which may or may not occur. They may manifest a sudden collapse, and yet not cause it. However, the restorative processes oftener prevail, and the disease keeps on its course as though they had not happened. The same of many of the erratic pains and spasms, which occur at the commencement of disease.

c. Vomiting is often present at the onset of disease, and may commonly be considered an accidental phenomenon, excited in harmony with the repulsive powers to restore the lost balance of circulation. It may occur whether any exciting cause exists in the stomach, or not.

Many other phenomena may occur casually, and attend more or less the progress of disease, which are extremely liable to deceive the medical attendant. It will be acknowledged as difficult to draw a line of distinction between the casual and constant phenomena, in a general review of the morbid habit; and the difficulty seems increased, on considering there are few but which may be absent, under particular

circumstances. Yet, pathologists have uniformly noticed certain trains of phenomena as attending what are styled fevers and inflammations, and our attention may be directed more particularly to these.

5. *Three Series of Phenomena.*

Semeiotice admits of three divisions of phenomena, the primary at the onset; the more developed at the acme, and the resulting. The *first* comprises the constitutional and local phenomena, at the onset of disease, whilst the functions are changed and attended with an inability of action, yet soon showing an excess of action at the acme of disease. The *last* comprises those which arise after disease has continued some uncertain length of time, and made structural changes of greater or less extent in the organism, and connected, more or less, with exhaustion of vital force. We need to review but a part of them. Although we may remark on the acme of disease, still it is a mere development of the first stage.

6. *Reflections on the first Series. Predisposition.*

The condition of predisposition is most commonly a state of excitation, above the ordinary state of health, from the stimulations of remote causes. The acumen of intellect, and activity of the organic actions are increased; the muscles are energetic; floridity of countenance, and increased or diminished appetite, show a state of energy and excitation. However, as soon as some changes take place in the nutritive tissues, lassitude, weariness, and dulness of intellect intervene; it now approximates more to disease.

7. *Shrivelled Aspect, Paleness and Faintness.*

These phenomena, with the erections of the papillæ, clearly indicate a rigid, tonic state of the dermoid tissue. The same condition prevails in the internal tissues, and the blood meets with a constrained passage in the capillary arteries, and still more in the capillary veins. The centrifugal circulations suffer delay, and the centripetal more or less of stasis. The aspect therefore becomes shrunken, with anæmia on the surface, and hyperæmia internally. The cardiac motions at this time are feeble, and irregular, like all the other functions. The alterations in the nutritive tissues impede the nervous force, and the functions become vacillating.

The stomach having sensitive nerves of external relation, reports its uneasiness, and inability of natural function, although its tunics are distended with blood, and its cavity with food. By and bye it may be provoked into abnormal efforts, with vomiting; or this may be absent.

8. *Chills and Rigors.*

The exsanguious state of the capillary circulations suspends the process of calorification, whilst a large proportion of blood is delayed in the great internal veins, in the spongy dilatable organs, and at the origins of the capillary veins forming congestions. (Sec. xxi. 4.) The temperature of the surface is below its ordinary standard, especially in the most severe conditions of disease. From the deficiency of the capillary circulation, the cuticular nervous expansions have their sensibility impaired or lost; and the surface may be burned by heated substances, without the subject being conscious of it at the time. In some extreme conditions, as in cholera and intermittents, there is a deficiency of calorification in the internal tissues, so that warm intestinal injections will be returned cold. The repulsive force is not brought

early enough into action, so all the functions cease without chills or rigors, as there is no renewal of circulation on the surface to elicit heat.

The ordinary conditions of disease, both acute and chronic, exhibit very different phenomena from those just sketched. In the chronic state, for the most part, the chills are very irregular, and sometimes absent, whilst there are certain accessions of depressions, lowness or faintness, occurring either casually or periodically. Some have a more settled coldness, continuing a long time from the beginning of the illness; whilst others have alternations of chills and flushes, but seldom rigors.

It is in the more common conditions of acute diseases, that chills and rigors appear at the attack. Soon after the other phenomena become manifest, and often simultaneously, the subject experiences a lively sensation of cold and heat, irregularly thrilling over the surface, and sometimes slight rigors. A sensation of coldness is often perceived at the stomach. These sensations invite the seeking for external warmth, and hot aromatic cordials internally.

In these instances, the instinctive susceptibility is readily excited, and the inordinate stimulations provoked to severe impulses, so that the capillary circulations begin to be restored on the surface. The cutaneous nerves of sensation have soon an increase of perception, and they transmit the mixed sensation of heat and cold to their centre. The contrast of the warmer blood of the interior, and the cold state of the skin gives the mixed sensation of heat and coldness. So a well person, who has been exposed to cold, on coming into a warm room, is liable to feel slight chills.

Again, there are certain states of paroxysmal fevers, called intermittents, in which the morbid condition appears to be a latent state of predisposition. The instinctive restorative powers become excited soon after the attack, and hold out a severe contest with the pathological derangements. The

preservative energies excite the external muscles into convulsive efforts or tremors. The internal accumulations of blood and precordial distress are great, the stimulations solicit the entire repulsive powers to action, and the whole muscular system becomes associated in convulsive movements, constituting the repeated rigors, which often continue several hours, apparently holding a doubtful conflict before the circulations obtain a full ascendancy. The centrifugal impetus now being considerable, sweats flow quite freely, and the primary cause, or latent state of predisposition, appears to be essentially removed, and yet manifests its existence on the approach of another paroxysm. In continued fever it is only very partially overcome.

It has long been remarked, that whenever chills and rigors arise, the paroxysm will not prove fatal. In such cases the repulsive powers have been partially excited, and when this is the fact they will prevail, although the contest may be severe before the derangements be restored; yet, only so far as to admit a free and general action. After the circulation becomes established, the intensity of capillary action continues in such fevers as have no remissions; but, in periodical fevers sweat soon flows and terminates the paroxysm. Sometimes the morbid changes are so great, that the repulsive force cannot be excited in season, and the paroxysm proves fatal.

The sense of feeling of patients is often very deceptive, with regard to either cold or heat at the commencement of fever; and even also, during its progress. They seldom feel pained by the sensation of cold until they have had chills, and are then liable to be greatly deceived. They sometimes correctly feel cold, when the surface is actually so, the thermometer indicating about 94° or 96° of F. Yet, they will often complain of being cold when it indicates the heat of the surface to be 102° or 104° of F., and when there is a strong sensation of heat perceived by a bystander. On the other

hand, sometimes they feel intense heat when the thermometer indicates in the mouth, far less than the natural standard of 98°. When the heat arises to 104° or 106° F. they sometimes become greatly pained by the feel of heat. The function of the nerves of feeling seems to be vitiated, answering to the *parapsis expers*, and *acris* of Good. This might not be considered very extraordinary, since the nerves of volition are, also, in a pathological state, as shown by the convulsive movements of the muscles, in the rigors. Or, might these phenomena be explained on the principle of the relative effects of cold and heat, the previous sensation deceiving the judgment, like changing hands in cold and warm water? Perhaps the effect on the nervous expansions would be the same, that is, a pathological state.

9. *Paroxysms, and their Periodical Return.*

Perhaps there is no thesis in semeiotice more abstruse, and difficult of illustration than this. Expositions of the subject have commonly been evaded in this age of rigorous induction; whilst some think we have no data sufficient to argue from. We approach it with diffidence.

Paroxysm implies a sudden accession of disease, and a train of phenomena resembling the cold, hot, and sweating stages of fever; yet terminating in a short time, leaving the subject in the interval as well as before. It may be a fever of a few hours, or of a day, called an ephemera. An exacerbation is an aggravation of the phenomena of continued disease, resembling a paroxysm, yet soon subsiding into a state of remission; when the disease continues as before. Both may return at stated periods, or casually.

The following propositions in relation to the contingencies of paroxysms, in both the acute and chronic states, will be advanced.

a. In every habit subject to paroxysmal attacks, there exists

either a permanent state of predisposition ; or, the actual presence of disease in the involuntary nutritive tissues.

b. In paroxysmal attacks of pain, and of convulsive agitations, the subsequent local concentrations fall upon some tissues receiving their nervous susceptibility from the spino-encephalic mass ; but in the instances of periodical hemorrhages, &c., the concentrations will be in some of the nutritive tissues, and without muscular agitations.

We will begin our illustrations by some familiar instances of paroxysmal pain. Suppose a subject has a carious tooth, which, however, gives no trouble until he finds himself indisposed from, perhaps, exposure to cold, or some other circumstance. He has merely acquired a state of predisposition. Soon some accidental excitation may be offered to the dental nerve of the carious tooth, which has now received an increase of sensibility ; it will rise into a severe paroxysm of pain, and even associate all the muscles of the trigeminal nerves into the same state, producing nervous, or paroxysmal toothache of perhaps five minutes continuance. This may be repeated occasionally, as long as the state of predisposition continues, and when this subsides the toothache will not be readily excited.

c. Again, in every state of neuralgia there exists a hidden state of disease, or predisposition. The local nervous affection cannot be removed as long as this state remains, and it always forms a concentration in some of the neurilema of the nerves of feeling, by which their sensibility immediately becomes increased.

Under the above circumstances the most trivial excitations induce a paroxysm of exquisite pain. A paroxysm, in the instance of neuralgia facialis, associates all the muscles of the face into the circle, and indeed often more extensively. In periodical hemicrania, the same circumstances exist, a state of latent disease, or predisposition ; and a point of increased susceptibility to which the morbid energies are directed.

In case of periodical epilepsy, there is always existing some point of irritation in some portions of the neurilema of the nerves of external relation ; it may be a tumor, or an alteration of the osseous texture, or even congestion, acting as a local stimulus on the cerebellum, liable to excite epileptic convulsions ; or, it may be some kind of alteration, or permanent excitation in the tissues of the cerebrum, liable to produce insanity. In these instances, on the accession of some disturbing circumstances, altering the economy, the concentrations will most certainly affect the focal points of former irritation ; and then a train of phenomena will be excited, and run through a course of harmonies of action peculiar to the organs most affected ; producing epilepsy in one case and insanity in the other.

d. Passing by many similar affections, we will review that condition of disease called intermittent fever, having distinct paroxysms and intervals. These consist of several, at least three important divisions of unequal paroxysms ; viz : quotidian, tertian, and quartan. It may be necessary to bring some of their characteristics into view.

e. The quotidian commences, in its most regular form, twentyfour hours after the onset of the preceding paroxysm, usually in the morning, and ending in less than eighteen hours. It has the shortest cold stage, but the longest paroxysm. It approaches nearest to continued fever, and shows a temporary crisis by passing off with sweat, and sediment in the urine.

f. In the tertian, the paroxysm commences about forty-eight hours after the preceding ; usually at noon, and ending in less than twelve hours. It has a longer cold stage, with shorter hot, and sweating stages.

g. In the quartan, the paroxysm commences about seventytwo hours after the preceding, usually in the afternoon, and ending in less than nine hours. It has the longest cold stage and shortest paroxysm.

The accession of paroxysms of unequal periods and severity,

seems to arise from modified physiological states of the subject ; for they may run the one into the other, or even into continued fever spontaneously, or by treatment, or by circumstances which alter this state. A single dose of opium has converted a tertian into continued fever, with delirium, when given at an early stage of the paroxysms.

In every instance of simple intermittent in either of the varieties, at their commencement, there previously exists a permanent state of predisposition ; and which had commonly been acquired by a residence in a cold damp atmosphere, whilst there is great disparity of temperature between noon and night. It may have been heightened by neglect of clothing and diet, adapted to defend the system against the atmospheric changes of cold and heat. This state of predisposition, when once established, is very persistive ; it often continues from autumn to spring ; and various anomalous affections may arise in the mean time, before the intermittent appears in its specific character. The general aspect is most commonly altered in this state of predisposition, together with many slight sensations in the præcordial region, and yet little heeded by the subject.

The peculiarity of this state of predisposition consists in the circumstance of an irritation concentrating in the spinal cord, more especially affecting the motory nerves. The general muscular susceptibilities show this, before and at the attack ; so also, the vitiated sensibility of the nerves of feeling. Indeed, all the phenomena at the attack of a paroxysm, indicate more especially a local impression on the spinal cord and organs of external relation, whilst the entire system of the nutritive tissues is affected by the state of predisposition.

h. The access of a paroxysm of intermittent is sudden, with chills along the back. The nerves of muscular motion and of feeling are depraved ; the patient feels great distress, especially in the præcordia, but judges erroneously of his sensations of heat and cold. The muscular system is agitated in

a convulsive manner, long continued, and very differently from what it is in simple fever, with internal membranous, congestive inflammation. The phenomena of the muscular system, in uncomplicated intermittents, would rather show, that this affection ought to be placed in a nosography, rather along with convulsive diseases than fevers. The mind is rather prostrated than delirious, and, as soon as the paroxysm is over, becomes sedate as before, and even sooner than in epilepsy. Indeed, all the phenomena soon subside, after equal circulation is restored, and sweatings follow; and the patient soon appears as though nothing important had happened to him, as in epilepsy. It is not until the affection has continued a long time, and a more distinct morbid habit has supervened, that changes are found in the internal viscera; these may be considered as sequelæ.

The reason, then, why intermittents do not continue, and show a succession of pyretic phenomena, is, that no important morbid habit exists to support them, but merely a particular state of predisposition, so that the healthy actions return. But, the paroxysm will be repeated when the circumstances of excitation again occur. Still the phenomena will appear essentially of the nervous kind, unless a morbid habit becomes established, when it will progress much like simple fever, either acute or chronic, and injure the internal tissues.

i. Intermittents and epilepsy appear to have many things in common, both as to the state of predisposition and phenomena. The most prominent phenomena of both appear in the organs of external relation. The muscular agitations, the disposition to sleep and sweat after the paroxysm, show a freedom from real disease in the intervals, whilst a state of predisposition exists. Intermittents are sometimes followed by periodical epilepsy, at the stated times of the intermittent accession; and both may have their paroxysms intercepted by the same remedies, viz., arsenic, opium, quinine, &c.

Both have been excited by mental emotions, and both cured by terror, or impressive passion.

Still the question in relation to the excitation, and subsidence of paroxysms remains to be examined.

Whenever the nervous system of external relation obtains a high degree of susceptibility, it is liable to be disturbed by slight impressions; and abnormal motions once excited in an organ, directly associate other motions in organs of the same apparatus at least, through their whole extent. When these organic commotions are considerable, the entire economy suffers more or less disturbance.

There must always be some cause to excite paroxysms, but they may be often so slight as to be imperceptible. Indeed, they are in their nature not perceptible by our senses. Yet, sometimes they may be, and it is common for paroxysms of neuralgia, convulsions, chorea, hysteria, epilepsy, and intermittents to be excited by fatigue, passions of the mind, &c. In these cases a general commotion is raised, and the concentrations instantly arrive at the point of greatest sensibility; this becomes sufficient to excite the subsequent catenation of phenomena, which constitute the paroxysm.

j. There seem to be diurnal changes taking place in the elements of our atmosphere, which affect the finer sensibility of the nervous tissues, although not always cognizable by our senses. These were descanted on in Sect. xli., on Etiology. These changes are rarely noticed by any one in health, although the subject may perceive some difference in his ability of action, or even mental exertion, either casually, or periodically. These insensible changes affect the morbidly sensible tissues in their peculiar way, or through the organic sensibility, as intensely as the eye is affected by light, when its internal coat is inflamed; or the auditory nerves in cases when a remote whisper becomes painful. Valetudinarians, and hypochondriacs sometimes possess such exquisite sensibility that they become good aerometers.

It is under circumstances like these that diurnal and lunar influences exert their greatest effects, or excite the nervous commotions, which begin a long train of consecutive phenomena. It may be found by accurate observation, that every twentyfour hours may be divided into quadratures of six hours each, at which periods disease is most liable to be excited by the diurnal changes, as it may be by the seven day quadratures of the moon.

Aside from all exterior circumstances, there appear to be periodical changes in the human economy occurring every day, and perhaps every six hours of the day, in which it may be less able to resist extraneous impressions. This is most discoverable in the whole round of phenomena in relation to the external superadded nerves ; and especially in the necessity of the periods of repose, and activity. It applies, also, in a less obvious manner, to the nutritive tissues. Nature seems to have impressed a law, especially on the external system of nerves, and more obscurely on the internal, whereby their functions are performed in regular rythms, especially of repose and activity ; and it is highly probable, that certain of these periods render the economy more assailable to the exciting causes of disease. The inquisitive are invited to follow out these suggestions, in the details of investigation.

k. With regard to the subsidence of paroxysms, it appears, that after the economy has become fatigued, and gone the rounds of associate actions, it subsides of necessity into rest. There is no positively fixed morbid habit, or state of nosodynamia in the tissues to perpetuate disease ; so a subsidence ensues as after any high stimulation, or violent exercise of the organs of external relation. The prostration of energy, followed by relaxations with the remaining internal excitations, give occasion to sweats, which terminate the paroxysm. However, when the system has again accumulated force, and the circle of excitations becomes renewed, the paroxysm will be repeated.

10. *Cold Sweats.*

Although the surface may be cold at the onset of many habits of disease, especially of fever, and destitute of red blood, yet the internal irritations being severe, and acting on morbidly tonic tissues, the thinner portions of blood are forced through the exhaling surfaces, and resemble the matter of sweat. They often, however, contain albumen showing some viscosity. They are more delayed on the surface on account of its coldness, and they accumulate in abundance on some occasions of severe disease, as cholera, &c.

As soon as the reactive forces have eliminated action, and the surface becomes turgid and warm, the cold sweats cease, and they may now be warm. This is a favorable circumstance; yet, the surface is liable to become hot and turgid, when all sweats cease. False views of the character of the diseased habit, have raised the hypothesis of these cold sweats arising from debility; yet nothing is more adverse to the facts, which the other phenomena teach us. They are forced through the straightened exhalants, by the severity of arterial impulse from internal irritations.

In some severe attacks of malignant fever, a portion of the cruor of the blood is forced on the surface, along with the serosity, or matter of sweat. The most remarkable instance of this phenomenon on record, was in the ephemeral epidemic called the *sudor anglicus*, which occurred about the beginning of the sixteenth century; thus described.

And soon the surface caught the spreading fires,
Through all the yielding pores the melted blood
Gushed out in smoking sweats.

Here lay their hopes, though little hope remained,
With full effusion of perpetual sweats
To drive the venom out.

In such cases the *pores yield* to a superior internal force.

Sweats at this stage are not critical, unless long continued until the surface becomes warm ; and perhaps not even then ; for the fever is still liable to remain. In what Blundell called the *hydrotic* fever, although the sweats were profuse, they were not attended with a crisis.

Ichorous effusions take place into the sacs of the pleura in epidemic pneumonia ; also into the aerial tubes, forming the bloody sputa ; also, into the peritoneal sac in severe peritonitis, &c. These are of a character similar to the bloody sweats ; in both instances forced from the exhalants.

11. *Diarrhœa Serosa.*

This is of frequent occurrence at the commencement of many varieties of disease ; and we may be excused, if we should rob it of its dignity as an isolated affection, as we have many others, and reduce it to an humble phenomenon of the morbid habit.

The muco-intestinal exhalants being portions of the centrifugal circulation, and arising from the terminations of arteries, probably have their functions accelerated by the force of the heart and arteries, above that of the centripetal series. A fluid quite similar to the cold sweat of the skin, and by a similar process, is forced out in abundance, and produces the diarrhœa. This is a common phenomenon at the access of disease both in cold and warm seasons ; it admits of many modifications by mixing with different substances in the first passages. The diarrhœa attending cholera consists in a mere extension of the same circumstances, which produce the sweats ; and both occurring together show a severe state of disease. In ordinary attacks of disease, only one of these phenomena occurs, and by increasing one of them the other is diminished. The natural remedy for serous diarrhœa, is, to divert the exhalant action to the dermoid tissue.

A moderate diarrhœa relieves the relative plethora of the

vascular system, which always occurs at the onset of acute disease, and often saves the local impression from more important organs. However, it sometimes proceeds to excess, as in cholera, and deprives the blood of its fluidity, neutral salts, &c., rendering it unfit for circulation, and sustaining the necessary secretions.

12. *Diabetes Simplex.*

This might be called a casual phenomenon, like most others occurring at the onset of disease. It, however, is frequently present. It is always absent in cholera, for the sweat and diarrhœa supersede it, and so effectually, that the kidneys suffer a pæsis. As the kidneys form a part of the eliminating series, so certain personal, or special circumstances may invite a determination of morbid impression to these organs, in preference to other tissues. A strong functional effort is excited, and large quantities of urine are produced. This renal effort relieves the vascular plethora, and saves more important organs, or such as are not constituted to relieve themselves by an excretion, such as the cerebral organs. These organs are seldom in danger of important congestions when the kidneys act freely; and many slight attacks of disease meet with an early crisis, when a copious discharge of urine attends them. Such are the ephemeral attacks of disease in movable and enervated habits.

As the severity of disease increases, the flow of limpid urine diminishes, and scarcely any is voided; and at the height of fever the kidneys often suffer a pæsis of function; and a stronger concentration might involve them in inflammation, *nephritis*. In this event there is no secretion, and the tissues of the organs are in danger of being spoiled. However, as the morbid condition abates, the organs resume their functions and become the eliminators of large quantities of heterogeneous and effete materials, at the crisis, to the great

relief of the circulating mass. On other occasions, the severity of the morbid habit is so intense, that there can be but little, or no secretion of urine at the onset.

13. *Inordinate Flow of Bile.*

A morbid habit of a milder grade gives occasion to a bounteous secretion of bile, at such times as the irritations concentrate in the liver. This is ascertained by the discharges partaking of a bilious aspect. Yet, in the instance of the more severe affections, this organ also, often suffers a paresis, when no bile is secreted. Thus it usually appears in those fevers called gastro-intestinal, whilst in typhus gravior, and cholera, it is wanting. Hence is discovered the impropriety, in ordinary cases, of using repeated cathartics to discharge bile, as they increase the quantity by their stimulations. Its own cathartic power is commonly sufficient to effect its discharge.

If it should be inquired, why there is a deficiency of bile in cholera, whilst the exhalants externally and internally are so active, producing sweats and diarrhœa? it might be suggested physiologically, that the same deficiency of nervous force exists in the liver, as attends the centripetal circulations. So, in the diseased state, the arterial series is more active than the venous; and the hepatic series of secreting capillaries are all venous. Besides, the exhalants do not suffer so much as the secernants.

It seems to be a law of the morbid economy in relation to all the internal secreting organs, that in mild affections they suffer *irritations*, in which state their functions are increased. In more severe degrees, they suffer what might be called a state of *excitation*; in which their function is impaired, commonly attended with paresis. In this state *inflammation* is liable soon to supervene, and to be attended, either by tissual effusions externally, as occur in what are called the phleg-

matiaë ; or, by interstitial infiltrations, constituting the phlegmonoid state of inflammation. We are compelled for want of more appropriate terms, to use those which have been established by long usage. The word sub-inflammation deserves no place in pathology.

14. *Cardiac, and Arterial Action.*

The physiology of the heart instructs us, that its motions quickly harmonize with every pleasant, and every injurious impression made upon the mind, or the susceptible tissues of the body. Its responses are, also, lively and energetic, whilst unembarrassed. Being the centre of the circulations it often has much to suffer, and to repel in disease. Being liable to a deficiency of vital force in common with other organs, and again to an increased sensibility ; also, sometimes inundated with fluids, and then suffering from inanition, we need not be surprised to find its rythms broken, the pulsatory actions sometimes irregular, often deficient, frequently powerful, and again, sometimes annihilated, suffering a paresis, called acrotismus, or even asphyxia, when fatal.

In the incipient stage of severe fever, the exercise of all the organs is liable to irregularity, or there exists a state of ataxia. The heart and arteries partake a portion of it oftentimes, not only in reference to other organs, but as relates to their individual exercise. Sometimes the heart acts quite powerfully, whilst the pulsatory action is small and feeble. The pulse is therefore liable to deceive, unless the examination is extended to the heart. A hand on the præcordial region may discover the disparity, but the stethoscope tells best. In this case venesection is safe and proper. On the other hand, when the cardiac action is small, whilst the pulsatory may be quite full and seemingly strong, as sometimes occurs, then venesection should be used cautiously, or leeching substituted to remove more safely the congestive, op-

pressed state of the heart. Small bleedings may be used, and repeated cautiously, until the disparity is removed, and then to the point of relief. If good attention is given, this pulse may be distinguished from the hard and strong pulse, free from cardiac oppression. Although pretty full, it wants the force and vibratility of unembarrassed action.

A deficient, irregular, and yielding pulse is one of the first phenomena we discover on the access of disease, the chronic as well as acute ; they are most manifest in the severest forms of disease. The pulsations soon become frequent ; but, their future feeble, or energetic oscillations depend on the circumstance, whether the morbid derangements, or the restorative powers gain the ascendancy. When the former prevail, the pulsatory actions more and more diminish until a paresis occurs. On the contrary, in the event of a triumph of the latter they become strong, full, and vibrating, if all other things are equal. In this event, the heart and arteries play their part in all the salutary processes. However, one consideration should constantly be kept in mind ; that, the predominant nervous susceptibility of the heart and arteries, incline them to an amount of force in the responding actions, so as to be in danger of producing lesions in the very tissues their instinctive motions are directed to protect. An excess of action restores not the functions, but destroys the tissues.

15. *Primary Coma.*

Several remarks have already been made in relation to the encephalic functions. (Sec. xvi. 3.) Coma often occurs at the onset of fever, especially in the order called typhoid. This is quite different from the lethargic sleep at the latter periods of disease.

Primary coma arises from any cause that suddenly occasions an exhaustion of vital force, by stimulation ; or from accumulations of blood in the venous radicles producing con-

gestions in the cerebrum, in which event the nervous force of the intellectual organs is partially intercepted for a time. The same circumstances occurring in the cerebellum occasion lassitude and paralysis; yet, if they should be of an irritating kind, convulsions might attend. Even congestions in the cerebral tissues may induce the same results, when they are sufficient to produce a perpendicular pressure on the cerebellum. (Sec. vi. 14.)

The cerebral functions are liable to suffer when the morbid force is directed to these organs, and there often arise new trains of phenomena called nervous, on account of injuries done the spino-encephalic masses. We may merely notice that the pneumogastric nerve is liable to suffer an inability of function by the same circumstances, and by which the functions of the larynx, of the lungs, and of the stomach may be essentially altered. Hence arises inability of speech and swallowing, laborious respiration, with sighing, and an incapability of the stomach to be excited by stimulants, emetics, &c. A state of paresis prevails. The blood is not properly depurated in the lungs; it remains dark.

If the morbid conditions are not removed, and the case continues, this state of the tissues will be followed by inflammation, with effusions of various kinds within or between the membranes of the cranium and spinal cord, according to the state of the diathesis, and severity of morbid action; and these give occasion to secondary coma, or *carus lethargus absolutus* of Good.

It may now be necessary to review some of the most prominent phenomena at the acme of disease.

SECTION XLIII.

PHENOMENA ATTENDING THE ACME OF DISEASED MORBID HABIT.

1. *Preliminary Remarks.*

WHEN the tissues are free from a state of paresis, and at liberty to act in the varied conditions of disease, there will be a very constant succession of cause and sequence; or there will be successive changes in the organism, and these changes are, for the most part, manifested by discriminating phenomena. The alterations are liable to terminate in destructive lesions of the organs affected; or so far injure their texture as to spoil their functions.

The phenomena become more distinct, as well as more intense as the disease progresses, until it has arrived at its acme. They then continue without essential variation until the organism is spoiled, or a salutary crisis takes place, by a removal of the primary morbid derangements in the tissues. The medical attendant should not be an idle, or indifferent spectator, contemplating the changes going on, merely to gratify curiosity in seeing what they may amount to. There is a time to act, and to act energetically too; and this is as soon as the disease has become developed; or, indeed, before its entire development.

A person who has studied and observed the morbid habit, can foresee by the early phenomena what must happen, if it is permitted to progress without restraint. It ought to be met at the threshold by suitable and efficient remedies, instead of seeking for some point of local *irritation*, and applying slow and inert palliations.

The phenomena are so diversified in different temperaments, and in the modified conditions of the different habits of disease, both acute and chronic, that they require separate

considerations in the different diatheses and types, so that our general remarks may be but few in this place.

2. *Increased action of the Heart and Arteries.*

At the acme of disease the organic susceptibility becomes increased, the tissues are impatient of even ordinary stimulations, but now endure those of the blood, which has suffered changes, and become more irritating. The phenomena of the circulations indicate a more elevated state of physiological action. The heart vibrates with unaccustomed energy, and the arteries act in accordance, as is manifested by their pulsatory movements. These pulsations admit of very different degrees of frequency, from ninety in a minute, to one hundred and twentyfive or thirty. The case may be considered more important as the pulse is more frequent, if all other things are equal.

The arterial capillaries, which had been contracted, have now become turgid, and venous absorption is better performed. In the synchoid diathesis the absorptions are free, for they must first become so, or there cannot be an expanded state of the circulations. In those cases approaching the typhoid state, the arterial pulsations remain limited, the pulse is constrained, or partially suppressed, although possessing some force; yet, the absorptions are not free, and cannot be so, until the relative plethora is removed, and chiefly by blood-letting. A portion of the blood still remains in the congestions, and there cannot be an expanded state of circulation until these are essentially removed.

Many instances might be detailed of the treatment modifying the whole train of the phenomena, which yet had remained from the attack for several days, partaking of the states called adynamia, typhoid, &c. In such cases the surface is still anæmic, and unequally hot and cold, with internal congestions; pulse frequent, feeble, and vacillating. Caloric to

the surface by warm water, or mild steam; moderate venesection, and a grain or two of tartarized antimony, whilst the patient is in a warm bed, will commonly change the whole aspect of the phenomena, induce equal circulation, a more expanded state of circulation, and render the case more manageable.

If the remedies should be successful in establishing a free and equal circulation, the phenomena are liable to become more intense than those attending the synchoid diathesis from the beginning, for the tissues now have assumed a greater increase of sensibility. The arterial impulse is now liable to become excessive in a day or two, and in proportion to the preceding state of depression of the circulation.

This state of the system is not peculiar to the acute forms of disease, but may clearly be noticed in many chronic diseases. Even in phthisis pulmonalis, many of the cases show for a long time paleness, small and frequent pulse, cold extremities. A treatment quite similar at an early stage, changes this state, so that capillary circulation diffuses warmth universally, and all the phenomena, especially by the pulse, are more distinct, and the way prepared for the use of other beneficial remedies.

3. *Relative Hyperæmia, or Plethora.*

The condensed, tonic state of the tissues produces a relative plethora between the vessels and fluids, in the first stage of disease. The fluids in the second stage have become expanded by the evolution of caloric, and gases, (Sect. ix. 13,) so that the vascular tissues are distended very considerably; the pulse becomes full and vibrating, whilst all the phenomena of high action are aggravated.

The state of hyperæmia may be so great as to impede the free exercise of the cardiac, and vascular actions, by intercepting the nervous force. The result will be an impeded

action of the centrifugal circulations, attended by what has been styled a *suppressed* pulse. This is a condition more or less approximating the typhoid state of disease. Venesection in such events, relieves the disparity between the solids and fluids, excites absorption, and uniform circulation. If used insufficiently it increases pain, by relieving the nervous oppression; but to an adequate extent relieves all the derangements, especially any disposition to chills, pains, or delirium.

4. *Increased Heat.*

Every phenomenon proves the existence of an exaltation of physiological movements in the diseased state, when the vital susceptibility is free from embarrassment. At the early stage, whilst impediments were opposed to the free play of the vital force, and capillary circulation, coldness existed. Now the excess of animal caloric is so considerable as to become painful. The free capillary circulation of blood affords an occasion for an increase of calorification. (Sect. xii.) The increase of caloric, however, is not in proportion to the sensation of the patient; for as he possesses an increase of sensibility at this time, it becomes the more intolerable. It rarely exceeds 102°, 104°, or 106° of Fah. The sense of feeling is evidently depraved, especially in dying people; with a surface as cold as marble, and even cold breath, they complain of great heat. The uneasy sensation of cold is believed by the patient to arise from heat, when it is the reverse. False perception exists. *Parapsis algor* of Good.

In the ardent state of fever, the turgid condition of the capillaries impedes the exhalations universally. Sweats are absent, and this gives occasion for a greater accumulation of heat. The dry constricted surfaces internally produce thirst. Absorption is now better performed than exhalation, for even large quantities of fluids are often taken up by the digestive

mucous tissue. As soon as the dynamic state is removed by the proper treatment, the exhalants act, heat diminishes, and thirst ceases.

Heat acts as a stimulus ; so it sometimes may be absorbed by cold drinks, and cold water to the surface. Cold takes up heat, and diminishes the turgid state of the capillaries. There is a period in which it may be used to some advantage, and this is after the severity of the disease has been removed by the proper remedies, so that internal congestion and inflammation are essentially overcome, and there remains a state of vascular erethism. If used before the primary morbid derangements are chiefly removed, cold drinks, and cold water to the surface will increase the tonic state, and aggravate the case. The state of internal inflammation either in the head, or elsewhere, is increased by it, although it may give a temporary respite on its first application.

5. *Impaired state of the Exhalations and Secretions.*

At the height of disease the dynamic state is made very manifest ; the disease seems to accumulate both in the acute and chronic form ; the capillary exhaling and secreting tissues cannot well perform their offices. Some seem quite suspended ; no sweats ; fauces parched ; saliva deficient ; urine and bile scanty. These illustrations have already been sufficiently made.

6. *Tissual Inflammation.*

The varieties of these are numerous, and their distinctive peculiarities may be found in Dr Good's nosology ; class hæmatica, order phlogotica.

To exhibit a synoptical view of inflammation in connection with fever, as we would wish to have it understood, we will employ the division of Sauvage's phlegmatix, into

a. Exanthematous.

b. Membranous.

c. Parenchymatous.

This is founded on the thesis of all the phlegmatiae being considered as sequences of the morbid habit. The divisions are necessary for the purpose of discriminating the eruptive diseases from those having local determinations to the internal membranes; whilst the parenchymatous include the whole order of internal local inflammations.

a. The difference in a pathological point of view, cannot be very great between the external and internal membranous inflammations, although they may have many peculiarities of appearance. The exanthems seem to possess a special tendency to the skin, although the internal tissues are previously affected. The peculiarities of the eruption require different names, whilst in every instance the general state of disease consists in what is called fever, and its intensity determines the severity of the case. Erysipelas sometimes occupies both surfaces at the same time. So, also, many of the exanthems; whilst in fevers strictly, it is internally.

b. It is peculiar to all the extended varieties of fevers, strictly so called, that they are accompanied with internal inflammations on either the serous, or mucous membranes. When very intense the fibrous fascia are also associated with them. This kind of inflammation is never circumscribed, but diffused, and erratic like erythema, and erysipelas. The tissue of a cavity is affected more or less; and the inflammation often leaves one cavity, partially at least, and seizes on some other. In the malignant fevers traces of inflammation, on inspection, may commonly be found in the head, thorax, and abdomen, in cases of some continuance.

The internal coats of arteries and veins are sometimes inflamed, resembling erythema; and they obtain an increase of susceptibility in many conditions of disease, especially in protracted fevers. In the heart it produces palpitations; in the

arteries, or in sections of them, throbbings. Beclard asserts, that these tunics are often inflamed in fevers. The very frequent irritative pulse indicates it, together with appearances denoting a typhoid diathesis.

c. The parenchymatous concentrations affect the interior of organs ; whether the interior fibrous membranes of the hollow organs, or the parenchyma of the secerning, it is very similar. The inflammation is confined or circumscribed ; effusions take place into the interstitial spaces of the tissues, compressing the vascular tissues, and injuring the organic function, and, if not removed, the texture also. The external serous tissues of organs become likewise involved in severe disease, whilst they may not in chronic. This kind of local inflammation has given origin to the internal local phlegmatia, the pathological character of which has been very generally considered essentially different, whilst the real difference consists in what has now been specified. The general phenomena are quite similar, except that more topical pain attends the local phlegmatia ; the treatment required is quite similar.

The first pathological change, locally, is a concentration of the morbid energies to the part to become inflamed, most commonly, attended with more or less pain, or tenderness on pressure, which indicates its location when internally. It has now become a focal point of irritation ; yet without redness at first. The capillary circulation is now interrupted, and blood soon accumulates, distending both veins and arteries. A strong oscillatory action ensues, with redness and an increase of sensibility. If its progress is not intercepted, either membranous or interstitial exhalations follow of sero-albuminous matter, and in a synchoid diathesis of a portion of fibrin. The part tumefies, becomes hard, with an increase of heat and pain. Chemico-vital changes follow, and the effused substance becomes softened, and forms an abscess, if parenchymatous. The purulent matter is discharged either exter-

nally, or into, or between some foldings of the tissues internally. During this process, the constitutional disease becomes aggravated by the reflex action of the inflamed part ; but, the discharge relieves the system of a great portion of disease.

d. The terminations are often different, all of which depend on the intensity of the constitutional diathesis, and structural susceptibility. The vital action of the part may suffer a paresis, and end in gangrene. Or, the severity of action may be partially intercepted after the effusions have taken place, and the softening process ceases ; the absorbents take up the fluid parts, and the residue obtains an inert solidity, ending in scirrhus. Again, in chronic cases, the process may not go so far as to produce effusions, but the part may assume the conditions of hypertrophy. The investing serous membranes of the internal organs are liable, when inflamed, to produce effusions and adhesions.

The diffused, internal, membranous inflammations, which always accompany fevers both mild and severe, are liable to be attended with considerable pain at first. The severe fevers have the most pain at first, but in the course of a few days according to their severity, the effusions from their surfaces take place, when the pain mitigates. This is liable to deceive. The disease may really be worse when the patient feels easier, if without being relieved by proper treatment ; and especially if the pain has only been smothered by opium, or any other narcotic. In mild protracted fevers there may be no pain, yet in the abdomen a soreness on pressure ; and the case may grow worse if it is not entirely removed in season.

e. The membranes of the brain, thorax, and abdomen, may all be affected in the severest malignant fevers ; yet some one of these cavities more than the others. The force of the disease may be transferred from one to the other, and as this occurs, the local phenomena will be changed, although

the constitutional character of the disease remains the same. When in the head, besides the phenomena peculiar to the organs, the pulse will be the hardest ; when in the thorax, the fullest and slowest ; but, when in the abdomen, the smallest and most frequent. This smallness of the pulse in the abdominal inflammations, is liable to deceive the medical attendant ; he is apt to impute the smallness of the pulse to some irritative weakness, when it arises from physiological circumstances concealing the greatest severity of concentrated inflammation, by affecting the nutritive ganglia. The attendant will be greatly deceived, if he should suppose the disease to arise merely from local irritation, for he has much more to do than to palliate this. The term *irritation*, is too liable to license the use of narcotics.

So, also, in fevers of tardy progress, the case may proceed from day to day with little or no pain, and with many placid appearances, whilst the disease is insidiously producing effusions, and destroying the tissues. Whilst the whole train of phenomena may be esteemed, by a superficial observer, as merely manifestations of a harmless debility, the disease may be making progressive strides in undermining the basis of the economy.

In protracted fevers, the local concentrations merely occupy a single tissue, and the effusions are very much of a simple character. But, in those of a malignant kind, there may be many tissues, and, indeed, entire organs involved in the inflammation ; whilst the effusions are various, and of a mixed kind. The functions of the organs may be speedily destroyed, and gangrene commence.

f. The long catalogue of chronic diseases bear some resemblance to the protracted fevers ; they commonly arise from the same causes. In fact they are many times the mere sequelæ of such fevers. The same tissues may remain affected, and terminate in purulent, or in hydropic effusions ; or in hypertrophy ; insanity ; atrophy ; phthisis pulmonalis, &c.

The morbid habit is suffered to remain unregarded sometimes, whilst, perhaps, the *local irritations* have received the entire compliments of the courteous adviser.

In conclusion we may remark, that the fur upon the tongue appears to arise from something of a similar membranous excitation. Its peculiar structure produces from its exhalant vessels an exudation of sero-fibrinous matter, liable to suffer many modifications. It is not peculiar to any particular tissue internally affected, but indicates the general state of diathesis. The mucous tissue of the tongue and fauces is sometimes affected with inflammation, in some measure similar to the internal membranes. So, again, in protracted fever the dothinentery and aphthæ denote the condition of the intestinal mucous coats.

7. *Elevated orgasm of the Nervous Tissues of Sense, Intellect, and Muscular Power.*

As all these depend on excitations of the spino-encephalic system of nerves, they may be noticed together. The illustrations have reference to the state of fever more particularly, but apply to any affection having a cerebral determination.

It is supposed the embarrassments to free vascular action have been essentially removed, if any such had previously existed, as is constant in primary coma, &c. Venous absorption must have become active, and the congestive state essentially removed, before an elevated state of action occurs. The capillary circulation in both arteries and veins is now free, and the increased sensibility of the nervous tissues renders them impatient of the stimulations of the passing fluids; and the blood now proves more irritating than in health. The nervous expansions of the five orders of the organs of external sense, transmit vivid impressions to the centre of perception, liable to be so intense as to misrepresent objects and produce hallucinations.

A similar state of the tissues exists in the organs of perception, and intellect. Their functions are accelerated, the ideas are vivid and in rapid succession ; indeed, so much so that the perceptive faculties are liable to be imposed on by false images, and the reasoning faculties to erroneous judgment. In the more moderate orgasm, the reminiscences are vivid ; imagination on the alert ; the trains of ideas numerous, and uttered in quick succession, replete with imagery and poetic effusions. If a little stimulation be added, either by the external senses, by medicaments, or internal irritation, the pleasant catenations of ideas are severed, and delirium more or less furious ensues. The cerebral membranes are now liable to afford effusions, which by a compressing force induce a fatal coma ; unless, peradventure, the patient may escape with some kind of mental imbecility. Yet, the orgasm often subsides without effusions.

In many conditions of even mild fever, continuing with a location in some remote part from the head, and when the organs of this part have remained free ; there may be a sudden determination to that part by some excitation, not of inflammation, but mere turgescence exciting an orgasm, and followed by delirium. It may continue a longer or shorter period, but may soon subside, by venous absorption removing the turgescence, and then the mind may be as tranquil as before. Such paroxysms may occur in a state of predisposition, in hypochondriasis, in liabilities to hysteria, producing alienations of mind, and sometimes insanity. Effusions are not made in the tissues in such cases.

There is a milder state of cerebral excitation, which produces vigilance, without any discernible turgescence, or uneasiness. It is liable to occur in a state of convalescence, and in the instance of moderate mental excitement in movable habits. It occurs with an habitual turgescence in those who indulge in alcoholic drinks, or opium, unless under the narcotic influence of large quantities.

The free play of the capillary circulations on the very excitable nervous, and muscular tissues in exalted fever, affords the muscles a preternatural energy. The state of lassitude is now exchanged for great strength with delirium, and the former weak patient is capable of prodigies of valor. The vital force of muscles exists in profusion, and the strength of several men may be required to restrain the morbid energy of one. Every exertion adds irritation, and when long continued is liable to end in asphyxia, or total exhaustion.

Delirium may exist at the onset of fever, but it shows a freedom from a severe congestive state; and in the more intense degrees of fever with coma-vigil, it does not occur until the absorbing processes have essentially removed the congestive state of the tissues, not only from the membranes of the brain, but throughout the nutritive tissues. It is in consequence of this, that the heart and arteries in tonic delirium act with considerable force and freedom. The pulse is full, hard, and frequent; whereas before it might have been unequal and embarrassed.

8. *Changes in the Fluids.*

It remains to be noticed, in relation to the forming state of disease, that the movable animal matter suffers changes simultaneously with the solid matter. It is sometimes difficult to ascertain which may have morbid precedence. This appears to be the fact both in the acute and chronic conditions of disease. We also, discover progressive changes in both; and as the primary impulses arise from the vascular tissues, we infer these to be the more immediate agents of all the subsequent changes.

Commonly when blood is taken from a vein in the state of predisposition, and especially as soon as the first actual phenomena appear, in either acute or chronic disease, on mere inspection it shows some physiological changes. It does not

flow freely from the vein, and is of a more than ordinary dark color. It either forms a weak coagulum very quickly, or not at all. If coagulated the serosity shows an ichorous appearance. This usually occurs in the most malignant forms of acute disease, yet is seen in the scorbutic habit, and other slow diseases.

All these phenomena may be imputed to two circumstances ; a deficiency of free vascular impulse, and of oxygen. By following the chain of causation, we discover these to arise from an inability of vital force ; and that this is produced by changes made by the noxious causes acting on the primary tissues, impairing their integrity of function, through the agency of the nutritive nerves.

As the disease proceeds to the second stage, if the functions of the vascular tissues remain embarrassed, as they sometimes do from the rapid succession of the stages in an ephemera, or by neglect of proper treatment in more protracted cases, the same phenomena may appear in the blood as in the first stage ; and, indeed, these phenomena may become increased and more apparent. The case now becomes very dangerous, the crisis of the blood is spoiled, as there is an inability of vascular function, whilst the state of nosodynamia has increased. The crisis of the blood is deficient of cohesion, and said to be putrid, and does not coagulate.

However, the progress of disease is far oftener very different from that just stated. The recuperative powers by their own susceptibility, or as aided by science, obtain an ascendancy ; the vascular impulsions modify the fluids, and they exhibit a new train of phenomena, and that partaking of the tonicity of the solids.

So we discover in the second stage, when directed to a more favorable termination, the blood to have been decarbonized, and to have assumed a florid appearance even in the veins ; it flows freely, and is projected from the orifice with force, and has more free caloric. It now clearly mani-

feats an increase of vitality. When drawn it does not coagulate so quickly as in health, but is sure to become so as soon as cooled, and the coagulum is far more dense, with a white fibrino-albuminous crust on the surface.

The amount of fibrin becomes quickly increased, in a free state of action. Mr Whiting demonstrated, that the fibrin of the blood in health might be as one in a thousand, whilst in acute rheumatism it was seven. The film on blood taken at such times by a free orifice in a vein, serves as a nosometer to measure the amount of the disease. The more free caloric, and fibrin that exists will afford a thicker film, and as it cools will contract with greater force; the edges turn upwards, and form a cup-like appearance in proportion to the density given it by the capillary impulse, with free caloric.

When these changes have taken place, the blood reacts with greater force on the tissues, it proves too highly stimulating, and the fibrin is liable to suffer a stasis in the most intimate parenchymatous and vascular tissues. As it circulates in the thin serous tissues in the vicinity of morbid concentrations, sero-albuminous fluid is forced out upon their surfaces, of various degrees of density according to the severity of the general diathesis. Sometimes a portion of fibrin is exhaled on serous tissues, which produces adhesions of the adjoining membranes.

Fibrin is one of the most combining, and sustaining of the fluids, but now exists in a modified state, and in too great proportion, as well as excess of tonicity. Its excess indicates that state of the system long known as the *phlogistic diathesis*, most apparent at the acme of disease. Yet, this particular state may exist to a very considerable degree, when the albuminous film of the extravasated blood may not be very manifest. This diathesis may be managed with much prospect of success, and it is a great desideratum to convert other states of the economy into it, in relation to their successful issue. There is a great accordance in the phenomena

discoverable in the fluids, indicating the several diatheses, and which reveal the character of the disease, and its salutary, or its destructive tendency, when diligently investigated. The external phenomena, when traced to their origin, indicate the condition of the organs sufficiently for practical purposes, almost as clearly as open vision.

When this phlogistic, or inflammatory diathesis exists, the secretions, and natural exhalations are either suspended, or imperfectly performed. There is heat, with a hard and frequent pulse. The appearance of hemorrhage, and flow of the exhalations and secretions, indicate a diminution of morbid tonicity, and are tokens of a favorable termination. Yet when once established, and the fluids changed as above, it takes a week or two, under favorable circumstances, for salutary changes to take place, to restore the fluidity of the blood, and effect the necessary depurations. In the chronic state of disease, a phlogistic diathesis may be perpetuated by bad treatment, not only from month to month, but from year to year ; provided, however, it be not so bad as to destroy sooner.

With these scanty remarks, we must pass by various phenomena of minor importance, to the resulting phenomena of the morbid habit.

SECTION XLIV.

PHENOMENA ATTENDING THE RESULTS OF THE MORBID HABIT, IN THE THIRD, OR LAST SERIES.

1. *Pathological Remarks.*

HAVING made an attempt to trace some of the external phenomena of disease to their origin, and expose the state of the organism, on which they depend in the forming, and more active stages; we must now re-examine the same tissues and organs, in pursuit of the alterations they may have sustained in the conflicts they have suffered. The changes are frequent, and progress in a ratio of the intensity of the diseased state.

Although it is difficult to make out an unexceptionable definition of fever, yet in every instance of derangements made in the tissues by the numerous ledantia, there scarcely fails to arise a train of pathological movements clearly indicating a perturbed condition, sooner or later; and as this is always attended with some disturbance of physiological action, so, more or less heat appears along with other phenomena, which are sufficiently pathognomonic of pyrexia, for all practical purposes. The modifying circumstances may be numerous which vary the phenomena, whilst the internal tissues are suffering.

The relation of the external phenomena to the condition of the organs is pretty constant, when the whole of them are taken into the estimate. So, if some of them should be absent, as for instance, pain in a low state of fever, we have no reasons to infer that internal inflammation does not exist, if other phenomena indicating such a state are present. For, it has been proved by all post mortem examinations, that tissue inflammation in some degree, constantly exists in such

conditions, and is always more manifest in some one of the three cavities than in any other. This inference is sufficient for all practical purposes, as the true therapeutic remedies ought to be used to remove the severity of the constitutional disease, on which the local affection depends.

In like manner, at an early period, if only a few of the leading phenomena of fever are present, the inference will be safe, that disease will be evolved, and tissued location must follow, and its intensity will be in proportion to the hurtful impression, the attending phenomena, and the idiosyncrasy of the subject.

The phenomena are sometimes deceptive, or become so to an inattentive, or incompetent observer. Although a frequent pulse usually attends acute fevers at an early period, yet there are cases of oppressed cardiac action, with slow, or intermittent pulse, even whilst there is an immense accumulation of disease, and the phenomena will yet appear in a terrific form.

Disease will continue until the primary derangements are removed, and the necessary adaptations effected; and after it has continued some length of time, a train of secondary changes may serve to perpetuate it in a chronic form. It becomes the duty of the attendant to obviate these as far as possible, and guide the pathological processes to a salutary crisis.

2. *Limitation of Diseased Action.*

The contagious exantheas require a definite period to effect certain changes, and pass through the system; they cannot be shortened, otherwise than by regulating the economy so as to prevent unnecessary aggravations and delay. Again, when any pyretic disease is fully formed, some indefinite period is necessary for the morbid changes to

be removed, and the healthy adjustments to take place. Otherwise than these, we cannot discover any limitation to diseased action, either favorable or otherwise, by which it is bound by fixed periods of termination.

It may rather be insisted, that disease, when once formed, must continue until the primary derangements are removed ; or, until the injury done to the solids and fluids spoils their integrity of composition so far, that the vital influence can no longer excite them. Disease does not always end when its career in one form ceases. Acute disease may be transformed into some chronic form of a tedious kind. If we are not greatly deceived, both acute and chronic diseases may often not only be made milder by treatment, but greatly shortened from what they would be if left to pursue an unmolested course.

As the active treatment of diseases has prevailed over the dilatory, expectant methods, so the paroxysmal exacerbations and crises of disease have been intercepted and obscured. Fevers left to the regular physiological processes are liable to manifest exacerbations and crises ; and are often continued to a great length ; not so long, however, as under bad treatment. So in phthisis pulmonalis, the hectic paroxysms are exact and severe, either with improper treatment, or no treatment ; whereas judicious treatment mitigates, and often annihilates them, when seasonably employed.

The ordinary epidemic, endemic, and sporadic fevers are not necessarily limited to any definite periods, before they can be eliminated from the system. Many are the instances of spotted fever, yellow fever, dysentery, and cholera, terminating in health, or in death within the first twentyfour or fortyeight hours ; or if otherwise, then in continued disease. If they sometimes terminate in health in so short a time, then they are not necessarily limited to one, two, or three weeks.

In these sudden restorations, the paroxysm may have been met at an early period by some simple therapeutic manage-

ment, suitably applied, and in a system ready to give lively responses to the first impressions of the disease, and by the recuperative processes suddenly restoring the absorptions, secretions, and exhalations; and this before any secondary changes had riveted the morbid changes in the inmost tissues. The first changes will be found to be few and simple, when separated from the numerous contingent circumstances that soon follow. However, if the disease does not meet with such favorable results, it progresses in a continued manner, to its severity, until other changes take place of a physiological character, but not of a necessarily limited kind.

3. *Phenomena resulting from changes made in the Internal Tissues, and Organs.*

The great theatre of morbid conflict, in the largest proportion of diseases, either acute or chronic, is in the internal viscera. This is particularly the fact in relation to those more emphatically styled fevers. If locations in acute disease should be more exterior, yet the internal capillary tissues are essentially affected, especially the heart and arteries. It is in the internal cavities that we find the most important lesions.

The examinations of unfortunate cases have been so numerous, it seems scarcely necessary they should be much further repeated, so far as relates to acute pyretic diseases. There is a striking uniformity of results in all the reporters of pathological anatomy, and which accord with our own observations. Severe disease concentrated in any particular cavity or organ, and continued a suitable length of time, produces certain results, which are sufficiently definite and uniform for all practical inferences. The united phenomena indicate pretty clearly what the essential changes in the organs must be, if not controlled; and it is not very essential, so far as relates to the protective treatment, to discriminate very

minutely beforehand the identical lesions that may occur. The protective treatment ought to be aimed to the prevention of all lesions, and its extent must be estimated from a knowledge of the constitutional phenomena. No time should be lost in waiting to see what local changes *may* take place. The phenomena universally tell what is in *danger* of taking place, and this is sufficient to excite to diligence. When destructive local changes have taken place, the subsequent phenomena, indeed, too clearly indicate them, and convey an admonition for unjustifiable neglect.

We can only stop to make some general references to the resulting phenomena, and chiefly in relation to acute disease, mostly omitting the chronic.

a. In the encephalon, every organ and portion of organs are liable to plus concentrations of fluids, and every grade of constitutional force, and local capillary impulsion urging lesions of the textures. The concentrations often occur in fevers affecting the cerebral membranes. When the dura mater is most affected, the diathesis partakes of the synchoid character, with a strong, hard pulse and considerably frequent. The effusions are fibrinous and dense between the membranes, cementing them by adhesions of different degrees of strength. The same may occur in the theca of the spinal cord. Other more fluid effusions sometimes accompany these affections, preceded by pain and delirium.

The concentrations are sometimes more particularly in the arachnoid membrane and pia mater, and radiating into the foldings of the brain, pursuing the tract of the pia mater. Pain is less intense, with more frequent pulse, and the case becomes full of danger. These yield serous effusions, and very early, especially in the arachnoid in children. The ventricles are more or less filled, producing hydrocephalus. The same often occurs in the spinal cord. These effusions are sometimes complicated, sometimes an ichorous fluid; in cases of some longer continuance a puriform fluid is discovered be-

tween the tissues. In cases that soon terminate fatally, there is a mere infiltration in the arachnoid. At other times it is found in large quantities, to the amount of eight ounces,* and with thickening of the tissues.

Finally, after some continuance of the phenomena, with perhaps coma-vigil, all consciousness is obliterated, and never to be restored; hydrocephalus, with the eyes turned upwards and inwards; pupils irregular, &c. Sudden concentrations at the attack of fever, are liable to produce effusions of blood; the consequence is apoplexy or hemiplegia. Morbid changes may commonly be expected in insanity, and other chronic affections, as hypertrophies, hardening and softening of tissues; ossifications. We cannot follow out the minute details, they may be learned from morbid anatomy.

b. In the thorax we discover changes in the tissues quite similar to those of the brain, with the addition of other tissues, each yielding modified products in a state of excitation. The kind and quantity are also varied by the intensity of disease. The mucous tissue of the lungs produces modified products, according to the severity of the diathesis. Sometimes an increase of mucus, together with an increase of exhalation, giving occasion to a copious sputa. When the case is a little more severe, there may be a copious effusion, engorging the aerial cells, and proving suddenly fatal, much to the surprise of an inattentive, or ignorant observer.

The state of excitation may be more severe, with but little excretion, and that of a fibrinous character, and adhering like the fur on the tongue. It is liable to be in more profusion in the larynx, producing a dense albumino-fibrinous exudation, altering the voice to hoarseness, and even accumulating so as to suffocate; producing tracheitis, or *rattles*. The sound of the voice denotes its density and danger.

Before the diathesis arises to its highest degree, there is

* Dr Abercrombie, *Dis. of the Brain*, p. 281.

liable to be in the lungs, some of the cruor of the blood forced from the capillary vessels, and affording a sanious mixture of the sputa. Again, in certain states of mild diathesis in predisposed idiosyncrasies, the capillary vessels of the bronchial mucous membrane become turgid, capillary action is increased, and blood is thrown out in large quantities, producing hæmoptysis. So, likewise, under circumstances very similar, the effusion of blood may be into the cellular and aerial tissue of the lungs, producing what has been improperly called apoplexy of the lungs, although the term is quite expressive of the physiological fact. The lungs become dense or hepaticized. A modification more frequently occurring in a phlogistic diathesis, is, a fibrino-albuminous effusion into the interstitial spaces of the lungs, producing dense circumscribed tumefactions of greater or less extent, which lay the basis of future imposthumations.

So again, in some of the mildest and nearly imperceptible grades of morbid concentrations on the pulmonary tissues, there is slowly exuded a sero-albuminous matter into the minute spaces of the interstitial cellular tissue.* The fluid matter is absorbed, whilst the hitherto suspended fibro-albuminous substances condense, in part by the heat, absorption, and its cohesion, into tuberculous formations. Their presence when not numerous, produce but little inconvenience. However, by the continuation, or a new accession of a mild morbid habit, its concentration is liable to be in the circle of their

* M. Andral says, "The lymphatic ganglions are *one* of the parts which best exhibit the development of tubercle subsequently to an attack of inflammation." (Path. Anat. Vol. 2. p. 282.) In p. 281, he also says, "Dr Boeker, a German anatomist, states that he repeatedly injected with mercury lymphatic ganglions presenting different forms of morbid alterations, and that he invariably found the injection pass freely through all the convolutions of the vessels; whence he concludes that in the diseases of these ganglions, the lesion is, at least in the greatest majority of cases, *confined to the cellular tissue that unites the convolutions of the vessels*, or to the coats of those vessels, but that there is no obstruction of their cavity."

irritation ; the tissue becomes excited, inflamed, softened, and the puriform matter finds a passage into the aerial cells, to be cast out by coughing and spitting ; constituting one variety of phthisis pulmonalis. The disease is continued by the same causes producing new crops or series of tubercles.

The serous membrane of the lungs externally, with its costal portion, affords exudations very similar to those of the brain. In the most severe diatheses, when the concentrations affect many tissues in the pneumonic inflammations, blood often passes along with the other exudations into the thorax. But, in a strong phlogistic diathesis, the effusions will be of the fibro-serous kind, in pretty large proportion ; and if the case continues, they often condense, and having still a vitality of the first grade, blood vessels vegetate in them ; it now becomes a parasitic pseudo-membrane. Notwithstanding these effusions oftener suffer changes, and form a mass of heterogeneous matter, occasioning empyema.

In ordinary conditions, and of less severity, the effusions partake of the sero-fibrinous kind, and taking the filamentary form, the thinner part being absorbed, unite the surfaces of the costal and pulmonary tissues, producing adhesions.

In a milder state of diathesis, there is often thrown out from these surfaces in a few weeks, a more strictly serous exudation, constituting acute hydrothorax. In a mild, protracted diathesis, chronic hydrothorax may be produced. The same circumstances occasion hydrops pericardii.

c. In the abdomen, the effusions are very constant under like circumstances. In order for their production there must be a general state of excitation, with a fixed concentration in a tissue, or some contiguous organ. In a severe state of disease, the peritoneum produces large effusions of sero-albuminous matter, with a portion of fibrin, sometimes in six hours ; and often tinged with blood.

We rarely meet with simple peritonitis ; this affection is most commonly associated in the inflammation of some con-

tiguous or subjacent organ. It is excited in acute hepatitis, enteritis, &c. It is, however, in acute metritis, as occurring in puerperal fever, that we are made witnesses of the most appalling results of peritoneal effusions. The pathological changes discovered in the peritoneum are often more manifest than in the uterus, or its appendages; which has led many pathologists into the error of considering the disease to have its chief seat in this tissue. A little further investigation cannot fail to show, that the uterus is the organ which is most highly predisposed; and the first phenomena are referable to it; but the peritoneum is a more readily excitable tissue, and liable to be totally as well as suddenly associated into excitation. Its effusions, also, suddenly appear, and before so manifest changes occur in the substance of the uterus. This seems to be the view taken of it by some pathologists, and particularly by Dr Lee, of London, very lately. Notwithstanding, lesions are commonly found in the uterus, especially a puriform fluid in its veins and absorbents; as well as other signs of inflammation, and extending to its appendages.* But, we need not pursue this subject any further here, only to observe, that nearly the same phenomena occur in the peritoneal sac, and about as suddenly in enteritis, as in hysteritis.

In concentrated disease, in any cavity, the blood vessels become more or less prominent, and particularly so in the abdomen, especially those of the mesentery and omentum. The effusions sometimes cement all the viscera together into a mass; and if disease mitigates, and continues, most commonly terminates in atrophy. The peritoneal sac is subject, in more protracted cases, like the pleura, to slow serous effusions, constituting acute and chronic ascites. (See Sect. vii. 4.)

The mucous tissue performs very important offices in the

* In 1829, at Paris, out of 222 fatal cases, 132 showed a "puriform fluid in the veins and absorbents of the uterus." (Amer. Jour. of Med. Sci. No. 30. p. 414.)

economy, both in health and in disease. (Sect. vii. 5.) It is more endowed with nerves of external relation than any other internal tissue, except a few feet above and below the cœcum; and the nerves of nutrition are, for the most part, thickly bestowed upon it by the numerous arteries sent to it. The physiological condition of this tissue enables it to admit of extensive capillary distention in every determination to the internal viscera. As most commonly at the onset of disease, whether acute or chronic, there is a retrocession from the surface to the centre, so this tissue is often distended; and it is at such times that hemorrhages of venous blood occur.

At the time examinations are made, being usually several hours after death, the absorptions remove a great amount of the blood concentrated in this tissue during life. It is then rarely seen in its real pathological state. It is seldom we find as much of a dense adventitious film on the surface of this tissue, as on the serous tissues, for it oftener yields an increase of mucus than fibrin, or albumen, when excited. It does not admit of the adhesive process. In croup, however, it is found in the larynx, but more probably when the subjacent fibrous fascia are associated in the inflammation, than from the mucous tissue itself.

The deciduous tunics in the affection called diarrhœa tubalis of Dr Good, as well as the uterine decidua, afford some evidence that fibrinous, or rather albuminous exudations may arise from excitations of the mucous surfaces. Still, however, the question returns, whether they ever arise, unless the subjacent fascia are also associated? It seems they neither appear in the serous tissues unless the affection becomes severe, when probably the subjacent fascia are associated, as in pleuritis, &c. They otherwise yield serous discharges when excited, and the mucous tissues their mucus, together with the matter of arterial exhalation.

Dr Hörner of Philadelphia, has been laudably engaged in pathological and physiological researches on the mucous tissue of

the intestines, in reference to cholera.* He appears to demonstrate the existence of an adventitious membrane; thus described in case 3d, p. 68: "The mucous coat of the stomach and small intestines had a strong inflammatory tinge; the latter were filled with sero-fibrinous fluid, and were lined in almost the whole extent by a layer of fibrin; this layer was about half a line in thickness, and adhered to the mucous coat as a layer of fresh fibrin does to the pleura or peritoneum; that is to say, with a degree of tenacity permitting it to be rubbed off with the finger or floated in water, so as to exhibit both its adhesion to the intestine and its distinction from it."

This layer hardened by alcohol. It will, however, be suggested, that all these exudations may partake more of an albuminous than fibrinous character. Alcohol hardens albumen as well as fibrin; and we do not find the proofs of their being exclusively fibrin. Although we are constrained to dissent from this writer in some of his pathological views of cholera, yet we fully agree with him in a state of orgasm of the intestinal mucous tissue, and will not even disagree in calling it inflammation; yet, cannot consider it as the primary cause, but as secondary, or a result of a primary constitutional affection. We cannot discover an "atony," as arising from "a sympathetic condition produced by the extreme pathological actions of the mucous membrane of the alimentary canal." We rather discover a state of tonic rigidity, and an inability of the functions of the centripetal circulations.

The proofs of a general primary affection are made plain in the fact of other phenomena being either previous or synchronous with the determination to the intestinal canal. The alteration of the general aspect is first discovered: and the excessive and continued sweats appear about as soon as the diarrhoea; they both show a similar state of the centrifugal circulations, even in their matter of exhalation. This disease

* Amer. Jour. of the Med. Sci. No. 31 and 32.

cannot be viewed with any justness, as an exception to all others of the group of what are styled ataxic, adynamic, or severe typhoid fevers; it being one particular modification, or variety. Neither are the vomitings, diarrhœa, or sweats peculiar to it. (p. 438.) The "cholera vesicles," on the surface of the mucous epithelium, or "superficial venous layer," bear a strong resemblance to the *sudamina* which appear when great centrifugal exhalations take place, in other conditions of fever, on the dermoid surface; with external heat. But external heat is absent here; morbid action concentrates in the mucous tissue!

That the main force of the disease is constitutional, is shown by an universal deficiency of calorification externally and internally, as well as a stasis of blood in the venous capillaries in every tissue of the system. We might, further, notice the tonic state of the tunics, and particularly the activity of the arteries over the veins, (p. 308,) as we have constantly insisted prevails at the onset of all fevers. "There was no pulse at the wrist, but it existed about the middle of the brachial artery, and beat from 160 to 170 in a minute, almost imperceptibly." (p. 76.) Again as respects the arteries: "The femoral, anterior tibial, humeral, radial, ulnar, and all the other arteries examined, were contracted to one half of their common diameter, with the internal coat in longitudinal wrinkles." (p. 77.) It manifestly appears they force out the fluid parts of the blood, at the extremities of the arterial circle, by a convulsive effort; not *debility*.

The phenomena exhibited above accord with all the views we have hitherto expressed, in relation to the pathological character of cholera, which will be further detailed hereafter, and in relation to other complicated fevers. Whilst the centrifugal circulations are in such a perturbed and nosodynamic state, the centripetal are suffering a constrained, universal paresis. There is no well grounded analogy in all the history of disease of a local irritation producing such astounding phenomena. The eruption in confluent small pox, alluded to by

the writer, is a resulting phenomenon of antecedent general disease.

The 3d thesis proposed, (p. 59,) admits of extensive animadversion; but, we have already digressed beyond what was intended, and can only remark, that in our most liberal estimation, he has not made out the case. We do not understand how "denuded veins pour out serum." (p. 294.) Is it not the arterial exhalants? All demonstrations prove the veins to be absorbing tissues, and they form the strongest chain of centripetal circulation. The inaptitude of the veins to absorb in cholera is shown by the fact stated in p. 285, viz., "it requires five minutes in cholera patients for an enema of camphor to be perceived in the breath, whilst one minute only is requisite in other cases of sickness." The blue tinge of the surface, and tardy flow of blood in venesection, prove the stasis of venous blood in cholera. We acknowledge, that aside from some too hasty inductions, Professor Horner has rendered important service to pathological, as well as the normal anatomy of the intestinal mucous tissue.

In our hasty review of the results of disease located in the abdomen, it may merely be remarked, that the glandulæ solitariae, (Brunner) and agminatae, (Peyer) are often found in a diseased state. They suffer excitation and inflammation in greater or less degree, in many conditions of disease; meaning all such as tend to produce some degree of inflammation in the mucous tissue, in which they are imbedded. They become turgid, enlarged, and often of a bluish color in the cadaver. They appear often ulcerated in typhoid fever, phthisis pulmonalis, &c. The membranes of the intestines become thickened and dense. After much investigation of late by many pathologists, it appears that the pathological condition of these glands is the result of disease, rather than a primary condition of disease in the glands. In such states as these glands are found diseased, there is liable to be in any part of the mucous tissue of the stomach or intestinal canal, certain small ulcerations beneath this tissue, with elevated

edges, and not quickly incarning. They sometimes produce a softening of the muscular coat of the intestine, and the serous tunic giving way, either by the same process, or by rupture, the intestine becomes perforated; their contents pass into the peritoneal sac, and the case proves fatal in about twentyfour hours.

The mucous coat of the stomach does not so often show traits of active inflammation in fever, or other disease, as other portions of this tissue; yet, such traits are sometimes discovered. It is very common, however, to discover a softening of its mucous coat; besides many other changes we must omit.* The liver is subject to many degenerations, but does not so often show pathological changes from fever, strictly so called, as many other of the abdominal viscera.

According to the reports of many cadaverous inspections, the spleen shows morbid derangements in fever, the most of any of the abdominal viscera. This change consists most commonly in softening. This viscus is composed essentially of gelatin; it is a vascular and erectile tissue; and in all concentrations becomes largely distended with blood; and on these accounts it is disposed to ramollisement. It is usually found softened, and easily breaks before the finger into a black, pultaceous mass.

The pancreas contains but little blood, and is formed chiefly of albumen, which is liable to condense by heat and other agents. When once condensed it never softens, but is liable to scirrhusity. It is usually found hardened in fever.

The organ affected in the abdomen can commonly be de-

* Without stopping to make many references on this controverted subject, let it merely be remarked in general terms, that our own observations accord with D. S. Smith. (Treatise on Fever, p. 203. Phil. Edit.) "The uniform result of the most careful observation in London is, that the mucous membrane of this organ (stomach) is less frequently, less severely, and less extensively diseased than any other portion of the same membrane." We may, however, except the softening of its mucous coat.

tected by pain, or soreness, on pressure. The pain is most severe the first three or five days in fever, and subsides on the taking place of effusion. When the other phenomena continue, on the cessation of pain and tenderness, the case becomes more fearful, as it indicates a state of insensibility which is the precursor of gangrene.

Our limits do not admit of extending this subject. Reference may be had to Abercrombie on diseases of the head and abdomen; Andral's Pathological Anatomy; Morgagni on the Seats and Causes of Disease; S. Smith's Summary, in Treatise on Fever; et aliis.

4. *Two trains of Resulting Phenomena, as disease may terminate favorably, or otherwise; Prognosis.*

Disease when once established in the economy, will continue until the primary cause, which produced and sustains it, is removed; or, until the tissues become so far injured as to be unable to support the vital susceptibility. The event is called a crisis, whether tending to health, or dissolution; and it becomes necessary to examine the principal phenomena in connection with each of these trains.

a. The salutary phenomena in the more manifest instances, are preceded by an universal effort of the united functions, or as it might be called an exacerbation; which is followed by a relaxation of the emunctories, succeeded by discharges and a mitigation of heat, pain, præcordial distress, and numerous reverberating sensations. If the disease has received the benefits of a proper treatment, it calmly subsides without any violent phenomena into ease, and repose; or, only a mild diarrhœa, turbid urine, or warm sweat.

Whilst abnormal actions and excitations are continued, having existed for some time, and the economy has suffered very considerably, and until the vital susceptibility becomes in danger of exhaustion, it appears, there is as it were, a final

effort made, an intense orgasm arises, as if to remove the offending cause, or exhaust itself in the attempt. This effort is attended with phenomena resembling an exacerbation followed by relaxation, and it often prevails by exciting the functions of tissues, which have been embarrassed by the morbid changes. In this event the nosodynamic cause is removed, secretion, absorption, and exhalation are restored, and health returns. Or, if the effort fails of effecting these objects, the vital energies are liable to be exhausted, and forever cease. Or, again, the effort, instead of eliminating the disease from the entire system, may produce a metastasis of local affection to some other tissue, which may be favorable or injurious, according to the circumstances in connection.

There may be several efforts, or partial crises before an entire solution is effected. This change may take place at an early period in unlimited disease, if the primary changes have not already produced too many consequential changes. After disease has arrived to its acme, some time may be necessary for the preparations and adjustments to be made, before there can be a solution, and subsidence of morbid action. After the nosodynamic force becomes fixed in the inmost tissues, the increased tonicities, and sensibility assume a more intense state, which requires changes in the fluids, and a relaxation in the solids to be effected; or it requires time for the internal stimulations to become diminished, which usually excite the repulsive powers in an inordinate manner.

Whatever may be the conclusions in relation to the humoral pathology, it appears evident, that after fever is formed, critical discharges cannot take place until the altered state of the fibrin and albumen, at least, is effected; and it ought not to be expected any more than that these same substances should flow from a phlegmon before a change, or softening. The state of the pyretic diathesis, and alterations of fluids in tissues, are in some degree similar to this.

At the acme of disease, or pyretic action, no hemorrhages

occur, nor sweats, nor but little urine, and this is not surcharged with the detritus of the blood. As soon as the nosodynamia of the solids and fluids has subsided, if the excess of morbid action has not destroyed the integrity of the organism, the salutary processes resume their accustomed rounds ; absorption and secretion become active, and the fluids receive their depositions. The emunctories are relaxed, and a new series of local tendencies direct the particles of decomposed fluids through them, being urged on by the yet irritated capillary vessels.

So great a weight of distention and stimulation being removed, all the vital actions subside even below their ordinary level in a few days. The weary tissues require repose. However, as absorption returns, the appetite increases, and the system is again replenished.

In a mild crisis, warm, fluid sweats flow spontaneously, whilst the aspect assumes its natural appearance. Sleep soon becomes quiet and refreshing, free from disturbing hallucinations ; for now the cerebral tissues are relieved of abnormal excitation.

On other occasions the new determinations may be more essentially to the kidneys, or urinary apparatus, purging the blood of a mass of heterogeneous substances, partaking partly of the common elements, and partly pathological. As the rigid tissues begin to yield, there is noticed some increase of urine, in which on standing some hours in a glass vessel, a cloud appears diffused ; as the favorable changes proceed, another parcel shows a dense nebula in the centre of the vessel, and as the solution of the viscid matter takes place, a reddish *sediment* is precipitated on the sides of the vessel, and therefore called *lateritious*. The particular composition of these depositions may be learned from animal chemistry.

The salutary impetus may be to the intestines, producing copious discharges by the now pervious exhalants, mucous secretions, and emancipated liver, pancreas, and other sources.

It is not very uncommon for the critical determination to be directed to the glands of the axilla and inguina, or to various parts of the surface and cellular tissue, in form of inflammations, which soon suppurate, and afford much relief by their discharges.

The blood now being a little altered, may be determined to some of the various portions of the mucous tissues, already turgid. The nosodynamia of the vessels being diminished, or removed, it finds a ready exit by hemorrhage from the nose, lungs, kidneys, intestines, or uterus. Let no presumptuous interference be attempted to suppress these salutary discharges, which now look frightful to those who can discover nothing but *debility* in disease. They are the heralds of returning health, and the recuperative powers have taken charge of the case. The timid may be well assured these discharges will cease, as soon as the instinctive force is sufficiently avenged of the injury done by the obnoxious excitations. Only moderate, supporting measures may be necessary; for too much will add further provocation, and exhaust. No physiological thesis is better established than this, that high stimulations may suddenly exhaust the vital force at such times. A waving of the hand often extinguishes a dimly burning taper.

The local affections subside along with the constitutional disease; and the congestions, inflammations, and tumefactions will be dispersed in proportion as the absorbing, centripetal circulations prevail over the centrifugal.

The time when these revolutions may take place depends much on collateral circumstances. 1st, partly as the disease might have received a cast at its onset by the treatment; as whether it was weakened, but not suppressed; or whether it was aggravated by improper treatment. 2d, as the causes might have been more impressive, and in an irritable habit, which cannot be long borne; or, as the phenomena might appear in the reverse state. As a medium suppose between

one and three weeks in ordinary cases of pyrexia ; yet sometimes sooner, and later.

From remote periods, it has been observed, that crises take place on certain days of fever, reckoning from the attack, rather than on others. These have been called *critical days*. The observations of a very respectable portion of physicians result in the conclusion, that about three fourths of fevers, not much interrupted in their course by treatment, terminate by crises on the assigned critical days. These are the observance of tertian periods to the 11th day, and of quartan thence to the 20th, and even after. The first division will fall on the 3d, 5th, 7th, 9th and 11th days. The second division will happen on the 14th, 17th and 20th. After this, some have insisted on hebdomadal periods ; say from 20th to 27th, 34th, &c. Others have insisted on the 21st as the third critical day of this period. There is a determinate periodicity in the economy observable, in many conditions, and it is well marked in hectic, and intermittents. These circumstances, with the observations of a great proportion of physicians, serve to confirm the suggestion of crises happening on these days, far oftener than otherwise. The fact of simple fever often showing exacerbations every other day, confirms it. The visible crises are more constant in warm, than in cold latitudes. Notwithstanding, a discreet treatment will almost uniformly protect the economy from the dangerous and uncertain conflict of a perturbing crisis.

Severe, or very manifest *crises*, are not so much expected, nor seen at the present time, as formerly under the expectant treatment ; and for two reasons. One is, that a well timed application of the relaxing, and secerning treatment, supersedes and anticipates the necessity of these convulsive efforts of nature. The other is, when the treatment has been on the thesis of debility, and of a tonic kind, or a mixture of opposing prescriptions, the combined excitations of the disease and of the treatment, depress or exhaust the vital force

prematurely, so that the recuperative powers are disabled from effecting the necessary processes. All may be lost, with numerous attending anomalies. A mild case in a good habit so treated, may be protracted, and yet in the end be triumphant.

The previous history will apply chiefly to acute diseases ; but the same analogy may be transferred to those of the chronic kind, as these consist of protracted fevers, with their several local tendencies. Manifest crises do sometimes occur in these ; yet, the changes are more commonly in a silent manner.

A hidden pathological state sometimes exists in the inmost tissues, which may be very persistive, and yet scarcely sufficient to provoke those pyretic changes, which ultimately destroy the organism, if not removed. These secret tissual changes are sometimes removed by a well timed excitant and secernant treatment ; and, also, they have often been removed by powerful affections of the mind, as was mentioned (p. 265.) In these instances the tissues suffer an excitation which promotes capillary action, and especially absorption, so effectually, by a sudden crisis, that all the phenomena of disease are suddenly changed for those of health.

b. The second train of phenomena are of a more sombre cast. The instinctive and repulsive powers may have been suppressed at the onset, and the case prove fatal without much injury done to the tissues ; but commonly otherwise ; and in the conflict of disease these efforts have produced irremediable changes in the organism, and nearly exhausted its force by its excessive efforts. The sequences of morbid action, now in their turn, have become the causes of a fatal repose. The functions of organs destroyed by an excess of action, can never be restored by excessive stimulation. The intellect frequently becomes darkened from cerebral changes. The senses no longer respond to their former impulses, and insensibility lends its soothing aid in mitigating the agonies of suffering organs.

A great inequality of organic function prevails, some are excessive, and others dormant. The respiratory functions soon become oppressed, even if there is no immediate organic restraint. The *rale* is heard; the pneumogastric nerve has lost its force, and the external respiratory muscles are associated into severe efforts to expand the chest. The control of the voluntary sphincters is lost; deglutition is difficult; the *fæces* discharged involuntarily, as well as unconsciously; the wavering coma-vigil, if it had been present, is exchanged for secondary coma. Muscular motion is paralyzed, except perhaps some involuntary jerks. A fetid breath, and the cadaverous smell of the sick-bed, foretoken dissolution.

The fallen countenance assumes the Hippocratic aspect; along with a faltering pulse, cold extremities, and viscid sweats, the eyes have lost their lustre, and sink in the sockets; features sharpened and sunk; the general contour of expression lost from a paralysis of the facial nerves; the skin about the ears and temples contracted; the nose sharpened; face pale or livid. Little, except the first grade of vital force remains, and that is soon to cease; whilst, indeed, the whole train of moribund phenomena show a persistive nosodynamic state of the tissues.

c. The prognosis of diseases depends on a careful examination of the phenomena, and on observing whether they manifest more or less severity as the case proceeds. However, certain phenomena at the attack, and during the progress, indicate a tendency to dissolution rather than recovery. Some of these may be mentioned in order to show the weight of disease, and which may require early attention.

Great prostration of strength at the onset, with muscular tremors; deliquium in an erect position, and disposition to sleep, all show the weight of disease, and severe impressions on the nervous system of external relation. Pulse small, tremulous and frequent, 120 to 150 in a minute; either remaining small, or becoming more full and strong, yet not

abating in frequency. Or, again, a very slow and irregular pulse at the onset. Deep sighing, with oppressed respiration, and desire for fresh air.

As the disease advances, the head is hot whilst extremities are cold ; or high universal heat, with a frequent, sharp pulse, and tendency to delirium at an early period. Loss of place ; ignorance of friends ; and desire to go away. Livid countenance, maculæ, petechiæ, and severity of local affection. These do not require any exposition in this place.

SECTION XLV.

1. *On the Diatheses ; particularly the Synchoïd and Typhoid.*

IN order to gain some view of the intrinsic character of different habits of disease, we are led into a consideration of circumstances in which they appear to differ. The various particular, constitutional conditions in disease, which we discover, are called diatheses ; whilst yet we are not able on all occasions to determine satisfactorily, in what the disparity consists. Thus we speak of a scrofulous, cancerous, hydropic diathesis, &c., on account of noticing some discriminating phenomena, although not able to explore the whole of their arcana.

These specific diatheses may require particular remedies, which are only learned from experience. Notwithstanding, we discover in all these conditions certain modified states, which in a practical view merit attention ; and these we assign to be the opposing states of the synchoïd, and typhoid

diatheses.* Aside from any specific treatment, these states ought to govern the general treatment. Thus, there may be two subjects affected with scrofula, the general treatment of which may require to be considerably different.

We have occasionally made allusion to the diatheses; (Sect. xv. 6, et aliis,) but as it may be esteemed one of the most obscure subjects in pathology, and at the same time of the deepest interest in a therapeutical point of view, it merits the severest inquiry. We cannot here enter into a review of all the specific diatheses; our attention, therefore, must be directed to the two general states of the economy, which may prevail and preside in many habits of disease, and which have been called the synochoid, and typhoid diatheses. There are numerous intervening grades, which may be called simple fever, not approximating very near to either of these states; or a simple pyretic diathesis.

Although these terms might be considered objectionable, they are continued in conformity to usage, and as familiar to every one in apprehending two essentially different, and seemingly opposite pathological states existing in the morbid habit. From the earliest history of fevers they have been distin-

* We have no particular predilection for the use of these terms; dynamic and adynamic, or sthenic and asthenic might have been used. We would, however, have it expressly understood, that these terms are here used to express particular states of the system, without any reference to the causes. These modifications of diatheses are discovered in different subjects from the same causes, as in variola, rubeola, epidemic pneumonia, &c. They are oftentimes convertible in the same subject, but not so suddenly as some might suppose from mere appearances of debility. We, therefore, take the liberty of dissenting from the views of Drs. Bancroft, Armstrong, Davidge, and Dewees, (Prac. Phys. p. 169,) even if it be "incorrect in logic as well as in language," in considering that those affections alone should be called "typhus," which arise from "a specific contagion." It remains yet to be demonstrated that typhus does so arise; and if it does, facts warrant that it does incline, in many instances, to the synochoid diathesis; this is as fully demonstrated as that variola often verges to the typhoid state.

guished by some qualifying terms of their intrinsic character, synonymous with inflammatory and malignant, as expressive of two seemingly opposite states, and for the most part readily distinguishable.

In the different epidemics and endemics which have ever prevailed, it has been observed they commonly possess a predominancy of character inclining to one or the other of these states, and that they may in the same individual, change the one into the other. When the manifest contagious diseases spread, it has always been observed, that some partake of one diathesis, and some of the other; and the diagnosis has been esteemed essential in modifying the treatment. Indeed, from the same causes, one in a family may manifest distinctly a predominance of one state, whilst another as clearly shows the other. These facts are important in leading to an investigation of their intrinsic characters.

These states of the morbid economy are not peculiar to acute diseases of the severest grades. The same disparity in the features of the leading phenomena of these two diatheses may be observed in a minus degree, in the milder grades of fever, and even in chronic diseases. It may be sufficient to mention influenza, phthisis pulmonalis, and dropsy. Typhus mitior evidently shows sometimes one diathesis, and at other times a verging to the other; and this accounts for the distracting views that different physicians have formed of its pathological character, and consequently of the treatment. The first stage of phthisis is often clad in a deceptive garb of debility, furnished by the typhoid livery.

What are the Invariable and Necessary Circumstances which produce the Disparity of these Conditions?

In prosecuting the inquiry, we shall need to be reminded of certain pathological theses, which are well established, and

we shall, therefore, not stop to prove them. One is, that every inordinate impression on the tissues, if even through the mind, which is capable of altering the functions, is directly followed by a retrocession of fluids from the surface to the central organs and tissues. It is attended with anæmia externally, and hyperæmia internally. This will hold good from syncope up to apoplexy. Although the period may sometimes be very short, between the impression and the return of circulation in quick responding habits, yet the change has existed in some degree.

The principal physiological force existing, which must give energy to the vascular tissues enabling them to restore the equilibrium to the surface, must be the visceral ganglia and their nerves, since they accompany the arteries into their dermoid capillaries.

Let us now recall what has been amply proved, that early in every severe disease the internal capillary vessels are fully distended, and engorged, whilst anæmia exists on the surface. And, also, the physiological fact of the ganglia, and their plexuses being vascular; together with the pathological fact of these ganglia being found engorged in the numerous examinations of fatal typhoid cases, and the proposition appears to be established, that the derangements have produced an inability in the capillary circulations, and this is the immediate cause of the typhoid state. A similar derangement in the encephalon produces coma, paralysis, and perhaps apoplexy, attended with a failure of functions.

We have now found certain derangements in the circulations, sufficient to account for the phenomena presented, and the circumstances which produce these derangements have heretofore been amply discussed.

We will, however, concede, that what has been advanced may be common, in greater or less degree, to both the diatheses; and the inquiry must still be extended, viz. What makes the difference?

We assume it as a fact, that those cases which afford the clearest manifestations of a typhoid diathesis early show the most of an anæmic state of the surface ; and the inference must be, that these cases have the greatest burden of internal hyperæmia also ; and this is in conformity to autoptical inspections.

We improve, also, another fact, that the causes are more impressive under some circumstances, than others ; and, also, that they make greater impressions on some less resisting subjects, than on others.

What has been advanced may not only be considered as facts, but as universally so. With this assurance, we will introduce another entitled to equal credit ; which is, the lively susceptibility of some temperaments enables the tissues to respond more readily, and energetically than others to every injury offered them ; and in disease severe stimulations have been presented. These early responding actions restore circulation in some degree, both arterial and venous, if not perfectly ; and in sufficient season to save the pæsis of the ganglia, which must take place, if the enthrallments at the attack are continued. The circulation will now be more free and intense, in proportion to the severity of the impressions, and vascular force of individual idiosyncrasy, if all other things are equal.

It is supposed this state of things may take place spontaneously, and without the assistance of art, which is often the fact, and most generally so. The pathological processes now go on exhibiting that train of phenomena, which indicates the condition called the *synchoid diathesis* ; viz. heat, pain, redness, thirst, hard, and often throbbing pulse, capillary circulation free, wakefulness, with liability to delirium, fixed location with pain in some organ or tissue, blood on venesection quite florid, having a fibrinous crust, and cupped.

In analyzing the other limb of our subject, we merely need to make the relative inferences from the principles advanced.

The blood is not early restored to the surface, either by nature or art, it is not aerated in the lungs, nor is venous absorption excited sufficiently. The ganglial nervous force, including the internal respiratory, is so far paralyzed, and the tissues held in such rigid duration, that the recuperative powers of the economy cannot be excited to afford seasonable aid; for, the primitive or first grade of vital energy of tissues holds the nervous force in restraint by its acquired, or nosodynamic influence. It may be held until all functional action ceases; but this is supposing an extreme case. It most commonly falls out, that the responding impulses are drawn forth, but in an imperfect manner, and this gives occasion to the typhoid state.

The circulations, with all their relative associations, are but imperfectly performed, when compared with the expanded state of the synochoid diathesis, with arterialized blood. The congestive condition of capillaries internally and externally still remains, at least in some considerable degree. The state of the ganglial, or as combined with other nervous force constituting the nutritive system, bears some resemblance to that of the encephalon in hemiplegia, half active, half dormant. The circulations which do appear are wont to be irregular; forcible in some organs, with heat; whilst in others coldness, and inactivity exists. The same disparity is seen in the nervous functions of external relation; plain specimens of ataxia. There exists uncommon prostration of muscular power, with sometimes spasmodic jerks; inability of mind, with coma-vigil; pulse feeble, and frequent, say one hundred and twenty or one hundred and forty in a minute; surface pale, or often dusky, sometimes with petechiæ, vibices, &c., appearing, also, in the internal tissues; blood dark, and mostly destitute of the fibrinous crust, and scarcely coagulating. This train indicates the *typhoid diathesis*, in its highest degree; yet, it often appears with far milder phenomena.

There appears then, to be a manifest difference in these two pathological states, and that they arise either from modifications in the appreciable causes, or in the personal condition of the subject, rather than from any specific virus with an agency to produce either of them. The virus of small pox may give origin to either of them in different subjects; and by different treatment. So of scarlatina, and perhaps all diseases more or less.

There are constantly presented intermediate grades of diatheses, between the two extremes. In fevers of a milder grade, a predominance of one, or the other of these states may be easily discovered. The simple synochus and typhus may be cited as specimens. Always supposing the causes producing the typhoid state have been the most impressive, with the least vital ability to remove the derangements. It remains to be noticed, that whenever the embarrassments connected with the typhoid state of fever, are fully removed, the resulting phenomena will indicate the severest conditions of the synochoid state; and attended with accumulated tissual sensibility, and intensity of vascular action, with a hard pulse and florid blood.

2. Diathetical Remarks.

Having briefly recapitulated the distinctive characters of the synochoid and typhoid habits, we may offer a thesis on our own responsibility; viz. *that these conditions are sometimes convertible, or changed the one for the other.* This thesis cannot be fully examined here, as it rather belongs to therapeutics. Some references, however, may be made to it.

a. Suppose a subject exercised with a sthenic, or inflammatory fever, of course having a synochoid diathesis, having pain, with a moderately full and hard pulse, say one hundred

in a minute ; moderate heat, and slight propensity to delirium ; and in this condition should be treated with wine, brandy, quinia, opium, the arsenious solution, and perhaps some *et ceteras*.

In such an event, a manifest change of phenomena will occur in twelve hours, often less, and still greater in twentyfour hours. The phenomena may then quite well simulate, and even assume the characteristics of the typhoid state. Already paleness, sweats, coldness of the extremities ; pulse fluctuating from one hundred to one hundred and thirty or more in a minute ; thirst ; dry and tremulous tongue ; vertigo ; vomiting ; muscular tremors ; coma-vigil ; internal congestions, and prostration of strength.

If these measures are practised at an early period of almost any pyretic habit, which usually shows some inequality of functions, and depressions ; and yet, if left to the natural processes would soon develop a mild synchoid diathesis of easy treatment ; then, this artificial state will very certainly be produced ; attended with a tremulous pulse, and general prostration. Mild cases of fever when thus treated develop a factitious typhoid diathesis of very difficult management.*

As this factitious train of phenomena is supposed to indicate a fearful debility, the adviser may be induced to increase the quantity of the stimulants and tonics ; and yet it usually results, that the coldness, inability, and every typhoid phenomenon increases in proportion ; and the case is most certainly lost.

There is but little difficulty in discriminating these factitious cases, by an experienced observer, although they may be so

* In Dr Rush's *Med. Inquiries*, Vol. III. p. 45, he has given the following advice. " Even opium, in large doses, sometimes produces by its powerful stimulus the same symptoms which are produced by the stimulus of marsh miasmata. These symptoms are a slow pulse, coma, a vomiting, cold sweats, a sallow color of the face, and a suppression of the discharges by the urinary passages and bowels."

frequent in particular neighborhoods as to become factitiously endemic. It is uniformly, but unfortunately the case, that those who advise such treatment, are ready to impute the forbidding appearances to the necessary results of the disease, instead of the treatment.*

* As a specimen of the "incendiary treatment," we may insert an abstract of a letter from the late Professor N. Smith, of New Haven, in 1824. He gave it as he had seen it ordered in "a case of fever," at Middletown, Conn. The patient was ordered to take, in divided doses, the following quantities, every twentyfour hours, viz.

Three pints of wine.

Eight ounces strong Tinct. Cinchonæ.

Two hundred and eighty drops strong Tinct. Cantharides.

One and a half ounces Aqua Ammoniacæ.

One hundred drops of Fowler's Arsenious Solution.

One and a half pints of Decoction of Capsicum.

Four ounces Tinct. of Opium by injection.

As, also, various dietetic stimuli.

It appears by the above *bill of fare*, the correctness of which we have no reason to doubt, that it is a harder job, sometimes, to kill people with medicines when they are sick, than whilst they are well; for they continue occasionally, for several days under such regimen; indeed, such an enormous quantity of high stimuli that they become poisons. It is probable the diminished sensibility, and scanty absorptions render them inoperative, in part.

In the case of M. M. Leavenworth, æt. 25, (Dr Minor on Typhus Syn-copalis,) it appears he took daily on an average twenty grains of opium, and eighteen ounces of Tinct. of Bark, for about nine days before he died; as also, wine, brandy, arsenious solution, old spirit, broth; and a plenty of epispastics were applied. Also, frequently repeated enemas, with two fluid drams in each of tinct. opium. The patient had vertigo, vomiting, delirium, stupor, wakefulness, aortal throbbings; pulse from eighty to one hundred and twenty in a minute; skin cool and sweaty; total suppression of urine, &c. Such treatment requires no further remark than to say, it is Brunonianism outdone. Similar misfortunes have attended other, and remote neighborhoods to which such treatment has been transferred. It might be supposed that the Thompsonians are more consistent, in applying a part of their combustibles to the surface, even supposing they sometimes parboiled and singed their patients.

It is cordially accredited, that the "incendiary" treatment has not many advocates at the present time amongst men of science. M. Broussais, however, accuses Professor Rasori, of Italy, of the use of extravagant stimulating treatment, of a modified kind. "It is my duty," he says, "to point out

b. On the other hand, to *convert a typhoid state of disease to the synchoid*, in order for the safety of the case, and to render it of comparative security, with plain mitigating treatment, involves the aid of many of the profoundest principles of pathology, and discriminating practice.

A view of the pathological condition of organs shows the embarrassments that require to be removed. The longer this enthralled state of functions has existed, its alteration becomes the more difficult, and uncertain; and yet many cases not of the severest grade have been changed after several days continuance. In the most severe grades of adynamic, or malignant fever, there is a period that offers the greatest prospect of relief, and this is as soon as the heart and all the centrifugal apparatus first make an effort, after the subsidence of action at the attack has occurred; and before many changes in the tissues have taken place, or the pulsatory efforts become very frequent and small. The more severe the impressions of the causes have been, the shorter is the period of possible relief. In many instances it may be of only one, or two hours space, that the instinctive powers of reaction can be excited, and drawn forth in a manner to save the destruction of the functions of the vital organs. It is rare that opportunity is offered, or indeed improved in these hurried cases, in a manner to give the greatest possible relief.

Many cases, however, of very considerable severity do continue twentyfour, or fortyeight hours under many threatening embarrassments, which are remediable with discreet

these errors, because they serve to throw light, in place of experiments, on the mechanism and effects of vomiting; because they are connected as causes of disease, with the disorders of the digestive functions; and finally because it is high time to put a stop to the contagions of Rasorism, which threatens to seize on our schools, and to replace the system of Brown, of which our countrymen begin to be ashamed." *Phy. applied to Path.* p. 344. 2d Amer. Edit.

and energetic treatment. Although there may be a great sedation of many of the most important functions, yet direct stimulants and tonics do not grant the needed relief; for the organism is oppressed and suffers an inability of function, which cannot be removed until there is a returning freedom in the play of the nervous force.

Every kind of stimulation, unless directed in a successful manner to promote secretion, and capillary circulation, co-operates with the causes, and adds to the enthralled condition of the nervous force. The design must be to diminish the state of nosodynamia, relieve the paresis of the nervous tissues, promote secretion and absorption, and solicit the circulations from the centre to the surface.

We cannot enter particularly on the *methodus medendi* at this time, but our own experience justifies the statement, that such changes have been effected in severe dysentery, spotted fever, pneumonia typhoides, scarlatina, &c. Reference may be had to some cases in *Treatise on Epidemic Diseases, &c.* We have the testimony of many, eminent in the profession, of similar results in yellow fever, plague, cholera, and local fevers of the typhoid aspect. Some allusion to the treatment will be made in the next division, on therapeutics.

The foregoing brief expositions of the phenomena of disease, are all that can be offered at present. Yet constant allusions must be made to their seats, and attending phenomena in our further investigations. It would be irksome to review all the phenomena of the chronic habits, nor does it appear necessary, as they depend on a series of circumstances very similar, or of much affinity to the acute forms of disease.

3. *Concluding Remarks in reference to the Study of Pathology.*

The foregoing sections merely afford a bird's-eye view of the entire range that is necessary to be explored, in the study of pathology. If it can be conceded that any one department of medicine claims a special regard, it is this ; but, how greatly neglected ! It has so happened in the course of our experience, that some students in answering to public interrogatories, would be able to describe the bones of the carpus and tarsus, as well as the minutest muscles ; and likewise give a good account of chemistry and botany ; but when interrogated on the maladies affecting the human system, could scarcely give a definition of common diseases, and were mainly ignorant of the character of the morbid habit.

The excuse for this neglect has sometimes been the want of time, and that they had intended to bestow more attention to these subjects after they had got through, and gone into practice ! Is not this an abuse offered to the community ; to visit the chambers of the distressed, to profer counsel with the badge of confidence, and yet ignorant of the indispensables of a practitioner ? By such things the public is wronged, and the profession degraded. Well might the keen sarcasm of a certain legislator apply in such cases, who in his remarks on a bill before the legislature, for the declared purpose of preventing quacks from practising *without* diplomas, observed, he was much in favor of the bill, and only wished it extended, so as to exclude quacks *with* diplomas also.

Our desire is not to wound, but rather to heal, and we are willing to provoke to good works. It is all important that the adviser should be able to decipher the state of the internal organs, most commonly the seats of disease, by the external emanations from those organs when oppressed in func-

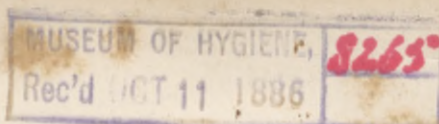
tion, and suffering structural changes. The external tokens are sometimes obscure from the want of intensity, but oftener from want of attention, or discernment.

There is most commonly, a catenation of tokens revealing the morbid habit, and even the sometimes obscure seats of particular diseases, which scarcely falls short of arithmetical exactness. The medical adviser should learn to construe their language, before he can form a just diagnosis, or estimate the kind or amount of remedies. The radical phenomena resulting from lesions of the nutritive tissues, must be distinguished from the fleeting nervous disturbances often hovering about. The empiric combats these fugitive symptoms with his specifics, and announces his patient to have as many diseases, as he discovers prominent phenomena.

The tokens of acute disease are intrusive, and force themselves upon the perception of the careless observer, whilst the instinctive energies are roused into manifest perturbation. The milder grades, and chronic forms of disease are more liable to deceive. Concealed as it were in ambush, in the inmost recesses, they prey upon the tissues of organic life. With slow and inappreciable changes the organism suffers a deterioration, and manifests its lesions by scattered light less vivid than a smothered coal-pit; exhibiting phenomena alone to be discerned, whilst remediable, by the scrutinizing tact of the pathologist; and fortunate, indeed, is that patient, who has an adviser possessing the faculty of discrimination.

Oftentimes, the slow movements of the torpedo outstrip the tardy progress of the ailment; and before the slothful pathologist discerns the worm gnawing the delicate tissues, the crimsoned, hectic cheek, and unrebukable thrush deride him in scorn. Or, the attenuated capillaries, impatient of delay, disgorge their fluids in the form of hydropic intumescences, and serous bloatings.

We may then be permitted to remark, that correct pathol-



ogy leads to the investigation of the character of disease, and the early ravages it is committing in the remote tissues and nutritive recesses. It is the concentration, as well as the completion of all other medical studies. It should be considered the common centre around which all others are arranged, though at unequal distances.

Anatomy and Chemistry, are the two supporting pillars in the temple of Medicine. They represent the basement and frame of the edifice ; but of how little use would these be without the finish, and without the endowments. As well might we expect the naked frame would defend us from the inclemency of the seasons, as that a physician should be prepared to compete with disease, without a correct comprehension of the principles of pathology.

We may then be suffered to observe, that however indispensable chemistry may be to the medical student, it merely prepares his mind the better to comprehend pathology ; and that, however important anatomy may be, not only to the surgeon, but to the physician also ; yet, it only portrays the form, location, and structure of animal bodies, without the vital impulses, and without the secret, tissual movements. Physiology sets the car in motion, whilst pathology exhibits its reddened axle exciting combustion in the whole machinery.

The first step in the investigation of the character of the
 disease is to determine whether it is the result of a
 remote cause. It is the object of the physician to
 find out whether the disease is the result of a
 remote cause, and if so, what is the nature of the
 cause. This is done by a careful history and
 physical examination. The history should be taken
 in the form of a list of questions, and the
 patient should be asked to answer them as fully
 as possible. The physical examination should be
 made in the same order as the history, and
 should include a careful examination of the
 general condition, the head, the neck, the
 chest, the abdomen, and the extremities.
 The results of the examination should be
 recorded in a systematic manner, and the
 physician should be able to give a clear and
 concise statement of the findings. The history
 and physical examination are the basis of the
 diagnosis, and the physician should be able to
 give a clear and concise statement of the
 diagnosis. The diagnosis should be based on the
 facts of the case, and should not be based on
 the opinions of other physicians. The
 physician should be able to give a clear and
 concise statement of the diagnosis, and should
 be able to explain the reasons for the
 diagnosis. The diagnosis should be based on the
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 be able to explain the reasons for the
 diagnosis.

OUTLINES OF ANATOMY :

ARRANGEMENT OF CONSTITUTIONAL DISEASES :

DIVISION III.

THERAPEUTICS.

OUTLINES OF NOSOGRAPHY :

OR AN

ARRANGEMENT OF CONSTITUTIONAL DISEASES,

ACCORDING TO THEIR

MOST COMMON TISSUAL SEATS.

If I may be allowed the expression, it is always the same individual, but in entering each system (tissue) it has a different appearance there, so that often you cannot recognise it.—BICHAT.

EXPOSITIONS.

AGREEABLY to our design, in treating of the physiological functions of the human economy, in the synthetic method, it appears equally proper, to begin at the simplest organization, in treating of the pathological states to which they are subject.

This appears to be in accordance with the fact, that a great proportion of diseases at their onset, have their seats in the simple tissues. Notwithstanding, in their progress, other contiguous tissues often become associated, and the event may show an injury done to every tissue of an organ.

It will be granted, again, that disease in its most complicated form, and impetuous career, may primarily seize on the whole of some organs, composed of many tissues. So it appears in the complex, or malignant diseases, attended with what might be called an exalted typhoid diathesis ; or, a tornado of the elements of disease. These are rather out of the common course of acute affections, and altogether so of the chronic. They accomplish in a short time, what the ordinary habits of disease do in a long period of conflict.

Dr Good, in his very scientific nosology, adopted the analytic method, and assigned the seats of disease, *in toto*, in the organs generally, and without descending from the compound to the simple organization. We will only stop to remark, that the course now pursued, is, in our opinion, most in accordance with the history of diseases. It was in-

tended to have followed up the pathological states in the exact order of the physiological, but farther reflection has convinced us, that this would not afford so good opportunity to illustrate the general character of disease.

An apology may be due for adopting the simple plan of embodying all constitutional disease into one class. This appears to us the most agreeable to facts, and at the same time assists in exposing the real simple character of disease, as disrobed of mysticism. We have merely made an attempt, in the preceding pathology, to expose this simplicity of the elements constituting disease, and when followed out may resemble the simple numerals in arithmetic. The intention is, to show, that all diseases partake of a state of excitation.

We can scarcely conceive of the existence of *disease*, when fully developed, and stripped of incidental contingencies, without a state of *excitation*, more or less intense; and therefore conclude it to be the more simple and natural method, to group all constitutional affections under one head. The discriminations of diatheses may be partly shown in the different orders; whilst the specifications of particular diseases are found in the genera, and their varieties.

There may be various states of organs attended with a deficiency of vital action, which, notwithstanding, arise from excitations, followed by paralysis, or inability of function. These should be considered as modified states of disease, and may require exciting remedies. The gangrene of a frost-bitten limb, and the dry gangrene may be of this kind. Syncope and asphyxy may need mild exciting treatment, although produced by excess of stimulation. Hemiplegia is connected with an excess of cerebral excitation; and ramollissement is the sequencè of antecedent abnormal excitation. Certain states of the diseased habit may, therefore, require exciting remedies, in the progress of abnormal changes.

Disease being a general affection, constituting a common morbid habit, is subjected by a pathological law of the eco-

nomy, to concentrate on some tissue, and form a local point, or focus. As soon as the special influences are altered, which directed the concentration to any particular point, and whilst the general morbid habit remains, the local concentrations, by other influences, may change to other tissues, requiring another nosographic order, and a new name; and there modifying the character of the morbid habit, by its peculiar reflex action.

Although we had retained a general knowledge of the opinion of Dr Rush, on the affinity existing in diseases, read many years past, yet we had entirely forgotten the following sentiment, and accidentally discovered it, after this arrangement was made out. We cordially accept its support. "However varied morbid actions may be by their causes, seats, and effects, they are all of the same nature, and the time will probably come, when the whole nomenclature of morbid actions will be absorbed in the single name of disease."*

It appears, that Broussais arrived to nearly the same conclusion, rather unconsciously, by another process in arguing; that is, by following out his notions of his favorite "irritation."† "This proposition is one of the keys to physiological pathology; it exhibits the secret tie which unites the slightest diseases with the most severe; it fills an immense hiatus, which has existed in the science from the most remote antiquity; it destroys this insulation of the different shades of irritation, which may be regarded as the source of medical ontology; it connects chronic and acute affections, those of different ages, sexes, and places, with one another; it shows the union of surgery with medicine," &c.

In some respects it appeared desirable to have made a division of the class into *acute* and *chronic* affections. But, on reflection, it was found difficult, and is indeed unneces-

* Med. Inq. Vol. II. p. 234.

† Commentary on Prop. 84, Prin. Phys. Med.

sary ; for, acute diseases often become chronic ; and again, the chronic, by slight aggravations, become acute. It is, therefore, difficult to draw a line of discrimination. It is certain both will remain until the primary pathological changes are removed, as well as their results.

The following summary is admissible of much improvement. Some affections may more properly belong to a nomenclature of local affections, and some no doubt are omitted which belong in this.

We are aware that other tissues might be admitted as seats of disease ; yet, concluded to make an attempt at the most obvious, and leave others for consideration. The cellular tissue performs many offices, and the effects of disease are often found in it, as it is a universal tissue. How far it may be found to be the primary seat of disease may be doubtful. It is very often only the reservoir of the morbid effects of disease in other tissues.

The vascular is, also, an universal tissue, and associated in almost every malady. Great homage may be due to it ; but, still it may rather be considered as an organ, and composed of the very tissues which are brought into review.

SYNOPSIS NOSOGRAPHIÆ GENERALIS.

CLASSIS SINGULARIS.

HABITUDO MORBOSA PYRECTICA COMMUNIS.

DEFINITION.

THE whole series of organic movements changed from their normal state, by the agency of certain causes impressing the vital susceptibility, producing a state of excitation. The phenomena manifest a perversion of the organic rythms, more or less, and other alterations of their functions. The general excitation is attended with local concentrations in tissues of different organic sensibility; the reflex actions of which modify the common diathesis. After uncertain periods of perturbed action, a subsidence ensues, often preceded by some unusual discharges; or, a continual conflict prevails until the vital energies cease.

ORDINES.

I.

Diathesis fervida fibrosa. (*Habitus phlogisticus.—Sthenia.*)

II.

Diathesis fervida mucosa. (*Habitus pyrecticus mitis.—Synochus.*)

III.

Diathesis fervida serosa. (*Habitus typhoides mitior.*—*Sthenia lenis.*)

IV.

Diathesis fervida complexa. (*Habitus typhoides gravior.*—*Ataxia, et Adynamia.*)

V.

Diathesis fervida erupta. (*Habitus phlogisticus.*—*Sthenia.*)

VI.

Diathesis glandularis indurata, et imposthumosa.

VII.

Diathesis capillaris adstricta.

VIII.

Diathesis muscularis adstricta.

IX.

Diathesis spino-encephalica depravata.

X.

Diathesis ossea depravata.

XI.

Diathesis specialis.

DIATHETICAL SCALE.

THE following general scheme will assist in comprehending the different states of the diseased system called *Diathe- ses*, which have been esteemed by most physicians, to exist in different conditions of fevers, and always considered essential in the diagnosis, as directing to modifications of treatment. The two most important adverse states may thus be illustrated, and considerably in accordance with the most approved writers on the pathology of fever; excepting their notions of debility.

1. DIATHESIS SYNOCHOIDES.

SYNOCHA. *Sthenia rigida*. With exalted phlogistic diathesis.

SYNOCHUS. *Sthenia mitis*. With mild phlogistic diathesis.

2. DIATHESIS TYPHOIDES.

TYPHUS GRAVIOR. *Sthenia oppressa*. With much inability of function; irregularity; enthrallment; rapid.

TYPHUS MITIOR. *Sthenia lenis*. With less oppression, and inability of function; mild typhoid habit; tardy.

Other terms might have been used, but these are preferred at present, as being familiar.

Some illustrations of these modified states of the system, were attempted in Section xlv.; to which particular reference should be made. They are farther specified in the Or-

ders. According to the present arrangement, the first and second comprise affections *ordinarily* of the synchoïd diathesis ; the third and fourth in like manner, the typhoid.

Some of these states of the general system are discoverable, in a modified manner, in every constitutional affection, whether fevers, strictly so called, or the exanthemata, or the phlegmatïæ ; and even in chronic diseases.

The scheme admits of many subdivisions, or grades and shades of difference, which are better discriminated in practice, than delineated on paper.

ORDINAL ARRANGEMENT.

THE character of the common morbid habit may be modified,

- 1st. *As the principal local affection, emanating from the general habit, may concentrate on the fibrous membranes, attended with intense reflex actions.*

ORDER I.

DIATHESIS FERVIDA FIBROSA.

(*Habitus phlogisticus.*—*Sthenia.*)

FIRST SERIES.

GENUS 1. SYNOCHEA. *Enecia cauma* of Good ; Inflammatory fever.

DEFINITION OF CHARACTER.

A state of general high excitement, preceded by a sensation of lassitude, and chilliness ; pulse full, hard, and moderately frequent ; pain intense. Blood drawn usually covered with a fibrinous pellicle. Skin dry, and hot ; tongue coated with a white fur ; urine high colored and scanty. Location of the disease, principally, in the fibrous or fibro-muscular membranes of any part of the body ; liable to produce effusions, adhesions, or suppurations, by associating other neighboring tissues in the series of morbid action.*

*It is to be understood, that the vascular systems throughout the body, act preternaturally, in *all* diseases of excitation. The fibrous tissues are

GENUS 2. MENINGITIS. *Empresma cephalitis*, G. Phrenzy.

Commencing with the common pyretic phenomena ; also, pain in the head ; redness of the face, and sometimes of the

about as freely penetrated by vessels, as any other tissue, but not so much with red blood ; however they become considerably injected when inflamed. All inflammations in this tissue from mechanical injuries, are found to be severely painful, and the same occurs from a concentration of disease, forming the local affection on this tissue. The dense and unyielding fabric occasions a divellication of nervous filaments, when only moderately distended with fluids. The sympathetic influences radiating from such inflamed parts, by their reflex actions on the general system, produce a free and high state of reaction, or fever, in connection with the general diseased impression.

Bichat insists on the "vital activity" of the fibrous tissue ; and "that it is the seat of pain, and of inflammation" ; that "all the kinds of sympathies are observed in it" ; that "remote organs are excited into disease by it," and yet, "that it hardly contributes to the formation of pus." (Gen. Anat. Vol. II. p. 278.) He has said, that inflammation was little understood, yet, that "the periosteum seems to be affected by it."

We insist that the chief seat of inflammation is in this tissue, in all the diseases of this order, and that the effusions, which are the effect of its excitation, are made on its surface, and of course into the adhering cellular tissues ; yet, where the adjoining membrane is close and dense, it may be made on a free surface ; as in pleuritis, &c.

Bichat also admits that the fibrous tissues may be injected.

Vicq d'Azyr says he has seen the dura mater red, and of a fleshy appearance.

Dr Dewees speaks confidently of this tissue being inflamed, "attended with a high degree of pain and irritation." He also says, "Inflammation may exist in the cornea, and proceed to the effusion of *coagulable lymph*, and even small ulcers occur, without any red vessels being visible either in this coat or in the sclerotic." (Prac. Phys. p. 289.)

Dr Eberle speaks of phrenitis seated in the dura and pia mater.

Dr S. Smith speaks of the dura mater as more vascular than natural, and adhering to the cranium.

Shaw in his Manual of Anatomy, speaks of the dura mater as "blood-shot."

Andral says, "the serous membranes are much less frequently altered in their own proper tissue, than in the cellular layer that lines their external surface." (Path. Anat. Vol. II. p. 357.) This is what has been called the fibrous fascia.

Reisseissen first demonstrated a fibrous tissue below the mucous in the

adnata of the eyes ; intolerance of light and sound ; watchfulness ; delirium.

GENUS 3. SCLEROTITIS. *Ophthalmia taraxis acuta*, G.
Fibrous ophthalmia.

Inflammation of the dense coats of the eye ; pain severe, and burning in the interior of the eye ; headache ; intolerance of light ; flow of acrid tears.

Var. 1. *Corneitis*, of the cornea.

Var. 2. *Iritis*, of the iris.

GENUS 4. TONSILLITIS. *Empresma paristhmitis tonsillar*, G. Quinsy.

Tumefaction of the tonsils ; heat, pain ; difficulty of swallowing ; liable to suppuration.

GENUS 5. PAROTITIS. *Empresma parotitis*, G. Mumps.

Pain, and tumefaction of the parotid glands, and adjacent parts ; liable to a metastasis to the testes in males, and the mammæ in females ; or in either sex, to the membranes of the brain.

GENUS 6. OTITIS. *Empresma otitis*, G. Inflammation of internal ear.

Pain in the inner ear acute ; sometimes delirium, or coma ; liable to suppuration, often followed by caries.

GENUS 7. ODONTITIS. *Odontia dolorosa*, G. Inflammation in the dense membranes of the teeth.

Pain acute ; inflammation of the investing membranes of the teeth, and jaws ; tumefaction.

trachea, and extending into the bronchiæ. When inflamed it furnishes the fibrinous exudations in croup, and pneumonia.

Broussais, and others teach, that the basis of the skin consists of "a fibrous network" ; hence the effusions in phlegmons, &c.

The fibrous tissue of the hollow organs, called sometimes muscular, and nervous, are most affected in phlegmonous, or circumscribed inflammation of those organs.

GENUS 8. LINGUITIS. *Dysphagia linguosa*, G. Inflammation of the tongue.

Pain, tumefaction, deep redness of the tongue ; mouth and fauces compressed ; tongue thrust out ; deglutition impeded, and danger of suffocation.

GENUS 9. PHARYNGITIS. *Cynanche pharyngea*. Inflammation of the pharynx.

Inflammation of the pharynx ; tumefaction internally ; deglutition prevented ; distress, and fever severe.

GENUS 10. LARYNGITIS. *Empresma laryngitis*, G. Inflammation of the larynx.

Pain, and tumefaction of the circumjacent textures of the larynx ; cough ; liable to prove suddenly fatal from the tumefaction producing suffocation.

GENUS 11. TRACHEITIS. *Empresma bronchlemmitis*, G. Croup, Hives, Rattles.

Inflammation of the fibrous and mucous tissues of the trachea ; inspiration attended with a sonorous, shrill sound ; fibrinous exudation, often extending to the bronchia.

GENUS 12. PNEUMONITIS FIBROSA. *Empresma pleuritis*, G. Pleurisy.*

* SPECIMEN OF PNEUMONIC AFFECTIONS, WHICH MAY BE APPLIED TO SOME OTHER ORGANS, IN RELATION TO THE TISSUES.

PNEUMONIA, Cullen. Inflammation of the lungs.

Varieties. 1st, — *fibrosa*. Pneumonitis.

2d, — *mucosa*. Peripneumonia notha.

3d, — *serosa*. Mild Pleurisy ; liable to terminate in acute hydrothorax.

4th, — *cellulosa*. Phlogotic inflammation ; liable to terminate in imposthumation.

5th, — *tuberculosa*. Tuberculous phthisis.

6th, — *complexa*. *Pneumonia typhoides*, or *epidemic pneumonia*. Involving all the tissues.

It will be unnecessary to notice the varieties in all the organs ; they will

Inflammation of the fibrous tissue of the lungs and exterior parts, and associating the serous ; pain acute, impeding respiration ; dry cough ; pulse hard and tense ; fibrinous effusions and adhesions between the pleuræ.

GENUS 13. **CARDITIS.** *Empresma carditis*, G. Inflammation of the heart.

Oppressive pain referred to the region of the heart, increased by a recumbent posture ; frequent, hard and irregular pulse ; forcible palpitations ; oftentimes a cough.

GENUS 14. **DIAPHRAGMITIS.** *Empresma pleuritis diaphragmatica*, G. Inflammation of the diaphragm.

Pain, with a sensation of constriction in the præcordial region ; short, oppressed respiration ; often hiccup ; slight alienation of mind ; distortion of the muscles of the face, representing a grinning, or risus sardonicus.

GENUS 15. **GASTRITIS.** *Empresma gastritis*. G. Inflammation of the stomach.

Oppressive pain at the epigastric region, aggravated by every thing swallowed, and by pressure ; vomiting, with a sensation of burning heat ; pulse small, hard and frequent.

GENUS 16. **ENTERITIS.** *Empresma enteritis*, G. Inflammation of the fibro-muscular coat of the intestines.

Acute pain in the umbilical region, increased on pressure, and by bending forwards ; tension of the abdomen ; frequent, small, hard pulse ; vomiting ; coldness of the extremities.

Var. 1. *Duodenitis*.

Var. 2. *Colitis*.

GENUS 17. **HEPATITIS.** *Empresma hepatitis*, G. Inflammation of the liver.

be developed in the general orders as we proceed. The general pathological character of the diseases will be shown by the definitions of the orders to which they are attached.

Pain acute in the right hypochondrium ; slight tension and tenderness on pressure ; difficulty of lying on the left side ; often pain above the right shoulder ; pulse, heat, and thirst indicative of synocha.*

GENUS 18. SPLENITIS. *Empresma splenitis*, G. Inflammation of the spleen.

Pain in the left hypochondrium, steady ; increased by pressure.

GENUS 19. NEPHRITIS. *Empresma nephritis*, G. Inflammation of the kidneys.

Pain in the loins, and along the course of the ureters ; numbness of the thigh, and retraction of the testicle of the side affected ; micturition, or ischuria.

GENUS 20. CYSTITIS. *Empresma cystitis*, G. Inflammation of the bladder.

Pain, soreness, and tumefaction in the hypogastrium ; micturition, or ischuria.

GENUS 21. PROSTATITIS. Inflammation of the prostate gland.

Pain, referred to the neck of the bladder ; suppression of urine.

GENUS 22. URETHRITIS. Inflammation of the urethra.

Heat, pain and thickening of the coats of the urethra, without discharges ; urination frequent, difficult, and painful, or suppressed.

GENUS 23. ORCHITIS. *Empresma orchitis*, G. Inflammation of the testicles.

Pain, tumefaction, and tenderness of the testicle ; nausea, and pain in the loins.

* The capsule of Glisson, accompanying the portal ramifications in the liver, is a fibrous membrane. So also the middle tunic of the blood vessels.

GENUS 24. METRITIS. *Empresma hysteritis*, G. Inflammation of the uterus.

Pain, tumefaction, and tenderness in the female hypogastrium; increased sensibility of the os uteri; frequent, hard pulse; pain in the loins; not limited to puerperal patients.

GENUS 25. MASTITIS. Inflammation of the female breast.

Pain, swelling, hardness, tenderness, and at length redness in the breast; liability to suppurate.

GENUS 26. PERIOSTITIS. Inflammation of the periosteum.

Severe and incessant pain, referred to deep seated parts surrounding the bones; liable to effusion and suppuration.

GENUS 27. PARONYCHIA. *Phlysis paronychia periosteï*, G. Felon, malignant whitlow.

This is periostitis of the phalanges of the fingers, below the theca, or in it.

GENUS 28. PHLOGOSIS. *Phyma furunculus*, G. Boil.

Pain, tumefaction, heat, redness in the skin; liable to suppuration, with a central core.

SECOND SERIES,

As affecting the arthro-dial fibrous membranes, and fascia of muscles.

GENUS 29. RHEUMATISMUS. *Arthrosia acuta*, G. Rheumatism.*

Acute pain in the fibro-serous membranes of the large articulations, followed by a smooth, shining tumefaction; not liable to suppurate; immobility of the joints and muscles.

Var. 1. *Acutus*.

Var. 2. *Chronicus*.

* It is understood that the pyretic character of synocha, at the head of this order, attends all these affections.

GENUS 30. LUMBAGO. *Arthrosia acuta lumborum*, G.
Rheumatism of the loins.

Pains, affecting the loins, extending towards the crura of the diaphragm ; immobility of the body.

GENUS 31. RHEUMATISMUS FASCIALIS. *Rheumatalgia*.
Rheumatism of the fascia and muscles.

Severe pain, soreness, and sensibility of a whole limb, or some portion of the fascia and muscles ; immobility ; tenderness, without tumefaction ; sporadic. Similar to the following genus, but without effusion, and liable to persist. The peculiarity of the diathesis, in this instance, is opposed to a morbid secretion ; in the other, effusion readily takes place.

GENUS 32. PHLEGMATIA DOLENS. *Sparganosis puerperarum*, G. Swelled leg. Milk leg.

Either sex, affected with an acute morbid diathesis, attacked with severe pain, and soreness in the groin, fascia, and muscles of the leg ; in a few hours followed by a tense, glossy tumefaction, extending over the whole limb ; not suppurating, but continuing several weeks or months ; pain mitigated by the swelling ; gelatino-albuminous effusion into the cellular tissue ; most commonly occurring in puerperal patients ; yet in other instances, and in both sexes.

GENUS 33. PODAGRA. *Arthrosia podagra*, G. Gout.
Arthritis.

Pain, severe in the small joints, commonly in the toes, and ball of the foot ; followed by swelling, not suppurative, but often followed by calcareous concretions ; occurring by paroxysms and remissions, and occasionally with metastasis to the organic viscera.

Var. 1. *Larvata*, G. Disguised, atonic, or wandering gout ; local affection not yet fixed.

Var. 2. *Retrograda*, G. Retrograde gout. After having attacked the extremities, the local affection becomes transferred to some of the organs of the three visceral cavities ; attended with severe inflammation ; this may occur even without going to the extremities first.

GENUS 34. HYDARTHROS RHEUMATISMUS. *Arthrosia hydarthrus entonicus*, G. Rheumatic white swelling.

Chronic inflammation, pain and swelling of the larger joints ; involving the dense membranes in the local affection ; swelling colorless ; tender on pressure ; slow imperfect suppuration ; thickening of membranes.

Var. 1. *Strumatosus*. Scrofulous white swelling. Pain deep seated and circumscribed ; slow inflammation, imperfectly suppurating, and disorganizing the bone, and integuments ; irritative fever.*

* Inflammation is not so manifest in the dense tissues as in the softer ; in this instance the parts are more yielding, they are more susceptible, and show the traces of altered structure more distinctly than the denser. Notwithstanding, we find the fibrous tissue very much thickened, or affected with hypertrophy, as in the last instance, in scrofulous white swelling. The cartilages of the acetabulum of the hip joint, for example, afford purulency in the disease called morbus coxarius, whilst no traces of inflammation are otherwise discoverable. The signs of inflammation were so entirely absent, that Mr Brodie supposed the inflammation was the effect, and not the cause, of the ulceration. It is probable no pathologist of the present time will assent to this, but will consider that the formation of purulency is the effect of inflammatory action, notwithstanding the tissue does not develop the ordinary signs of inflammation in an eminent manner, on account of its density and incapability of receiving large engorgements. So the fibrous tissue may be severely affected in acute disease, without manifesting traits of disease like the soft membranes.

THE character of the general habit may be modified by the reflex actions,

2dly. *As the local concentration may chiefly affect the mucous membranes, lining the hollow organs.*

ORDER II.

DIATHESIS FERVIDA MUCOSA.

(*Habitus pyreticus mitis.*—*Synochus.*)

DEFINITION OF CHARACTER.

The common diathesis, in the diseases of this order, is of a milder pyretic grade than the preceding. Although in some instances, cases present of a very considerable intensity of vascular action; yet, the common range of diseases of the mucous tissues, is of a milder grade than those of the preceding order, although commonly of the synochoid character. When they are very severe, it is on account of the contiguous tissues being associated with the mucous in the local affection. The diseases may be acute or chronic.

The grade of morbid intensity corresponds with the common received opinion of *Synochus*, a grade of intensity below that of synocha. However, absolute precision is not expected in these cases. For a synopsis of the physiological character of this tissue, see Section vii. 5.

FIRST SERIES.

GENUS I. CATARRHUS. *Catarrhus communis*, G. Catarrh, or coryza.

Irritation, or inflammation of the mucous membrane of the nostrils, fauces, frontal sinuses, and trachea; at first, thin acrid discharges, afterwards mucous; sneezing and coughing.

Var. 1. — *communis*.

Var. 2. — *epidemicus*. Influenza. Attack sudden ; pain in the forehead ; cough, and expectoration ; sneezing ; epidemical.

GENUS 2. CONJUNCTIVITIS. *Ophthalmia taraxis mitis*,
G. Common sore eye.

Redness, heat, irritation, in the tunica conjunctiva ; sometimes pain ; watery discharge.

Var. 1. — *acuta*.

Var. 2. — *chronica*.

Var. 3. — *purulenta*. With muco-purulency.

Var. 4. — *chemosis*. Adnata turgid, with dark blood.

GENUS 3. APHTHA. *Emphlysis aphtha*, G. Thrush.

Minute vesicles on the tongue, gums, and fauces ; at first transparent, soon of a pearl color ; often migrating through the eustachian tube, nostrils, and alimentary canal ; terminating in excoriating ulcerations.

Var. 1. — *infantum*. White thrush.

Var. 2. — *maligna*. Black thrush.

Var. 3. — *diphtheritis*.

GENUS 4. TRACHEITIS MITIS. — Mild croup.

Respiration impeded ; hoarse cough ; soreness in the glottis ; discharge of mucus.

GENUS 5. PNEUMONITIS MUCOSA. *Peripneumonia notha*,
G. Spurious pleurisy.

Acute inflammation of the mucous membrane of the lungs ; pain obtuse in the thorax, and often in the forehead ; pulse moderately hard and frequent ; respiration oppressed, attended with cough, and frequent expectoration of mucus, or sanies, which is liable to accumulate, and suppress respiration.

GENUS 6. PHTHISIS MUCOSA. *Marasmus catarrhalis*, G.

Consumption from an affection of the mucous membrane of the lungs.

Chronic inflammation of the mucous membrane of the trachea, bronchia, or both; coldness of the surface and extremities; frequent, small, and hard pulse; pain in the side, or some part of the thorax; cough, dry at first; afterwards expectoration, more or less copious; shortness of breath on exercise; fever ultimately assuming the hectic character; emaciation; sweats; diarrhœa. (See Order vi. G. 5, 6, 7, 8.)

GENUS 7. PERTUSSIS. *Bex convulsiva*, G. Hooping cough; chin-cough.

Slight pain; affection of the mucous membrane of the bronchia; convulsive cough, occurring by paroxysms, accompanied with a shrill, protracted sound in inspiration; supposed to be contagious.

GENUS 8. FEBRIS GASTRICA. — Gastric fever.

Irritation, or inflammation in the mucous membrane of the stomach, prevailing mostly in warm seasons; pulse moderately hard, and frequent; slight pain, unless extending to other tissues; tenderness on pressure; attended with emesis.

GENUS 9. ERYTHEMA GASTRICUM. — Erythematic blush.

Irritation of the mucous membrane of the stomach, often extending to the fauces; intolerance of food or drink; sensation of heat, and tenderness in the stomach; mucous tissue liable to become softened.

GENUS 10. ENTERITIS MUCOSA. — Mild inflammation of the intestines.

Inflammation of the mucous coat of the intestines, not indicated by pain, unless other tissues are involved, but gener-

ally by symptoms of mild fever ; occasional diarrhœa ; intolerance of emetics, cathartics, and stimulants ; tenderness on pressure.

GENUS 11. GASTRO-ENTERITIS. Inflammation in both stomach and intestines.

Similar to the above, only more extensive.

GENUS 12. FEBRIS BILIOSA. — Biliary fever.

Same as gastro-enteritis, only the irritative state of the membrane extends into the liver, producing a *morbid* secretion of bile.

GENUS 13. DYSPEPSIA. *Limosis dyspepsia*, G. Bad digestion.

Digestion impaired ; appetite unsteady ; eructation ; cardialgia ; nausea ; chronic irritation of the mucous coat of the stomach ; occasional diarrhœa, or costiveness.

GENUS 14. DYSENTERIA LENTA. *Dysenteria simplex*, G. Mucous dysentery.

Inflammation, or irritation of the mucous coat of the rectum ; frequent dejections of mucus ; gripings, and tenesmus ; fever mild.

GENUS 15. CHOLERA INFANTUM. — Cholera of infants.

Usually attacking children at the age of dentition, and in the warm season of the year ; some vomiting ; debility ; frequent intestinal discharges, of thin, watery, and occasionally, bilious materials ; sometimes a curded substance ; small, and frequent pulse ; tumid abdomen ; lingering fever, producing great emaciation.

GENUS 16. ERYTHEMA URETHRALIS. *Paruria ardens*, G. Micturition.

Necessity of urinating very frequently ; urine in small quan-

tities, and bloody ; irritative state of the membrane, extending into the bladder.

GENUS 17. DIARRHŒA. *Diarrhœa*, G. Looseness.

Frequent alvine discharges of various materials ; more or less gripings ; absence of tenesmus.

Var. 1. — *stercorea*. Copious discharges of thin, fecal matter.

Var. 2. — *mucosa*. Discharges of viscid mucous matter for the most part.

Var. 3. — *chylosa*. Discharges of a milky appearance.

Var. 4. — *lienteria*. Aliment discharged with little alteration.

Var. 5. — *aquosa*. Discharges copious, and of a watery kind.

Var. 6. — *biliosa*. Discharges containing bile.

SECOND SERIES.

Attended with mucous discharges, or accumulations ; also, discharges from organs connected with the mucous surfaces.

GENUS 18. PTYALISMUS. *Ptyalismus*, G. Salivation.
Discharge by spitting.

Copious discharge of muco-salivary matter from the mouth and fauces.

Var. 1. — *spontaneus*. From local irritation, as pregnancy.

Var. 2. — *hydrargyratus*. From use of mercury.

GENUS 19. ASTHMA HUMIDUM. *Asthma humidum*, G.
Common, or mucous asthma.

Expectoration of viscid mucus ; suffering exacerbation, preceded by dulness, lassitude, oppression of the præcordia ; laborious respiration, aggravated by a recumbent position.

GENUS 20. DIABETES MELLITUS. *Paruria mellita*, G.
Flow of sweet urine.

Copious discharge of urine, containing saccharine matter, affording the smell and taste of honey; thirst, and frequent pulse; dryness of the skin; costiveness.

Var. 1. — *simplex*. Of limpid urine.

Var. 2. — *excrementitius*. Excrementitious discharges in fevers.

GENUS 21. LEUCORRHŒA SIMPLEX. *Leucorrhœa communis*, G. Fluor albus; Whites.

Discharge of mucous matter from the vagina, without infection; usually heat of urine; disappearing during menstruation.

Var. 1. — *acrior*. Acrimonious and fetid.

GENUS 22. BLENORRHŒA. *Blenorrhœa simplex*, G. Gleet.
Mucous discharge from the urethra, without infection.

GENUS 23. BLENORRHŒA VIRULENTA. *Blenorrhœa luedes*, G. Gonorrhœa; Clap.

Copious discharge of vitiated mucus from the glands of the urethra; burning pain in micturition; from impure, or inordinate coition; infectious.

GENUS 24. SYPHILIS. *Lues sypphilis*, G. Pox. *Lues venerea*.

A vesicular eruption, most commonly on the glans penis, terminating in ulcerations not inclined to heal, with ragged edges, called chancres; for the most part tumors in the groin, called buboes; copper-colored spots on the skin succeeding, with nodes on the bones, and deep seated pains; ulceration in the throat, deep and ragged, affecting the cartilages, and destroying them; produced by an irritating infectious material, introduced through the mucous membrane of the glans penis, or by excoriation on any part of the body; very persistive in

its character, and not readily eliminated from the system ; irritative fever ; emaciation.

ACCUMULATIONS IN MUCOUS CAVITIES.

GENUS 25. HYDROPS UTERI, G. Dropsy of the uterus.

Tumefaction, with obscure fluctuation in the hypogastric region ; lower section of the uterus elastic to the touch.

Var. 1. — *mucosus*.

Var. 2. — *hydatidosus*.

GENUS 26. HYDROPS TUBALIS, G. Dropsy of the Fallopian tube.

An intumescence in the iliac region ; spreading transversely ; with obscure fluctuation.

GENUS 27. HYDROPS OVARII, G. Dropsy of the ovary.

Intumescence in one, or both iliac regions, spreading gradually over the abdomen ; fluctuation obscure.

THIRD SERIES.

As the local engorgements may be attended with discharges of blood.

GENUS 28. EPISTAXIS. *Hæmorrhagia narium*, G. Bleeding at the nose.

Discharge of blood from the nostrils ; commonly preceded by pain and heat in the forehead.

GENUS 29. HÆMORRHAGIA LARYNGIS. Bleeding from the larynx, or trachea.

Spitting of blood, not intimately mixed with mucus ; absence of cough.

GENUS 30. HÆMOPTYSIS. *Hæmorrhagia hæmoptysis*, G. Spitting of blood.

Flow of blood from the mucous membrane of the lungs, with cough; commonly preceded by pain, or pressure under the sternum; when scanty, mixed with mucus; when profuse, red and coagulating.

GENUS 31. HÆMATEMESIS. *Hæmorrhagia hæmatemesis*,
G. Vomiting of blood.

Large quantities of dark blood from the mucous membrane of the stomach, by emesis; distress; sinking.

GENUS 32. HÆMORRHAGIA INTESTINALIS. Intestinal discharge of blood.

Large quantities of blood discharged, *per anum*, from the intestines, or liver. Usually occurring in the latter stage of typhus, from the mucous coat.

GENUS 33. HÆMATURIA. *Hæmorrhagia hæmaturia*, G.
Bleeding from the urinary passages.

Discharge by the urethra; preceded by turgescence, pain, and tension, in the region of the bladder.

GENUS 34. HÆMORRHOIS. *Hæmorrhagia proctica*, G.
Bleeding piles.

Dropping of blood from the hemorrhoidal vessels, preceded by heat, irritation, tension of the part, and pain extending up the back.

GENUS 35. MENORRHŒA. Catamenia.

Stilicidium of sero-cruor from the uterus, preceded by slight uneasiness, and sensation of heaviness in the loins; occurring every lunation; not coagulable. This is a physiological secretion, unless in excess, when it becomes coagulable.

Var. 1. — *naturalis*.

Var. 2. — *serosa*. Serous periodical discharge, usurping the natural.

GENUS 36. HÆMORRHAGIA UTERI. *Hæmorrhagia uterina*, G. Flooding.

Immoderate flow of blood from the uterus ; coagulable.

Var. 1. — *menstrualis*. Excessive flow at the monthly period.

Var. 2. — *parturientis*. Discharge of blood before, and during delivery.

Var. 3. — *puerperalis*. Immoderate flow after delivery.

THE character of the common morbid habit is also modified, by the reflex actions,

3dly. *As the local concentration may chiefly affect the serous membranes, with feeble and peculiar sympathetic associations.*

ORDER III.

DIATHESIS FERVIDA SEROSA.

(*Habitus typhoides mitior. Sthenia lenis.*)

DEFINITION OF CHARACTER.

The phenomena in the diseases of this order, exhibit a low grade of responding action, when compared with the two last. In the series of acute diseases, the chills are slight ; lassitude considerable ; pulse small, compressible, and frequent, from 90 to 120 in a minute ; the general aspect fallen, with paleness ; a disposition to coldness and drowsiness ; sighing. In the progress of diseased perturbation, numerous phenomena are developed, which must be learned from its extended history. The diseases of this order are sometimes so procrastinated as to be called chronic.

FIRST SERIES.

GENUS 1. TYPHUS MITIOR. *Enecia typhus*, G. Typhus, nervous, or slow fever; Dothineritis, or typhoid fever.

Pains slight and erratic; chills moderate; pulse frequent, small, and compressible; dull pain in back of the head and neck; sighing; despondency of mind; lassitude; inclination to sleep. Location in the serous tissues of the brain; as the disease progresses for several weeks, the phenomena become varied, such as coma-vigil, low muttering delirium, diarrhoea, sub-sultus, furred tongue, with brown list in the centre: in fatal cases, insensibility, with hydrocephalus.

GENUS 2. PLEURITIS MITIS. *Empresma pleuritis*, G.
Mild pleurisy.

Pains slight and persistent in the region of the thorax, increased during inspiration; fever moderate and protracted; location diffused in the serous tissues of the thorax; liable to terminate by adhesion, or hydrothorax.

GENUS 3. PERITONITIS MITIS. *Empresma peritonitis*, G.
Inflammation of the peritoneum.

Pain, and tenderness of the abdomen generally, increased on pressure, and an erect position; location extensive in the peritoneum covering the viscera, and lining the parietes of the abdomen; liable to effusion of sero-purulent matter, or adhesion, or effusion of serum, constituting ascites.*

GENUS 4. ARTERITIS. Inflammation of the inner coat of the arteries.

Strong, sharp, and frequent pulsatory action of the arte-

* When severe peritonitis exists, it stands connected with the subjacent muscular, or fibrous tissues.

ries generally, but especially in certain ramifications more particularly affected; when in the cœliac artery, it offers some resemblance to an abdominal aneurism.

GENUS 5. PHLEBITIS. Inflammation of the inner coat of veins.

Signs of irritative fever generally; pulse frequent, and irritable; sometimes arising from venesection; having a red list along the course of the vein; an effusion of sero-purulent matter often found in the veins.

GENUS 6. DELIRIUM VIGILANS. *Mania e potu.* Tremulent delirium.

Pulse moderately accelerated, sometimes more full and hard, commonly frequent and compressible; mild delirium; muscular movements feeble, and tremulous, sometimes convulsive; watchfulness persistent for a considerable period; restless anxiety, and inquietude; aspect fallen; occasional nausea and faintness; fugitive pains, mostly in the head. Occurring in persons, who have ordinarily made too free use of alcoholic potations.*

GENUS 7. IRRUPTIONES. Irruptions into the serous cavities.

These have been ascertained to be pretty frequent; but their characters are not at present definable. They often accompany malignant fevers, especially the exantheams, and are attended with much distress. Chronic irruptions have often been noticed in autoptic examinations.

* We may here remark, that the seat of local tendency is in the serous membranes of the brain, as they have commonly been found surcharged with serum, and the ventricles filled, as in typhus; also the sinuses, with the veins, greatly distended. The nervous system has previously acquired a morbid susceptibility, and tremulously discharges its functions, when the common causes of disease are applied to the system. The diathesis compares the best of any with the present order.

SECOND SERIES.

Serous effusions into cavities not having apertures.

GENUS 8. ANASARCA. *Hydrops cellularis*, G. General intumescence.

Accumulation of serosity in the serous cells of the cellular tissue universally, especially in the lower extremities; obscurely diaphanous; pitting on pressure; scantiness of urine; frequent pulse; dyspnœa; inability to exercise, especially in ascending heights.

GENUS 9. HYDROPS DARTI. Dropsy of the scrotum.

Soft, œdematous tumefaction of the cellular tunic of the scrotum; often large, and obliterating the penis; imperfectly diaphanous.

GENUS 10. ŒDEMA. *Hydrops cellularis artuum*, G. Œdema.

Intumescence of the cellular tissue of a part; often the joints, but more commonly of the feet, in which instance it is increased by an erect position; pitting on pressure.

GENUS 11. HYDROCEPHALUS. *Hydrops capitis*, G. Dropsy in the brain.

Headache; synchoid, or typhoid fever, followed by squinting; torpidity of the body and intellect; dilated pupils; coma. An effect of previous inflammation, producing effusion of serum into the ventricles of the brain, and other tissues.

Var. 1. — *internus*.

Var. 2. — *externus*. Sutures separated, and external enlargement.

GENUS 12. HYDRORACHIS. *Hydrops spinæ*, G. Spina bifida. Dropsy of the spine.

Collection of serous fluid in the spinal column; congenital; tumor, commonly on the loins, from a deficiency of the vertebræ; fluctuating, and diminished on pressure, inducing lethargic symptoms.

GENUS 13. HYDROPTHALMIA. *Staphyloma*, G. Dropsy of the eye.

Ball of the eye enlarged, especially the cornea; vision obscured; or destroyed.

GENUS 14. HYDROTHORAX. *Hydrops thoracis*, G. Dropsy of the chest.

Dyspnœa, increased by exercise and a horizontal position; countenance sub-livid; urine red, and scanty; sudden starting from sleep, with a sensation of suffocation; œdema of the lower extremities. When extensive, an elevation and distention of the affected side, and difficulty of lying on the opposite side.

GENUS 15. HYDROPS PERICARDII. Dropsy of the heart case.*

Oppression, and distress in the præcordial region; vibratory motion perceived in the action of the heart externally; sometimes palpitation.

GENUS 16. ASCITES. *Hydrops abdominis*, G. Dropsy of the abdomen.

Intumescence of the whole abdomen, uniform and compressible; fluctuation on percussion; pulse frequent; thirst; scanty urination.

*It is most commonly an effect of excitation in the tissue, as associated with the adjacent tissues; sometimes idiopathic. Corvisart found eight pounds of fluid in an idiopathic case. Laennec frequently found air, (gas?) along with a fluid.

Var. 1. — *hydatidosus*. Sacculated dropsy of the abdomen ; from hydatids. A heavy, inelastic intumescence, destitute of the undulatory motion in ascites, on percussion.

GENUS 17. HYDROCELE. *Hydrops scroti vaginalis*, G.
Dropsy of the vaginalis testis.

Heavy, elastic tumor of one, or both sections of the vaginal tunic of the scrotum ; diaphanous ; the spermatic process distinguishable ; not diminished by pressure.

THE character of the common morbid habit may be modified,

4thly. As the localities may affect several, or all the thin tissues, and parenchyma of organs, attended with severe, unequal, and perturbed association of actions.

ORDER IV.

DIATHESIS FERVIDA COMPLEXA.

(*Habitus typhoides gravior.—Ataxia, et Adynamia.*)

DEFINITION OF CHARACTER.

This order embraces the most severe and complicated forms of acute diseases. The causes act collectively on highly predisposed habits. Severe impressions are made on all the system of the nutritive tissues, and immediately affecting the nerves of external relation, with their functions perverted. Some functions may suffer a paresis, whilst others have an excess of action. Great disproportion in the phenomena, and liability to change. The functions of the heart, arteries, and brain, liable to severe depressions, followed by excess, and perturbation of action ; or suffering a quietus in death, soon after the attack. Many of the phenome-

na developed from the suffering of the organs of external and internal relation, are mutable, whilst the organs are undergoing important pathological changes. Early in the disease, or first stage, blood drawn appears highly carbonized ; great prostration of muscular and vital action. In the second stage, the blood shows a floridity in the more prosperous cases ; and if the responding actions become free, the diathesis makes an approximation to the character of the synchoid. The organs chiefly impressed, are often despoiled of their functions, and liable to gangrene, hepatization, or erysipelatoïdes.

FIRST SERIES.

GENUS 1. TYPHUS GRAVIOR. *Enecia typhus gravior*, G.
Severe typhus. Jail, camp, hospital, or putrid fever.

“With rigör and heat alternating, with little or no perspiration ; pulse tense and hard, usually quick, but fluctuating ; pain over the forehead and crown ; urine alternating from limpid to turbid ; delirium, succeeded by stupor ; signs of putrescency.” G.

GENUS 2. PESTIS ORIENTALIS. *Anthracia pestis*, G.
Eastern plague, or pest.

Fever typhoid ; externally buboes, carbuncles, vibices, or vesicular erythema.

GENUS 3. TYPHUS ICTERODES. *Epanetus malignus flavus*, G. Yellow fever.

Fever typhoid ; local determination concentrating to the stomach and liver ; occasionally, yellowness of the skin, and black vomit.

GENUS 4. CYNANCHE MALIGNA. *Empresma paristhmitis maligna*, G. Malignant quinsy.

Inflammation of the fauces, terminating in ash colored

oughs, followed by ichorous discharges ; often an efflorescence, or petechiæ on the skin.

GENUS 5. PNEUMONITIS COMPLEXA. *Empresma pneumonitis maligna*, G. Pneumonia typhoides. Epidemic lung fever.

Pain in the thorax ; pulse variable, often feeble ; impeded respiration ; cough tedious, with sputa tinged with blood ; prostration of vital action ; epidemic in cold seasons.

GENUS 6. TYPHUS PETECHIALIS. *Ephemera maligna*. Spotted fever.

A malignant ephemera, occurring epidemically in cold seasons, but liable to be protracted into the character of slow typhus ; pains fugitive, yet usually concentrated under the frontal bone ; not preceded by rigors ; paleness ; sighing, and solicitude of mind ; pulse frequent, small, corded, and retiring, often 160 in a minute ; liable to become suppressed some time before death. The location is in the serous membranes of the head and thorax, involving the adjacent nervous tissues ; sometimes fixes with severity in the abdomen. Petechiæ in the serous membrane of the thorax, often in the abdomen, and frequently on the skin ; sweats, for the most part, readily excited. A protean form of disease, having a resemblance to the malignant epidemic intermittents, as described by Alibert ; and, excepting the transpiration of blood, to the Sudor Anglicus of Sennertius.

GENUS 7. MELÆNA. *Melæna*, G. Black jaundice.

Dark, sallow complexion of the adnata ; also vomiting of black, viscid, bilious matter, sometimes mixed with grumous blood ; distress ; faintness.

Var. 1. — *focculosa*. The discharge, by vomiting, of a dark, flocculent appearance, compared to coffee grounds ; occurring in severe malignant diseases ; faintness, and prostration of strength.

GENUS 8. CHOLERA MORBUS. *Cholera*, G. Spasmodic puking and purging.

Frequent vomiting, and purging of a watery fluid ; spasms of the abdominal muscles, and often of the limbs ; anxiety, sinking, and cold sweats. As the disease mitigates, the emesis is attended with bilious discharges, as mild cases often are from the beginning.

GENUS 9. DYSENTERIA MALIGNA. *Dysentaria acuta pyrectica*, G. Malignant, or camp dysentery.

Frequent, small dejections of bloody mucus ; tenesmus. Prostration of vital action. Location in the rectum and colon ; paroxysms of pain severe ; pulse small and frequent ; dejection of countenance ; conjunctiva clear, and eyes sunk in the sockets.

GENUS 10. ENTERITIS MALIGNA. *Empresma enteritis*, G. Severe intestinal inflammation.

Intense pain in the abdomen, not relieved by cathartics ; pulse frequent and small ; vomiting ; tension, and tenderness on pressure ; countenance fallen ; vital action early prostrated.

GENUS 11. HYSTERITIS TYPHOIDES. *Empresma hysteritis puerperarum*, G. Child-bed fever.

Commencing about the second or third day after delivery ; pain, and intumescence in the hypogastric region, extending over the abdomen, and often involving the peritoneum generally ; tenderness on pressure ; small, frequent, and hard pulse ; suspicious alienation of mind.

GENUS 12. ERYSIPELAS GANGRENOSUM. *Emphlysis erysipelas*, G. Malignant erysipelas.

External, local inflammation diffused, without marginal adhesion, and irregular ; burning heat ; vesications inclining to a dark color, or gangrenous.

GENUS 13. GANGRENA. *Gangræna*, G. Gangrene.

A part, deprived of vital force by causes inducing extreme innervation, or enervation, loses its tonicity and vital character; becomes insensible, yielding, and livid, or assumes dryness and hardness. A dead part, surrounded by vital solids.

Var. 1. — *sphacelus*. Mortification. The dead part soft, and black; decomposing; separating from the sound, and affording a putrescent smell.

Var. 2. — *ustilaginea*. Mildew mortification. The enervated part, at first white, turns [black, dry, and shrivelled; then becomes separated, and cast off. Occurring chiefly on the extremities, with a general state of enervation; spreading in limbs, sometimes until they lose their attachment to the body.

Incarcerated hernia, intussusception, and other maladies destroying the vitality of all the tissues of a part, might be admitted into this order.*

* It ought to be distinctly understood, that the above are not all the diseases that may find admittance into this order. There is scarcely a febrile complaint, including the exanthemata, internal inflammations, and even chronic diseases, but that appears in different degrees of intensity, and the degree of intensity will always indicate either the mitior or gravior diathesis. Small pox, measles, scarlatina, enteritis, peritonitis, &c. may be cited as examples. The general morbid changes are more severe in the one instance than in the other, and each one impresses the tissues affected, according to their intensity.

THE character of the general habit may be modified by the reflex actions,

5thly. *As the local concentrations may affect the dermoid tissue, endowed with sensitive nerves of external relation.*

ORDER V.

DIATHESIS FERVIDA ERUPTIVA.

(*Habitus phlogisticus.—Sthenia.*)

DEFINITION OF CHARACTER.

THE general character of the dermoid diathesis is inflammatory, or phlogistic; notwithstanding many cases present the aspect of the typhoid gravior, as particularly exemplified in the exantheas. So small pox, measles, and cynanche often assume this diathesis, on account of the eruptive irritation having made strong impressions on the internal tissues, affecting the ganglionic susceptibility, before arriving on the skin. In such cases the viscera remain burdened, they are not relieved sufficiently by the eruption. The chronic affections of the skin are pretty uniformly of a mild phlogistic character. They sometimes recede to the internal tissues, and excite extraordinary commotion. The skin being essentially of the fibrous character, and supplied with the sensibility of external relation, renders it susceptible of transmitting free reflex action on the general habit.

FIRST SERIES.

GENUS 1. VARIOLA. *Empyesis variola*, G. Small pox.

Shivering; pain in the back and head; vesicles appearing under the cuticle, between the third and fifth day from the attack, rising into purulency about the eighth; degenerating

into scabs, and falling off about the sixteenth day, leaving scars, or pits ; contagious ; liability to secondary fever.

Var. 1. — *discreta*. Pustules pea-sized and distinct ; margin red.

Var. 2. — *confluens*. Pustules irregular, and running together ; margin pale.

Var. 3. — *inserta*. Inoculated.

GENUS 2. VARIOLOIDES. *Variola simulata*. Modified small pox.

Occurring in spuriously vaccinated, and sometimes variolated persons, when exposed to the contagion of small pox ; symptoms similar to the mild small pox ; a full vesicle forms, but higher than small pox, with an indentation, and suddenly dries up, and falls off in thin, transparent, straw colored scales ; the skin appears now projecting above its level, or tuberculated ; no secondary fever ; contagious.

GENUS 3. VACCINIA. *Emphlysis vaccinia*, G. Cow, or kine pox.

One, or more vesicles, depressed in the centre, transparent, and circular ; surrounded with a red areola ; hardening into a dark, mahogany colored scab, falling off about the eighteenth day, leaving a permanent smooth scar. Transmitted by contact.

Var. 1. — *inserta*. Inoculated.

Var. 2. — *spuria*. Vesicle irregular, and purulent ; areola indistinct ; scab formed early, and rough.

GENUS 4. VARICELLA. *Emphlysis varicella*, G. Chicken pox.

Vesicles thinly scattered ; not so large as variola ; transparent, with a thin pellicle ; not maturing into pus ; but about the third day, oozing at the top, and forming small, irregular, dark scabs ; often successive imperfect crops of pustules.

Var. 1. — *lentiformis* ; vesicles flattened at the top.

Var. 2. — *coniformis* ; swine, or water pox ; sharp pointed.

GENUS 5. RUBEOLA. *Enanthesis rubeola*, G. Measles.

Dry cough ; soreness in the fauces ; suffusion of the eyes ; rash appearing from the third to the sixth day of the attack, first in the fauces, then on the face, and breast ; terminating in cuticular exfoliations about the tenth day ; contagious.

GENUS 6. SCARLATINA. *Enanthesis rosalia*, G. Scarlet fever.

Rash, or scarlet efflorescence, irregularly diffused over the body ; appearing about the second, and vanishing about the fifth day.

Var. 1. — *simplex*. Without inflammation in the fauces.

Var. 2. — *anginosa*. Inflammation in the fauces, with fever of the synchooid character.

Var. 3. — *maligna*. With typhoid character ; *cynanche maligna*. See Order 4, Genus 4.

GENUS 7. URTICARIA. *Enanthesis urticaria*, G. Nettle-rash.

“Rash, in florid, itching, nettle-sting wheals ; appearing about the second day ; irregularly fading, and reviving, or wandering from part to part.” G.

GENUS 8. MILIARIA. *Emphlysis miliaria*, G. Miliary eruption.

Small vesicular eruptions ; stinging sensation ; following profuse sweats, especially in puerperal fever ; attended with a sour odor.

GENUS 9. ERYSIPELAS. *Emphlysis erysipelas*, G. St. Anthony's fire.

An extensive, undefined, and irregular tumefaction on the face, or any part of the body; skin of deep red color, and often partially covered with vesications.

Var. 1. — *suppurativum*. Solid, and liable to suppuration; cells of the cellular tissue not united by adhesion; matter diffused.

Var. 2. — *œdematosum*. Soft or compressible.

Var. 3. — *gangrænosum*. Dark colored, liable to terminate in gangrene.

Var. 4. — *erraticum*. Migrating extensively over the skin.

GENUS 10. ERYTHEMA. *Erythema*, G. Inflammatory blush.

Superficial, turgescient redness on the skin; burning sensation; redness disappearing on pressure; occasionally migrating in irregular trains.

GENUS 11. PERNIO. *Erythema pernio*, G. Chilblain.

Bluish, crimson color of the skin; intolerable itching; affecting the extremities in cold seasons; liable to ulcerate.

GENUS 12. PEMPHIGUS. *Emphlysis pemphigus*, G. Vesicular fever.

Transparent vesicles, the size of a filbert, scattered over the body; edges inflamed; fluid pellucid; liable to ulcerate on breaking.

GENUS 13. BULLE. *Emphlysis pompholyx diutinus*, G. Blebs.

A large portion of the cuticle detached, containing a watery, yellowish fluid; growing from small vesicles to the size of walnuts; spreading over the whole body, and into the mouth; forming ulcerations; continuing several months.

Var. 1. — *quotidianæ*. With dark, red base, coming and going in twentyfour hours ; on the hands and legs.

Var. 2. — *pompholyx*. Tingling, followed by transparent vesications, pea-sized ; difficult to heal ; reappearing on various parts of the skin.

SECOND SERIES.

Chronic Eruptions.

GENUS 14. PLICA POLONICA. *Trichosis plica*, G. Matted hair.

Hairs of the head, sometimes of the beard, and pudendum, increased in vascularity, sensibility, and size ; issuing blood, and an agglutinating secretion ; the hair becomes matted, and entwined. Supposed by some to be infectious.

GENUS 15. IMPETIGO. *Lepidosis psoriasis*, G. Scaly running tetter.

Pustules continuous, terminating in scabs ; skin often chappy.

GENUS 16. LEPRA. *Lepidosis lepriasis*, G. Leprosy.

Laminated scales of various sizes ; of a circular, smooth form.

Var. 1. — *vulgaris*. Scales smooth and large, whitish, with red borders ; covering the whole body.

Var. 2. — *albida*. Scales whitish, small, depressed in the centre ; on extremities.

Var. 3. — *nigricans*. Black leprosy.

GENUS 17. HERPES. *Ecphlysis herpes*, G. Tetter.

Vesicular eruption in distinct clusters ; forming scabs ; tingling and itching.

Var. 1. — *phlyctanodes*. Small inflamed vesicles.

Var. 2. — *zoster*. Shingles.

- Var. 3. — *circinatus*. Ring-worm.
 Var. 4. — *labialis*. On the lips.
 Var. 5. — *preputialis*. On the prepuce.

GENUS 18. PSORA. *Ecpyesis scabies*, G. Itch.

Vesicular, or pustular pimples between the fingers, and flexures of joints, and spreading over the body; intolerable itching; terminating in scabs.

- Var. 1. — *papularis*. Rank itch.
 Var. 2. — *vesicularis*. Watery do.
 Var. 3. — *complicata*. Complicated do.
 Var. 4. — *purulenta*. Pocky do.
 Var. 5. — *exotica*. Mangy do.

GENUS 19. ICHTHYOSIS. *Lepidosi ichthyiasis*, G. Fish-skin.

Hard, thickened incrustations on the skin; hard, dusky rind, or scab; sometimes nearly covering the body; at other times more partial; resembling horn.

- Var. 1. — *simplex*. Warty rind.
 Var. 2. — *cornea*. Brown horny rind; thickened skin.
 Var. 3. — *cornigera*. Scabs incurvated, horn-like; growth much elevated.

GENUS 20. PORRIGO. *Ecpyesis porrigo*, G. Scall, or tinea.

Yellow colored pustules, containing a viscid fluid, forming thin yellowish scabs.

- Var. 1. — *crustacea*. Milky scall. In patches on the face of lactescent children.
 Var. 2. — *galeata*. Scalled head. Producing scabs over the head, affecting the roots of the hair; occurring mostly during dentition.
 Var. 3. — *furfuracea*. Dandery scall. Very minute pustules, terminating in scurfy scales.

THE character of the general habit may be modified by the local irritations,

6thly. As they exist in indurated glandular textures.

ORDER VI.

DIATHESIS GLANDULARIS INDURATA ET IMPOSTHUMOSA.

DEFINITION OF CHARACTER.

It may be suggested, that tuberculated states of glands and hypertrophy of membranes, rarely, if ever, arise without some fault, some pathological state of the general habit. Changes are often made in a gradual manner, in the organs of internal relation, without the subject being made conscious of them, until some secondary train of symptoms arises. A mild pathological state may exist, and be making very slow changes in tissues of location, even whilst the person is engaged in his usual concerns. These local changes are commonly excited and modified primarily by the general habit; but when once formed, they produce a reflex action back on the system, according to their identical irritative character, and the physiological character of the part affected. Perhaps there is no structure more complicated, and less sensitive, than that of the glandular, and indurations of this structure are frequent. The pyretic habit is mild and dilatory; it is strictly chronic, and partakes of an irritative synochal character. Whenever changes have been made of a structural kind, they may not induce much disturbance in the general habit, until some adjunct cause excites commotion in the economy of the system; whenever this proves to be the case, the local irritations will concentrate to the altered part, and inflammation be liable to become manifest. The reflex action now becomes more manifest; and if ulceration follows,

the future fever, called *hectical*, receives its chief modification from it.

By including imposthumations in this order, we are led to a review of the *hectical habit*.

FIRST SERIES.

GENUS 1. CARCINOMA. *Carcinus vulgaris*, G. Cancer.

Irritative pyretic habit, with dingy countenance; hard or scirrhus tumor, commonly in the secernent glands; of a leaden color; knotted to the feel; attached to the skin, which is puckered, and to the muscles, making it fixed; occasional darting pains; intersected with ligamentary bands; terminating in an ichorous phagedenic ulcer.

Var. 1. — *vulgaris*. As above.

Var. 2. — *pullulans*. Partially healing, then becoming aggravated.

Var. 3. — *spongiosum*. Having bleeding and fungous excrescences; invading all the tissues of a part. The fungus hæmatodes of Wardrop.

GENUS 2. SCROFULA. *Struma vulgaris*, G. King's evil.

Indolent tumors of the glands of the neck, groin, armpit, &c. with but little pain; slowly suppurating, and tardy in healing; skin of the tumor retains its natural color; tumor movable. The common habit delicate, skin smooth and florid; upper lip full.

GENUS 3. GOÏTRE. *Emphyma sarcoma cellulorum*, G.
Bronchocele. Swelled neck.

Elastic tumor of the thyroid gland; extending largely, and affecting the cellular tissue; incident to young people in mountainous countries; not liable to suppurate; destitute of redness or inflammation.

GENUS 4. TONSILLA INDURATA. Swelled and indurated tonsils.

Liable to become indurated, and impede deglutition.

GENUS 5. TUBERCULUM. *Emphyma sarcoma tuberculosum*, G. Tubercle.

Very small indurations, situated in the internal organs and membranes; so minute as scarcely to be seen, but as they become enlarged, they may be of the size of millet seed, or larger. They are liable to suppurate in clusters, or in their envelopes, and afford an imperfect purulency; rarely taking on the incarning process; ending in a destruction of the respective organs or membranes, attended with hectic fever. Some may be named merely as varieties, from the tissues where they may be located.

- Var. 1. — *gutturis*, of the throat.
 - Var. 2. — *tracheæ*, of the trachea.
 - Var. 3. — *pulmonum*, of the lungs.
 - Var. 4. — *stomachi*, of the stomach.
 - Var. 5. — *hepatis*, of the liver.
 - Var. 6. — *splenis*, of the spleen.
 - Var. 7. — *mesenterii*, of the mesentery.
 - Var. 8. — *omentis*, of the omentum.
 - Var. 9. — *intestinorum*, of the intestines.
 - Var. 10. — *mem. serosæ*, of the serous membrane.
 - Var. 11. — *mem. mucosæ*, of the mucous membrane.
- et cetera.*

The cancerous, scrofulous tumors and ulcerations, together with tubercles, and a carnified state of membranes, include a considerable portion of the catalogue of diseases; and especially, if we might add to these the various exulcerations and imposthumations occurring externally. It seems as proper here, as any where, to take some notice of these in a very general manner, as liable to be connected with a state of irritative fever, and producing various kinds of atrophy.

SECOND SERIES.

GENUS 6. PHTHISIS TRACHEALIS TUBERCULOSA. Tracheal phthisis, or consumption.

Pain slight and transient ; cough, with hoarseness, and loss of natural speech ; dry at first, followed by expectoration ; pulse frequent ; hectic fever.

GENUS 7. PHTHISIS PULMONALIS TUBERCULOSA. *Marasmus phthisis tuberculosa*, G. Tubercular consumption.

Slight and transient pains in the side ; alternate chills and heats, especially in the afternoon ; often heat in the palms of the hands, and soles of the feet ; slight, ineffectual cough, sometimes attended with small hæmoptysis, and eventually with a copious expectoration of muco-purulency ; shortness of breath, especially on exercise ; circumscribed flush on one or both cheeks ; pulse 100, or 120 in a minute, small and hard. Most liable to occur between the ages of 25 and 35, in habits slender, impressible, and easily fatigued ; having skin rather pale, and streaked with small blue veins ; teeth and adnata of a cretaceous whiteness. Fever chronic, degenerating into hectic ; emaciation. Towards the close, night sweats, diarrhœa, œdema of the feet.

GENUS 8. PHTHISIS APOSTEMATOSA. *Marasmus phthisis apostematosa*, G. Apostematous phthisis.

Dry cough ; obtuse pain in the chest at a fixed point ; inability of lying on the opposite side ; hectic fever ; at length a sudden and copious expectoration of purulency ; liable to repetition.*

GENUS 9. VOMICA. *Apostema vomica*, G. Internal abscess.

A collection of purulency in some of the organs of the

* See Pthisis mucosa, in Order II. Genus 6.

great cavities ; preceded by more or less signs of inflammation ; discharged either by some natural outlet, or retained in natural cavities.

GENUS 10. EMPYEMA. *Apostema empyema*, G. Purulent matter in the thorax.

After more or less pneumonic inflammation ; rigors and heats ; short respiration ; expiration the most difficult from the accumulation of purulency in the thorax pressing the diaphragm ; inclination to lie on the affected side ; elevation of the ribs of the oppressed side ; hectic symptoms.

GENUS 11. APOSTEMA HEPATICUM. *Apostema hepaticum*, G. Hepatic abscess.

Shiverings ; fulness, and tenderness in the right side, preceded by more or less signs of hepatitis ; yellow countenance ; hectic symptoms ; liable to be discharged,

1st, externally.

2d, by the ductus communis.

3d, into the thorax.

4th, into the abdomen.

5th, into the intestinal canal, by adhesions first formed.

GENUS 12. LUMBAGO APOSTEMATOSA. *Apostema psomaticum*, G. Lumbar abscess.

Preceded by dull pain and tension of the loins ; shiverings ; impediment to an erect posture ; commonly a tumor and fluctuation of matter below Poupart's ligament on the thigh ; diminished by a recumbent position, and by pressure. Liable to be discharged,

1st, below Poupart's ligament.

2d, on the loins.

3d, exterior to the sphincter ani.

GENUS 13. MORBUS COXARIUS. *Arthropuosis*. Hip disease ; malum ischiaticum.

Abscess of the hip joint, with caries of the acetabulum.

Accompanied with hectic phenomena ; preceded by slight, obtuse pain in the knee, ankle or groin ; inability to use the limb, or maintain an erect position ; pain on moving the hip joint ; shrinking in the size, and an elongation of the limb ; sometimes an acute disease, but oftener chronic ; frequently a displacement of the head of the os femoris, with shortening of the limb.

GENUS 14. CARBUNCULUS. *Phyma anthrax*, G. Carbuncle.

An imperfectly suppurative abscess, with a sordid gangrenous core ; preceded by a vesicular, livid, flat, burning tumor, highly inflamed.

GENUS 15. ATROPHIA. *Marasmus atrophica*, G. Atrophy.

Pale, emaciated habit ; skin wrinkled ; muscles thin and weak ; synochula. Occasioned by deficiency or bad quality of nutriment, or from a deficiency of the assimilatory processes.

GENUS 16. TABES. *Marasmus tabes*, G. Slow wasting, or marasmus.

Universal languor and depression of mind ; emaciation ; persistivè synochula, often induced by extraneous irritating materials ;—as,

Var. 1. — *venenata*. From improper use of mercury, arsenic, opium, &c. Also, syphilis.

Var. 2. — *strumosa*. From a scrofulous diathesis.

Var. 3. — *cachectica*. From cachexy.

GENUS 17. HECTISIS. *Epanetus hectica*, G. Hectic fever.

An irritative fever, having a resemblance to a mild remittent ; two exacerbations every twentyfour hours, one com-

mencing about noon, the other about six o'clock in the evening, preceded by chilliness, followed with aggravation of fever, a flush in one or both cheeks, and ending with free sweats. The noon exacerbations of about four hours continuance, the evening the severest, of about six hours; urine high colored, depositing a red sediment; in an advanced stage, the tongue free from fur, of a deep red color, and covered with aphthæ; adnata of a pearly whiteness; occasional diarrhœa; œdema of the feet; emaciation; always connected with a state of irritated, or of ulcerated surface, not incarning, but reflecting morbid sympathy to the involuntary movements.

THE common habit may be sympathetically influenced,
*7thly. As the local impressions may constrain the secretory
 and excretory functions.*

ORDER VII.

DIATHESIS CAPILLARIS ADSTRICTA.

DEFINITION OF CHARACTER.

Some of the varieties of diseases of this order, may be considered as having a local origin, in a particular manner. They, however, generally depend on a state of innervation and tonicity. The tissue affected receives an undue proportion of the general preternatural state of tonicity existing; yet it may not, in the first instance, be sufficient to produce even much turgescence of vessels, although it may impede the secretion, or the excretion of a tissue. If it continues, a stage of turgescence follows, and sooner or later, a liability to inflammation. The reflex action will be different on the

system, as modified by tissues of different sensibilities, and of greater or less importance to the general economy. It becomes difficult, therefore, to make much advance in relation to any specific modification of character, collectively, of this order on the common habit.

FIRST SERIES.

GENUS 1. PLETHORA. *Plethora entonica*, G. Fulness of vessels.

Vascular system generally, distended beyond the physiological state, on account of the ingesta and egesta not being duly proportioned; or, as a sudden state of tonicity may have contracted the calibres of the vessels, and as the fluids may have become suddenly expanded.

GENUS 2. ADIAPHROSIS. Obstructed perspiration.

Dryness of the skin; from a sudden state of innervation, diminishing the secretion; or, a more permanent and inelastic state of the tissue, whereby transpiration is made difficult.

GENUS 3. POLYDIPSIA. *Dipsosis avens*, G. Morbid thirst.

Strong desire for drink, with a dryness of the mouth and fauces. The secretion by the mucous membrane is stopped, whilst absorption is active; the part needs to be frequently moistened; the same in the stomach. Restore secretion, and thirst ceases.

GENUS 4. AGALACTIO. *Agalactia impotens*, G. Scantiness of milk.

Var. 1. — *tonica*. A state of innervation, or of inflammation.

Var. 2. — *inanis*. From defect of nutriment.

GENUS 5. TUSSIS ARIDA. *Tussis sicca*, G. Dry cough.

The mucous membrane of the lungs not affording its secretion, in consequence of a state of tonicity, excitation, or inflammation.

GENUS 6. ICTERUS. *Icterus*, G. Jaundice.

The natural course of the bile perverted; it becomes absorbed or regurgitated into the circulation, and tinges white membranes and fluids of a yellow color; most of the excretions are also yellow, except the fæces, which are whitish and tardy from its absence.

Var. 1. — *tonicus*. From a state of innervation and erection, impeding secretion.

Var. 2. — *phlogisticus*. From extreme excitation, or inflammation of the liver.

Var. 3. — *cholæus*. From a viscid state of the bile, closing the passages.

Var. 4. — *chololithicus*. From gall-stones; or from other mechanical impediments.

GENUS 7. ISCHURIA. *Paruria inops*, G. Suppression of urine.

A paresis of the function of the kidneys; urine not secreted; bladder empty.

Var. 1. — *tonica*. From a state of morbid tonicity or innervation, producing an inability of function, or paresis.

Var. 2. — *phlogistica*. From inflammation; far more obstinate than the last.

Var. 3. — *vesicalis*. When urine is retained in the bladder from any cause obstructing its passage through the urethra; tumor above the pubes; tenderness on pressure; desire to urinate. From inflammation, from stricture, from calculi, from paralysis, from narcotics, &c.

GENUS 8. STRANGURIA. *Paruria stillatitia*, G. Strangury. *Dysury*.

Frequent desire to void urine, irresistible; in very small quantities, often by drops; attended with painful *dysury*; urine often mixed with blood. From cold, from cantharides, &c.

GENUS 9. OBSTIPATIO. *Coprostasis*, G. Adstriction. Costiveness.

Slow fecal movements, or a constipation. Often from a deficiency of mucous secretion, or an intense absorption of fluid matter from the intestines. From deficiency of bile. From an undue proportion of calcareous and albuminous matter secreted into the intestines, forming scybalous substances. From mechanical hindrances, as strictures, inflammations, &c.

GENUS 10. CHLOROSIS. *Chlorosis*, G. Green sickness.

Absence of menstruation at the expected period. Adstrictive state of the uterine mucous tissue.

Var. 1. — *irritata*, (*inops*.) Countenance sallow; muscular inability; depraved appetite; imperfect digestion; dejection of mind; pulse increased. A mild state of tonicity; excitants may overcome the paresis, and effect the secretion.

Var. 2. — *plethorica*. Pain in the head and loins; palpitations; pulse full and frequent. The tonicity needs to be reduced by debilitating measures, before secretion can take place.*

* For a membranous tissue, or a complicated organ to maintain its function regularly, it is necessary to have the natural impetus accurately balanced. If it suffers only a small degree of orgasm, it is liable to have its functional office increased, constituting that morbid condition called *proflua*. If the organ suffers a higher degree of orgasm, it is liable to have its function suppressed, and a state of adstriction follows; of course an inability of functional exercise, even whilst a state of tonicity prevails. So sweat does not flow from the surface whilst the intensity of fever continues, although it might in the

GENUS 11. AMENORRHŒA. *Paramenia obstructionis*, G.
Retention of menses.

Menstruation obstructed in its course, after having been established. Pain in the head and back; languor; febrile symptoms.

GENUS 12. DYSMENORRHŒA. *Paramenia difficilis*, G.
Difficult menstruation.

Menstruation progresses with great pain, attended with tonic spasms of the hypogastric viscera; suffering paroxysmal aggravation.

SECOND SERIES.

Emphysematous tumefactions, with adstriction of outlet.

GENUS 13. EMPHYSEMA PULMŌNIS. Inflation of the
bronchial vesicles.

Dilatation of the bronchial vesicles, by the pressure of confined air, or a rupture of several into the substance of the lungs; or an infiltration into the cellular tissue, appearing in vesicles below the pleura pulmonalis from internal rupture, or secreted from the blood. Attended with dyspnœa; cough, and surcharge of mucus; lungs not collapsing, and the capacity of the bronchia diminished. Often produced by hurried respiration.

GENUS 14. PNEUMATOSIS CELLULARIS. *Emphysema cellulare*, G. Cellular intumescence.

An intumescence from gas, throughout the cellular texture over the body, giving a crepitating or crackling sound when pressed.

commencement, and at length at the close, after the severity of the diathesis becomes diminished. Something similar occurs in numerous other instances in the morbid economy, although we may not be able, in the present state of pathological science, to explain all of them in the most satisfactory manner.

- Var. 1. — *a veneno*. From poison.
 Var. 2. — *a vulnere*. From a wound.
 Var. 3. — *a putridine*. From putrefaction.

GENUS 15. EMPHYSEMA INTESTINALE. Tympany of the intestines.

Light and sonorous intumescence of the abdomen, from accumulation of gas in the intestines. When moderate and less extensive, it is called *flatulency*; also, borborygmy.

Var. 1. — *abdominale*. Tympany of the abdomen. An accumulation of gas in the cavity of the abdomen; sonorous on percussion.

GENUS 16. PHYSOMETRA. *Emphysema uteri*, G. Tympany of the uterus.

Light circumscribed tumor in the hypogastric region, giving an obscure tympanitic sound on percussion; flatus sometimes discharged *per vaginam*.

THE general habit may be influenced sympathetically,

8thly. *As the local concentrations from the morbid habit, may impress the expansions of the respiratory and ganglionic nerves, distributed in either the voluntary, or involuntary muscular organs, obstructing their movements by a spastic rigidity.*

ORDER VIII.

DIATHESIS MUSCULARIS ADSTRICTA.

REMARKS ON CHARACTER.

In this habit of disease, the muscles suffer a morbid contraction, and remain fixed an indefinite length of time. Their motions seem to be influenced by the susceptibility bestowed

by the branches of the trisplanchnic and respiratory nerves, plentifully distributed in their composition, especially as relates to the visceral muscles. Anatomy demonstrates many of the voluntary muscles, also, as being supplied with nerves of involuntary susceptibility, as well as of external relation. Where the latter have not been demonstrated, we argue their existence from analogy, which anatomy may reveal at a future period. When the morbid concentration is on the nerves destined to excite voluntary motion, their spasmodic muscular action is alternated with relaxations, in quick succession, constituting the kind that is called *clonic* spasm; whilst the contractions producing the present order, have been called *tonic* spasm. In both conditions, there is a state of morbid tonicity, yet variously modified by the physiological character of the different orders of nerves, and primitive vital force. With respect to the character of this diathesis, it may merely be noticed, that as the vital force is lavished on the muscular branches of the trisplanchnic, the vascular branches are deficient in vital force; the responding febrile actions are, therefore, not well developed, yet laboring in a constrained manner. We may firstly consider the external, and then proceed to the several muscles particularly under the dominion of the trisplanchnic nerves. The former organs will be again brought into review, in treating of the morbid actions of the nerves of volition. It should further be observed, that this order of spasm is very persistive, sometimes continuing even after apparent death, whilst any irritability remains, as is shown in the case of priapism, and stiffness of joints, in some instances.

The physiological movements of the organic viscera are more steady, uniform, and persistive, than those of the organs of external relation. The same leading character prevails in the morbid state; hence the persistency of tonic spasm, and neuralgic pains. It will be suggested, that the primitive vital

force, *vis insita*, assumes its prerogative in tonic spasm ; perhaps in aid of the ganglial nerves.

FIRST SERIES.

Affecting the muscles of external relation, through the agency of the arterial trisplanchnic nerves, and primitive vital force.

GENUS 1. TETANUS. *Entasia tetanus*, G. Stretching spasm.

Permanent, tonic spasm in some or all the locomotive muscles ; subject to slight remissions, but not relaxation ; severe pain ; countenance distorted ; dyspnœa ; difficult deglutition ; jaws closed ; pulse contracted, small, and hurried ; coldness of the surface and extremities ; blood when drawn shows no phlogistic pellicle. The disease often terminates fatally by some convulsive movements.

Var. 1. — *anticus*, or *emprosthotos*. Body rigidly bent forwards.

Var. 2. — *posticus*, or *opisthotonos*. Body rigidly bent backwards.

Var. 3. — *lateralis*. Body rigidly bent sideways.

GENUS 2. CATOCHUS. *Carus ecstasis*, G. Ecstasy.

“ Total suspension of mental power and voluntary motion ; pulsation and breathing continuing ; muscles rigid ; body erect, and inflexible.” G.

GENUS 3. TRISMUS. *Entasia trismus*, G. Locked-jaw.

Painful, fixed, and rigid contraction of the muscles of the jaws ; mouth firmly closed.

Var. 1. — *nascentium*. Affecting infants soon after birth, from irritation of the funis, or in the alimentary passages.

Var. 2. — *traumaticus*. From wounds or ulcers, especially in hot climates.

GENUS 4. HYDROPHOBIA. *Lyssa*, G. Dread of water.
Rage.

Dread of cold, or shining bodies, and for the most part a horror of liquids. When voluntary efforts are made to swallow drink, an involuntary and painful spasmodic action of the muscles of deglutition prevents, with an exacerbation of the spasms of muscles of the throat and adjacent parts. Hurry of mind ; anxiety and horror ; supervening the bite of a rabid animal. These symptoms are preceded by pain, or uneasiness in the bitten part. Sometimes a desire of biting and doing violence ; at other times not. Occasionally priapism.

Var. 1. — *canina*. From the bite of a dog, and often fatal on the access of one or two paroxysms.

Var. 2. — *felina*. “The paroxysms periodical, and returning with the full moon ; produced by the bite of an enraged cat.” G. From the bite of wolves also.

GENUS 5. GLOBUS HYSTERICUS. *Dysphagia globosa*, G. Hysterical globe.

A suffocative sensation in the throat ; a tumefaction, from contraction of muscles ; sensation of a ball rising from the stomach ; deglutition hindered ; often attends hysteria, hypochondrias, and grief.

GENUS 6. CEPHALOXIA. *Entasia loxia*, G. Stiff neck.

Fixed contraction of the muscles on either side of the neck, drawing the head to the side affected.

GENUS 7. ANGINA SPASMODICA. *Laryngismus stridulus*, G. Spasmodic quinsy.

Painful, constrictive sensation of the larynx, attended with severe dyspnoea ; often attacking young persons in sleep ; having some resemblance to croup, but without inflammation or effusion ; access and exit sudden.

GENUS 8. PLEURODYNIA ACUTA. *Pleuralgia acuta*, G. Stitch in the side.

Sudden pain or stitch in the side, without manifest fever ; relieved by pressure.

GENUS 9. PRIAPISMUS. *Entasia priapismus*, G. Priapism.

Painful and continued erection of the penis, without libidinous desires.

GENUS 10. CRAMPUS. *Entasia systemma*, G. Cramp.

Muscles, portions of muscles, or contractile membranes, suffering a sudden and very painful contraction, and remaining so an indefinite length of time, not very long ; yet until warmth and circulation restores them.

Var. 1. — *stomachi*. Of the stomach.

Var. 2. — *intestinalis*. Of the intestines.

Var. 3. — *cruralis*. Of the legs, &c.

SECOND SERIES.

As affecting the internal and external muscles, under the dominion of the ganglionic and respiratory nerves ; also, the primitive vital force.

GENUS 11. INCUBUS. *Ephialtes nocturnus*, G. Nightmare.

Spastic stricture of the internal and external muscles of respiration ; inability of moving, or effecting respiration ; occurring during sleep ; intellect partly excited, or dreaming ; consciousness of a heavy weight on the breast ; ineffectual exertions to move ; distress of body ; trepidation of mind ; at length a severe, yet sort of despairing effort, excites the muscular movements ; and the heart is perceived, on awaking, to be acting with prodigious force and frequency.

Var. 1. — “*vigilantium*. Produced during wakefulness ; the pressure severe, and extending over the abdomen ; respiration frequent, laborious, constricted ; eyes fixed ; sighing deep and violent ; intellect undisturbed. Found, occasionally, as a symptom in dyspepsia, hydrocephalus, worms, and hypochondriasis.” G.

GENUS 12. ADSTRICTIO CORDIS. *Cordèd pulse.*

The action of the heart constrained ; pulse frequent, small, corded, and retiring, as noticed in Order IV. Genus 6, from 130 to 180 pulsations in a minute. Præcordial distress ; sometimes of short duration ; at other times of some hours' continuance, ending suddenly and favorably ; or at other times fatally by a cessation of circulation.

GENUS 13. ASTHMA CONVULSIVUM. *Asthma siccum*, G.
Nervous or convulsive asthma.

A sudden spasmodic paroxysm of difficulty of breathing ; a sense of constriction, with a wheezing sound ; not of long duration ; cough slight ; scanty expectoration at the close of the fit.

GENUS 14. ANGINA PECTORIS. *Sternalgia*, G. Breast pang.

Violent and sudden constrictive pain under the lower part of the sternum, involving the heart and its appendages, also the respiratory muscles, and those along the left arm most commonly ; breathing constrained, with a sense of suffocation ; occurring by paroxysms ; often excited by exercise ; frequently palpitation, followed by loss of pulse, sensation, and muscular motion, with cold sweat ; paroxysm usually of half an hour, often fatal. Chronic and irregular.

GENUS 15. SINGULTUS. *Clonus singultus*, G. Hiccough.

Sudden contractile snatch of the diaphragm, associating the respiratory muscles, especially the abdominal ; interrupting

every word, with a sharp sound on inspiration ; sometimes transient, at others a symptom in fevers, with irritation on the pneumogastric nerve ; and in a chronic state, continuing many months.

GENUS 16. CLONUS EPIGASTRICUS. Epigastric spasm.

A single and sudden snatch or jerk of the diaphragm, and parts adjacent the solar plexus, soon after going to sleep ; resembling an electrical shock ; causing instant wakefulness, rising, distress, and perturbation.

GENUS 17. EMESIS. *Limosis emesis*, G. Vomiting.

Persistent spasmodic contraction of the muscular coat of the stomach, until its contents are evacuated by the œsophagus, assisted by the respiratory muscles ; recurring by paroxysms. Sometimes by sudden snatches, with belchings, without much aid of the respiratory muscles, as in strictured hernia, and ganglionic irritations in fever.

GENUS 18. PYROSIS. *Limosis sputatoria*, G. Water-brash.

Severe constrictive pain in the epigastrium, increased by an erect position ; the paroxysm is relieved by an eructation, or emesis, of a white, acrid, sometimes viscid fluid, in considerable quantity.

GENUS 19. COLICA SPASMODICA. *Colica ileus*, G. Iliac passion.

A sudden, spasmodic, and inverted motion of the alimentary canal, with vomiting of fecal matter ; painful retraction of the umbilical region ; costiveness.

GENUS 20. RHACHIALGIA. *Colica rhachialgia*, G. Painters' colic.

Of slow access ; pain of the stomach, extending along the intestines to the umbilical region, which is drawn backwards,

towards the spine, with pain in the back and arms ; the whole region of the abdomen painful to the touch, and the muscles drawn into hard eminences ; frequent eructation and vomiting, with obstinate spastic costiveness ; ineffectual attempts at defecation. If the disease is not seasonably removed, it is liable to terminate in inflammation and gangrene, or in paralysis of the arms, and contraction of the fingers.

GENUS 21. TENESMUS. *Proctica tenesmus*, G. Straining.

Painful and very constant desire for defecation, with small discharge of mucus sometimes ; suffering frequent exacerbations.

GENUS 22. PROCTALGIA. *Proctica simplex*, G. Pain of the anus.

Severe and unrelenting pain at the fundament, without inflammation.

GENUS 23. HYSTERALGIA. *Dolor uteri*. Uterine pang.

Severe spasmodic pains of the uterus, and its pelvic appendages, spreading to the sacrum ; directed to the exclusion of its contents.

Var. 1. — *parturientis*. Severe, exclusory, spastic, uterine movements, during parturition ; occurring by paroxysms.

Var. 2. — *secundaria*. Unrelenting, spasmodic pains succeeding parturition, directed in the same manner.

Similar spasms occur in dysmenorrhœa, and some other affections of the uterus.

THE general habit may be affected sympathetically, by the reflex actions,

9thly. *As the local concentrations, emanating from the common morbid habit, may impress the spino-encephalic system of nerves of external relation; altering their susceptibility, and the movements of their dependent organs.*

ORDER IX.

DIATHESIS SPINO-ENCEPHALICA DEPRAVATA.

REMARKS.

It may be proper to make three series of the diseases that especially affect the nervous system of external relation. *Firstly*, as affecting the muscular nerves of *volition*, and their organs;—*secondly*, as affecting the nerves of *sensation*, and their organs;—*thirdly*, as affecting the *encephalic mass*, and altering or modifying the intellectual functions. Each of these admit of *two* divisions, viz. as their functions may be *exalted* or *depressed*.

The common morbid diathesis, as depending on the system of ganglionic influence, may be in very different states, during the existence of the diseases of the present order; it would be useless, therefore, to attempt any definition of its character.

FIRST SERIES.

FIRST DIVISION.

Diseases of Exaltation of the functions of voluntary muscular organs.

GENUS 1. CONVULSIO. *Sypspasia convulsio*, G. Convulsion fit.

Alternate contractions and relaxations of the muscles of voluntary motion, generally; reiterated in rapid succession

for several minutes ; hands clenched, and teeth gnashing ; intellect obscured in severe cases, but not in mild.

Var. 1. — *universalis*. Affecting the whole body.

Var. 2. — *partialis*. Affecting portions of the body.

Var. 3. — *parturientis*. Uterine irritation metastasised to the encephalon ; severe, reiterated clonic agitations ; no recollection of any thing that transpired.

GENUS 2. EPILEPSIA. *Sypspasia epilepsia*, G. Falling sickness.

Severe agitations of the whole of the system of voluntary muscles, without consciousness ; countenance livid, and horribly distorted ; gnashing of the teeth, and often wounding the tongue ; frothing at the mouth ; paroxysms commonly ending short of ten minutes ; involuntary emission of urine, and other excretions ; succeeded by coma.

Var. 1. — *periodica*. Returning at fixed periods ; often curable.

Var. 2. — *organica*. From organic changes in the encephalon ; incurable.

Var. 3. — *sympathetica*. Associated with some local defect in a remote part, and a sensation of coldness, or *aura epileptica*, slowly ascending to the encephalon.

GENUS 3. HYSTERIA. *Sypspasia hysteria*, G. Hysterical-fit.

Irregular and protean agitations of the voluntary muscles, repeated in successive paroxysms, most commonly of uncertain duration ; a sensation of flatulent uneasiness in the abdomen, ascending to the throat, which becomes constricted and swollen, called *globus hystericus* ; followed by an abolition of consciousness, and spasms ; in the intervals, mind often incoherent, with sighing, laughing, or crying ; copious limpid urine. Most commonly appearing in females, between puberty and the acme of life, having movable, sanguine temperaments, and at catamenial periods.

GENUS 4. CHOREA. *Synclonus chorea*, G. St. Vitus's Dance.

Convulsive and irregular agitations of various muscles of the body, or limbs, when attempted to be moved by the will; sensation and consciousness not disturbed; occurring in young persons, and liable to continue some time.

GENUS 5. SUBSULTUS. *Chlonus subsultus*, G. Jerking of muscles.

Involuntary contractions of separate muscles, thereby moving their tendons; reiterated at short and uncertain intervals; a symptom of organic irritation.

GENUS 6. PARALYSIS TREMULA. *Synclonus tremor*, G. Paralytic trembling.

Chronic, tremulous agitation of the head, limbs, and sometimes of the whole body, especially when directed by the will; occurring in elderly persons; and occasionally in nervous habits, from cold and the passions.

GENUS 7. PALPITATIO. *Clonus palpitatio*, G. Palpitation.

Irregular, convulsive, or vibratory motion of the heart, with corresponding irregular undulations of the pulse; sometimes severe, with præcordial distress; at other times mild.

GENUS 8. INTERMITTENS. *Anetus*, G. Intermittent. Ague.

A succession of paroxysms during its course, having a freedom from fever in the intervals. Commencing with languor, yawning, corrugation, and coldness of the skin; horripilation, and a sudden sensation of extreme coldness, especially along the dorsal region, quickly followed by tremors and convulsive agitations of all the voluntary muscles, which continue for several hours; countenance livid; præcordial

distress ; thirst ; insensibility to heat, whilst there is an increased sensibility to cold. At length, the convulsive agitations abate, and responding action is manifested by heat, pain, throbbing of the arteries, and at length followed by profuse sweats, and an inclination to sleep.*

GENUS 9. INTERMITTENS QUOTIDIANA. *Anetus quotidianus*, G. Daily ague.

Paroxysm commencing twentyfour hours after the first, usually in the morning, and ending in less than eighteen hours.

Var. 1. — *anticipans*. When the paroxysm commences earlier, by about an hour.

Var. 2. — *protracta*. Paroxysm continued so as to leave a shorter interval.

Var. 3. — *tarda*. When the paroxysm is retarded, or delayed beginning.

Var. 4. — *complicata*. When assuming a febrile diathesis, and having local determination, as to the kidneys, hips, liver, spleen, side, head ; changing into hysteria, or epilepsy.

GENUS 10. INTERMITTENS TERTIANA. *Anetus tertianus*, G. Tertian ague.

*The phenomena of intermittents indicate very essentially an affection of the nerves of external relation ; however, the whole of the vital forces are truly impressed, but in a slight manner at the onset. The local concentration appears to be on the nerves of external relation, and the repulsive actions are here manifested almost as clearly as in convulsion ; certainly as much as in tremor. Dr Hosack, in his lectures on Theory and Practice, p. 63, states that a patient of his, upon the attack of an intermittent, was seized with convulsion. When the state of paroxysmal agitation is over, there is no greater appearance of febrile commotion, than there is in the intervals of epilepsy, nor so much as often occurs in convulsion. We mean in simple uncomplicated intermittents ; for it is true, that a congestive state of the viscera is liable to take place, and may become the theatre of morbid derangement, attended with fever. (See. Path. Sect. xlii. 9. c.)

Paroxysm commencing fortyeight hours after the first, usually at noon, and ending in less than twelve hours.

Var. 1. — *tarda*. Having a short and imperfect intermission.

Var. 2. — *complicata*. Giving rise to other diseases, as dysentery, syncope, lethargy, apoplexy, &c.

GENUS 11. INTERMITTENS QUARTANA. *Anetus quartanus*, G. Quartan ague.

Paroxysm commencing seventytwo hours after the first, usually in the afternoon, and ending in less than nine hours.

Var. 1. — *anticipans*. Paroxysms beginning earlier.

Var. 2. — *tarda*. Delaying its usual period, commonly two hours.

Var. 3. — *complicata*. Giving origin to numerous other diseases.

GENUS 12. INTERMITTENS ERRATICA. *Anetus erraticus*. G. Irregular ague.

The paroxysms irregular in point of time, as, whether they may be on the fifth, sixth, seventh, eighth, ninth, or tenth day, having an interval of more than seventytwo hours. Irregular in point of severity of paroxysm.

GENUS 13. INTERMITTENS COMPLICATA. *Anetus complicatus*, G. Complicated ague.

Paroxysms multiplied and intricate; consisting of tertian or quartan periods.

Var. 1. — *tertiana duplex*. Double tertian. Paroxysms of the one tertian, occurring in the intermissions of the other; yet having a difference of severity and continuance. One paroxysm every day, yet a difference in severity; occurring at noon.

Var. 2. — *tertiana triplex*. Triple tertian. The double tertian; yet one of the sets having two paroxysms on the day of its return; the other but one. The two last va-

rieties differently combined, constitute double tertians, double and triple quartans, &c.

It may be noticed in illustration, that the shorter the intermission, the longer the paroxysm will be. Again, the longer the paroxysm, the earlier it commences in the day. And, furthermore, the longer the cold fit, the less durable the other stages. The quotidian has the slightest cold stage, but the longest paroxysm. The quartan having the shortest paroxysm, has the longest cold stage.

Nature having impressed a law on the nervous system of external relation, whereby its functions are performed in regular rythms, especially of repose and activity ; intermittents, as well as many other diseases of the nervous system, are bound to it, and receive their modifications from it. This is more particularly the case, when not complicated with a decided congestive location in the viscera, under the dominion of the ganglionic nerves.*

SECOND DIVISION.

Diseases of depression of the functions of voluntary organs.

REMARKS.

The phenomena of diseases of this division are considerably different from the last. In that, the functions of the organs are exalted, in this depressed. The pathological circumstances of the involuntary organic system affect the encephalon and its appendages, essentially through the medium of the vascular system. So the heart, and all the organs under the dominion of the ganglionic influence, may be in

* Should an objection be raised against exalting the species of intermittents to the rank of genera, it might be replied, that it comports with the other arrangements we have followed. The same objection might be made against all the phlegmatæ, as well as the other spasmodic diseases. It need only be remarked, that it appears to be in unison with other arrangements, so to dispose of them.

vigorous exercise, while the spino-encephalic, and its dependent organs, are quiescent.

GENUS 14. APOPLEXIA. *Carus apoplexia*, G. Apoplexy.

Suspension of the functions of sensation, motion, and intellect; deep sleep; sonorous breathing; respiration slow; pulse rather slower than natural, and full; attack sudden; attended with a general morbid habit.

Var. 1. — *sanguinea*. Occurring in plethoric habits, and attended with hemorrhage in the encéphalon.

Var. 2. — *serosa*. Occurring mostly in leuco-phlegmatic habits, attended with serous effusion in the brain.

Var. 3. — *congestiva*. From sudden dilatations of the encephalic blood vessels, sometimes at the attack of malignant fevers; also, from narcotics; from ebriety; from passion; from oppressive substances in the stomach; from rigidity of cerebral capillaries in aged people.

GENUS 15. PARALYSIS. *Carus paralysis*, G. Palsy.

Sudden loss of sensation, or of motion, or both, in a part of the body.

Var. 1. — *hemiplegia*. Affecting one half of the body, from the median line; loss of sensation and motion, with weakness of intellect and articulation; face contracted to the sound side; acknowledging nearly the same pathological circumstances as apoplexy, only partial, and not attended with somnolency.

Var. 2. — *paraplegia*. Affecting the lower half of the body, from some circumstance impairing the function of the spinal cord.

Var. 3. — *partialis*. From inability of function of some particular nerve, as in *paralysis facialis*.

GENUS 16. CATALEPSIA. *Carus catalepsia*, G. Catalepsy. Trance.

Suspension of motion, sensation, and intellect; pulsation and breathing not affected; imos flexible, and retaining a given position; countenance florid; eyes open, and intently fixed, but without vision.

GENUS 17. LETHARGUS. *Carus lethargus*, G. Coma.
Morbid sleep.

Quietus of body and mind; morbid sleep, of several degrees of intensity, from which the subject cannot easily be roused.

Var. 1. — *absolutus*. Impossibility to excite sensation, motion, or consciousness.

Var. 2. — *cataphora*. Short intervals of imperfect waking.

Var. 2. — *vigil*. — *coma-vigil*. Torpitude of sensation and motion, but imperfect quietus of mind; incoherent ideas, and disjointed talk, without consciousness of having slept, when thoroughly awakened. This variety is also called *typhomania*. They may all appear as symptoms in pyreptic disease.

GENUS 18. VERTIGO. *Dinus vertigo*, G. Dizziness.

An apparent whirling round of objects, or swimming of the head; often with dimness of sight; sometimes a sense of undulation in the ground; loss of judgment and muscular balance, and the subject is liable to fall; often followed by headache. Sometimes a chronic affection, attended with milder symptoms.

Var. 1. — *illusoria*. Imaginary objects before the sight.

Var. 2. — *scotoma*. Blindness and faintness; *nervous fainting fit*.

The two following will be offered as affecting the two divisions of the nervous systems, the external and internal; or,

in other words, the whole of the nervous forces of the system. The first from causes irremediable ; the second from causes more transient, and less fatal.

GENUS 19. ASPHYXIA. *Carus asphyxia*, G. Suspended animation.*

Total suspension of all the functions of the system, from causes paralysing the energy of nervous influence, both in the spino-encephalic and ganglionic systems.

Var. 1. — *suffocationis*. From hanging, and from drowning, or any cause hindering the circulation and respiration. Countenance turgid and livid.

Var. 2. — *mephitica*. Choke-damp. From carbonic acid gas, in wells, and other places ; or any other deleterious gas, damp, or exhalation. Countenance pallid.

Var. 3. — *algida*. From severe cold. Limbs rigid ; countenance pallid and shrivelled.

Var. 4. — *electrica*. From lightning, or a severe stroke of electricity. Limbs flexible ; countenance pale ; blood uncoagulable. In this variety the system seems to be totally exhausted of its irritable and contractile power.

GENUS 20. SYNCOPE. *Syncope*, G. Fainting fit. Swoon.

Circulation and respiration feeble, or imperceptible ; loss of motion, sensation, and consciousness ; eyes rolled up ; slight spasms, followed by a momentary quietus, resembling asphyxy.

Var. 1. — *cardiaca*. From affections of the heart ; plethora ; polypi ; ossification ; hypertrophy.

Var. 2. — *inanitionis*. From long fasting ; debility ; loss of blood, fatigue, diarrhoea, &c.

Var. 3. — *doloris*. From severe pain ; sudden shocks.

Var. 4. — *pathematica*. From sudden, overwhelming passion.

* ASPHYXIA. The term signifies an absence of pulse. But custom has given it the extensive meaning we apply to it.

SECOND SERIES.

Affecting the nerves of sensation, and their organs.

I. DISEASES OF EXALTATION OF THE SENSE OF TOUCH.

GENUS 21. TACTUS ACRIOR. *Parapsis acris*, G. Acute sensibility.

Feeling painfully acute, or sensible to impressions not generally perceived.

Var. 1. — *teneritudo*. Soreness. Painful uneasiness, or tenderness, local or general, on being touched with a moderate pressure.

Var. 2. — *pruritus*. Itching. Painful titillation, local or general.

Var. 3. — *ardor*. Heat. Sense of temperature, local or general, above that of pleasant and natural coolness.

Var. 4. — *algor*. Coldness. Painful sensation of coldness.

GENUS 22. CEPHALALGIA. *Cephalæa nauseosa*, G. Sick headache.

An aching, strictured sensation over the head, with severe pain in the forehead, temples, or about the head; inability of bearing the light, or sounds, or bringing the mind to mental operations; occurring by paroxysms in the predisposed, when excited by slight causes, yet sometimes periodical; continuing several hours; often followed by vomiting, which, with sweating, gives relief. Commonly occurring in movable temperaments.

Var. 1. — *chronica*. Chronic headache. Very similar to the above, only not so severe, but continuing in a chronic form for a considerable part of the time, with occasional remissions.

GENUS 23. HEMICRANIA. *Cephalæa hemicrania*, G. Periodical head-ache. Megrin.

Severe strictured sensation over one half of the head, with an intense pain in a small circumscribed spot over the parietal bone, or in the forehead; occurring by paroxysms, and often periodical; sometimes connected with a carious tooth, or a sequel of intermittent fever.

GENUS 24. NEURALGIA. *Neuralgia*, G. Tic douloureux.

Acute, lancinating, insufferable pains, following the course of the nerves of sensation of a part, exciting spasms in the neighboring muscular tissues; occurring by short and uncertain paroxysms; excited by anything that lightly impresses, or moves the part; continuing a long time. Most liable to affect the face; but no part where the fascia and muscles are supplied with sensitive nerves is exempted.

Var. 1. — *faciei*. Pains beginning in the terminations, more or less, of the branches of the fifth pair of nerves of sensation in the face, eradiating along their course with distracting pains, and distortions of muscles; no change discoverable in the part, in the intervals.

Var. 2. — *pedis*. Intolerable pain about the heel of a similar character.

Var. 3. — *pedis digiti*. Affecting the great toe in a similar manner; very persistent.*

GENUS 25. ODONTALGIA. *Odontia dolorosa*, G. Toothache.

Acute pain in the teeth and jaws, without swelling.

Var. 1. — *cariosa*. Severe sharp pain, continuing an indefinite length of time, having exacerbations; referred to the carious tooth, but extending into the jaw.

Var. 2. — *nervosa*. Severe sharp pain occurring by paroxysms, slowly spreading along the fifth pair of nerves

* Almost all the diseases attended with severe pain, and without vascular turgescence, might be styled neuralgia, (pained nerves.) Indeed it appears very lately, that Mr Teale has embodied a large family under the genus neuralgia, including pyrosis, angina pectoris, colica pictonum, &c.

from the teeth to the face, ear, and temples, and sometimes over the parietal bone ; then gradually subsiding ; simulating neuralgia.

Var. 3. — *sympathetica*. From general irritation concentrating to the dental nerves, without caries, or any evident cause, as in the first months of pregnancy.

GENUS 26. GASTRODYNIA. Stomach pain.

Oppressive, unrelenting pain in the epigastrium ; weakness ; tenderness on pressure ; very persistive, and rarely remitting.

GENUS 27. PLEURODYNIA. *Pleuralgia chronica*, G. Side pain.

Fixed, permanent pain in the side, of long continuance ; not relieved by any position, but aggravated by lying on the affected side ; tenderness on pressure, and frequently along the course of the intercostal nerves to the spine ; breathing not affected.

Var. 1. — *hypochondriaca*. Similar pain and tenderness, seated in the side below the spurious ribs ; or above the os ilium.

GENUS 28. ISCHIAS NERVOSA. *Arthrosia coxendicis*, G. Sciatica. Coxalgia.

Severe and persistive pain, with tenderness, seated in the hip and back part of the thigh, without swelling ; bearing some resemblance to chronic rheumatism, and involving the ischiadic nerve ; liable to numbness and atrophy, as well as emaciation of the whole body ; febrile habit ; often followed by a retraction of the hip from muscular contractions.

DIMINUTION OF THE SENSE OF TOUCH.

GENUS 29. ANESTHESIA. *Parapsis experts*. Numbness. Total insensibility to objects of touch.

Var. 1. — *simplex*. Numbness confined locally or gen-

erally to the sense of touch; sometimes accompanied with uneasiness.

Var. 2. — *illusoria*. Imaginary sense of touch, or general feeling in organs that have no existence, as after amputations.

II. DISEASES OF EXALTATION OF THE SENSE OF SIGHT.

GENUS 30. RETINITIS CHRONICA. Protracted inflammation of the retina.

Acute sensibility of the retina; vision indistinct; intolerance of light, which, if permitted to strike the retina, produces shrieks and agonies. Slight symptoms of irritative fever, with occasional headache; often persisting for many years; emaciation; increased sensibility universally.

GENUS 31. NYCTALOPIA. *Paropsis lucifuga*, G. Night sight.

Vision painfully acute in strong light; but clear and pleasant in a deep shade, or the dusk of the evening.

DIMINUTION OF THE SENSE OF SIGHT; OR INDIFFERENCE.*

GENUS 32. AMBLYOPIA. *Paropsis noctifuga*, G. Day sight.

Vision dull and confused in the dusk; but clear and powerful in broad daylight.

GENUS 33. PRESBYOPIA. *Paropsis longinqua*, G. Long sight.

Vision only accurate when the object is far off.

*The future definitions of the organs of sense will be mostly copied from Good; omitting some, and varying the order of others. We freely grant that the most of these are local affections, and only secondarily disturbing the general habit.

GENUS 34. MYOPIA. *Paropsis propinqua*, G. Short sight.

Vision only accurate when the object is near.

GENUS 35. DYSOPIA LATERALIS. *Paropsis lateralis*. Skue sight.

Vision only accurate when the object is placed obliquely.

GENUS 36. PHANTASMA. *Paropsis illusoria*, G. False sight.

Imaginary objects floating before the sight ; or real objects appearing with imaginary qualities.

Var. 1. — *muscæ volitantes*. Dark spots floating in the way of vision.

GENUS 37. CALIGO CORNEÆ. *Paropsis caligo*, G. Opaque cornea ; web eye.

Dimness or abolition of sight, from opacity of the cornea, or spots upon its surface.

GENUS 38. GLAUCOMA. *Paropsis glaucosis*. G.

Dimness or abolition of sight, from opacity of the humors.

GENUS 39. CATARACTA. *Paropsis cataracta*, G. Cataract.

Dimness, or abolition of sight from opacity of the crystalline lens.

Var. 1. — *lenticularis*. The opacity existing in the lens itself, and confined to it.

Var. 2. — *capsularis*. The opacity confined to the capsule of the lens.

Var. 3. — *complicata*. The opacity common to the lens, and its capsule.

GENUS 40. CALIGO PUPILLÆ. *Paropsis synizesis*, G.

Dimness, or abolition of sight from contraction or obliteration of the pupil.

GENUS 41. GUTTA SERENA. *Paropsis amaurosis*, G.
Drop serene.

Dimness, or abolition of sight, with unalterable pupil, usually black and dilated; but without any other apparent defect.*

GENUS 42. ECTROPIUM. *Ophthalmia ectropium*, G.
Eversion of the eye-lids.

Eversion of one or both the eye-lids; and consequent exposure of the red internal tunic.

Entropium, when the eye-lids are turned inwards.

III. DISEASES OF EXALTATION OF THE SENSE OF HEARING.

GENUS 43. AUDITUS ACRIOR. *Paracusic acris*, G.
Acute hearing.

Hearing painfully acute, and intolerant of the lowest sounds.

GENUS 44. PARACUSIC IMAGINARIA. *Paracusic illu-
ria*, G. Imaginary sounds.

DIMINUTION OF THE SENSE OF HEARING.

GENUS 45. DYSECŒA. *Paracusic obtusa*, G. Hardness
of hearing.

Hearing dull and confused, and demanding a clear and modulated articulation. From organic defect; local debility; obstruction in the auditory passages, as mucus, wax, sordes, extrinsic bodies.

GENUS 46. DYSECŒA ORGANICA. *Paracusic surditas*,
G. Total deafness.

From organic defect, local palsy.

* Some cases admit a slight movement from the ganglionic nerves sent to the iris.

IV. EXALTATION OF THE SENSE OF SMELL.

GENUS 47. OLFACTUS ACRIOR. *Parosmis acris*, G.
Acute smell.

Smell painfully acute, or sensible to odors not generally perceived.

DIMINUTION OF THE SENSE OF SMELL.

GENUS 48. ANOSMIA. *Parosmis obtusa*, G. Loss of smell.

Smell dull, or totally lost. From organic defect, or paralytic inability.

V. EXALTATION OF THE SENSE OF TASTE.

GENUS 49. GUSTUS ACRIOR. *Parageusis acrida*, G.
Acute taste.

Taste painfully acute, or sensible to savors not generally perceived.

DIMINUTION OF THE SENSE OF TASTE.

GENUS 50. AGEUSTIA. *Parageusis obtusa, et expers*, G.
Taste dull, or extinguished.

From mucus, aphthæ, palsy, &c.

THIRD SERIES.

Affecting the encephalic mass, and perverting the intellectual functions.

EXALTATION OF INTELLECT.

GENUS 51. VESANIA. *Ecphronia*, G. Insanity.

Diseased perception, with little disturbance of the judgment, occasionally shifting into diseased judgment, with lit-

the disturbance of the perception; diminished sensibility; irregular remissions.*

GENUS 52. MANIA. *Ecphronia mania*, G. Madness.

The discrepancy between the perception and the judgment, general; raving; extony; and impassioned emotion.

Var. 1. — *ferox*. Furious and violent madness.

Var. 2. — *exultans*. Gay and elevated madness.

Var. 3. — *despondens*. Gloomy, despondent madness.

Var. 4. — *demens*. Chaotic madness.

DEPRESSION.

GENUS 53. MELANCHOLIA. *Ecphronia melancholia*, G. Melancholy.

The discrepancy between the perception and the judgment, limited to a single object, or train of ideas, for the most part with taciturnity, love of solitude, gloomy fear or suspicion.

Var. 1. — *attonita*. Fixed, mute, immovable melancholy.

Var. 2. — *errabunda*. Roving, restless melancholy; having a constant desire to change the abode.

Var. 3. — *malevolens*. Morose, or mischievous melancholy; occasionally terminating in suicide, or the injury of others.

Var. 4. — *complacens*. Self complacent and affable melancholy; occasionally rejoicing in a visionary superiority of rank, station, or endowments.

* We have presumed to borrow very liberally from Dr Good's order, *Phrenica*, or diseases of the mind; indeed, pursuing him very literally, and only transposing to suit our own mode of exhibiting the characters of the several affections.

In this series we are under the necessity of abandoning the tissual phenomena, and to pursue the mental; and this must be so, until anatomy, and phrenology shall arrive to such precision, as to indicate the individual organs and functions, connected with the several mental processes.

EXALTATION.

GENUS 54. MANIA A PATHEMATE. *Empathema*, Good's
2d Gen. Ungovernable passion.

The judgment perverted or overpowered by the force of some predominant passion; the features of the countenance changed from their common character.

GENUS 55. EMPATHEMA ENTONICUM, G. Ungovernable
passion.

The predominant passion accompanied with increased excitement, ardor, and activity; eye quick and daring; countenance flushed and tumid.

Var. 1. — *iracundiæ*. Wrath.

Var. 2. — *superbiæ*. Pride.

Var. 3. — *gloriæ famis*. Ambition.

Var. 4. — *letitiæ*. Joy. Transport.

Var. 5. — *philautiæ*. Self-love. Self-conceit.

Var. 6. — *zelotypiæ*. Jealousy.

DEPRESSION.

GENUS 56. EMPATHEMA ATONICUM, G. Despondency.

The predominant passion accompanied with diminished excitement; anxiety, and love of solitude; eye fixed and pensive; countenance pale and furrowed.

Var. 1. — *desiderii*. Longing. Eager desire for an absent object, whether place or person; and hence equally including home-sickness, country-sickness, love-sickness.

Var. 2. — *auri famis*. Avarice.

Var. 3. — *anxietudinis*. Preying care.

Var. 4. — *mæroris*. Heart-ache. Severe grief.

Var. 5. — *desperationis*. Despair.

EXALTATION.

GENUS 57. HALLUCINATIO. *Alusia*, 3d Gen. Good. Illusion.

The judgment perverted, or overpowered by the force of the imagination; the spirits permanently elevated or depressed; the feelings of the mind depicted in the countenance.

GENUS 58. ALUSIA ELATIO, G. Mental extravagance.

Romantic ideas of real life; ardent and exalted fancy; pleasurable feelings; frequent pulse; great activity; eye keen, and lighted up; countenance confident and animated.

Var. 1. — *heroica*. Chivalry. Romantic gallantry.

Var. 2. — *facetosa*. High spirits; sparkling, ebullient wit, incapable of restraining itself; that often sacrifices a friend at the shrine of a jest.

Var. 3. — *ecstatica*. False inspiration; visionary conceits.

Var. 4. — *fanatica*. Fanaticism.

DEPRESSION.

GENUS 59. ALUSIA HYPOCHONDRIAS, G. Low spirits.

Gloomy ideas of real life; dejected spirits; anxiety; dyspepsy; languid pulse; indisposition to activity; eye oblique and scowling; countenance gloomy and sullen.

Var. 1. — *autalgica*. Vapors. With visionary or exaggerated sense of pains, or disease; whimsical dislike of persons, places, or things; groundless apprehensions of personal danger, or poverty.

Var. 2. — *pertasa*. Weariness of life. Spleen. With general listlessness, or disgust; irksomeness, and weariness of life.

Var. 3. — *misanthropica*. Misanthropy. With general malevolence, peevishness, and abhorrence of mankind.

GENUS 60. APHELXIA, 4th Gen. Good. Revery.

Voluntary inactivity of the whole, or greater part of the external senses to the impressions of surrounding objects, during wakefulness.

GENUS 61. APHELXIA SOCORS, G. Absence of mind.

Truant attention; wandering fancy; vacant, vacillating countenance.

GENUS 62. APHELXIA INTENTA, G. Abstraction of mind.

The attention wound up, and riveted to a particular subject; and with sympathetic emotion of the muscles and features, connected with its general drift.

Var. 1. — *a studio*. From intense study.

Var. 2. — *a pathemate*. From overwhelming passion, as rapture, grief, despair.

GENUS 63. ONEIRODYNIA. *Paroniria*, 5th Gen. Good. Dreaming.

The voluntary organs connected with the passing train of ideas, overpowered by the force of the imagination, during dreaming, and involuntarily excited to their natural or accustomed actions; while the other organs remain asleep.

GENUS 64. SOMNAMBULISMUS. *Paroniria ambulans*, G. Sleep-walking.

The muscles of locomotion excited into their accustomed action, by the force of the imagination, during sleep.

GENUS 65. NYCTEGERSIA. *Paroniria loquens*, G. Sleep-talking.

The muscles of speech excited into their accustomed action, by the force of the imagination, during dreaming.

GENUS 66. EXONEIROISIS. *Paroniria salax*, G. Night-pollution.

The sexual organs excited into venereal action by the force of the imagination, during dreaming.

GENUS 67. AMENTIA. *Moria*, 6th Gen. Good. Fatuity. Defect or hebetude of the understanding.

GENUS 68. MORIA IMBECILIS, G. Imbecility.

The defect or hebetude partial, or confined to particular faculties of the understanding.

Var. 1. — *stupiditas*. Stupidity. Dulness and indolence of the apprehension; torpitude and poverty of the imagination.

Var. 2. — *amnesia*. Forgetfulness. Febleness or failure of the memory.

Var. 3. — *credulitas*. Credulity. Weakness and undue pliancy of the judgment, with a facility of being duped.

Var. 4. — *inconstantia*. Fickleness. Instability and irresolution of the will.

GENUS 69. MORIA DEMENS, G. Wistlessness. Irrationality.

Defect, or hebetude of all the faculties of the understanding.

Var. 1. — *stultitia*. Folly. Shallow knowledge; feeble judgment; light frivolous fancy; for the most part good natured; sometimes with obstinacy.

Var. 2. — *lerema*. Dotage. Impotence of body as well as of mind, from natural or premature old age.

Var. 3. — *anæa*. Idiotism. General obliteration of the mental powers and affections; paucity, or destitution of ideas; obtuse sensibility; vacant countenance; imperfect or broken articulation; with occasional transient and unmeaning gusts of passion.

THE general habit may be affected by the reflex actions,
 10thly. *As emanating from the irritation of local affections
 seated in the osseous texture.*

ORDER X.

DIATHESIS OSSEA DEPRAVATA.

REMARKS ON CHARACTER.

The osseous texture being composed of vital solids, although studded with crystallizations of saline carbonates and phosphates, is liable to take on preternatural, or morbid action. The diseases of the bones, like those of other textures, may be acute or chronic. The hard hollow bones have been broken into fragments in six days' inflammation, with exulceration, reverberating severely on the general system, with high sthenic diathesis. At other times they slowly decay with little reflex action; merely a reflected irritation. In the pathological state, the bones and teeth often assume a high degree of sensitiveness. Diseases of the bones often accompany constitutional idiosyncrasies, arising from scrofulous, syphilitic, scorbutic, or cancerous contaminations.

FIRST SERIES.

GENUS 1. OSTITIS. Inflammation in the outer or inner membrane of hollow bones.

Pain severe and deep seated; inflammation involving the surrounding soft parts; synochoid fever for the most part; soon followed by suppuration, breaking the bone with exulceration, when internal.

GENUS 2. OSTEO SARCOMA. *Sideratio ossis.* Spina ventosa.

Slow, internal caries of bones, involving the integuments;

elevating the skin in the form of a conical tumor ; discharge ichorous, corroding, and fœtid.

GENUS 3. EXOSTOSIS. *Emphyma exostosis*, G. Node.

Chronic inelastic tumor ; immovable, hard, and bony to the touch.

Var. 1. — *ostea*. Seated on the bone.

Var. 2. — *periosteæ*. From ossification of the periosteum ; protuberant.

Var. 3. — *pendula*. Detached bony substances in joints.

GENUS 4. CARIES. *Ulcus cariosum*, G. Carious ulcer.

An ulcer of the soft parts, connected with a death of the external lamella of a bone ; dark color ; fœtid smell ; exfoliation ; crumbling.

Var. 1. — *arthrocacæ*. When the defect extends to the medulla.

Var. 2. — *necrosis*. When there is an entire death of a bone.

GENUS 5. OSSIFICATIO. *Osthecia infarciens*, G. Ossification.

Ossific matter concreting in masses in various soft parts.

Var. 1. — *implexa*. Ossific matter deposited in membranes, as in the aorta and pleura ; also, as in tendons, ligaments, and sometimes uniformly over the periosteum.

GENUS 6. RHACHITIS. *Cyrtois rhachia*, G. Rickets.

Deformity of the osseous system ; head bulky, with prominent forehead ; spine crooked ; ribs depressed, with protuberances at the sternal junction ; sternum prominent and deformed ; epiphysis of bones enlarged, presenting a soft cellular structure internally, which may readily be cut ; deficiency of ossific matter ; periosteum thickened ; skin pale, and flesh flabby ; premature development of mind.

GENUS 7. CRETINISMUS. *Cyrtois cretinismus*, G. Cretinism.

The skeleton short and deformed; head large; goitre; enlarged abdomen; universal cachexy; skin wrinkled; vacant countenance, and stupidity of mind; hereditary.

GENUS 8. MOLLITIES OSSIUM. *Parostia flexilis*, G. Softness of bones.

The substance of bones soft and yielding, liable to bend with small force and little pain; deficiency in the deposit of phosphate of lime.

GENUS 9. FRAGILITAS OSSIUM. *Parostia fragilis*, G. Brittleness of bones.

The entire osseous system of a friable nature, and liable to be fractured by slight force, and with little pain; deficiency of component gelatine.

SECOND SERIES.

GENUS 10. LITHIASIS. *Lithia*, G. Gravelly habit.

Superabundant secretion and deposition of calcareous neutrals in various receptacles, forming crystallizations, which are voided with difficulty, or retained; or depositions in membranes, as in arthritic concretions.

Var. 1. — *renalis*. In the kidney. Severe pain in the region of the kidneys, extending towards the testicle and thigh of the side affected; vomiting, pyretic habit.

Var. 2. — *vesicalis*. Stone in the bladder. Pain on walking or riding; urgency to urinate often, and suddenly interrupted; rigidity in the penis, and pain in the glans. When in the urethra, pain exquisite, and inability to urinate.

Var. 3. — *chololitha*. Gall-stones. Obtuse pain in the right hypochondrium; sallow, or yellow complexion; pale fæces; urine of a yellow cast. When passing the ducts

to the duodenum, exquisite pain at the epigastrium, fever and vomiting.

Var. 4. — *pulmonalis*. Calcareous deposits in the membranes of the bronchial vesicles, and occasionally loosened by suppuration, and discharged by coughing.

Var. 5. — *enterolitha*. Lithic concretions or crystallizations in the stomach and intestinal canal.

THE general susceptibility may be sympathetically influenced,

11thly. *As the local irritations may be of a peculiar kind, affecting different tissues.*

ORDER XI.

DIATHESIS SPECIALIS.

GENUS I, SCORBUTUS. *Porphyra*, G. Scurvy. *Purpura*.*

Gradual approach of debility of body, and torpitude of mind; bloated countenance; anxiety; difficult respiration; frequent and small pulse; pains in the limbs; petechiæ, or vibices on the surface; occasionally cutaneous exudations of blood; often spongy, bleeding gums, and intestinal discharges of blood; fœtid breath.

Var. 1. — *simplex*. Numerous small flea-bite spots; lurid countenance.

Var. 2. — *urticans*. Tingling nettle-sting wheals, with flea-bite spots; migratory.

* Although this habit of disease affects the mucous texture very considerably, yet it does not seem to have a primary location in it. The sanguineous system appears to be essentially affected, as is manifested from the great changes taking place in the crisis of the blood. It was conceived most proper to have it stand in the specific diathesis for consideration. Both solids and fluids seem simultaneously to be affected. See Sect. xv. 5.

Var. 3. — *hæmorrhagica*. Land scurvy. Various sized and shaped patches.

Var. 4. — *navtica*. Sea scurvy. Spots of various colors ; teeth loose.

GENUS 2. HELMINTHIA, G. *Entozoa*. Vermiparous habit.

A disposition to produce worms, or nourish the larvæ of insects in the alimentary canal, or extension of the mucous membrane. Producing various and anomalous symptoms, as emaciation, voracious appetite, or disgust of food ; gnawing, pungent pains, pale countenance, fœtid breath, convulsions, irritation of the nostrils, and febrile excitations.

Var. 1. *Lumbricus teres*. *Ascaris lumbricoides*, G. Long round-worm. Head incurvated ; mouth triangular ; yellowish, transparent color, with a faint line down the side ; gregarious and vivacious ; from twelve to fifteen inches long ; commonly inhabiting the ileum, or the stomach.

Var. 2. *Tricocephalus*. Long thread-worm ; about two inches long ; head obtuse, and furnished with a retractile proboscis ; tail longer than its body, terminating in a hair-like point ; residing in groups, and inhabiting the cœcum of sickly children.

Var. 3. *Tania solium*. Long tape-worm. Long articulations, with pores, by which it attaches itself to the intestines, one on each joint, generally alternate ; head with a terminal mouth, surrounded with two rows of holders ; a little below, on the flattened surface, two tubercular orifices, or suckers ; tail terminated by a semicircular joint, without any aperture ; from thirty to forty feet long, or even sixty ; residing at the upper part of the intestines, and feeding on the chylous materials ; removed with difficulty.

Var. 4. *Tania lata*. Broad tape-worm. Articulations short and broad ; body broader in the middle, and tapering towards both ends ; head smaller than the last ; inhabiting

the upper part of the intestines ; usually in groups of three or four ; from three to fifteen feet long.

Var. 5. *Fasciola*. Fluke. Gourd-worm. Body flattish, with an aperture at the head, and generally another beneath ; size and appearance having a resemblance to a gourd seed, and broader. More commonly infesting quadrupeds, and also other animals ; sometimes in the liver ; one kind white, another brown.

Var. 6. *Ascaris*. *Ascaris vermicularis*, G. Maw-worm. Thread-worm. Inhabiting the podex, but sometimes wandering ; in groups ; about half an inch long ; head divided into three vesicles, an aperture in each, which receives nourishment ; tail terminating in a point. Exciting local irritation ; itching.

Var. 7. *Scarabæi*. Larvæ of the beetle. But little known.

Var. 8. *Æstri*. Bots, or larvæ of the gad-fly. Round ; pale green ; found in the human fæces, but more frequently in those of the horse ; taken into the stomach.

Var. 9. *Gordii*. Hair-worms, or seta equina. Found in stagnant waters ; from four to six inches long, twisted into knots ; pale brown color. Produced in Lapland especially, occasioning violent colics, attended with profuse ptyalism, and bloody urine ; called *Colica Lapponica*.

Var. 10. *Hirudo*. The leech. Different species swallowed along with the muddy and stagnant water they inhabit.

Var. 11. *Muscæ cibariæ*. Larvæ of the pantry-fly. Producing disturbance in the stomach. In danger of being taken in various media, especially in decayed cheese.*

* We have drawn liberally in this genus from Dr Good's Nosology, as on many former occasions. Those who wish to pursue the subject more minutely, may refer to his Study of Medicine, and Brera on Worms.

Perhaps the vermiparous habit might have had a location amongst the affections of the mucous membrane. But worms have been found in all tissues, and may be considered to arise from constitutional circumstances.

We have the history of a case furnished by Dr L. Emmons of Lower

GENUS 3. INCENDIUM SPONTANEUM. *Catacausis ebriosa*,
G. Spontaneous combustion.

Combustion of the human system ; spontaneously arising, or easily excited ; occurring in females for the most part, who are advanced in life, and who have made an immoderate use of alcoholic liquors ; occurring in the night, and in solitude. The body has been found with a flickering flame upon it, but oftener with a smothered heat, producing a fœtid smoke ; the flame increased by water ; the fabric becomes reduced to a black, oily, and sooty mass.

Canada, of a vast number of the filaria taken from the breast of a woman, at various times. They made way with their heads through the skin, and were thence pulled out.

M. Andral makes this notice in his Path. Anat. "Only two kinds of entozoa have as yet been observed in the nervous centres of the human subject, namely, acephalocysts, and cysticeri. The former has occasionally been observed both in the substance of the brain, and in that of the spinal cord.

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T H E R A P E U T I C S .

ORDER I.

SECTION XLVI.

PRELIMINARY REMARKS.

It is expected the antecedent illustrations in the two former divisions, will assist in exposing the characters of the maladies incident to the human economy, and thereby shorten what might otherwise be necessary in this division.

It is not so necessary for us to dwell long on the external tokens, called symptomatology, after giving the most characteristic phenomena, as to explore the external connections with the oppressed organs. This has been already attempted in part, and frequent allusions to the subject will be made as we proceed. The histories of the distinctive phenomena of isolated disease, have been so repeatedly made out, that it is unnecessary to repeat very minutely.

The preceding nosography teaches the leading, and most distinctive phenomena ; and for a more full enumeration reference may be made to many systematic writers, and of late to Doctors Dewees' and Eberle's systems of medicine. The phenomena constantly vary with the state, and stage of disease, and they are modified by numerous incidental circumstances. A very minute enumeration of phenomena, is liable to lead to a view of the independent existence of isolated disease, a circumstance to be greatly regretted. It has been our province to harmonize the general principles of medicine,

to trace the analogies of particular diseases, and expose erroneous inductions, which direct to improper treatment.

The arrangement of diseases into orders, according to their tissual seats, is offered with much assurance of utility ; as assisting the memory, exposing the affinity and intrinsic character of diseases, as well as the simplicity of treatment. Not that all diseases of any order possess, at all times, the same diatheses, and demand the same remedies, but they generally do ; subject, however, to many modifications. The diathesis even in the same case may become altered, and require a modified treatment.

The first order comprises a group of affections, although of much intensity of pathological action, nevertheless of simple character ; and the remedial agents are very well agreed on in kind, if not in degree. We begin then with the plainest mode of treatment, and proceed to other groups more complicated and difficult. The general treatment of the diseases, in this order is so similar, it cannot be necessary to repeat it in all of them, neither have we time.

Neither can we dwell on all the minutiae of treatment. As brevity is our director, we will pass over many things, which although of much importance, need not to be repeated, being already before the public. We refer the student directly to the advice given by Dr Dewees in his first volume of *Practice of Physic* from page ninth to page sixtythird ; on the subjects of the qualifications of a nurse, and the faithful discharge of duty ; on drinks and nourishment ; cleanliness ; ventilation ; temperature ; dressing of blisters ; injections ; management during convalescence, &c. These subjects are there well advised, and demand primary attention. We may merely remark, that he may be over cautious in the dietetic part ; but, this may be accounted for by the great alarm so vehemently reiterated by our transatlantic coadjutors in relation to irritating the stomach by food. However, a small

medicament may contain a severer goad, than a large mess of panada.

Our limits rather compel to the aphoristical method of writing, and excludes, for the most part, the details of particular cases. We think time better employed in offering reasons for what is proposed, as we understand the nature of the subject. Nothing is therefore concealed, or taken upon *prima facie* evidence.

1. *Synocha. Cauma of Good.*

The qualifying terms used to express the character of this grade of the pyretic habit, have been various ; it has been called continued, sthenic, dynamic, and inflammatory fever. It proceeds with considerable regularity, and without any great depressions. It has some slight aggravations oftentimes, from about six to nine o'clock in the afternoon ; and again, slight remissions from three to about six o'clock in the morning. When it occurs in low, cold, and damp situations, it often partakes some of the intermitent type, and shows more evident remissions.

This habit of fever has its location diffused principally on the dense fibrous tissues of the body, either externally, or internally ; as may be seen in rheumatism, and the internal phlegmatia. In the latter event the fibrous fascia of the organs are involved in the local affection, whether all the other tissues are, or not. (See Nosography, Order I.)

There is no necessity of making reference to causes, as these have been already considered. It may be noticed that cold is usually an accessory agent. We have now to contend with the *primary* physiological cause, the effect of the remote and exciting causes.

a. In addition to the phenomena of this grade of fever given in the nosography, it may be observed, that the depression at the attack is quite inconsiderable ; there is commonly,

however, paleness, lassitude, shrinking of the surface, some irregularity of cardiac action, with running chills, especially over the back. Responding action soon takes place; for, although there are some internal congestions, the primary changes are not so great as to embarrass the capillary circulation so extensively, but that it is continued rather freely, and a vigorous expanded action soon obtains; and this is attended with more or less universal distress; sensibility is increased, with pain in some part, commonly diffused through the head and back, if not more immediately directed to some particular organ, which is to become the seat of future inflammation.

Although there might be some partial, cold sweats for a short time, the surface soon becomes hot, and red, especially if external warmth has been applied. All sweating soon ceases and the skin is dry and hot; as is the tongue also, and covered with a white fur, which after a few days becomes thick, and brownish; loss of appetite, nausea, and sometimes vomiting, exist; thirst is troublesome, and mouth clammy; urine scanty, and high colored, and its secretion sometimes quite suspended for a day or two; often some redness in the adnata of the eyes, with flushed countenance; oppressed, and sometimes laborious respiration; temperature from 100° to 106° F.

Pulse at the attack is small, corded and hard; it soon becomes large, full, and strong, giving a vibratory sensation to the finger; from ninety to one hundred and ten strokes in a minute; sometimes, however, slow and remitting. Often, throbbings in some parts, as if the capillaries possessed a vibratility of action independent of the heart, and this often felt in the head; watchfulness, and liability to delirium.

The severity of local concentrations and pain, on dense tissues, produce intense reflex actions on the general system; the blood soon becomes visibly altered; at first, when drawn from a vein it coagulates without much, if any pellicle; the

succeeding venesections show a florid blood, slowly coagulating, with a pellicle more or less cupped.

If the severity of the disease be not early, and sufficiently moderated, a train of phenomena ensue in about seven, nine, or fourteen days, bearing some resemblance to the severe typhoid habit; as coma, partial coldness, pulse one hundred and thirty, small, tremulous, &c., with great liability to a fatal termination. Or, it may be so far moderated, by a doubting and temporizing treatment, that it may simulate the slow typhous form, with internal lesions; continuing several weeks, with a doubtful termination, and perhaps change into some chronic form of disease. However, the recuperative powers are sometimes so efficient, as to produce a salutary crisis under very adverse circumstances.

a. Methodus medendi.

After having investigated and exposed the conditions of the morbid habit in the last division, the intentions to be pursued in the removal of the physiological derangements become very obvious, and especially in the diseases of this order. It has been abundantly shown by the causes, the phenomena, and the successful treatment, that there exists an abnormal physiological state, and that this is of a morbidly tonic kind. This condition has been styled a state of nosodynamia, and exists throughout the entire system, and especially affects the minutest capillary circulation, perverting or annihilating their functions. We consider this alteration to constitute the primary cause of the disease, and that it is of the same character in the affections of this order, let it be produced by whatever cause, if it is not of the same severity.

We further say, that disease will continue until this abnormal state is removed, either by the natural efforts, or as assisted by art. We may not be able to mention all the remedies that might be used in ulterior resources, but the

leading ones; and these are of a simple character, when applied to a sufficient extent, and before secondary lesions take place; when the morbid action subsides into the quiet physiological state again, if not interrupted by too much improper interference.

b. If a patient is early visited, and before the repelling force has established vascular action on the surface, then this ought to be encouraged by caloric applied in some agreeable form. No method can be more useful than the warm bath at a temperature of about 98° or 100° of Fah., but this should be accommodated to the patient's feelings. This is often inconvenient and of slow preparation. Then let the patient's legs and arms be bathed in warm water; and if not sufficiently warmed, as he lies in bed apply mild steam of water, more or less, over the body by processes well known. This is a preparatory process; but care should be taken not to carry it to a great extent, especially if sweat does not flow.

If the heat should be urged hard, and continued, there will be danger of the capillary arteries forcing the blood into the interstitial spaces, and producing lesions of circulation, occasioning petechiæ, or at any rate sudamina, and attended with worse effects in the nervous tissues.

c. If the patient should be already hot, and skin dry before visited, then merely bathing the legs and arms in warm water will be sufficient. In either event, the first internal medicine, except some mild aromatic infusions, will need to be for an adult, about a grain and a half or two grains of tartarized antimony; or about ten of the antimonial powder, or phosphate of antimony.

The patient will be prepared for the next remedy in about one hour, after taking the antimony; and then, unless, peradventure, there should be a free sweat, and mitigation of pain, venesection should be practised. If this should be the case, the sweat should be continued, and observation made how far it may be relied on in affording relief. It is but seldom the

sweats can be relied on, even in a mild state of disease without blood-letting, and this we will next consider.

d. The previous measures have been directed, in order to produce as equal circulation as may be obtained at this period; but still there may be much inequality until venesection is resorted to. We now take blood with the intention of reducing, and even removing the nosodynamic state. We therefore say, this remedy is debilitating under all circumstances; and if it is sometimes followed by an increase of energy, it is because it relieves the organic impediments, and emancipates their inability of function.

But, how much blood shall be taken in a severe case of synochal fever? Shall we measure it? If we intend to arrest the chief force of the disease, render it safe and manageable, or even palliate it at an after period, when it has not progressed beyond the bleeding point, the only measure we want, is an equivalent to the cardiac and vascular force. The rule must be to bleed to the point of relief; and this implies a prostration of the nosodynamic force; and in order to effect this, it is necessary, oftentimes, to prostrate for a moment the physiological energies. The more early and effectual the bleedings are practised, the sooner the patient escapes the danger of the disease, and with the loss of the least blood in the aggregate.

In order for this remedy to be the most effectual, let the patient remain in his warm bed, in a recumbent position; take from a vein in the arm, in a full stream, until the pulse falters, and the patient faints so far as to be unconscious of anything, or to deliquium animi. He will no doubt revive, for we never knew it otherwise. As the circulations resume their courses, by a convulsive effort of the recuperative powers, the nosodynamia is annihilated for the present, at least, and the exhalations, absorptions, and secretions assume their natural courses. Sweat flows, and now is the favorable time to continue it by mild and easy measures; that is, continuing

moderate external warmth, and aromatic infusions, &c. Also, camphorated powders, or emulsion.

This change is more certainly produced, if the patient should vomit at the moment of resuscitation, and the small dose of antimony was given about an hour previous with a view, in part, to this result.

The tokens of the primary cause having been removed, are, an immediate flow of sweat from a previous dry surface; perhaps a change of countenance, and cessation of distress and pain, with a milder pulse. The intention now is, to prevent a return of the severity of the morbid condition; and for this purpose mild sweating should be continued for twentyfour hours, unless pain, heat, &c., should return. In this case sweating ceases. The morbid force has again accumulated. It now becomes necessary to repeat the bleeding, but without intending to produce extreme faintness; but yet to the point of relief from pain, &c.

The disease is liable to accumulate again and again, if it has obtained too much fixity at the beginning, and must be as early met by efficient remedies. The bleedings should be repeated to the amount of relieving the urgency of the symptoms and rendering the case safe, but not now of suddenly arresting the disease. When bleedings are early practised, they are well borne afterwards to a great extent, if the necessity of the case should require them, and the bleeding point is not soon passed by.

A case that has proceeded several days without bleeding, ought to be treated very much in the same manner in order to render it more safe; for no further time should be lost; provided however, it has not proceeded beyond the bleeding point. This is often one of the most difficult questions to decide. When the question is rather doubtful in relation to copious bleeding, it should still be practised, but in a reserved manner. It is often so, that the case cannot do well without it, there being heat, pain, hard pulse, &c. still pres-

ent. It may be proper to take some blood from the arm, and some by leeches, and observe whether it is well borne, and if so it may be repeated, and probably to the point of relief and safety.

After fever has continued without bleeding, until there is evidently a failure of vital energy, as manifested by many phenomena, bleedings are liable to diminish the recuperative powers, so that the patient loses the chances of a favorable crisis ; or the chances may be diminished by it. Yet, we have often known decided benefits resulting from late bleedings, and in cases supposed to be very doubtful.

If the case should be attended with a determination to some of the organic viscera, with local inflammation, bleedings should early be extended, in quick succession, to the entire relief of pain. The repetitions should be practised as soon as pain returns after being mitigated, and without delay. Organic changes may take place within twentyfour hours after a re-accession of pain and inflammation, when it had appeared to be removed by previous means. So patients at a distance should be provided with accommodations of relief, during the absence of the medical adviser.

Considerable observation is necessary to enable the physician to use bleeding to the greatest advantage. The patient should always be in a warm state when it is practised. In any disease whatever, either acute or chronic, the case will do better in the end as well as the time present, to take as much blood as is *necessary*, along with the other aids of remedies, to remove effectually the morbid habit, and without resorting to early tonics or stimulants. When this is accomplished, the healthy actions never fail to replenish the system with sound blood. It is the imperfect cures, or state of cachexy following disease imperfectly cured, that has given origin to the great complaints of Dr Copland, and others, as arising from the loss of blood. Neither are subjects, that lose much blood when necessary in disease, liable to suffer

from plethora afterwards, if the previous disease be fully eradicated. The salutary actions soon establish their own healthy adjustments, when not interrupted.

e. As soon as the patient has an opportunity after the first process of treatment, he should take a cathartic. According to circumstances, the first should be more or less drastic. If the principal location of pain should be in the head, it should be more drastic. Eight grains of calomel and rhubarb each may be sufficient. If the bowels are in a state of paresis, the case may require more, and the intestines need to be the more acted on. But this is not commonly the fact in the affections under consideration. In ordinary cases the neutral salts will be the best; and cathartics ought not to be so freely employed as to vellicate, or produce excitation in the intestinal mucous tissue. In synochal fever they require to be repeated, usually, about every other day.

f. If the head remains affected with pain and heat after the bleedings, whilst the lower extremities incline to be anæmic and cold, then the semicupium will become useful. Instead of this, blankets may be wrung out of warm water, and applied several thicknesses over the feet, and up to the hips, and continued until the parts become well warmed. This diverts the blood from the plus distended parts to the exsanguious.

If there remains some pain of a part, as the epigastrium, or abdomen, apply an emollient epithem. A handful of hop flowers infused in water, or spirit and water, thickened with wheat bran makes a convenient application for this purpose; it should be large and thick, as well as of an agreeable consistence. If much coldness exists in a part, sprinkle it well with black pepper; this is better than mustard, as it readily excites without blistering. If there is much heat of a part that is pained, the epithem should be of an emollient kind.

g. After sufficient rounds of the above applications, if there should be found tokens of some topical affection in a

considerable degree internally, leeches, or cups should be applied. Leeches to the hard and sensible parts, and cups to the soft parts. It appears to be a fact, that after there has been a local affection sometime established, the capillaries keep up for a time an independent action; or it may be slow of removal, and is greatly expedited by local bleeding. These applications should be made early, or as soon as general bleedings have been carried to a considerable extent.

h. Nothing hitherto has been suggested in relation to the fashionable practice of blistering with cantharides; a practice we formerly went deep into, but now think it not often necessary in fevers of high action. If the suggested remedies have been assiduously employed, the disease will probably be removed in due time. However, this cannot always be expected under the adverse circumstances in which cases have to be met, and accommodated. Previous time may have been lost, or the patient subjected to some unfortunate treatment.

Epispastics add severe, and oftentimes unprofitable stimulations to the general system, as well as to the part. They ought to be avoided in every pyretic state attended with much heat. Nevertheless, there are circumstances in which they may be useful, especially in protracted fevers. They should always be of ulterior application. If after the general and local remedies already suggested, have been well employed, there should still be a local pain internally, of some considerable importance, an epispastic may be effectual for its removal.

Nothing can be more out of time than an epispastic to the head at an early period, whilst it may be hot, and before the general remedies may have been fully employed, and perhaps whilst the feet incline to be cold. In such cases, if blisters are applied, they should be put on the ancles, after bathing the feet and legs in warm water; at the same time, cloths wet in warm water and laid round the head and neck, for a little

time, will probably be far more useful than epispastics, or ice at an early period of the disease.

Epispastics are sometimes useful in transferring local affections from the interior organs to the surface; and when this is their effect, they answer a valuable purpose. But, if they fail in it, they only add stimulations to a system already suffering the severest excitations. In order to insure their good effects, they should be delayed until the other remedies have been assiduously employed, and in as quick succession as may be prudent; then, if there should still be tokens of remaining local affection, as for example in pleurisy, a large and efficient epispastic over the part will very certainly remove the local affection, by transferring it to the surface; whereas, if it does not, and at an early period of a bad case, it could not, the case will then be the worse for it. However, if the other remedies with the epithem, should be sufficient for the removal of the local affection, epispastics may be wholly dispensed with, greatly to the comfort of the patient.

i. General remedies should be most relied upon in every case of fever, and even in those local inflammations, which seem to demand the whole attention from their severity of pain, and injury of organic function. But little lasting benefit can be gained by topical applications, if the general habit is neglected. Our attention, therefore, should be chiefly directed to this, even if the pain should be intense; for this will be the surest method for its radical removal.

By practising free and repeated bleedings, the general mass of blood is deprived of its excess of coagulable lymph, and saline substances, which are proved to exist in the synochoid diathesis at least; it circulates more freely, and gives less stimulations, aside from the force of distention. The absorbent veins more greedily take up serous fluids, and the matter of effusions, to replenish the vessels, and this they accomplish very rapidly, in order to produce an equilibrium in the circulating masses; provided the absorbents are sufficiently set at

liberty from their embarrassments, and not enthralled by tonics and stimulants.

j. The practice of using opiate anodynes to mitigate pains in any form of fever, and local inflammations, is greatly to be deprecated; it is not only unjustifiable, but should be esteemed unpardonable; at least, after having heard a warning voice. Whilst these are used no benefits can be obtained by the radical treatment. In fevers of the synochoid character, the state of the diathesis may be such, that a single ordinary dose may put the case out of the reach of all remedies; and the greatest proportion by far of fevers of this climate, are of this diathesis; neither are they scarcely more justifiable in the reputed typhoid habits. Opium in all its modifications aggravates the morbid habit more than alcohol, or any other of the higher stimulants.

The popular composition vulgarly called Dover's powder, is used extensively on the supposition, or pretence, of the hurtful effects of the opium being altered, or neutralized by its other ingredients. There is no modification of opium that alters its effects when given in a competent dose to affect the system. The black drop, and morphia have very nearly, if not entirely the same effects in stimulating the general system, in an adequate dose to ease pain, that the extract of opium has. These pretences are erroneous and delusive; for we have seen the latter as certainly fatal as the *tiecte upas*, if not quite so speedily.

These articles may occasionally be used in some conditions of distress, of the more strictly neuralgic kind, to much temporary benefit; also, a single dose at the onset of severe dysentery, cholera, and ataxic fever; but after even these diseases have passed the stage of extreme irregularity, they add greatly to the danger; indeed, every condition of the established pyretic habit is made worse by them, if not irremediable. It is probable, that for forty years past, opium, and its preparations have done seven times the injury they have ren-

dered benefit, on the great scale of the civilized world. The proper discriminations have not been attended to.

It should be kept in mind, that these strictures in relation to the use of opium, are intended for that state of disease more strictly called fever, in which there is more or less of internal visceral inflammation, involving the nutritive organs, and of course directly affecting the ganglial system of nerves. We contend, that in all such instances opium is more or less injurious. Still there are instances of fever in which the local affection concentrates on the external tissues, in which the nerves of external relation are especially distributed; such, for instance, as gout, rheumatism, neuralgia, tetanus, &c. Opium often appears to have different effects in the local affections of these tissues, and it may be used to relieve pain with great advantage; and also, as an excitant of the capillary tissues, it may be so managed as to promote a restoration of healthy action sometimes. The disease is here located in other tissues and under the dominion of another order of nerves. Still, as the state of febrile excitation is essentially supported by the nutritive tissues, the use of opiates should still be much restricted in ordinary cases.

The immediate soothing effects of narcotics are readily appreciated, whilst their deleterious influences are concealed, and only to be discerned in their results as combined with the phenomena of visceral disease; they are not, therefore, duly appreciated by every observer. If the patient with moderate fever, should have delirium, subsultus, and a fearful increase of pulsatory action a day* or two after their use, it is easy for the friends, and natural to the adviser, to conceive their effects to be the unavoidable consequences of a bad case. Their use in slow fevers is about alike pernicious. Even Sydenham might not have had so many unfortunate cases to mourn over, had he as well observed the ulterior results of his soothing draughts, as he did the temporary tranquillity his treacherous medicine produced in his patients. We

will leave negative practice after remarking, that in the affection we are treating of, all medicine and regimen, in medical language styled stimulating, should be avoided.

k. During the progress of synochal fever, considerable advantage is gained by small doses of some antimonial preparation, one given in the morning about 8 o'clock, and at about the same hour of the evening. The quantities ought to be just sufficient to excite a slight nausea, and if there should be any thing in the stomach that ought to be dislodged, it may excite emesis once or twice. If, however, the dose should not be so great as to excite even nausea, it will have a beneficial effect in promoting the secretions, and inducing compo-
sure. If we are not greatly deceived, this article has many times produced a tranquillizing effect in fever, so that the patient obtains more rest at night. It also favors an easy and salutary crisis, by directing the efforts of the system to some of the emunctories, as the skin, kidneys, or intestines. It opposes the morbidly rigid state of the tissues, and relaxes them, as it enervates the whole system; that a state of innervation exists in synochal fever, is manifested by every phenomenon.

Whilst we favor the temperate and easy use of tartarized antimony, its very liberal use ought to be deprecated. By giving it every few hours for much length of time, the subject becomes irritated and exhausted; it spoils the appetite for every thing in a short time, and leaves an increase of sensibility and tenderness in the mucous tissue of the primæ viæ. It, finally, adds irritation to the whole system. From half a grain to one and a half, twice or thrice in twentyfour hours, will be sufficient to answer the intention. It is better to be given in the form of a pill, so that it may have a slower effect.

l. It is a too common fault to oppress the stomach with many things at once, called alterative medicines, which cannot have any good effect. They commonly consist of contraries, one for this symptom, and another for that; and aside

from being irksome and oppressive, they render it impossible to distinguish, or ascertain whether any particular medicine has a beneficial, or injurious effect. Perhaps nitre, camphor, senega, rhubarb, capsicum, elixir paregoric, magnesia, cream of tartar, castor oil, valerian, snake root, Fowler's solution, calomel, opium, wine, with many *et ceteras*, nearly all at once, being ten times more than the gizzard of a cormorant could endure, or digest in good health.

m. The drinks may be of a mild, diluent, and acidulous kind. Diluted lemonade, or vinegar and water; barley, or crust water; plain water with a small teaspoon-full of nitrous ether; supertartrate of potash dissolved in water with white sugar, or not. The best in synocha, may be bi-carbonate of potash and vinegar, in adequate proportions of neutralization, well diluted; it may be used as a laxative. We may allow at all times, when the stomach will kindly receive them, rice water, gum water, arrow root, gruel, panada, sweetened or not; weak broths, and other mild nutritious drinks. Some of these in succession, as the case may seem to require.

Notwithstanding patients often call for cold drinks, they had better take them moderately warm, unless in very small quantities. There are some conditions in which a free use of cold water may be beneficial, after some days. (Sec. xlix. 2, f.) After the evacuations have been pretty thoroughly made, if there should be intense thirst, with external equal heat of about 104° or 106° F. cold water drunk freely may be salutary, by absorbing caloric and lowering the temperature to the sweating point. The surest way is, to keep it from the patient until he has desired it for some time, and then admit it pretty freely; it dilutes, relieves the erethism, and if it induces sweat it will be useful, but if chills, hurtful. If there are tokens of internal inflammation, it ought not to be given, for the cold may add much to its tonic nature and increase distress, with pain. As it is often a doubtful remedy, it should rather be avoided, and only allowed in small

quantities, often repeated, unless there are sure tokens of an ascendancy of action in the centripetal circulations. (Sect. xlix. 1, f.)

n. Cold applications externally, by water, vinegar, ice, &c., should be avoided in the early stages of every kind of fever, even if there should be partial heats of considerable intensity. Whilst there are permanent engorgements, or active inflammation in the visceral membranes of the head, thorax, or abdomen, or of their organs, the tonic effects of cold applications by air, water, or any other medium, will prove injurious; even if they should not produce chills, and seem soothing to the patient. They will more certainly be injurious, if there exists any partial coldness on the surface or extremities. The internal tissues should first be relieved, by the proper curative treatment, of their turgidity, and phlogosed condition, or they will become more fixed by the constringing influence of cold.

Notwithstanding, after these objects are obtained, and an universal high heat prevails on the surface, indicating rather a simple state of orgasm than inflammation, then cold applications may assuage the erethism of the tissues externally and internally, and by diminishing heat, relieve the system of considerable irritation. The light delirium unattended with coma, is sometimes suddenly dissipated by them, yet, they ought not to be so freely used as to produce coldness. However, their use may commonly be dispensed with, if the patient has had the privilege of judicious treatment; it is only occasionally, in general practice in this climate, that they become necessary.

o. We have alluded to the principal of the remedial agents, that are commonly required for the treatment of synochal fever. We allow it is a mere sketch, and will be made more complete in our expositions on other habits of fever. As the elements of the morbid habit are few, the treatment for its removal is simple and plain. Much discernment, however,

is necessary in applying enough, and not too much. The remedies require to be repeated, in proportion to the urgency indicated by the phenomena, and as early as the circumstances of the case may require ; always having it in view, that if the case is not getting better, it is getting worse, on account of the liability of organic changes, and alterations of the circulating fluids. The case cannot be rendered safe, until the centripetal circulations overbalance in activity the centrifugal ; for, until then, effusions and alterations of the tissues are liable to take place, and the absorptions cannot effect resolution of the congestions, and inflammation. (Sect. xlix. 2, f.)

p. Antiphlogistic Regimen.

Certain extraneous management becomes necessary in the treatment of all diseases of excitation, but especially in fevers of exalted action, and therefore may be noticed here. It consists in avoiding casual stimulations, and is therefore called the *antiphlogistic regimen*.

1st. It consists in avoiding all unpleasant external impressions on the senses ; as light ; the sight of unpleasant objects, whether they be persons or things ; thought and calculation ; especially all resentments, and disagreeable associations.

2d. The avoiding all offensive smells, so that all substances producing them be removed ; as well as excess of ammonia and aromatics, not in themselves offensive.

3d. All loud and disagreeable sounds, as those of fire-arms, tumults, creaking of shoes, conversation, and whisperings, are injurious. Let there be no arguments or contradictions, either with the patient or between others, but courtesousness, and affectionate behavior. No conversations should be had with the sick, except necessary.

4th. Avoid unnecessary motion of the sick ; let there be but little sitting up, perhaps none, but an easy posture in

bed ; all pressure on the body, except as some movement in bed is necessary, should be done in the easiest manner.

5th. Thirst should be appeased by pleasant acidulous, and mucilaginous drinks, first cleansing the mouth.

6th. Avoid all stimulating food ; if there exist any offensive substances in the first passages, their removal becomes necessary by light emetics, or eccoprotics.

7th. The temperature of the room should rather be agreeable to the feelings of the patient, having no excess of heat, nor exposures to cold ; yet, having sufficient ventilation, or change of air. The circulation of air produced by a fire in a room, is commonly sufficient, unless too much heat is induced.

2. *Meningitis.*

a. See synopsis of particular character in nosography. It is also styled *cephalitis*, *phrenitis*, &c. We consider *meningitis* most expressive of its seat, which is in the membranes of the brain ; and infer from the phenomena, and post mortem appearances, the dura mater to be essentially affected, and associating the arachnoides and pia mater. The pyretic habit is synchoid.

The constitutional state of the system is the same as in synocha. It may have a primary location in the head, or be transferred there after some continuance of fever, with a location in some other part, as in the instance of parotitis, and gout. In this event it has been called symptomatic ; yet, it is of the same character, and requires similar treatment. The local affection is only changed.

It is one of the most formidable affections incident to the human system ; passing its stages with great rapidity, and when attended with wild looks, deep breathing, catching at supposed objects, wishing to be gone, exposing private parts, almost uniformly proves fatal, and often on the third, or fifth day from the attack.

The pulse is constantly contracted, and hard, but does not always intrude on a careless observer the amount of danger existing at the attack. A few hours delay of the most efficient treatment, may render the case irremediable. Inflammation in the meninges of the brain, is more liable to be attended with pain and delirium; but when in the pia mater and substance of the brain, less pain, and more coma attend it. However, they are often so complicated, the diagnosis becomes difficult. The treatment may be the same, only modified to suit the urgency of the state of the disease.

b. Methodus medendi.

The most efficient remedies for the removal of synochal fever should be directly employed. Some irregularity of heat, pains in the limbs and head at the onset, are liable to occur, before delirium seizes the subject. In such cases a pediluvium, or even semicupium may be very proper, to equalize action, and prepare for subsequent measures.

Bleed freely to faintness, or to the point of relief. Repeat as the pulse and other phenomena indicate. The first twentyfour hours will decide the case; as whether the morbid impulses will produce organic changes, or whether the absorptions will sufficiently be brought into action and prevent them. The surface will sometimes incline to be cold, whilst the most destructive changes are taking place internally. By keeping up external action, a part of the morbid force may be diverted from the internal tissues. In this case epispastics may be applied to the ancles.

Repeat the bleedings when the patient can tell of a return of pain; but if delirium be present, as soon as the pulse has recovered sufficient energy. When it becomes imprudent to take any more blood from the arm, apply leeches to the temples, and behind the ears, and cups to the sides of the neck.

Cathartics should be diligently employed, and they will be made more effectual, and more useful, by mingling with them, occasionally, a grain or two of tartarized antimony.

After the bleedings have been rather freely practised, if the head should be hot, apply cold lotions of water and vinegar, by means of linen cloths, and often renewed, as in synocha. If these do not give relief, and if the surface remains warm, with pain in the head, or delirium, then have recourse to the cold dash. Some extreme cases of synochal fever may require this remedy, but it was purposely omitted for this place. But, even in meningitis this is hardly admissible, if the surface is cold and the countenance pallid. The manner of using it is as follows :

Place the patient in a convenient condition, with the head upright. A large tub may be necessary, in which the patient may sit on a folded blanket, or stool. Let cold water be poured from a coffee or watering pot, in a steady manner, on the crown of the head, in a stream of one third, or half an inch in diameter ; at first about two feet above the head, and soon raised to six or eight feet. This may be continued from five to fifteen minutes, or until the pain ceases, or until some circumstances may forbid its use. If the pulse should become very small, and pain removed, it should be discontinued.

The patient should then be wiped with warm cloths, and laid in a moderately warm bed. If no important organic changes have taken place, the pain may be entirely removed; but may again return, when the dash should be repeated, and probably leeches also. This process will now have the effect of exciting internal absorptions, whilst it could not until the vessels had been freely emptied. In other respects, the patient should be treated in the mildest manner, with strict regard to the antiphlogistic regimen, which has already been mentioned.

3. *Sclerotitis.*

It will not be compatible with our design to detail all the minutæ of treatment of individual affections, nor is it necessary. For, the principles of the order have already been explained, and will further be illustrated; we shall be obliged to abbreviate some, and omit others of less magnitude.

Many valuable treatises on diseases of the eyes are now extant. All that will here be necessary to be remarked, is, that acute inflammations of the fibrous tissues proceed with great rapidity, and with intensity of pain. They are prone to be as persisive in the sclerotis and cornea, as in any other of the same order of tissues in the system. A delay in the removal of the affections endangers the integrity of the organ, and produces a liability of spoiling vision.

There ought to be no delay in the treatment; and as soon as manifest inflammation exists, which will be known by the continued severity of pain for a few hours, it will be the greatest saving of blood, of time, and of pain, to arrest it at once. This may be done by closely pursuing the antiphlogistic treatment to the point of relief.

Bleed from the arm until pain ceases. Previously, however, use a pediluvium. After bleeding, a slight emetic, followed by sweating. If pain returns, again bleed; or apply leeches on the temples, and behind the ears; cups on the sides of the neck may be tried. Cathartics. Darkness. See antiphlogistic regimen. Avoid cold.

Flowers of poppy well beat, and moistened with milk and water, should be applied largely over the eye, about of the temperature of the blood; or, 15 grains of opium dissolved in an ounce of water, and biscuit enough to make a soft poultice. After two or three days, use a weak solution of acetate of lead in water, of such a temperature as is most agreeable, by soft rags. Warm applications are usually better than cold.

The wounds produced by couching, and extracting the

cataract, are often associated with general disease before inflammation begins. (Sect. xx. 12.) So they must be treated chiefly by general remedies, when inflammation supervenes.

4. *Tonsillitis.*

Styled amygdalitis, angina tonsillaris. Proceed in the treatment on the same principles. Semicupium; venesection; an emollient poultice extending from ear to ear; inhalation of the steam of vinegar and water; sweating; an emetic.

The treatment of the three following affections in the nosography, may proceed on the same principles, with necessary modifications.

5. *Linguitis.*

In addition to the treatment in the last article, cut the ranular veins; if this is not attended with free discharge of blood, scarify each side of the tongue sufficiently deep for this object. Apply an epispastic to the throat. Same constitutional treatment as before mentioned. If suffocation becomes threatening, then resort to tracheotomy.

6. *Pharyngitis, Laryngitis, and Tracheitis.*

These being of a similar character may be treated together, and indeed they are often combined. The two former are most incidental to adult persons, chiefly males, and such as have passed the acme of life; whilst tracheitis most commonly appears in children. No diseases are more evidently excited by cold than all of these. Notwithstanding, tracheitis sometimes arises from an extension of faucial inflammation in scarlatina, &c.

The discriminating phenomena are named in the nosography, and may be found more particularly in many books;

yet some will be mentioned in the following pathological discriminations.

It was found necessary to make two varieties of tracheitis; and in Order II. Genus 4th, mild tracheitis is placed, as being more particularly confined to the mucous tissue, and of less severity.

Tracheitis, or croup in its severest form, as in the present instance, always involves the subjacent fibrous tissue; and this has been amply demonstrated as being the supporting and connecting tissue attached to the tracheal cartilaginous rings and muscles, and extending into the bronchia.

These three affections have much identity of character, yet the local determinations produce some modifications in the phenomena. In laryngitis and tracheitis the same tissues are affected, but in different degrees. In pharyngitis the same kind of tissues are affected, but the difference of function to be performed by the tissues, displays a very modified train of phenomena. In the one case respiration is affected, and in the other deglutition; whilst the character of the diathesis is the same.

In severe tracheitis occurring in children, there is commonly but little tissual tumefaction, but a fibrino-albuminous exudation escapes into the trachea, and receives some condensation, forming a coagulum of some density. It commences at the rima glottidis, extending downwards, but of less dimensions, and often reaching the bifurcation of the trachea. At first it adheres to the mucous membrane with considerable force; but in a few days becomes loosened, and then detached. The excitation of the mucous membrane often extends into the bronchial ramifications.

This exudation is very similar to that which appears in severe pleuritis, from a serous tissue, whilst the polypus of tracheitis comes from a mucous tissue. It is not peculiar to either of these tissues to yield lymph when excited, unless when their subjacent fibrous tissues are affected. The one

yields serum as in hydrothorax, the other mucus as in catarrh, and also mild tracheitis. In the instances of the diseases under consideration, we infer, that the subjacent fibrous tissue is also affected; and so examinations show.

In the instance of laryngitis and pharyngitis, the local concentration is severe, and effusions take place into the cellular tissue more or less, on both sides of the fibrous tissue of Reisseissen. Tumefactions suddenly appear, which by compressing the larynx and pharynx, impede respiration and deglutition, and are very liable to produce suffocation, if not arrested. No doubt the tumefaction impairs the function of the pneumogastric nerve, and hastens the fatal event.

Examinations have shown these tumefactions of sero-fibrinous matter to be extensive, and in some cases more fortunate, to have ended in the formation of abscesses; the tissues being thickened. Some cases of tracheitis in children have been attended with effusions around the outside of the fascia of Reisseissen, as well as the formation of polypus in the trachea. In some instances the polypus has been thrown out quite entire, after becoming loosened from its attachments, which are the strongest at the posterior part of the trachea. It is liable to produce sudden suffocation, either by filling the trachea, or being partially detached.

All three of these affections, then, consist in a local concentration of the constitutional affection upon the fibrous and mucous tissues of the pharynx, larynx, and trachea; sometimes most in one spot, and again most in the other, constituting the different appellations in medical nomenclatures. They are mere modifications of the same disease, acknowledge the same causes, and are cured by very similar remedies. They are often complicated in the same subject.

a. Methodus medendi.

The most fatal error that ever crept into pathology, is that

which teaches these affections, and many others of similar character, to be of primary local origin. We have labored this thesis in our pathological investigations, and hope, for the cause of humanity, the arguments will be convincing; if not, then the same misplaced and inert treatment will be continued, to the loss of life, and prejudice of the profession. Even Dr Good must have had very imperfect views of the character of laryngitis, in advising "epithems of pounded ice, applied internally;" also, "gargles of ice-water acidulated."

b. The medical reputation of the United States suffered not a little obscurity, and the nation an irreparable privation, in the death of General Washington at the very close of the last century, by an imbecile, doubting management. It is not pretended but that he was himself in fault; so like many others in high stations, skilled in everything, except what relates to the character of disease. After an exposure in December, on horse-back, he had hoarseness and sore throat, but called it a *cold*, and said in the evening, "Let it go as it came," as stated in Paulding's Life. So nothing was done. He read newspapers on the evening of Friday, and "had been remarkably cheerful all the evening." Went to bed as usual. Between two and three o'clock had a rigor; but made no alarm, and still had nothing done. Early in the morning of Saturday was found, "breathing with difficulty, and hardly able to utter a word." Whenever he attempted to swallow, he became "convulsed and almost suffocated;" at the same time "some phlegm followed" the return of vinegar, molasses, &c. attempted to be swallowed. This was, no doubt, a complicated case of laryngitis, associating other contiguous tissues, and producing pharyngitis, with some appearance of tracheitis.

An overseer attempted to bleed, without any previous preparation by external warmth; he obtained half a pint, when Mrs Washington interfered, and had it stopped. Dr Craig arrived next day, at nine o'clock, A. M. He put an epis-

pastic on the throat; took more blood; again bled; and repeated at three o'clock, P. M. No account is given how much, but it "ran very slowly, appeared very thick," and no doubt it might have been added, was very dark. Bleeding without other adjuvants is commonly useless. However, "calomel and tartar emetic were administered, without effect." At five o'clock, P. M., he said, "I find I am going, my breath cannot continue long." He languished until about ten o'clock, P. M., and expired, December 14, 1799. From the time of the rigor about twenty hours.

No doubt this case demanded the most efficient constitutional as well as local treatment, and at an early period. At a later period, there might have been some chance of success. It might be inquired, at what later period of the disease there existed a fair chance of relief. His case required diligent attention at the time he went to bed; then it is probable a pediluvium, and an emetic followed by sweating, would have been sufficient; especially with venesection after the surface became warmed.

At the time of the rigor, the morbid changes had proceeded so far as to require very vigorous measures. He then ought to have taken the universal warm bath for twenty minutes; or mild steam well applied might have been a substitute, but never an equivalent. Then copious bleeding, even to faintness, closely followed by an emetic of tartarized antimony. Warmth continued, with diluent aromatic drinks, as hyssop, pennyroyal, &c., followed by copious and continued sweats. Instead of an epispastic to the throat, as was done in this case, an extensive emollient cataplasm of linseed meal and wheat bran; first anointing the throat with the anodyne saponaceous balsam, or some camphorated oil. Also, cataplasms with mustard seed flour, to the whole of the feet. All should have been done and repeated in the most perfect manner, under the immediate inspection of the physician.

But, no physician saw him, to prescribe, until Dr Craig

arrived at 9 o'clock, A. M. Important time had been lost ; the appearances were inauspicious. Still, however, the patient ought even at this late hour, and in a disease making awful strides, to have had the chances of relief, and this was the last hour that presented much prospect. As nothing can be gained in these cases if caloric in a humid form to the surface is neglected, he ought to have had all the measures diligently applied, as mentioned before, at 3 o'clock, the time of the rigor.

An emetic was indispensable at either of the periods. Although the difficulty of swallowing was great, yet at either period it is probable a little of a concentrated solution of tartarized antimony might have been got down, or at any rate by frequent trials, some might have been absorbed in the fauces. At the same time the epigastrium might have been bathed every ten minutes with a warm and strong solution of the same. Furthermore, a scruple of the same article in solution, might have been injected as an enema. By persevering, there is but little doubt, emesis might have been effected. The influence of this process on the general capillary systems was as much needed, as its utility in dislodging phlegm from the trachea.

c. In all these cases, the centrifugal circulations greatly overbalance the activity of the absorbent processes, and no effectual benefit is obtained, until the centripetal processes obtain an ascendancy. When this is accomplished, it constitutes a crisis, or at least a partial one. Then only persevere, and the case will be safe. If, however, it should have proceeded so far, that very extensive accumulations have already formed in the tissues, and the recuperative powers are greatly exhausted, and embarrassed, this fortunate termination cannot be calculated on with much certainty. Yet, a proper arrangement, and operations in quick succession, often make astonishing changes in the morbid economy.

The treatment in all respects, may be continued, as more particularly specified in synochal fever.

d. Children affected with tracheitis require delicate treatment, but it must be efficient in proportion to the severity of the case. The bronchial and tracheal effusions more easily and more readily take place than in adults; and also, the capacity of the trachea being relatively small, it is liable to be soon obstructed. Besides this, perhaps in seven eighths of the cases, the affection extends into the lungs, rendering it complicated with pneumonitis. But, the stridulous cough is an early monitor to sound the alarm, and it is well if this warning voice is heeded; for, when early and efficient remedies are employed, the disease may quite certainly be arrested. But, in a single hour, or a few hours, it may put every remedy at defiance.

It must, however, be distinctly understood, that the effusion constituting the polypus is not always present in a very considerable degree; for, the local affection in children may partake much of the character of laryngitis in adults. The mucous membrane lining the margin of the glottis, epiglottis, cordæ vocales, and even lower down, from a sudden turgescence, soon thickens by inflammation; the passage becomes narrowed, and finally obliterated, if the disease is not arrested. When this state occurs the stridulous sound of the voice continues; but when the effusion furnishes the polypus, the croupy sound becomes more indistinct, or lost. In this case demulcents are of more use than detergents, whilst the constitutional treatment should be the same.

The pathological state of the system has already been shown, if not satisfactorily demonstrated. Notwithstanding the doubts of some, who may still linger on the false thesis of this being a "primary local" affection, we must insist, that the warm bath acts as a primary auxiliary in restoring the normal actions, and better preparing the way for other remedies. It is of easy, and perfectly safe management in

children, attended with no more risk than the pediluvium, with a little care. A temperature of 98° or 100° F. by the thermometer ; or without it, a trial on the part of the nurse may be sufficient. Let the child remain in it ten or fifteen minutes ; then be folded in a warm blanket. Dress at leisure in a warm place of 80° F. Repeat it, if sudoresis does not well succeed, in co-operation with the other remedies.

The cataplasm just mentioned, or some other of similar character should be applied extensively to the throat, instead of a tormenting epispastic ; it should extend on to the sternum, taking care that it keeps its place, and does not grow cold, by frequent renewal. When discontinued, apply large bats of cotton wool in its place. The part should be embrocated as above, with the saponaceous, anodyne liniment, or anodyne balsam ; or camphorated oil of almonds. Also, take a heated brick, and wrap it around with a clean napkin wrung out in hot water, and lay it a few inches from the throat, as the child lies in bed, so that a mild steam will mix with the common air of respiration. Cold air ought not to be breathed.

Soon after coming from the bath, bleeding should be practised, and it will be best to take freely at first, for this may save after bleedings ; if syncope should be induced, it will become more useful. This ought to be done in a recumbent position, or faintness may be produced, before a sufficiency is taken to make a lasting impression. In young children the back of the hand is the most convenient place to get the blood. A vein can commonly be felt if not seen. We have often reached a vein, without seeing or feeling it, by passing a lancet under the skin.

Without delay, an emetic should be given ; the compound syrup of squills, or hive syrup will be the best, and most convenient. After it has proved emetic, it should be continued in very small doses every hour or two, and in a manner to occasion a slight emesis occasionally, but without fa-

tiguing the child too much. The prime object, after diminishing the force of the disease, is, to soften and expel the dense effusion in the trachea, and in a gradual manner. Whatever promotes a secretion of mucus in the trachea, has the effect of loosening the concretion from its attachments. All the means hitherto suggested tend to this, and especially the syrup. In addition, as soon as opportunity presents, after the first round of remedies, one grain of calomel may be given every hour, or until it moves the bowels; yet much purging should be avoided. If it should operate ever so much, avoid every kind of opiate; for nothing in all the materia medica will so soon dry the fauces, and suspend the secretion of mucus, as well as aggravate the fever.

Further, for the purpose of increasing the secretion of mucus, and detaching the dense effusion, take half a drachm of the powdered root of the polygala senega, one drachm of powdered liquorice root, and one scruple of nitrate of potash; digest half an hour in half a pint of hot water. Give half a table spoonful often, according to circumstances. Much judgment is necessary in adapting the particular management to suit the circumstances of the case; therefore experience and common sense are necessary auxiliaries. Armed with these, all overdoings and quack nostrums will be shunned.

7. *Pleuritis, and Pneumonitis.*

a. By turning to the Nosography, (page 94, note,) it will be seen, we have attempted to follow out the tissual seats of the different affections of the lungs, although it is acknowledged to be difficult in some respects. The tissues are intimately blended; when one is affected, others are liable to be associated in the morbid state. For the most part, separate tissues are first affected, and a knowledge of these is often of use in the treatment.

Dr Cullen blended all the acute affections of the lungs in

the article pneumonia; and it is true the treatment on general principles, must be guided by the intensity of the phenomena in a given case. Yet, early discriminations have their use, and may in some measure obviate the necessity of percussion and the stethoscope; for these are chiefly of use to detect the lesions, or sequences, when perhaps but little benefit can be rendered, after these have occurred. Yet often both these methods aid the diagnosis.

b. Our divisions will place some of the varieties in other orders. All we can with propriety consider here, are those at the head of this article; and it will be seen, that variety 4th, the *cellulosa*, is merged in variety 1st, *fibrosa*; for the effusion is supposed to be lodged in the cellular tissue, as in other instances where the fibrous tissue is the essential seat of the affection.

In pleuritis the effusion is thrown into the sacs of the pleuræ, and in pneumonitis, strictly so called, into the connecting cellular tissue of the parenchyma of the lungs. These two varieties are therefore identical in character, and require very similar treatment at the onset; notwithstanding the results may be very different.

c. A very violent local concentration may seem to involve all the tissues as an organ; as may be seen in complex inflammation, in Order 4th. The effusions in epidemic pneumonia do not form phlegmonoid tumors, but universal tissual exhalations.

The treatment in pneumonitis and pleuritis requires to be quite similar; but the phenomena are very dissimilar in point of obtrusiveness. The former is seated in the bronchial fascia, distributed through the parenchyma of the lungs, of yielding texture; it gives little pain, and excites not great pulsatory action, but oppresses respiration.

Pleuritis, seated on the investing fascia of the lungs and serous sacs, produces severe pain, intense reflex action, with vascular excitation. Respiration would be quite free, were

it not that the intercostal muscles do not admit of their usual extension and contraction ; they cannot move without intense pain ; respiration is mostly performed by the movement of the diaphragm. The pain, by a series of harmonies, concentrates at a point, whilst the local affection is quite extensive in the sac.

In pneumonitis the phenomena are masked, and liable to deceive, whilst in pleuritis they are obtrusive, and tell all that transpires. Pneumonitis is liable to terminate in circumscribed tumefaction, followed by imposthumation ; whilst pleuritis affords effusions of false membranes, and serosity, into the thoracic sacs of the pleuræ, constituting empyema. These effusions in severe cases take place in a few hours from the attack.

As the sero-fibrinous effusions take place very quickly after the attack of pleuritis, and as recoveries are frequent from even severe attacks, the effusions often remain in considerable quantity for several months, before they are absorbed, without very material injury to the patient. And even then, the more dense fibrinous parts remain in the form of false membranes, yet occasioning but little inconvenience.

There is but little cough, or expectoration in simple pleuritis ; and indeed, pneumonitis may proceed to suppuration with almost an entire absence of cough. It will be seen that the discriminations we have made are essential in relation to the diagnosis.

d. Nosologists have taken but little notice of pneumonitis ; its existence, however, cannot be doubted. We have seen very dense, circumscribed tumors, occupying about one third of one lung, having the appearances of phlegmonous tumors in other parts. When these have time to soften, then vomicæ, or abscesses form, as in other parts.

We have witnessed several cases in which pneumonitis and pleuritis were combined, the lesions in their united results constituting pneumo-thorax. Some of these have re-

covered after long continued discharges, both by the trachea, and by paracentesis between the ribs. The lung on one side perhaps entirely dissipated on recovery, and the ribs falling down, as delineated in Laennec's sixth plate.

Methodus medendi.

c. The treatment in pleuritis is very well agreed on ; yet the patient is liable to have so many contraries in the management, that the case is often unnecessarily prolonged ; and more especially if the adviser should think best to manifest his skill, in giving sudden ease by some opiate preparation, instead of eradicating the affection.

Apply a pediluvium ; use external warmth unless the skin is already hot ; bleed from a free orifice at the arm to the point of relief, and repeat as the pain, and the pulse may indicate.

A solution of tartarized antimony, is to be exhibited in such manner as to nauseate, and promote diaphoresis ; perhaps about every three hours for the first twentyfour hours ; or according to circumstances of relief. Mild diaphoretic drinks, warm.

Apply a large emollient cataplasm to the pained side, besprinkled with powder of black pepper. Or a large piece of thick cotton batting ; first sprinkled with tincture of camphor, and dusted over with black pepper. If the case should prove obstinate after taking what blood might seem prudent, apply a large and effectual epispastic to the side ; still keeping up a diaphoresis.

Although pleuritis is not necessarily accompanied with an affection of the mucous tissue of the lungs, yet it is often so complicated ; in this event the inhalation of mild steam of some emollient infusion, as flaxseed, mallows, &c., by Mudge's inhaler ; or a heated brick as proposed in tracheitis, may be advantageously employed.

It is expected the general treatment of synochal fever will apply in all these cases.

d. On account of the phenomena of pneumonitis being obscure, the affection is liable to progress until suppuration becomes inevitable. The treatment, however, ought to proceed on the same principles. The intention should be, to excite and assist the absorptions in obtaining an ascendancy over the centrifugal circulations, and the method of accomplishing this has been already specified. In addition to what has been suggested, we remark, that in the fore part of the treatment the antimony should be used freely; and after bleeding, it may be so managed as to produce emesis every day, yet not given but twice in twentyfour hours, as the affection is liable to continue some time; when so protracted, the tincture of digitalis combined with wine of antimony, may be very useful; but should rarely be given sufficient to produce emesis. These measures should be stopped, if the case must proceed to suppuration.

8. *Brief Reviews.*

The particular consideration of the remaining affections in this series must be omitted. After making the necessary discriminations, the treatment ought to proceed on the principles already advanced. Some, and indeed all of them, require early and efficient remedies.

a. Carditis requires venesection to the full extent the system can bear. Then proceed on general principles.

b. Gastritis is an affection very different from Erythema of the stomach. In the former, the pain at the epigastrium is often very severe and incessant, with synochal fever; vomiting will occur on assuming almost any thing; perhaps gum water, and chicken water may be taken in very small quantities; but sometimes total abstinence must be enjoined for several days. The pulse may be small, and only moderately

hard, even when repeated bleedings are required. Anodyne lotions to the epigastrium, with warm epithems; an epispassic over the pain, if not relieved. Treatment of synocha.

c. Enteritis is very similar; no cathartics except castor oil, or some of the mildest kind; the bowels commonly move easy; mild enemata and fomentations are beneficial. A case doing well in a young man, proved fatal on the mother obstructing a dose of calomel and rhubarb, contrary to express orders.

Enteritis, in many of the divisions of the intestines, is a disease of frequent appearance, and liable to become suddenly fatal. It will be observed in Order 4th, Genus 10th, that *enteritis maligna* is put down. All the difference we can discover between them, is, that one is attended with the phenomena of the dynamic, or phlogistic diathesis, and the other of the typhoid. It appears to be a fact, that in this affection particularly, as in many others, the phlogistic diathesis is convertible, and very quickly, into the typhoid. It is often, if efficient remedies are not early and assiduously employed, that a great prostration of vital force occurs within 24 or 48 hours after the attack. The aspect is fallen, attended with a very frequent small pulse; perhaps pain has ceased, and effusions already taken place. The case may now be irremediable.

A knowledge of these results ought to excite to the most vigilant attention. At the onset, and before the state of exhaustion occurs, such cases bear free abstractions of blood, and far more than seems indicated by the pulse, in comparison with affections of the chest. If these are withheld in time and in quantity, the case is liable to collapse into a fearful adynamic stage.

However, the first remedy to be used is the universal tepid bath for some length of time; then immediately followed by emollient cataplasms over the abdomen. If the pain should not be thoroughly removed, leeches should be used on the

epigastrium. All the remedies should be repeated in quick succession, until the case is rendered safe, without waiting for any uncertain events of tomorrow.

We have often known one and a half grains of opium, with eight drops of cajeput oil, or as much camphor, given at the onset, to relieve vomiting and pain, and afford better opportunity for the use of the other remedies. But not to be repeated.

d. Hepatitis requires the use of the same remedies to prevent effusion and suppuration. This variety does not require mercury in this climate; but no doubt hepatitis with the fever of hot climates does. However, calomel may be used as a purgative, but not freely. Same *general* treatment.

e. In Orchitis, besides the ordinary remedies, often repeated emesis has a beneficial effect. At first an emollient cataplasm to the part. When heat prevails, a solution of acetate of lead.

f. Periostitis, (vulgarly called fever-sore) requires as much to be done, and as speedily, as in pleuritis, with more early epispastics of the most active kind. The most threatening cases have been arrested, with all their odious consequences.

g. In suppression of urine from affections of the trigone planè of the bladder, prostrate, and urethra; after the warm bath, bleeding, and an emollient enema, apply an extensive epithem of the leaves of stramonium and hop flowers, to the perineum and pubis. Then take one drachm of extract of belladonna, dissolve in half an ounce of warm water. Introduce a silver catheter as far as the prostrate only, and with a penis syringe placed into the outer end, inject the solution every twenty minutes; or, repeat at discretion. Afterwards introduce the catheter if necessary. Semicupium.

SECOND SERIES.

9. *Rheumatism and Gout. Or the two common varieties of external fibrous inflammation; or Arthritis.*a. *Preliminaries.*

WE now pass from the affections of the internal fibrous tissues, to those of the external. Although these may have a common anatomical name from their structure, and general use, they possess different degrees of vital susceptibility. This is again modified by the economy of the organs invested in these dense membranous expansions. In a more especial manner, we discover a difference of susceptibility between these tunics externally, from what they possess internally. They are thicker, they are subject to greater mobility, and more plentifully supplied with nerves of the sense of feeling. They are more easily excited by the causes of disease, and as they are numerous, connecting all the locomotive apparatus in a continued series of envelopes, it is no matter of surprise, that their morbid harmonies should be extended over the entire system, as in tetanus, chorea, &c., affecting the muscles as their inclosed organs.

When in a state of excitation, their sensibility of external relation becomes exquisite, in connection with the nervous tissues; and they possess a consensus, which constitutes a unity of feeling, and of action. Motions excited in one part are instantly felt over all. Disease with pain, for the moment located in a part, may be transferred to some remote part, as silently and easily as thought passes from one object to another. The concentrations of morbid impressibility may pass from one section to another, with the same facility as electricity suffers a maximum and minimum.

b. The concentrations of local affections in disease often pass from one part to another with equal facility, before the part has suffered essential lesions by their ravages; and in-

deed; in some instances, when this is the fact, without carrying with them the alterations they have already made. The localists, and humoralists have always been confounded with their own theses, because they never could apprehend how their *materia excitans* should so easily migrate the capillaries, as to get so far without their being able to ken its march.

The local affections in disease, at their onset, are mere concentrations of the morbid force, or nosodynamia, which always alters the part more or less, even if the knife of the anatomist cannot reveal it in the lifeless subject. But, it may suddenly leave a part, and migrate to another; leaving the task of reparation to the recuperative powers of the economy, to be effected as circumstances permit; whilst it commits other ravages in its new habitation.

The morbid economy is far more capricious under some circumstances than others. The phenomena sometimes indicate an infuriate state of versatility, as discovered in ataxia. (Sect. xxii.) The local affection, as if impelled by a tornado, passing from tissue to tissue, and whatever the function of such tissue may be, it becomes accelerated, distorted, or even annihilated. In applying these remarks to the affections before us, we may be led into some investigations of their intrinsic character.

c. In the 4th Vol. of Dr Good's Study of Med. p. 251, there is a curious case borrowed from the Philosophical Transactions. We abbreviate it a little, and insert it for the purpose of offering a physiological explanation quite different from what he has done. The patient was "a female, about forty years of age, and had labored under the disease, (ascites) for twenty years. The abdomen was extremely hard as well as enlarged." "She was extremely emaciated; had a quick, small pulse, and insatiable thirst; voided little urine; breathed with difficulty, and could not lie down in her bed for fear of suffocation. For an accidental rheumatism in

her limbs, she had four doses of Dover's powder prescribed for her, of two scruples each; one dose of which she was to take every night. The first dose relieved the pain in her limbs, but did nothing more. An hour or two after taking the second dose on the ensuing night, she began to void urine in large quantities, which she continued to do through the whole night; and as fast as she discharged the water, her belly softened and sunk. The third dose completed the evacuation. The cure too was radical, and the patient restored to permanent health."

In this case the powder relieved the pains in the limbs, but did "nothing more," did not sweat. We have no reason to suppose the powder in this instance proved directly diuretic; but relieved the local affection, or rheumatism, and by some peculiar associated harmony of action, idiosyncrasy, it migrated to the kidneys, and by accelerating their functions severely, proved a diuretic, instead of being so intense as to excite inflammation. So one affection may cure another, thence showing the harmonies in the system, and affinities in disease.

d. The aspects of gout and rheumatism have always betrayed their affinity, and many have attempted the parallels of their family likeness; whilst others have placed them at an alienated remove. By inspecting their intrinsic characters, we may peradventure, discover them to be not indeed gemini, neither Castor and Pollux, but *cousins-german*, at least.

These affections have their natural seats in the articular fibrous membranes, but have been considerably noted for their migration from one joint to another, and sometimes from the external to the internal tissues. But gout has been noticed to possess this fugitive propensity far more than rheumatism. Let us inquire how it obtains this license, and in doing this we may expose both their characters.

A synopsis of two modified states of the morbid economy has been attempted in the synochoid and typhoid diatheses,

(Sect. xlv.) The phenomena of rheumatism entitle it to a place in the synochoid diathesis, whilst those of gout appear sufficient to admit it into the typhoid, yet variable.

e. With respect to rheumatism, the strong, hard pulse, intense pain, and cupped blood, have been passports with all pathologists for its admission to this state. If it shows a propensity to migrate more than some other affections, it claims this right by keeping within the range of its kindred tissues. It goes to the tissue of a neighboring joint, of the same family, and its way is prepared by an altered, and excited state of all these tissues, when the morbid habit has been established. If it steals its way to the heart, it there occupies its family seat in the fibrous tissues. But, it is not very common that it makes this stride; when it does, it is liable to be a fatal one; it commonly abides there to spend its rage, and subdue its victim. It acknowledges the same predisposing causes with other acute diseases, which are aided by an idiosyncrasy, and is almost uniformly excited by cold. It is a disease chiefly of cold seasons, but does appear in the predisposed, from the influence of relative cold, from sudden changes in warm seasons.

When the fibrous tissues have become exalted in sensibility, they retain it with much persistency. The disease is prone to linger, and although it relents about the fourteenth day of the attack, it is easily recalled by slight exciting causes, especially cold. It is liable to become chronic and injure many organs. Soreness, stiffness, and contractions of muscles, thickening of the fibrous tissues, hydropic effusions, &c. succeed. One inveterate case of acute rheumatism fell under our notice, in a boy ten years old, which was followed by repeated attacks, occasionally, until it proved fatal in about eight years. Instead of mitigating, it increased in intensity, so that some of the last attacks were of the highest grade of severity of vascular action. There was such an ex-

alted state of susceptibility universally, that the attacks seemed to take place without any evident exciting cause.

The swellings about the joints in rheumatism, are from the sero-fibrous membranes of the larger joints, which yield a sero-fibrinous fluid; the thinner parts are absorbed, whilst the thicker condense, leaving a thickening of the parts. Gout attacks the smaller joints; the effusions are similar, with the addition of lithic deposites, or chalk-stones.

f. Gout, in its regular form, occupies for its location the same kind of tissues; and were it not for a different state of predisposition, or rather we might say preparation, it would be identical with rheumatism. These modifying circumstances have their origin in excess of regimen, habits of inactivity, and cold, damp, variable climates. A lithic diathesis accumulates upon a rheumatic propensity, the tissues assume an abnormal susceptibility, or idiosyncrasy, rendering the subject liable to disease, and when excited, to partake of the character of ataxia. Gout may then be considered a state of modified rheumatism. This physiological state becomes so coalescent in the tissues, by long usage, as to be transmitted to offspring; and if the children's teeth are not set on edge, it is because the great toe wards off the vibratility from them.

Gout and gravel vegetate in cold, damp, or foggy climates, in subjects who assume more nutritious ingesta than the economy requires; also more acid wine than can ordinarily be eliminated, in a temperature that throws this process chiefly on the lungs and kidneys, whilst that of the skin is nearly inactive. Muscular inactivity, also, allows of vascular turgidity and cellular accumulations of adipose matter. Plethora with irritation constantly excite the organs to abnormal actions, and an habitual state of excitation prevails.

Uric acid exists in excess, and the vinous acid also, is ready to unite with the lime so abundantly taken in with the farinacea, etc. as well as the ossific detritus. Chemical combinations follow, manifesting the lithic diathesis. These may

tardily pass the emunctories, or their slow expulsions give origin to concretions in the kidneys, or urinary bladder; or commingling in the fibrous tissues produce ossifications of arteries, &c.; or, again, when effusions take place in the local concentrations of gout, they become effused with fibrin, and form the chalk-stones of gout, as the more fluid matter is absorbed. These substances now become local irritants, excite inflammation with softening, and are expelled; the membranes remaining thickened. The 11th class of calculous concretions of Dr Marcet, is called the fibrinous calculus.

Europe, and especially England, are said to be the regions of gout and calculi. Such of the community as may be called idle-full-feeders, and excessive drinkers of wine and ale, either assume, or aggravate, both the arthritic and lithic diatheses, as the results of climate and indulgencies. Although the people of North America feed well, yet they work well, and are but little tempted by wine and ale; so they mostly escape the twinges of the gout. Nevertheless, they have scarcely escaped less calamity in the use of alcohol; which if it has not so much contributed to these calamities, has besieged the nervous system, the citadel of intellect; enervated the bacchanal devotee, and made an assault on the temple of the moral graces. Still there is a saving spirit in the community, that will guide the destinies of the moral compact, under the direction of Him, who ruleth on earth as well as in heaven.

Reverting, then, to the condition of the arthritic subject, we discover him to possess an increase of mobility of temperament; slight causes in connection with those of periodicity, excite disturbance, and produce gout. The steady actions of the synochoid diathesis are wanting, and in their stead the irregular, and convulsive movements of the typhoid state are present. Congestions form, and increase the embarrassment, whilst there is not a sufficiency of energy to fix the locations in their natural places.

In this state of things tumults arise in some or in many of the internal organs, called *mislplaced* or *atonic gout*. The stomach, head, lungs, or bowels, suffer great oppression. The locations may abruptly migrate to different tissues, simulating the diseases peculiar to them. A more accumulated energy may direct it to its lawful abode in the feet or great toe; it is now called *regular gout*. Perhaps, however, there is not constitutional force enough to fix it there in a regular fit; so it may collapse, and revisit some of the internal viscera, under the appellation of *retrocedent gout*. It now riots in some organ with almost uncontrolled confusion.

g. In this conflict the physiological actions manifest irregularity, and often inability of functions. The pulse becomes oppressed and irregular; distress, sighing, faltering, cold sweats, &c. succeed. The child of science may wish for intuitive knowledge, or some directions from *Æsculapius* to direct the course to be pursued; as whether to take blood, or use stimulants. If the oracle should answer, he might say, bleed with one hand, and give cordials with the other; that is, opiate tinctures, with spiced spirits and warm water, for the moment, and consider it not a contradiction. Contraries must be opposed, and the nervous commotions quieted.

Cordials and opiates are required for the time present, to sustain an equilibrium of function, and render more stable the wavering actions, until the force of the paroxysm has passed by, when the latent energies of the system may appear, and approximate the more steady synochoid diathesis; then will be afforded an opportunity for a more radical treatment. During the period of severe distress and commotion, no more opium should be exhibited than to produce some tranquillity. A teaspoon-full of vitriolic ether may be given at such times, diluted in water; also, ten grains of camphor well ground with gum arabic and loaf sugar. Tincture of peppermint; or capsium, piperine, &c. may be tried if the affection seizes the stomach, or bowels. A blister should immediately be put

on the top of the feet in retrocedent gout. Opiate tinctures may be rubbed on the surface contiguous to the seat of the distress. These applications are suggested only for the first period of commotion; the general treatment will presently be considered.

We discover very striking analogies existing between these affections, except the modifications of the diatheses; and gout oftentimes possesses a far more stable state of action, and admits of the full treatment of the synochoid diathesis. The greatest difference consists in the lithic habit of gout being commingled with the other common predisposing circumstances. It is no more a subject of surprise that gout should oftener prove fatal than rheumatism, than that severe typhus should be more dangerous than inflammatory fever. The eradication of the lithic diathesis constitutes an important part of the treatment, during the intervals of the arthritic paroxysms.

h. Methodus medendi of Rheumatism.

Acute rheumatism affords as many of the distinct phenomena of the synochoid diathesis, as any other habit of disease. The rigidity of the tissues, and density of the blood do not admit of a free circulation in the minute white tissues, until much has been done to eradicate the diathesis, and time given for the necessary changes in fluids to take place. Neither are these changes apt to take place so effectually as in ordinary synochal fever. The disease is, therefore, liable to relapse, and even continue in a chronic form. The locations being exterior, and more directly associating the nervous system of external relation, they afford reflex actions. The treatment needs to be continued until these circumstances are obviated. Although the sweats may be free, they do not afford full relief; they are often not warm but viscid, and manifestly containing an acid.

Venesection is very necessary in acute rheumatism, and

sometimes in the chronic; but the disease is rarely so suddenly relieved by it as in common fever. It must, however, be persisted in, but not carried to a full extent as in pleurisy, with a view of arresting it suddenly. In ordinary cases, three or four bleedings during the first two weeks, of about sixteen ounces each, may be sufficient for an adult. Yet, according to the phenomena.

Sweating is very useful, but a severe diathesis cannot be subdued by it at once; it needs to be repeated. If often urged it dissipates too much fluid matter. If excited by severe stimulants, they aggravate the fever. The celebrated Dover's powder, in a prudent manner, is well adapted to excite sweating in a mild case, but not in the severest kind. In this instance two drachms of the polygala senega root may be infused in a quart of water, to which add half a drachm of vinum antimoniales. It may be so far diluted as to be drank plentifully, being sweetened, or not. It should not be taken so freely as to excite the stomach much, but be changed for some of the more agreeable aromatic infusions, as pennyroyal, sage, &c. The object of sweating has never been reached, until the cold surface and viscid sour sweats, become changed for warm fluid sweats. An infusion of the asclepias tuberosa may also be used as a sudorific. The reputed sudorifics are numerous.

There is much in the manner of conducting sweats. The patient cannot bear heated substances in bed, after the joints are much inflamed. The covering ought not to be heavy, but the air of the room may be at a considerable high temperature.

If the patient should incline to sleep, he should be often awakened. The face and much of the surface should often be wiped with a warm soft cloth. The bed should be furnished with soft flannel; unless the patient makes strong objections, and dry flannels should occasionally be drawn over, and often changed.

If sweat but slowly appears, steam may be conducted on to the body of the patient by means of a roll of paste-board, or some other apparatus, from heated water. If the heat of the patient is not great, Jennings' vapor bath, of burning alcohol, may be used.

Quietness should be observed, and the patient supplied with mild, and agreeable nutritious drinks. When he appears fatigued, the sweats should be moderated slowly; but to make much impression, they often require to be continued ten or twelve hours, but not urged vehemently.

Purging between the sweatings will be useful, if the patient can be moved; yet not very severe. Calomel may be combined in the common icteric pill. Sulphate of soda, sulphur, &c.

We have to obtain access to the remote tissues with their capillaries, through the general circulation, when it is expected to affect such tissues particularly. It has been found that certain acrid agents, such as gum guaiacum, colchicum, mezereon, capsicum, phytolacca decandra, mustard seed, oil of savin, lobelia, terebinthina, &c., which may pass the general circulation without much disturbance, do excite action in these remote circulations, different from the morbid action; and they oftentimes assist in removing the affection. But, these cannot be used in the most acute state of the disease; yet when the severity of the diathesis becomes moderated, they may be used to advantage. Their manner of being used may be found in many treatises.

The pained joints, before swelling takes place, may be mitigated by tincture of opium,* and covered with soft hat

* This may be made extemporaneously as follows :

Extract of opium,	1 ℥.
White soap,	4 ℥.
Proof spirit,	1 lb.
Digest two hours, then add,	
Gum camphor,	2 ℥.

Apply freely whilst warm, and with the naked hand, every 4 hours.

case silk, with a cotton bat over it. The same applications may be as good as anything else afterwards, if heat is not great. If there is not high inflammation, the volatile liniment may be used.

i. Chronic Rheumatism.

Rheumatism half cured, by continuance is called chronic. It often requires twice as much time and labor to eradicate it, as might be necessary in the acute stage. During all the time of its continuance, there is a masked chronic fever. It has been mentioned, that it is liable to be followed with hydropic swellings and contractions; yet sometimes with atrophy, or shrinking. One case of an inveterate kind may be inserted, for the purpose of showing its progress, and the method of treatment.

About twentyfive years past, as by notes, Capt. Clapp, of Royalton, made application. He was aged about fifty-eight; perfectly clear in intellect, and stated, that he had been attacked with acute rheumatism about one year previous; had endured much distress, &c. His pulse was hard, contracted, and moderately frequent. He was universally affected with hydropic swellings, so much so that the skin along the fore part of his legs had burst, and the serous fluid continually dribbling down. Abdomen greatly swollen, with satisfactory tokens of water in the chest. He could not lie in bed, for a sense of suffocation; and had not attempted it for two or three weeks. Sat in his great arm chair, to the form of which he had become perfectly accommodated, as neither his hips nor knees could be straightened, nor bent any farther backwards; indeed, all his joints were fixed, and his head bent forwards and downwards, and could not be raised to a horizontal line.

He said he had employed nine doctors more or less within the year; had fully made up his mind to die, but concluded

finally to know if we had anything to say about his case. As he seemed to have some staminal energy left, with an evident synochoid diathesis, he was told we would make an attempt, the best we could, if he saw fit to risk it. He appeared desirous to undertake.

The first process was a full bleeding from the arm, followed by a cathartic of calomel and jalap. Took several very large doses in quick succession, all of which had only a moderate effect. He then took a solution of tartarized anti-mony with a view to excite emesis. The article was not weighed. It was astonishing at the time, and might appear incredible to others, in offering an opinion how much he took, before it excited emesis. He took the medicine in increasing quantities for about three days, and then vomited but moderately.

After another bleeding, and the impression of the first round of medicine, it required less to take effect; in about two weeks he could be moved with about a common dose of the emetic and cathartic; one or the other of which he took about every day, or every second day.

In about ten days after commencing treatment, he used the universal warm bath every evening, and it was steadily used for six weeks. Every other night it was prepared by adding about two quarts of flaxseed, as the water was heating; and the intermediate night a quart of common salt. Free rubbings were used whilst in the bath, remaining half an hour in it.

At about the end of the first week he could lie in bed with some ease, and at the end of two weeks from beginning treatment, could lie perfectly easy in his contracted condition. During the first four weeks he was bled six full bleedings from the arm, and required no further bleedings. At length he would sweat some after the bath, but took no Dover's powder, nor opiates in any other form, during the whole treatment.

Some small articles were used a little, as the essential oils ; and for the limbs, some liniments, as the volatile, prepared of olive oil, with an eighth part of aqua ammonia. In about two months he appeared to be quite well, altogether relieved of the dropsy, yet with some stiffness of joints. Attendance discontinued, with directions to repeat the bath occasionally, and some of the medicines as circumstances might require. In one year he had gained good use of his limbs, and labored ten years steadily on his farm, to our knowledge, and without having an attack of rheumatism, or any other disease.

Every disease will continue until the primary cause, deep seated in the tissues, is removed either by nature or art. The recuperative powers unaided, oftentimes cannot effect it ; and it often requires great force, and repetition of therapeutic agents to accomplish it.

Chronic rheumatism, with pain and without swelling, is materially benefited by the steam bath in heated rooms ; frictions long continued ; rubefacients ; thick flannel, and bodily exercise.

j. Use of Thermal Springs.

These have often been found useful in continued rheumatism ; they are a natural warm bath, of easy and extensive application, and their use is connected with many agreeable circumstances. The hot springs of Virginia, in this country, have been proved as very useful, with a temperature of from 100° to 108° Fah. High degrees of caloric combined with humidity, either in the form of water or steam, excite the action of capillary vessels, relieve rigid tonicity, and enable the tissues to evolve animal caloric, and consequently remove the primary morbid changes constituting disease.

k. The use of Narcotism by Opium.

We cannot speak from our own experience concerning this method of treating acute rheumatism. This practice proposed by Cazenave, had not arrested our attention until of late. The prize dissertation of Dr Webb, of Rhode Island, presents some very favorable reports of the free use of opium, as being capable in his hands, and also Dr Maurin's, of arresting the progress of either acute or chronic rheumatism in a few days.*

The method of using opium as proposed by Dr Cazenave, p. 137, is as follows: "To an adult he orders a pill containing one grain, and an hour afterwards he gives another grain, if the pains continue. At the expiration of the second hour he gives a third grain, and after a little time he examines his patient. If there be a tendency to hilarity, he administers a fourth grain, and so on; a grain every hour until a complete calm is established, or an abundant perspiration is induced. This being the case, he orders a grain to be given every two, three, or four hours, according to circumstances, solely with the view of keeping up the perspiration.

"Its failure is owing to the timidity with which it is administered. It acts in three ways according to the dose employed. Given in small doses it obtunds the sensibility, and brings on temporary relief; but the cure is not thereby accelerated. Administered in a somewhat larger dose, it sometimes occasions nausea, palpitations, giddiness, headache, &c. These effects are, of course, but momentary, and should form no solid objection to the remedy, if it is found beneficial in other respects, besides relieving pain. To the above effects of opium, if it be continued, succeed others; the patient does not sleep; but he experiences a kind of delightful ecstasy, forgets his sufferings, &c. The action is then ex-

* See Boston Medical and Surgical Journal for April, 1837.

cited like that of wine. In some cases an abundant perspiration is excited,—but in both events, the radical cure of the rheumatism is effected,—that is, with or without the sweating process.

“In respect to regimen during this mode of treatment, it is indispensable to keep the patient in an even and mild temperature, with flannel next the skin, and on the simplest liquid food ; use laxatives. Perfect quietude.” Many other particulars require attention for effecting a speedy and easy cure ; perhaps venesection.

We are aware that the effects of medicines are modified by at least three cardinal circumstances ; 1st, the relative quantity used ; 2d, the particular state of susceptibility of the subject at the time of exhibition ; and 3d, the physiological character of the tissues most essentially involved in the local affection, modifying the diathesis. Many others might be mentioned, as age, habit, idiosyncrasy, &c. But, in the present case in relation to the free use of opium, perhaps we have much yet to learn of its therapeutic properties. Our animadversions on this article hitherto, have principally been confined to its use in what may be said to be the general pyretic habit ; meaning those affections connected with concentrations in the internal viscera, and materially affecting the nutritive system of nerves. We attempted some discriminations in its use, in diseases affecting the two great nervous systems, in a former article. (Sect. xlvi. 1, j.)

We are well assured, that large and repeated doses of opium in pyretic affections of the internal viscera have been most unfortunate. We consider it a powerful stimulus in small doses, and cannot conceive how it loses its stimulating influences in large doses, otherwise than in changing the state of the vital force, it may show sedative effects in some tissues, whilst others manifestly show an increase of excitation. So it appears in the instance of rheumatism, a disease locating essentially on the tissues chiefly under the dominion of the

nerves of external relation ; the organs of nutrition appear to be in a state of sedation by excessive doses, whilst the system of external relation is highly excited, and along with this, the exhaling systems.

Dr J. K. Mitchell, of Philadelphia, appears to have been considerably successful in curing rheumatism by excitations, as cuppings, blisters, &c. at the spinal origin of these nerves.*

The use of opium as specified, is commonly attended with an increase of exhalations, or sweats ; and of course at the same time the capillary absorbents must be excited. These excitations may probably remove the primary causes of the disease, and afford opportunity for healthy action to succeed. We have already shown that rheumatism, and many other diseases both acute and chronic, have been removed by very different remedies, which excite the exhaling and absorbing processes, increasing the vascular pyretic state.

If opium can be so managed in large doses, as to produce these desired effects with safety, it will prove to be an attainment of a desideratum long wished for. The subject merits further investigation by experience and observation.†

In the mean time we may be allowed to remark, that an attempt to cure the severest cases of acute rheumatism by narcotism, would very surely be a dangerous practice ; at least, until the diathesis shall have been essentially mitigated by time and suitable treatment. Whilst the case remains lingering, with even strong symptoms of irritative perturbations, Cazenave's method may be successful. It surely must be the most useful in rheumatism, as well as the safest. Yet, we are in no degree persuaded, that such a case of chronic rheumatism as the one above stated, could be benefited by it.

* American Journal of the Medical Sciences, Vol. VIII. p. 55.

† We have seen a very considerable number of cases of "opium-eaters," who had contracted this habit by using opium to mitigate the pain of rheumatism ; a state scarcely less tolerable than the tortures it relieves.

j. Treatment of Gout.

Some suggestions have already been made, in relation to the manner of guiding a paroxysm of irregular gout, in order to render it as safe as possible. Sound discretion should be used as to the amount, and timing the remedies.

The treatment of gout must be conducted on general principles, and modified as may be indicated in any individual case. Sometimes the treatment may be very similar to rheumatism, but without urging sweat. Most commonly it does not require so extensive bleeding; but requires more cordials, and opiates; yet they should be cautiously used. The safest treatment of the swelling in the feet is, to cover them lightly with flannel, and not disturb the local concentrations.

During the intervals of the paroxysm, the only sure and safe method to remove the litho-arthritic diathesis is, by taking the opposite course from those circumstances which had produced it. This will go far, also, in avoiding the evils of an hereditary liability.

The instances reported by writers are numerous, of gouty subjects being driven by poverty to hard labor and privations, who have thereby wholly escaped the attacks of the disease. Yet, few have moral courage and perseverance sufficient, to practice voluntarily, what necessity compels to.

10. Phlegmatia Dolens, or Rheumatismus cruralis.

It has been our lot to witness a considerable number of instances of this affection. For many years past it has been a topic of much speculation, and too much time has been wasted in propagating visionary hypotheses, in relation to its pathological character.

a. The intumescence possesses much sameness of external aspect; whoever has been but little conversant with its appearances, will not be very liable to mistake it for any thing

else. That we have not been mistaken in this affection, we have carefully noted the phenomena mentioned by Dr De-wees, in paragraph 2147, in his Practice of Physic. They are specified in fourteen articles, and accord very exactly with our observations. Or, we might except to article 10th; the cases we have seen have been mostly confined to one leg; and it has been rather rare that the opposite leg went through a similar course, and if it did, it was of less severity.

Except, again, article 13th; although the severity of the intumescence abates in a few weeks, yet the remaining swelling does not assume the full character of the "common œdema," but retains much of its own peculiar appearance. It will receive the print of the finger, but feels doughy, and does not go off fully in the night, like œdema. The parts have obtained some thickening. Some limbs have never obtained their former dimensions, but remained thickened, weak, and clumsy.

The affection of the leg is always subsequent to a previous pyretic habit; it seems not to be a necessary, but rather accidental sequence, arising from cold, or other circumstances, which excite a state of exacerbation at the time. It is not confined to any period of the co-existing disease, sometimes occurring within the first fortyeight hours; at other times, not until fever may have existed two or three weeks.

It is not exclusively confined to the puerperal state, neither to the sex. We have known two instances in males above adult years; one had been exercised with pneumonic inflammation for two, and one for three weeks, when the thoracic affection suddenly collapsed to the leg, and we could not discover any difference from the puerperal swelled leg. The thoracic affection become essentially relieved. We have seen several instances of married and unmarried females, neither pregnant nor puerperal, who having been confined with what we call typhus fever of this climate, some two or three weeks, suddenly become affected in like manner with swelled

leg, which we could not distinguish from the phlegmatia dolens of puerperal females. One of the unmarried had not yet got rid of all the intumescence, at the end of ten years. We have known one instance in the arm of a male; and several on either side of the body very similar.

b. Our attention having been early directed to this affection, it became a subject of not a little solicitude, to ascertain its pathological character; always having satisfactory reasons in conclusion, for rejecting all the suggestions hitherto advanced; some more congenial with the history of the affection were sought after.

There is something plausible, in the view of the circumstances of gestation, and parturition, creating a local predisposition in the lower limbs, as well as the uterus; so that this affection may be excited when commotions arise in the general system. This may be, and probably is the fact.

Again, as the affection seems demonstrated, by many reports, to arise, aside from the puerperal state, we are compelled to assign it a more general and constant origin, than the gestative predisposition.

Our limits prevent the following out this subject in the detail it merits; we shall, therefore, have abruptly to intrude the results of our own observations into a narrow compass. Whether it may be considered on the same principles as the transfer of other local affections, as eruptions, hemorrhages, &c., we will not fully decide. But, whatever may have been the predisposing causes of the local affection, or of the previous disease, it seems to have its origin from a sort of metastasis, and a kind of imperfect crisis.

We are in the habit of considering the puerperal, or any other fever, quite safe, under *discreet management*, after the local intumescence appears in the leg. We cannot specify the number of cases we have been concerned in, on account of having kept notes only in part; if they have not been many, they have not been very few; but we have had but

one unfortunate case of the affection, and that under very adverse circumstances. The local affection manifests no liability to suppuration, neither to degenerate into gangrene, when not much disturbed; neither to any destructive state. The limb certainly detains much of the lœdemia, which sustain general disease; and we have often been persuaded that the general habit has been rather relieved, than aggravated by the metastasis; and this now has become the principal local affection. But the limb should not be over disturbed by too great service done it.

c. With respect to the pathological character of this affection, we long since came to the conclusion, that the effused substance was of a sero-albuminous kind, and probably containing some fibrin; and that some other tissue than the sero-cellular must be concerned in it. The fibrous fascia of the groin, inguinal glands, and of all the muscles of the limbs, declare an immediate participation by their extreme tenderness, immobility, and pain at the very onset, and before any intumescence appears. These tissues of the muscles, tendons, and the capsules of joints, are very extensive in the solid limbs. And, again, the middle coats of arteries and veins claim an affinity. The muscular tissues seem, also, to partake of the affection.

In acute rheumatism, when the kindred tissues are affected, the effusion is of a similar viscid character, and extends throughout, to the cutis vera at the joints, and sometimes quite over a limb. Distracting pain and soreness, are alike mitigated in both cases, as the swelling appears; unless the fever should be urged by stimulants, instead of being assuaged by proper treatment. And still, in neither case does the fever wholly subside at once, but may continue indefinitely.

Any objection that might be raised from the circumstance of the puerperal fever, seated in the uterus, metastatising, or extending to the leg, may be answered by the fact, of a very similar condition existing in the peritoneal inflammation, so

liable to be associated with hysteritis, and producing similar results. The effusions, in this instance, would be identical in appearance and in kind, were they thrown into a loose cellular texture, instead of a large serous sac, as in the abdomen, where the matter suffers some changes. A fibrous subjacent fascia is here, also, connected immediately behind the serous lining. And farther, the uterus and its envelopes are of the fibro-muscular character, and usually associated with synochal fever.

d. If there is any justness in these suggestions, we may hail this intruder to the leg rather as a friendly visitor, whose formal transit to the peritoneum and abdominal viscera, might have been attended with fatal consequences, without more energetic repulses than it commonly meets with.

We have often traced the phenomena of acute rheumatism, with phlegmatia dolens, or sparganosis, or tumid leg, and found a very constant similarity; especially, marking the anatomical difference between the thick capsules of joints, and the thin accommodating structure of the muscular fascia of the leg. Therefore, in our nosographic arrangement, we feel justified in removing the escutcheon of phlegmatia dolens to the family of rheumatism, with its proper cognomen, *rheumatismus cruralis*.

e. *Methodus medendi.*

The pyretic habit in connection, is of the synochoid character, and very similar to rheumatism. It requires similar constitutional treatment, which must always be accommodated to the severity of the individual case. Some may not require bleeding, whilst others may need it two or three times.

The diathesis, in hysteritis, is of the synochoid character, in its natural state; although, frequently assuming the typhoid, in a state of aggravation. When phlegmatia dolens occurs in this condition, there need be no further apprehen-

sion of danger from a typhoid state, for the susceptibility of the tissues in its new location, does not admit of it; not, indeed, any more than in rheumatism. The hysteritis is always relieved by it; and farther, the local affection never retrogrades to the uterus.

Sweating is well adapted to relieve the irregular and deficient circulations in the capillary systems, in phlegmatia dolens, but the diathesis may be so strong, and the fluids so viscid, that sweats flow with great difficulty. As soon as the system is reduced to the sweating point, it ought to be employed in a prudent manner.

Moderate cathartics are commonly useful, and occasionally a few grains of calomel. We have long been in the habit of employing a combination of the root of the American hellebore, or poke root, which is an important constituent in the Coit pills.* It may be used as a full cathartic, or laxative, in many acute or chronic diseases; it acts as an easy hydragogue.

f. The tumid leg does not require very active treatment; it being a sequence, and greatly dependent on the general diathesis for its severity. Although its approach may be rapid, its removal must be slow. In our early practice we were induced to do much for the leg, but found our mistake in this. Severe, active treatment is worse than useless. Although we never met with the misfortune mentioned by Dr

* R. Gum Gambogiæ	-	-	-	-	-
Gum Aloes socot.	-	a. a.	-	-	℥ ss.
Rad. Veratri viridis	-	-	-	-	-
Saponis Castil.	-	a. a.	-	-	ʒ iv.
Hydrarg. sub-mur.	-	-	-	-	-
Antimonii sulph. rub.	-	a. a.	-	-	ʒ ss.
Gum Guaiaci	-	-	-	-	ʒ j.
Gum Ammoniacy	-	-	-	-	ʒ ss.
Tinct. Camphoræ g. s.	Fiat massa.				

The mass should immediately be made into pills, of four grains each, and dried on a sieve, and kept free of dampness. One, two, or three for an adult.

Dewees, we discovered that epispastics were useless, and not only so, but very troublesome. Neither rubefacients, unless in the latter stages. Tight bandages are of no use until the subject gets so as to walk about; they then afford some support, and preserve warmth.

In the early stage, embrocate gently with the anodyne tincture mentioned in the last article. Cover the limb sometimes with fresh cabbage leaves, or soft oiled silk, and gently support with the twelve tailed bandage.

Apply twice a day, a mild steam of hot vinegar and water, sometimes by means of cloths wrapped around heated bricks; or in the manner advised by Dr Dewees, in a vessel, and the bed clothes raised by a hoop placed crucially.

In the latter stage, bathe the limb in camphorated spirit, with the addition of oil of rosemary. Bandages; frictions.

11. *Lumbago and Rheumatalgia.*

Lumbago is rather of the family of the rheumatalgia, and might have been placed in the order of the tetanic affections, along with cephaloxia; but the removal might seem too far distant.

a. It affects the psoas muscles principally, with their fascia; also, other muscles in the neighborhood, more or less. Attended with rigidity, soreness and inability of muscular motion. Severe pain at every attempt to move; but without effusion, and of course without swelling. The attacks are sometimes so sudden that the subject falls down, or remains riveted in one position. The body cannot bend forward, and this distinguishes it from nephritis, which allows of bending of the vertebræ, and motion of the muscles. This affection does not metastatise like rheumatism, and this circumstance, with the absence of effusions, are sufficient to remove it from the family of rheumatism.

b. Rheumatalgia fascialis, or when in the lower limbs,

rheumatalgia cruralis, is of a similar character with what is called lumbago. Perhaps some have called it nervous rheumatism ; but this is inappropriate, and so is neuralgia, although it has a strong affinity to it. It is often confined to one limb, and occupies the same fascia and muscles as phlegmatia dolens ; sometimes both limbs at once, and even extending considerably over the body. Pyretic phenomena attend both rheumatalgia, and lumbalgia as it might be called, but of not so severe a grade as in acute rheumatism.

c. In these affections, also, no effusions follow ; and in this they resemble the tissual condition, which exists in the spastic state of tetanus. These tissual changes disturb the sensitive nerves, and render their perceptibility more acute.

The capillary exhalants appear to be differently affected ; in the one case free, and in the other confined, or suffering a state of adstriction. The same takes place in excitations, and inflammations of the secreting organs in their different degrees of morbid impression. We do observe something similar in both the serous and mucous tissues. They are sometimes dry, and again yield much fluid when excited. The urinary mucous tissues yield fluids very differently, and so the serous when apparently excited in a similar degree. (See Order VII. and VIII. of Nosography.)

d. Methodus medendi.

As these affections are of similar character, they require like treatment, making some difference to accommodate particular locations. Sweating should be procured in both, although sometimes difficult. Begin with the warm bath, if practicable. Steam bath moderately, but universally applied, either in a room, or the portable box. Take blood according as the state of the vascular system may require. Cathartics. Antiphlogistic regimen.

In lumbalgia, apply mustard seed poultices to the loins ;

or, cotton batting, besprinkled with tincture of camphor, and dusted with black pepper ; acupuncture. As the affection becomes relieved, a plaster of burgundy pitch, dusted with opium and camphor. Thick bandage over the loins.

In rheumatalgia of the limbs, use tight flannel bandages over the whole extent of the limb, and passing several times around the hip. Remove twice a day, and apply a stimulating liniment as below.* As soon as the case admits, thick clothing along with the bandages, and walking until sweat is excited, taking suitable care to avoid cold.

The same liniment may be used in lumbalgia. In both cases in the state of convalescence, tincture of gum guaiacum and aloes.

Both of these states of disease require narcotics to relieve pain, and the compound powder of opium and ipecacuanha may be as good as any other. If narcotism is justifiable in any case, it may be in these. Still our experience does not justify it to any extent.

- * Olive oil, 4 parts.
- Aqua Ammoniacæ, 1 do.
- Laudanum, 1 do.
- Oil of Origanum, $\frac{1}{2}$ do.

Shake well in a bottle, and anoint in the iatroleptic method, with a heavy hand, and long continued, in a warm room.

ORDER II.

THE MUCOUS TISSUES.

SECTION XLVII.

1. *Synochus.*

By this we understand a continued state of fever, with slight remissions, less severe in intensity than synocha. It is more fully defined in the nosography. It is of frequent occurrence; attended with the common phenomena of the synochoid diathesis, as slight depression, chills, heat, pain, internal membranous inflammation, &c. with only slight congestions internally, and morbid action early appearing on the surface, as compared with typhus mitior. So far as we know, it is excited by the same causes as synocha.

The notion of its having a hybrid, contagious origin and character, partly "synocha and typhus blended together in a slight degree," is altogether hypothetical. The supposition that synochus at its commencement only, inclines to the synochoid diathesis, and soon changes to the typhoid, is a most unfortunate circumstance in a practical point of view, and has led to very disastrous consequences.

The diathetical character of synochus is synochoid throughout, and as manifestly so by the phenomena, as in synocha, if not so severe. The phenomena exhibited towards the close of disease of a typhoid appearance, in fatal cases, are factitious, and the result of a stimulating, or "incendiary treatment;" or, the neglect of proper treatment. This we are well assured of by long observation, and we do insist, that when such treatment is withheld, and the obvious anti-pyretic is used, no such typhoid appearances occur. Indeed, a

similar improper treatment will clothe the real synocha in somewhat like habiliments. When synochus is misapprehended for typhus, and by those who have much dread of debility, and more so of sedative measures, the results of improper treatment will be a state of the system simulating real typhus, and even partaking much of the typhoid diathesis, and its accompanying phenomena. The remedies which insure a fatal event, are then urged the more thoroughly.

We have met many cases of this description, some of which have been saved, and others lost. Whilst we do insist, that typhoid fever has often prevailed extensively in the New England States, we as strenuously insist, that synochus has often been mistaken for it, and attempted to be treated as real typhus is said to be in Great Britain. The consequence has been as above, a factitious typhoid state.

It is with peculiar satisfaction we hail our veteran coadjutor in the cause of reform, Dr Dewees. On the subject of the *typhus form* of continued fever, *Prac. Phys.* p. 152 and seq. he says, "For if the pulse be tense and active; pain acute; especially, if in the head, chest, or region of the stomach; the skin hot, and dry; the tongue dry; the teeth encrusted, and the mouth black; the fingers employed in picking the bed clothes, or the arms twitching with subsultus tendinum, we would not hesitate to abstract blood in one way or other, be the period of the disease what it may.

"Nor would this be all; we would purge as just directed, and observe a rigid antiphlogistic regimen throughout. We would do this, because we could appeal to our experience for the comparative success of the two methods; for the time was, when we went with the current; stimulated as fearlessly as any one; and lost patients as certainly as any other practitioner. But for the last ten years we have abandoned this mode of treatment; and by doing so, if we do not deceive ourselves, we have carried patients through, that would, we sincerely believe, have succumbed under the other plan."

These are the general sentiments he expresses in relation to what he calls this *artificial disease* ; and they are in strict harmony with our own observations. We have the satisfaction of early suspecting the correctness of the then new Brunonian treatment ; had seen others try it, and fully proved it erroneous to our satisfaction, within two years practice ; so that in 1795 we became as well satisfied of its pernicious results, as our author was in 1818. The immense weight of opposition was resisted single handed for a long time, whilst every returning season has confirmed the correctness of the opinion then formed. We had constantly been extending the principle and practice to other diseases, commonly reputed adynamic, and in a restricted manner to typhus ; and even several years, before we had read Dr Rush's *Med. Inquiries*, it being the 2d Phil. Ed. in 1805.

However, there seems to be no necessity of pursuing the treatment of simple synochus any further at present. It requires mild antiphlogistic treatment. This state of disease most commonly requires some blood to be taken at an early stage ; and if so, large bleedings will not be required. But, if neglected, and especially if much stimulation shall have been practised, large bleedings will be required, if practised before the bleeding point has passed by. Yet, it should be remarked, that this point is not so soon passed as in many other habits of fever ; so that late, and extensive bleedings are sometimes required, and even whilst some typhoid phenomena are present. Then continue a mild antiphlogistic treatment.

It may now be remarked, that most of the diseases of the mucous tissues are accompanied with a general state of the system approximating to, or resembling the diathesis commonly attending synochus. We, therefore, make use of this term as the most proper, or appropriate, we think of, to give some idea of the diathesis of the affections of this order.*

* See definition and reference, in *Nosography*, p. 100.

2. *Catarrh, and Influenza.*

a. The phenomena presented by these affections are very similar ; as may be seen in the nosographic definition, and more particularly, in all the books. The constitutional symptoms indicate a pyretic grade of the mild synochoid character. The local affection is a concentration upon the mucous tissues of the respiratory apparatus ; that is, the frontal sinuses, Eustachian tube, antrum Highmorianum, fauces, and pulmonary tissue ; also including the eyes, and nasal ducts. The first discharges are acrid, of a serous character, then mucous, or muco-purulent.

Catarrh is almost always excited by cold, and sometimes more readily than at other times. Influenza appears in an epidemic manner, affecting almost a whole community in the course of a few days, or at most a few weeks. It seems also, to be excited by slight cold, but is often ushered in without any evident exposure. There is satisfactory evidence of the existence of a wide spreading atmospheric afflatus, when it prevails. (Sect. xxv. 2.) It proceeds in a rapid, progressive manner, sparing neither age, sex, nor scarcely such as are already afflicted with other diseases.

It is a fortunate circumstance, that it is not a very severe affection ; yet it sometimes proves such, when neglected, or badly treated. The primary affection may suddenly destroy, by a more than ordinary concentration in the head ; or more commonly in the lungs, producing that form of pulmonic inflammation long denominated peripneumonia notha ; or pneumonitis mucosa. Notwithstanding, the sequelæ of catarrh and influenza, are the most to be dreaded, in their liability, when neglected or palliated by narcotics, of establishing a predisposition to phthisis pulmonalis. Again, any person already predisposed to phthisis, with an incipient tubercular state, is liable to severe pulmonic inflammation.

b. Methodus medendi.

Most attacks of these affections pass off in three or five days, by observing a warm temperature ; keeping in bed ; using aromatic, diaphoretic infusions, demulcents, and the antiphlogistic regimen generally. Yet, on some occasions more active medical treatment becomes necessary. Warm ablutions ; mild steam admitted by respiration ; mild sweating, and at the very onset a single dose of pulvis ipecacuanhæ comp., is useful to allay the thin saline discharges from the mucous membranes, to remove the chills, and promote warm sweats. If repeated it is liable to increase pain, suspend the mucous discharges, and aggravate the case. More reliance should be placed on mild diaphoretics, mucilaginous drinks, and agreeable warmth constantly sustained. Finally, pursue the treatment of mild synochoid fever.

If the pyretic phenomena become urgent, then venesection, followed by an emetic of the compound syrup of squills. Neutral salts as laxatives. The disease is liable to be renewed with greater severity, by exposure to cold, in the state of convalescence. The phthisical and infirm ought to be very circumspect.

3. Peripneumonia notha ; Pneumonitis mucosa ; or Bronchitis.

a. A synopsis of its character has been given in the nosography, and various allusions made to it already in several places, as well as the last article. It consists in an inflammation of the mucous tissue of the lungs, or of the bronchia and trachea, very similar to the last affection treated of, but of more severity. Dr Eberle styles it acute bronchitis, but in its ordinary state the inflammation does not extend beyond the mucous tissue.

The severity of its pyretic character, and of course the

importance of each individual case, will be estimated by the attending phenomena. However, it must be especially inculcated, that the severity and danger of the disease, are often masked. It frequently occurs in elderly people and depreciated habits, which are not so capable of eliciting an obtrusive suit of phenomena. And, again, as occurring in the aerial tissue of the lungs, pain is often absent.

The tissual excitation at first may not admit of much, if any discharge of mucous secretion, for two or three days ; and then a sudden, and copious secretion may take place into the bronchia, and inundate the aerial cells, producing laborious respiration, carbonized blood, sublivid countenance, tracheal rale, and quickly, suffocation. Such a probable event should always be kept in view, and we do say it may be obviated with much certainty, by a previous treatment.

b. Methodus medendi.

Let the patient be kept in bed and constantly in a mild diaphoresis, so that there shall be an equal warmth. Use inhalations of mild steam of vinegar and hot water. Take blood from the arm even if the pulse should be intermittent, and without great force or frequency. A second bleeding in six hours will be more strongly indicated by prominence of symptoms than the first, and the blood may even be cupped. Repeat according to circumstances.

The compound syrup of squills, or antimonial wine, may be exhibited every four hours, for the first twentyfour hours, so as to excite nausea, and slight emesis once or twice during that time. Infusion of hyssop and flax seed for drink, sweetened with honey, or as the patient may choose. After emesis, onion syrup, or a clove of garlic once in six hours.

As a cordial, give half a drachm of oil of rosemary incorporated with two ounces of treacle or honey, in small doses as most agreeable. Chicken water, broth, and gruel as nutriment.

Purging should be avoided ; but a laxative of calomel and castor oil may be employed according to circumstances.

Follow up the treatment, until respiration becomes easy and deep ; especially keep up a steady external warmth. If, however, the case remains obstinate, and the skin either dry and rigid, or cold and damp, the universal warm bath should be resorted to, with much confidence of immediate relief. Epispastics on the spine between the shoulder blades. Leeches.

The duration of the disease depends chiefly on the management, having regard whether it was seasonably employed. The severity of the disease ought to be speedily arrested, and if the absorptions are well sustained, it may require one or two weeks for the natural adjustments to take place in the system.

In Tracheitis mitis, or mucosa, a very similar state of the mucous tissue of the trachea is present. It affords, oftentimes, large quantities of a sero-mucous matter, but no dense adhesive membrane ; often occurring in children. Emesis ; mild and continued diaphoresis ; mild detergent gargles ; as infusion of senega, with honey ; onion syrup, &c., are all that is required.

4. *Phthisis Pulmonalis.*

“How dost thou rend in sunder
Whom love has knit, and sympathy made one ?
A tie more stubborn far than nature's band.”

a. *Explanation.*

Having attempted an arrangement of diseases according to their tissual seats, it now becomes necessary to notice phthisis pulmonalis, along with the affections of the mucous tissues, in Order Second. Yet, as other tissues are implicated, we cannot avoid associating them in a consideration of its entire character. Reference will therefore be made to Or-

der Sixth, genera 5th, 6th, 7th, 8th, 9th and 10th, for the purpose of bringing together the different diseased states of the tissues of the lungs, and reviewing their connections and dependencies.

The *adventitious tubercle* requires some notice, and is placed in the order of the glandular tissues, because we could find no more suitable place ; and especially as some connoisseurs declare it to have its seat in the lymphatic ganglia. In many cases no lesions are found beyond the mucous tissue, when the disease terminates fatally, attended with the common phenomena of phthisis.

b. Preliminary notices.

Of all the maladies, which have visited and afflicted the human family, this has constantly borne the supreme sway in the middle latitudes ; so that the pestilence in every form of plague, cholera, fever, fluxes, &c. dwindles into little comparative importance. It pursues the even tenor of its course, whilst those have long respites between their visitations.

Notwithstanding so many have been engaged, with the best motives, and most tender solicitude, to discover some remedial agents ; yet, according to some of the most recent reports, the whole world still remaineth in ignorance in a therapeutic view, as profound as before the flood ; and all the labor is lost for the want of a right application of the knowledge obtained ; or, from the want of a generalization of facts, or correct theory. Even the veteran Dewees, who seems to have soared above many of his fellows in his intrepid practice, prostrates the standard his arm has sustained through many conflicts, and says, whilst devoting fiftytwo pages to the subject, “ we fear we declare too solemn a truism, when we say we do not believe that phthisis, properly so called, has ever been cured by art.”*

* *Prac. Phys.* p. 512.

Perhaps it may be said, that no disease was ever cured by art. We say a disease is cured, when the physiological actions are so modified by art, that the recuperative powers of the system can produce salutary changes, without which they could not be effected.

We have again to deprecate the present ill directed course of pathological investigation. Although the anatomical researches are laudable and useful, still little advantage will be gained by a knowledge of all the pathological minutiae in this department, whilst the morbid economy of the system is neglected, or erroneously interpreted.

We are fully aware of the labor, and difficulty of modifying the abnormal state existing in phthisis pulmonalis, in such a manner that the salutary processes shall be restored, and the lesions removed. Yet, notwithstanding all that has been said to the contrary, we are as well assured that this has been done on many occasions, as we are that pleurisy has been cured. We do not say that every case can be as certainly cured; for, its slow, insidious approach often allows of formidable lesions taking place, before the patient becomes alarmed and calls for advice. And again, the adviser is too often inattentive; and if he entertains some serious views of the case, his decisions and exertions may be hesitating. Unless he has gone through a long train of experience, the writers he consults are useless to him; as they give contradictory advice, so that his decisions and exertions are finally paralyzed, from not having confidence in any treatment.

In this dilemma some palliatives are given, and these of course consist of opiates in some form, to soothe the cough. Even a doubting veteran will escape from the case after proposing *morphia*, and fully justifies his conscience on the authority of multiplied precedents, and the present Lethæan comfort he affords his deluded patient. Doubt crowding on all sides, he wants to look on awhile, to see more of the ravages of the disease, before he attempts any radical meas-

ures. Perhaps the stethoscope is used, more to explore the ravages of the disease than the primary changes. If any radical treatment is used, it is of a superficial kind, conceived in obscurity, and practised in doubt. The giant *debility* staring him in the face, causes him to be abashed; he again calls in the aid of the stethoscope, and finally determines it a hopeless case. The patient is still cheated by palliatives, and of the chance of a radical cure. The disease progresses with all its direful train of phenomena; and that *necessity* which consigns the victim to the tomb, alike satisfies the mind of the adviser.

If this picture appears of too brilliant a tint to some, we can say our travels have often brought us in contact with many of even a deeper stain. Whilst we mean not to cast reflections, nor speak lightly of the formidable character of the disease we are treating of; we feel deeply, and deplore the hypothetical dogmas so industriously circulated and imposed by high professional authority, in too many instances.

Our circumstances at present preclude entering into a consideration of much, if any, of the false inductions, which serve as a basis of the practical errors in phthisis. Everything must be abbreviated, so that a volume must be condensed into a few pages. Merely a bird's eye view can be exhibited in relation to the disease, and yet enough we hope, to excite new inquiry, and a review of the subject. Without intending to enter the domain of egotism, we may be permitted to remark, that the principles and treatment of phthisis we made public twentytwo years ago, have been well sustained in the results, and that our inquiry has been constantly awake in relation to the subject.

c. Causes.

The causes of phthisis, like those of other diseases, may be esteemed to be, 1st, remote; 2d, exciting; 3d, primary. The remote causes so far as they can be recognized, are,

in many respects, very similar to those which often lay the basis of the acute morbid habit, and which have been, in part at least, briefly treated of in the preceding etiology, and need not to be repeated here. Dr Clark has given a very good summary of those which may have a particular reference to phthisis, but still they are all such as lay the basis of the common chronic morbid habit.

The hereditary predisposition, or idiosyncrasy, is difficult to be defined, as the very term implies. That such a state exists in families and individuals cannot be doubted. It implies a state of more ready susceptibility to extraneous circumstances acting on the general system. It may in some measure be recognized by the general aspect, and contour of the body. A comparative state of tenuity of texture, slenderness, and mobility; not capable of fatigue; easily hurt by cold, severe mental impressions, and internal stimulations above mediocrity. The character of the lymphatic temperament does not strictly apply to it, for the subjects are very often of a dark complexion and coarse texture. Scrofula is a rare disease in North America, whilst phthisis is the most frequent. From all the facts, we can only infer, that there is some similarity in the common state of increased susceptibility, rendering the system more assailable to the ordinary causes of disease. Scrofula is a disease of southern latitudes, affecting subjects in their nonage with laxity of tissues; whilst phthisis is a disease of cold and variable latitudes, and affecting adults in their acme of plethora, with much activity of tissues, and vascular impulse.

A state of predisposition is often obtained in those free from the congenital, by numerous causes leaving a sort of increased tissual susceptibility, above the ordinary grade; and now subjecting the individual to injuries, which others pass with impunity. Pyretic diseases of every grade are liable to leave a state of more than ordinary tissual susceptibility, and especially if often repeated; and more particularly if

badly treated. This is a fruitful source of phthisical predisposition.

This subject needs some closer examination, and by it we shall find, that antecedent pyretic diseases often not only leave a state of predisposition, but an actual state of disease of an obscure kind, which goes to form the chronic morbid habit, presently to be noticed. All the chronic eruptive affections; the exanthemata, as measles, small pox, scarlatina; as well as all fevers of northeru latitudes, are liable to leave a state of predisposition to be lighted up by slight exciting causes, or they dwindle into chronic disease by being only half cured. (Sect. xxviii. 3.)

We might notice here, improper diet, too much exercise or great inactivity, alcohol, impure and damp air, exposures to evening air, debauchery, venereal excess, and sudden changes of temperature, which by frequent repetition create a state of predisposition, without exciting actual disease. Oppressions of mind, sorrow, disappointment, nostalgia, &c. All the passions create a morbid susceptibility of the internal tissues, when of any considerable duration.

d. Exciting Causes.

These may be all those which usher in the acute morbid habit, but of a less severe kind. They often act in a silent or masked manner, producing but little present disturbance, but act an important part in establishing a permanent chronic morbid habit. The causes are slowly and slightly applied. If they were severely applied, they would excite acute disease. So, in disease being excited soon after measles; if the exciting causes are severe, pneumonia would be the result; if slow and mild, the chronic state of disease called phthisis will probably succeed. In like manner all the exciting causes of phthisis may be slight, and their effects by repetition become permanent. Cold, and its alternations with

heat, is the most prolific of any other. Hence the reason why phthisis is an endemic of latitudes liable to frequent and considerable vicissitudes of temperature. (Sect. xxxvi. 5 and 8.)

This scourge of human life is but rarely met with in southern latitudes, where the temperature is steadily elevated, sustaining action on the surface. And again, in northern latitudes, it is not very common, where the temperature is more permanent, although cold. Sudden changes acting on predisposed subjects, especially when in a sweating state, destroy the balance of the minute circulations internally, as well as externally, and induce a morbidly tissual susceptibility, rendering them liable to conflicting actions.

e. Proximate cause.

A knowledge of this is the most important desideratum, that ever exercised the ingenuity of pathologists. It has given occasion to the most vague speculations, and it is not a little surprising, that so many should have mistaken the real and simple thesis, which develops its true character. In Section xviii. we have attempted to reveal its intrinsic character, on principles that cannot easily be undermined by sophistical argument. The same facts and arguments, may be applied to the chronic as to the acute morbid habit.

There are certain determinate laws which regulate and control the diseased actions, as well as the healthy movements in the human economy. As one normal law consists in this, that health continues until some vital change is made in the inmost tissues; so, disease continues until the abnormal state of nosodynamia (Sect. xviii. 7) is removed, either by the efforts of the economy, or as assisted by art. A rigid contracted state of the involuntary tissues remains, on some occasions, a long time, as shown in cephaloxia, intestinal contractions, tetanus, cuticular eruptions, pleurodynia, &c. So

a fixed nosodynamic state persists in the minutest capillary circulations of the exhaling, secreting, and absorbing tissues, for an indefinite length of time, supporting the chronic morbid habit.

There exists a great difference of constitutional ability in restoring morbid derangements in the tissues. We discover in some subjects, when laboring under rather a severe state of disease, that the recuperative powers gain an ascendancy spontaneously, whilst others may require a thorough round of treatment, which may be unsuccessful in the end. The former appear to possess a more intense tissual sensibility, by which the restorative powers are more readily excited; whilst the latter, remain inactive. So we see many morbid habits restored by the physiological repulses, without the aid of remedies. If these very circumstances expose a subject easily to contract disease, he also possesses an ability whereby he becomes freed from it, at least in many instances.

If these changes, exciting disease, are sudden and extensive, the economy cannot long endure them; in this case a state of acute disease is excited; if they are slow and affect the economy in a partial manner, then a comparatively mild state of disease will be the result. Perhaps there is nothing incompatible in all this; for exhalation, secretion, and absorption are only partially interrupted in their regular courses; so, these functions are partially performed; and as they are more or less free, nutrition continues imperfectly, and a sequential diseased state will be more or less dilatory and protracted. One case of the chronic morbid habit may be more rapid than another, or by a new morbid impulse, may easily be converted into an acute state of disease.

As soon as these morbid changes are made, the fluids begin to suffer more or less deterioration, and in proportion to the tissual changes. Indeed the fluids themselves may have suffered some previous degeneration, and add inordinate stimulations to the tissues, perverting their functions in an in-

sensible, or inappreciable manner. Both these circumstances may originate and progress together, or one may have antecedence of the other.

f. Chronic morbid habit.

The foregoing circumstances may establish a diseased state, which is common to many other affections besides phthisis, according as the local emanations from it may concentrate on different tissues and organs, either by the influence of remote causes, or by idiosyncrasy. If by any peculiar state of irritative predisposition, it happens to concentrate on the serous tissues, dropsy will be the result; if on the glandular tissues, scrofula or cancer may appear; if on the mucous tissues, phthisis may be the result, with all its hydra train. All these determinations are liable to be transferred to other tissues and organs.*

We do not discover a very essential difference between the acute and chronic morbid habit, in their intrinsic characters, except in what relates to severity, or the slow or hasty changes of the different tissues. They are both induced by quite similar causes, remote and exciting; they both consist of abnormal changes in the minutest tissues; the chronic is often a mere continued sequence of the acute; they are both attended with similar trains of pyretic phenomena, differing in degree; and as we may show in the sequel, should be treated by very similar remedies; admitting, however, of many modifications.

The word cachexia, as employed by Dr Clark, is too vague; it is saying a bad habit exists; this is as much as to say, something like disease exists. We think some further

*The esteemed Dr Norton of Middlebury, Vermont, was wholly relieved from all the usual phenomena of phthisis, of several months standing, in 1831, on the attack of a severe chronic inflammation in his knee, which continued with all its sequences until his death.

approximation to facts is made out, in showing that a pyretic state exists, with a local affection ; and this is manifested by every phenomena in the morbid habit, as relates to phthisis. The phenomena are sometimes obscure, but a nice practical tact will discover an alteration in the pulse, even if it is not much accelerated ; if small, it will be more hard and pungent than is natural to the subject. The phenomena are numerous to show the existence of a febrile state, even if we have not the admonition of a cough. There is an altered aspect ; paleness, and occasional flushes in the countenance ; cold feet and hands, followed by slight burnings ; dry surface ; often slight fur on the tongue, or it shows too much redness ; increased susceptibility to cold commonly exists.

Although the subject may be very sensitive to cold, yet any degree of heat oppresses him, and he finds it difficult to sustain himself in an agreeable medium. He is liable to have shortness of breath on ordinary exercise, especially in ascending even moderate heights. The lips, and roots of the finger nails show a sublivid appearance, and the tip of the nose and ears will be cold even on exercise, or when oppressed with heat ; so of many other parts of the surface. Muscular inability is not remarkable, neither does pain but rarely attend, and the digestive functions are but little affected, whilst a close observation discovers a beginning of slow emaciation. There is often observed a cautiousness in the gait, and an inclination to bend forward in walking. The catamenia of the sex commonly close early ; the pulse may be a hundred or more a minute for a long time, before the stethoscope discovers any thoracic lesions. As these slight appearances proceed, and the determinations to the lungs, in phthisis, are becoming more important, slight thoracic pains, and a short cough are rarely absent. On the first notice of these two last symptoms, in connection with other circumstances, no time should be lost in the use of efficient remedies.

The affection ought to be recognised at an early period, before any essential adventitious changes occur in the tissues of the lungs. Dr Rush seemed to have a confirmed opinion, that phthisis was a disease of the whole system, but could discover nothing in its character but an inappreciable debility in its forming state, and vaguely supposed it must be cured sometime or another by tonics.* Yet, it seems he never made a salutary impression on recent phthisis, otherwise than by an efficient antipyretic treatment. The same vein of perverted logic seems to have meandered through the minds of empirics, and even of those who have climbed the rugged heights of science. True to theory, they commonly treat the disease altogether by excitants, or tonics.

The suggestions of dyspeptic phthisis, hepatic phthisis, &c. only serve to mislead from the just mode of investigation. The subject may suffer more or less in these organs, from infarctions and tubercles, urged on by the constitutional impetus, whilst phthisis is being seated in the lungs; and this is nothing more than what may happen to other organs. All the attempts for removing these phenomena by local remedies merely, are useless.

We have often had occasion to deprecate the falsity of the thesis so industriously propagated by some, of diseases originating at a tissual point, and from thence radiating, and producing what is styled sympathetic fever. Were the subject of less importance, it would not require so much attention. There is no instance in the whole catalogue of maladies, in which it has a more baneful effect, than in phthisis.

We are not pleased with controversy, but we will contend for truth, and for principles in medicine, when so closely associated with the happiness of fellow beings; and our duty to society, as well as to these pages, never will be performed,

* Med. Inq. Vol. I. p. 213 and II. p. 89, after repeating the essential phenomena of the morbid habit. "The early inability of function resembles other fevers in miniature; a febricula."

until we have fearlessly done all we can do, to correct the evil, and prevent the consequences resulting from it. So long as this false thesis prevails, the treatment of phthisis will be inert, doubting, and misplaced. Finally, it will be worse than useless to the community, as a dispassionate review of the present methods have fully proved to the understanding of many experienced advisers of the afflicted.

It is manifest that a general pyretic habit exists in phthisis, from the beginning to the termination of the disease, whether in health or in death; and it is marked by the same stages as other pyretic diseases. But, when the ulcerative processes have taken place in the lungs, with exposure to the air, and when they do not take on the incarning process, the pyretic habit suffers some peculiar modifications, and is then called *hectic fever*. It suffers two paroxysms every twentyfour hours; one at about noon, the other about six o'clock in the evening. It partakes of the remittent character. If the constitutional affection can be removed before too great devastations are made in the tissues, then a restoration may take place, otherwise not. As soon as the ulcerations, whether apostematous or membranous, assume the incarning process, the peculiarities of the hectic phenomena vanish, and soon the whole of the pyretic also; provided, there is no new crop of tubercles to excite another process.

Tubercles once deposited in the tissues act as foreign bodies, or local irritants, although originating from constitutional circumstances. They cease forming when the common morbid habit is removed.

g. History.

We have not attempted a regular history of the phenomena of phthisis, because this is sufficiently made out in all the treatises on the subject; it would be a mere repetition of what is familiar to every one. The phenomena vary in some

particulars in almost every case, on account of many personal circumstances ; also, by the treatment ; and also, by the severity and peculiarities of location. The common phenomena of mild febricula are always present ; or rather synochula, as the diathesis is commonly of the synochoid character. We shall have occasion to notice many of the phenomena in an incidental manner as we proceed.

h. Mucous tissues affected.

In phthisis the primary concentrations are to the mucous tissues ; principally to the respiratory, secondarily in importance, to the digestive, and occasionally associating the uterine in females, and the urinary in males. In females there is often, first leucorrhœa, afterwards amenorrhœa. Often dysuria in males. See case of Girard, No. 41, by Broussais in his work on phlegmasiæ.

These tissues become turgid, and suffer severe hyperæmia, whilst the surface of the body is dry, shrivelled, and pallid, with deficiency of function. The reactive impulses occasionally produce a transient glow on the surface, on exercise ; especially after some continuance of the disease, it is seen in a flush on the cheeks. The chief force of circulation, however, concentrates in the mucous tissue of the lungs, from the many circumstances of predisposition, together with its constant exposure to the atmosphere. The aerial cells become narrowed by a turgescence of their own tissue ; the air is not so freely admitted, and very commonly some dyspnœa is perceived on every hurry of circulation.

In a certain time, sooner or later according to the severity of the morbid habit, these tissues assume a state of excitation bordering on inflammation ; at length real tissual inflammation follows. M. Andral says, "we know that the mucous membrane of the bronchia, in a state of chronic irritation, may furnish all the varieties of secretion which are

formed in a pulmonary excavation."* The influence of this irritation is often extended to the other pulmonary tissues.

During this progress hæmoptysis may appear, and even at an early period, if the mucous capillaries take on the hæmorrhagic effort, instead of the phlogotic. It may be a favorable circumstance when early occurring, if opium, acetate of lead, &c. are withheld from the patient. He now becomes alarmed and will follow advice. This may be a time to remove the disease radically in some instances. The more he bleeds at the lungs the better, for there is but little danger of a fatal hæmoptysis when it issues from the mucous tissue. Yet it ought to be superceded by venesection, perspiration, epispastics, &c. We have seen many such cases restored. The hæmoptysis connected with tubercles in later cases, cannot be so managed; although severe, it cannot save the case. Again, in pulmonary apoplexy, the blood sometimes accumulates in large clots, whilst much is diffused in the tissues. Such cases are not easily restrained, and large quantities may be spit up, in this variety. So large portions of blood sometimes pour forth, from ruptures of blood vessels in ulcers, and tubercular excavations. Such cases of hæmoptysis are liable to prove fatal; at any rate they afford no relief.

The student is now referred to Section xxi. on the subject of the lost balance between the centrifugal and centripetal circulations. On the surface there is an almost permanent state of anæmia, and in the internal tissues, hyperæmia. It has been often called engorgement; it is a condition long since discovered, and promulgated by the German physicians, particularly by the Kempfs, who styled it infarction. The capillary veins are distended, whilst the capillary arteries extend their impetus into the white tissues oftentimes, producing more or less redness, being tokens of excitations.

This state of things is common to the chronic morbid hab-

* Vol. I. page 297.

it, and pervades all the internal tissues, in different degrees, and always attends phthisis. In this affection, the mucous tissue of the superior part of the lungs is most affected. There is a constant conflict exerted; the absorbents cannot take up the fluid animal matter fast enough, being constrained by the nosodynamic force; (Sect. xxi. 4.) whilst the same force increases the arterial impetus. The cough and pyretic phenomena gradually, and almost imperceptibly increase. We speak in the familiar way, of the circulation being confined to minute vessels; yet, we will not contend about the thesis of interstitial infiltration and imbibition; the results may be the same, let the communications between the arteries and veins be conducted either way.

i. Tubercles.

We will now make a digression in order to review some of the early results of the state of turgescence, and excitation of the pulmonary mucous tissue, and particularly in relation to tubercles. Whenever this tissue has been kept in a state of even moderate excitation for some time, effusions of a particular kind are liable to take place, and especially as soon as the contiguous tissues receive some impression of the morbid impetus. For their formation they require a certain, but slight degree of excitation, in subjects of a peculiar tissue susceptibility. They arise from a particular state of excitation, let the cause of the morbid habit be what it may, whether rubeola, scarlatina, catarrh, syphilis, slow fever, eruptions, or hereditary predisposition excited into action by any cause. They are almost constantly found in the superior portion of the lungs. The most frequent exciting cause is cold, from atmospheric vicissitudes. If the nocent impression is severe, pneumonia may be excited, followed by effusions of a very different kind from tubercles. Sometimes the pulmonary tissues do not possess so ready a susceptibility

to produce tubercles, and they may be excited for a considerable time, producing only a very few, or none.

We will not contend whether tubercles are seated in the lymphatic tissue, or in the minutest aërial cells, or in the connecting cellular tissue. Each has its advocates, and each may be correct in their turns. As they appear of some difference in kind, they may occupy different locations; but, we have the most convincing evidence, that they are the effect of the morbid excitation of the pulmonary tissues, and not the cause of it. On a former occasion we have argued this subject in *Remarks on Phthisis, in Sketches of Epidemic Diseases, &c.*, and cannot go into it here. It is more fully demonstrated by M. Broussais, in his *Phlegmasiæ*, and also by many others.*

One of the most paralyzing and fatal errors that ever crept into supposed phthisical etiology, is that of Leannee, in his insisting that tubercles are antecedent, accidental bodies, and that by their mechanical irritation they excite the entire disease. Also, by restricting phthisis solely to this cause, and denying that colds and catarrhs excite the disease, or that they are the precursors of it. Yet, he acknowledges he is not always able to distinguish catarrh from phthisis.† The cases that recover are said to be catarrh, and not phthisis. So the argument is ended. This thesis is so absurd, it would not require much notice, had it not obtained such an incredible ascendancy in the domain of medicine. We almost every day meet with cases, in which the subject can describe the time, and circumstances, of obtaining an impression of cold, attended with cough, and ending in a fatal train of phenomena, which no one can distinguish from tubercular phthisis; for it is phthisis with tubercles as a sequence, but not as a primary cause. It is again phthisis without tubercles.

* A case is published in *Amer. Jour. Med. Sciences*, No. xxxiii. p. 214, by R. Christison, M. D., which demonstrates this thesis.

† *Treatise on Diseases of the Chest*, p. 77.

Those who accord with M. Laennec in sentiment, consider they have not much else to do than to look on, and note the desolation of the disease ; they say it is incurable in its character, but nature sometimes accomplishes what they do not expect. Instead of bestowing strict attention to the natural signs, and the early modifications of the vital movements, the stethoscope is often resorted to and relied upon ; and, at a period when it cannot expose the incipient changes taking place, or about to take place ; this being the most favorable time for the assistance of art. It lends its aid too late ; not until after structural changes have taken place ; it then discloses a diagnosis of little comparative use. Percussion affords full as early monitions as the stethoscope, which becomes about as convenient to discover the ravages of the disease, as a telescope is to view the carnage of a battle-field.*

We wish not to depreciate the merit due to this instrument. Yet we insist that the student has been wrongly directed, in that the belief is inculcated, of tubercles being the primary cause to be sought for, whilst they are so manifestly the results of a primary state of disease of the whole system, and of the lungs in particular, which is capable of being discovered, and often removed before the stethoscope can elicit any signs of internal changes. It invites apathy, and dereliction of duty, in waiting for the manifest results ; leads to supineness, and the loss of lives, intrusted to the charge of pretended science. A physician that cannot detect the early progress of phthisis, in its incipient state by the physiological tokens, is not deserving the charge of his patient.

* On examining the writings of M. Laennec, we find he placed but little utility himself on auscultation or percussion, in that stage of phthisis, in which remedies are the most available. In p. 220 of his Treatise on Diseases of the Chest, he says ; " In the early stages of Phthisis, neither *percussion* of the chest, nor *auscultation* in any of its forms, affords any means of detecting the disease in ordinary circumstances."

We are informed by Andral, Cruveilhier, Bouillaud, Hope, and others, that tubercles begin by a small point of liquid matter; no doubt chiefly albumen according to Thenard. They harden, and then remain until a slow softening process succeeds, and are expectorated along with other purulency, and shreds of the lungs. Tuberculated granulations are often discovered; also, hypertrophy of the tissues of the lungs, of a semi-cartilaginous kind. All these and other lesions are the effects of the disease; and if the primary morbid habit had been seasonably removed, these resulting lesions never would have appeared. Dr Hope says, (*Morbid Anatomy*, p. 28,) "Every tubercle is infiltrated into the tissues where it exists."

Indeed, tubercles may remain inactive in some degree, for a time after having been formed, on a subsidence of, or removal of the primary diseased state which produced them. We have a clear recollection of the case of an amiable young woman, who applied rather late for help. By a very diligent course of treatment, the morbid habit, and the apparent phthisical phenomena seemed to be very much removed. We began to entertain an expectation of a successful result. However, in a short time we were convinced of the existence of permanent lesions too formidable to admit of a free exercise of the functions of the lungs, in consequence of consolidated masses of tubercular matter. Yet scarcely any cough, no expectoration, and but little dyspnoea existed. She emaciated more like atrophy than phthisis, and sunk in about twelve months after this change.

Most anatomical pathologists speak of successive crops of tubercles. So long as the chronic morbid habit remains, there will be new depositions, as well as the softening of former ones. If the present crops should not be too extensive, they may be cast off by expectoration; and if the morbid habit should be removed, there may be an opportunity of saying the case, with some excavations in the lungs, which

may give but little trouble during a lengthened existence. Critics may decide whether the case was cured or not ; but we have the comfortable assurance of many similar cases, the subjects of which do consider themselves well, and attend assiduously to all the ordinary avocations of life. Even if a few tubercles remain, there is some reason to expect that an active absorption disposes of them in time. M. Andral favors this sentiment.*

j. Pulmonary vomicae.

In certain temperaments, not possessing so great an aptitude to the formation of tubercular effusions, whilst the mucous tissue of the lungs remains in a state of excitation, there may be vomicae form, with only a few tubercles. M. Andral saw cases where they were so few, he thought they could not be esteemed the cause of the abscesses. Such cases cannot be satisfactorily distinguished during life, and indeed it would be of no practical utility if they could ; for the treatment should always be in accordance with the pathological phenomena, so as to afford every case the best opportunity it can have of a restoration. Some have recovered after very copious expectoration, and long continued.

It is a fortunate circumstance for the subject to be relieved of the necessity of vomicae, either with or without tubercles, by an early and efficient treatment. It appears that in either event the case may prove fatal, and with phenomena very similar ; and one condition may as well be styled phthisis as the other.

Phthisis may proceed to a fatal termination without vomicae, and without tubercles. The mucous surface and follicles, after being inflamed a certain length of time, become abraded and afford a muco-purulent discharge, more or less copious, from its extensive aerial surface. There are no aerial

* Path. Anat. Vol. II. p. 343

adhesions, nor interstitial effusions in such cases, so that imposthumations do not occur. And again the case may terminate fatally without muco-purulent discharges, or before they occur. Still the disease is as strictly phthisis as if it were attended with tubercles, or a tubercular abscess. It has similar hectic phenomena.

k. Tracheal phthisis.

The upper part of the trachea, sometimes, unfortunately experiences the greatest concentration of the mucous tissual excitation, and consequently of tubercular deposits, constituting tracheal phthisis. The voice is changed, and the affection progresses very certainly to a fatal termination, after tubercles have formed; and probably, from the circumstance, that the character and functions of the tissues are such as not to admit of cicatrization. The cartilages are liable to be diseased. Notwithstanding the lungs are of peculiar complicated textures, yet recent wounds readily heal; and indeed they admit of surprising restoration in phthisis, as soon as the general diseased habit is removed; and before extensive degenerations occur in the tissues, and in the general habit.

l. Intestinal mucous tissue.

This is often extensively affected with tubercular deposits, either simultaneously, or soon after the pulmonary tissue. Indeed the intestines are quite uniformly affected, and essential lesions occur frequently, attended with pain, diarrhœa, hemorrhage, perforations preceded by ulcerations in the mucous tissue, and extending into the other tunics; particularly in the cœcum, and its vicinity. Sometimes in the latter stage of phthisis, the chief force of the diseased habit may seem to concentrate in these organs, producing a concealed and deceptive state of the pulmonary lesions.

Whilst writing this, (January, 1837,) was inducted to the

case of L. Mack, aged 35, dark complexion. Was informed he had fever nearly three years previous, followed by phthisical symptoms. He got better, and labored some, until a little time since. About a month before death, respiration was free, although percussion gave a very dull sound; could talk freely, lie on either side, or back; no thoracic pain; but seldom coughed; spat a mere fraction of mucous-like matter, a few times slightly tinged with blood. Said that during a year past he had much pain in abdomen, and quite constant diarrhœa, which he habitually restrained by injections of starch and laudanum. For three weeks before death he purged blood, sometimes about a pint, at other times less, but lost much blood with gripings.

Autoptic examination revealed important thoracic lesions; lungs adherent firmly at every point of contact with costal and diaphragmatic pleura; they did not collapse in any point; filled every where with tubercles, and tuberculous granulations; cartilaginous hardenings in some places, and three abscesses in others, about the size of pullet's eggs. In abdomen, numerous tubercles, ulcerations in mucous tissue of intestines, in cœcum, colon, and ileum; one perforation; slight adhesions by serous tissue; a space of contraction in colon; patch of recent inflammation in stomach about the size of the palm of the hand. Universal emaciation, with internal vascular infarctions.

This was a concealed case of phthisis at the time examined, and a superficial observer might have concluded there was but little disease in the lungs. It seemed incredible he should manifest so few thoracic phenomena, breathe and talk so freely, with such essential derangements in the lungs; but the morbid impetus had been chiefly transferred to the intestines, after committing great pulmonic ravages.

m. Ulterior hæmoptysis.

Through the negligence of patients, and sometimes the inattention of advisers, tuberculated deposits become quite extensive before discovered, and without manifesting any urgent phenomena, and the first serious admonition may be an alarming hæmoptysis. The tissues are now engorged, and the tubercular deposits act as restraints to a free circulation, and a hemorrhagic effort now throws out large quantities of blood. The discharge may retard the progress of the disease, but the lesions are so extensive the case becomes hopeless. A palliative treatment by bleedings and demulcent diet is advisable; but if much amount of astringents and opiates are used, the fatal termination will be expedited.

n. On avoiding phthisis.

It would require a volume to specify all the hygienic rules to be observed, in avoiding the accidental causes which may excite phthisis. A knowledge of the hurtful agents, which induce a chronic morbid habit, may be sufficient to incite the considerate part of the community to shun many of them. It is, however, a sad reflection, that oftentimes those who are very circumspect in other matters, are often neglectful of every circumstance relating to their health. It would seem that the extensive prevalence of consumption, might admonish all to be circumspect in the preservation of their health, and especially to pursue means of restoration, when they find the first monitions of the disease upon them.

We have heard many express a reluctance to call for advice, because, they say, all die on taking medicine, no one was ever benefited by it. Perhaps there is too much just cause for this professional rebuke; but, it might be expiated in time; if advisers would attempt the removal of the consti-

tutional derangements, instead of palliating the more obtrusive local phenomena.

Those who possess a liability to phthisis, and others of acute sensibility to cold, ought to be very circumspect in avoiding atmospheric changes, and especially exposures to evening, or morning cool and damp air, westerly winds, &c. As the body may be heated by exercise, so these circumstances may make a greater impression. Strict regard should be had to clothing, and in a manner to ward off any impression of cold by day and by night; and yet it should not be very burthensome. Steady exercise in the open air for those who are able, gives stability to the tissues, assists in supporting an equal circulation, and renders the economy less disturbed by vicissitudes of weather.

An essential part of the prophylactic treatment for a voiding the formation of a morbid habit, in the movable temperaments, consists in washing the body with cold water, on rising from bed in the morning. This practice should always be adopted during the premonitory stage, and before the establishment of a morbid habit, or permanent local affections. Those suffering coldness of hands and feet, also sensibility to cold, will commonly be benefited by this practice, if it is rightly conducted. A part of the body may first be made accustomed to it; such as washing freely the neck and breast, and at the same time the feet and legs in cold water, with a napkin. Follow it immediately by dry rubbings with flannel, until warmth or some redness arises on the surface. Then dress, and exercise by walking until general warmth is produced. It may soon be extended to the whole body, if the first attempts are successful. Feeble persons, inclining to febrile irritations are sometimes liable to suffer injury by this practice. Such should adopt it more cautiously, and be careful to obtain warmth soon. It is sometimes prudent to temper cold water a little, with warm water added, on begin-

ning the practice. If found beneficial, the practice should be continued for months, and years.

The diet should be mild and moderately nutritious, without rendering too high stimulations; milk, and vegetables; and avoiding much meat and condiments. Hot drinks should be avoided by those who can dispense with them, except when necessity requires. Avoid all exciting, or depressing emotions beyond mediocrity. In middle aged people, much may be done to inure the system to bear the vicissitudes of changes without injury.

On the access of every impression of cold, however, in the form of catarrhal fever or otherwise, be careful to remove it in a short time by the ordinary means. Reference may be had to all that has been said on the subject of etiology. In the event of any attack of exanthematous, or other fever, be careful to have it entirely eliminated, before exposure to cold air, or indulgence in ordinary regimen. Finally, observe temperance in every thing, with uniform exercise, avoiding all circumstances of agitation of body or mind, and keep the system as nigh the standard of equilibrium as possible.

In the instances mentioned by writers, of great exposures and fatigue curing phthisis, the subjects are in very different conditions from what they are at the attack of the disease, when a recent morbid habit exists. Steady, and even laborious exercise goes far to sustain uniform circulation, to obviate a predisposition, and give stability to the system in such a manner that the subject may not be so likely to contract the disease. And again, after the morbid habit has existed for some time, and has been essentially removed by remedies, or the natural efforts of the system, and without very extensive lesions in the lungs, then exercise is often very useful to sustain an equilibrium of circulation, to keep up secretion, and give stability to the tissues. However, if practised with exposures to cold, at the onset of the morbid habit, such exci-

tations would inevitably aggravate the disease, and render it more certainly fatal.

o. Methodus medendi.

Let not the risibles of the long foiled satirical critic be moved, on seeing the inscription of this paragraph. Even if the finger of scorn should be pointed at us, we will still talk about curing phthisis, or assisting nature to do it. By this we only mean, that a part of the cases may be conducted to a favorable termination, under the adverse circumstances that are commonly met with, in private, or in hospital practice. The case may have been greatly neglected; it may have been treated by charlatanic palliatives, and made worse; or the patient may not be willing to submit to rigid discipline; and if he should, he may after a while fly to those who promise soothing treatment, and a speedy cure. Or, his circumstances may be such, that he cannot be supplied with the necessary conveniences, or suffer the loss of his time.

It is often a long and laborious task to alter the progress of so unrelenting a disease, which has already made considerable advance. The sooner it is undertaken, and the more efficient the treatment, the greater will be the chance of a successful issue.

We have endeavored in the briefest manner to expose the character of phthisis. From the existing abnormal conditions of the system, the indications of treatment are naturally inducted. We have endeavored to show, that the general constitutional derangements are the basis of the local affection. Remove this, by directing the axe to the root of the tree, and the foliage will commonly wither. The local treatment is of but little use.

In reviewing the primary changes in the morbid habit, we find them to be few, and simple in their character in the beginning. They remain so, until the sequences of the repul-

sive powers of the system, produce lesions of textures, more difficult to be removed, than even the primary changes. The remedies to alter the primary state of the tissues, are also of a simple character, and only a few are required, when seasonably and properly applied.

The means which bring about this change may be various, and sometimes apparently quite opposite in their nature; but all unite in one single circumstance, viz: such agencies as overcome the state of nosodynamia, and excite absorption and secretion in the minutest tissues of the body. A severe state of agitation of the minute capillary system, by emotions of the mind, has sometimes effected this change. (Sect. xviii. 7 and 8.)

It has been brought about by severe exercise of the body, exciting extreme agitations in the minutest tissues, when under favorable circumstances. Numerous cases are recorded of such sudden changes in the economy of the system produced accidentally. Several cases are related in Dr S. G. Morton's Illustrations, of casual cures by protracted exercise; there are many such by other writers, who consider it a mere tonic. Dr Salvadori practised it more systematically, but with what intentions is not stated by Dr Young.* "He directs his patient in the morning to climb, as quickly as he can, up some eminence, till he is out of breath, and bathed in sweat; and then to place himself near a large fire to increase the perspiration. He is afterwards to change his linen, and gradually withdrawing from the fire, to partake freely of salted meat and wine."

These severe agitations have a far more certain beneficial effect, when the mind is ardently excited. Yet the case of the captive sergent, mentioned by Dr Chisholm, was under very adverse circumstances. "The merciless enemy, regardless of his wretched condition, forced him at the point of the bayonet to keep up in the hurried march," although he

* Dr S. G. Morton's Illustrations, note, p. 144.

labored under the worst symptoms of phthisis, colliquative diarrhœa, &c. In a few days all the symptoms of the disease vanished, and with a scanty allowance of rice for diet.

Phthisis has sometimes been cured by an intense exacerbation of the fever, somehow excited. An instance of this is shown in Dr Holmes' Dissertation, in the abbreviated case of Bayle, the pathologist, p. 234. "It began in 1802, and presented the symptoms of phthisis to such a degree that he himself, and the physicians around him, looked forward to its speedy and fatal termination. About two months from its commencement, there took place a violent chill, followed by the most profuse sweating. A few days after, he was convalescent, and in a month from the apparent crisis, his health was entirely re-established. From this time until 1810, when the work which contains this observation was published, he had no symptom which resembled phthisis, and was then enjoying good health. The observation is entitled, 'Chronic pulmonary catarrh, having all the appearances of pulmonary phthisis, cured spontaneously.' He died soon after of pulmonary phthisis."

This case shows emphatically the impropriety of confining phthisis to supposed primary tubercles. As it did not prove fatal in the first attack, of course, the case must be called *chronic pulmonary catarrh*, yet having *all* the appearances of pulmonary phthisis. In the last attack, because it proved fatal, it most certainly must be styled *pulmonary phthisis*. Without any further commentary, this case shows the absurdity of confining phthisis to originate from *primary* tubercles, whilst catarrh may be attended with *all the appearances of pulmonary phthisis*. We must discriminate things by their similarity and dissimilarity. This case also shows, that the agitation of a severe paroxysm of fever, attended with free evacuations, may excite the inmost tissues, and remove the primary cause of the morbid habit; and on similar principles to the cases cured by terror, and other agitations.

Many cases similar to the above might be mentioned ; and what instruction do we obtain from them ? Certainly much. These severe exertions and agitations, excite absorption and secretion, when the nosodynamic state has been diminished. When the enthrallments of tissues are in part removed, the capillary circulations are more readily excited, and capable of being sustained in their actions under favorable circumstances. In Salvadori's cases, they were excited by exercise, and sustained by continued caloric, and by *meat* and *wine*. In Bayle's case, by long continued sweating during the paroxysm ; and in Henderson's, by continued exercise of body. Perhaps the case of the sergeant might have been sustained by extreme resentment, whilst the excitations were produced by severe exercise.

In all these cases it appears, that the abnormal changes sustaining the morbid condition are removed, and the normal circulations take their courses ; and as a sequence of this, the pulmonary turgescence, and even inflammation subside very soon, unless too great ravages have been committed in the tissues. And even in this event, the case stands on the footing of other lesions happening to the lungs, unsupported by a morbid habit. These fortunate cases usually occur after considerable subduction of the phlogistic state of the system by treatment, or otherwise, and before extensive lesions arise in the lungs. A severe agitation in a case with much inflammation, might very certainly have done injury, provided the primary cause should not have been removed by it.

Can these favorable results be obtained by art ? or, can we gain instruction from the casual operations of the restorative processes of the human economy ? Indeed we must be very drowsy pupils if we do not. These cases can more surely be conducted in safety by the aids of science, than left entirely to fortuitous circumstances, and the capriciousness of the undirected vital movements. Whilst these casually favorable cases are carefully recorded, how numerous are those

which have been hurried to a fatal termination, by some adventurous exposures ?

PARTICULAR REMEDIES.

p. Caloric.

Having the previous expositions in view, the rational treatment immediately intrudes itself to the apprehension. On the surface paleness, dryness, anæmia with chilliness ; the centripetal circulations deficient, with internal engorgements. This condition cannot be safely altered by mere internal stimulants ; and every attempt in a severe case, increases the perturbation of the centrifugal series of vascular action. In nine times out of ten, the disease is excited by cold, and the first treatment requires the use of caloric in some form to the surface. A warm temperature is indispensable in the first stage of treatment.

In cold seasons the patient should be defended by a warm room of about 75° Fah. A steady temperature should be observed by day and by night ; or, so as to be agreeable to his sensation. Capillary action should be excited on the surface by caloric, by frictions, and by such exercise as the patient can take without exposure to cold. Both exhalation and absorption should be excited.

It was not until about eighteen years past, that we became fully convinced of the utility of the universal warm bath in phthisis. We now think it indispensable in recent cases, and enjoin it every, or every other evening, before retiring to bed. It may be continued a month or two, and occasionally for a much longer time, if there should be chilliness, or dryness of the skin. It even moderates the hectic paroxysms, and converts the colliquative sweats into a state of warm perspiration. A temperature of about 100° Fah. may be employed, but always such as to be agreeable, and easily borne by the patient.

A tub of sufficient size for some motion should be employed. A flannel blanket should be wrapped about, and kept loosely around the body in the bath. As the patient comes out, he should be covered up with a dry blanket over the whole body, and laid in a warm bed. Whilst in the bath use severe rubbing, and on rising up, continue it with a dry cloth. A mild warm sweat should now be promoted by aromatic infusions, as hyssop, &c., sweetened, or not. The patient will then be prepared for other measures.

Sometimes the bath may be impregnated with common muriate of soda; at other times with a few quarts of wheaten bran, or even common soap. The warmth on the surface should be sustained by occasional rubbings with warm flannel, by a sufficiency of clothing, with flannel next the skin, and some agreeable nutriment mostly in a fluid form.

q. Venesection.

Although the anæmic aspect of the patient might seem to forbid taking of blood, yet the internal infarctions and inflammations imperiously demand it. The pulse is usually small, hard, and frequent at the commencement, from 90 to 120 pulsations in the minute. Even late cases require it; but subjects bear more bleeding, and with greater benefit, when it has been practised at the beginning. This is the surest of all remedies, after due preparation, to moderate the progress of the disease, whether we have regard to the constitutional diathesis, or the local inflammation.

After one full bleeding in recent cases, if the subject is kept warm, the pulse becomes more expanded, and the blood shows an inflammatory buff, more or less cupped, like as in many other states of disease. This is a sure token that the disease is of the synochoid character, and that it will be well borne. This is generally the result in the first stage of the disease, and much so in protracted cases. But, our treat-

ment must be chiefly confined to the first stage of the disease.

We discover the same diathetical difference in phthisical habits, as in other conditions of pyrectic diseases. Whilst many exhibit more free and expanded vascular action at the commencement, others of the temperament called lymphatic, or scrofulous, show but feeble vascular action. The feet and hands are constantly cold, except sometimes a burning sensation, with a flush in one or both cheeks. The veins are small and blue, the surface anæmic, with a small thready pulse, 120 or 130 in a minute. Slight pain in the thoracic region, and often in the forehead; small and dry cough in the beginning. We call this the *typhoid state* of phthisis.

We formerly had much hesitation about taking blood in such cases. Believing, however, that no favorable impression could be effected without it, full trials have been made, and the results have sustained its utility, when employed under the circumstances just mentioned. About half an hour after coming from the bath, in the fore part of the evening, will be the most suitable time, and whilst the patient is in a recumbent position. If there should be faintness this will be no objection, as it insures a very general impression on the system, and a return of more natural circulation, and warmth.

Within a short time after the first bleeding, the pulse will commonly be fuller and stronger than before, if external warmth is continued; perhaps there may be more pain. This will be a sure token that the circulations and nervous sensibility are becoming more free, and that more bleeding is necessary; and that the diathesis is approximating to the synchoid character. If these phenomena appear, blood should be taken to the point of freedom from all pain; and even further at proper intervals, until the pulse diminishes in frequency, in the course of a few weeks.

In order to subdue the morbid habit in any diathetical condition, the bleedings should be full instead of small, and

repeated at as short intervals as the case will admit of. This is as necessary, according to the urgency of the symptoms, as in pleurisy. When the economy is once disturbed by bleeding, it ought to be quickly pursued as far as is necessary, or as far as the circumstances of the case admit, whilst bleedings with long intervals may be altogether useless.

One of the most distinctly marked cases we ever met with of the typhoid character, was in a young lady of about twentytwo years, who had several previous attacks of hæmoptysis, and the case had been of slow access and of considerable standing. We made full bleedings three times during the first week of treatment, and two of them to syncope. The greatest severity of the case was soon overcome; no more hæmoptysis; and with a few after bleedings, with other anti-pyretic measures, she recovered in about four months. We saw her well, at the head of a family of children, fifteen years after.

No practice is more reprehensible than that of making small bleedings, and repeating it at long intervals. All the good is lost and the disease has been gaining the victory. If certain changes in the system are to be effected by bleeding, it should be quickly followed up until the object is effected. This can be done in an efficient manner, oftentimes, and with the loss of less amount of blood in the whole, than by small and protracted bleedings to a greater amount, which often do no benefit to the case.

The chronic morbid habit is of more difficult removal, and requires a greater amount of remedies than the acute. Success depends on perseverance to the point of relief, if the powers of the system have not become previously too greatly exhausted; and on improving the earliest opportunities to save the integrity of the internal tissues.

The balance of fluids is quickly restored to the blood vessels, after bleeding, and the dynamic actions are soon renewed after it, and sometimes with greater force. The intention

should now be to proceed on, until the object is obtained. Prudence must be used to proceed no faster, and no farther, than the phenomena indicate the patient can bear with safety. And, again, not so dilatorily, as that the disease will gain strength by delay, and render useless all that has been done. Here is a specious opportunity for doctors to disagree, and we can give no further opinion without examining the particular case. We can only observe, that the aspect of the patient, and the false notions of the theory of debility, are liable to intimidate both the veteran, and the novice.

However, it should constantly be borne in mind, that nothing efficient has been gained, until the centripetal circulations have obtained an ascendancy over the centrifugal; or, until the absorptions become more active than the depositions. As soon as this is attained, there is but little more to do than to observe carefully, that nothing be done to interrupt the restorative processes going forward. But few and light medicines are necessary; perhaps none for a time. There should be strict observance that the patient is supplied with mild, fluid, albuminous diet, but not in excess, yet sufficiently supporting.

Taking blood from a vein in the arm is preferable to any other mode, as its sudden influence is more effectual in overcoming the morbid tonicity. If this is accomplished, the turgid sanguineous capillaries will yield up their contents to the now active venous absorbents. However, cups and leeches may sometimes be used as palliatives, in cases of much lowness, where further general bleeding may be esteemed not advisable, and where there are large pulmonary deposits. When the general affection is removed, there will be no more successive crops of tubercles; and if a first crop is already formed, yet not too extensive, they may be eliminated with the sputa, and the case saved.

Cases of long standing with considerable tissual lesions, attended with much exhaustion, where bleeding has been

omitted at the onset, do not require bleeding, or only sparingly as a palliative. Notwithstanding, there may be some protracted cases which require it, when they become aggravated. A young woman, aged thirteen years, had suffered immensely by pneumo-thorax ; had large discharges by paracentesis, as well as by expectoration, for twelve months. She became affected with a re-accession of severe pyretic phenomena ; a peripneumomary with pains, &c. Took from her two bleedings in one week, of twelve ounces each ; and but for this, the case would have been fatal in our opinion. She recovered in about six months from this, and has so remained for eleven years and more, with en-bon-point and strength.

In cases where bleedings have been practised from an early period, by which vascular action has become free, the blood may show a dense pellicle to the last. We do not bleed to get rid of all this, for it might require the last ounce that would flow ; but, to alter the physiological actions which produce it. Much circumspection and discrimination are required, to conduct bleedings in phthisis to the best advantage. It is for the want of just discrimination, and energetic procedure, that this remedy has not gained reputation in the honest opinions of many practitioners.

r. Emetics.

We have aimed to simplify the character of disease, to dissolve it of mystery, and to resort to the most uncomplicated means to change the primary derangements to their normal condition. This may be an easy task in some conditions, yet in phthisis it is laborious, and not always attainable. We need to call in various resources to suit contingencies, and are liable to use too many internal, as well as inefficient remedies, or slow alteratives.

The character of the chronic morbid habit leads us to in-

fer, that certain operations which may bring into exercise the minute circulations, may be useful to restore their integrity of function. One adjuvant has been found in the exercise of vomiting; and we make it a substitute for corporeal exercise for those not in a condition for this. Not only so, but it exercises every minute tissue more effectually than any mere muscular exercise. It is necessary that this, with other processes, should precede, and prepare the system to endure muscular motion with benefit, by removing the morbid derangements.

The lungs, as well as all the internal organs, are exercised by emesis, and their functions promoted by it. The exhalants and mucous follicles discharge more freely, and the internal infarctions of the blood vessels are agitated, and absorptions promoted by it. The centrifugal and exhaling surfaces are excited, not by direct stimulants, which would add to the diseased state, but by a train of associate motions restoring or exciting their lost functions. Even the exercise of nausea is extended very considerably to all the tissues, and in many conditions may, where there is much lowness, be used as an occasional substitute for emesis. These processes may be so conducted as not to exhaust overmuch. Like corporeal exercise, they may be extended to the point of fatigue, but not of exhaustion.

It is not a single emesis that will be of much use, to remove a fixed-state of disease of slow access; but it must be reiterated, and in connection with other auxiliaries. The patient should always be in a warm condition during the process, so as to promote dermoid action, and sometimes moderate sweats. Emetics may be used once a day, yet sometimes every second day, and in the intermediate day a nauseating dose. Oftener than this, they become very disgusting, and spoil the appetite for everything. The patient needs time for rest and refreshment, and should not be teased with other medicines that are of doubtful, or no use; perhaps injurious.

As soon as the patient has rested, and manifests some desire, agreeable nutriment in a liquid form should be presented him. Sometimes the broth of the flesh and bones of pork, as practised by Dr Sentor; or indeed of other flesh, as beef tea, or chicken broth, when tired of the farinaceous and mucilaginous mixtures.

The evening, in an hour after coming from the bath, offers the most advantages in many respects for the use of the emetic, especially at the commencement of treatment. If the subject is not reduced, it may be used even after bleeding. Some who suffer much in the morning from collections of muco-purulent matter, receive the most benefit by using it at this time.

We have had cases in which the patient desired an emetic every morning, for several weeks in succession, because it afforded so much immediate relief. In cases of a dry cough, without expectoration, both emetics and nauseates promote secretion, and relieve the excitation of the pulmonary mucous tissue.

Various are the means of exciting emesis. We have long been in the habit of using the pill below, on account of its efficient, yet mild operations.* In common treatment it possesses advantages over any other, in our opinion, especially in the first stage of this disease; or in any other when

*RED ANTIMONIAL PILL.

R. Antimonii Tart.	3 iv.
Antimonii sulp. rub.	3 jss.
Gum Ammoniaci	
Gum Guaiaci . . . a a	3 iij.
Sapo. Cast.	3 ij.

Pulverize and levigate separately, and make into a mass of pills well beaten, with *Ol. Olivæ*. The mass does not soon grow hard, and pills of a size required may be made when wanted. About two or three grains will excite emesis in an hour and an half, or two hours, in an easy manner. It may be so managed as to nauseate more or less. By a slow solution it promotes diaphoresis, and may prove laxative.

emetics or antimonial alteratives are required; we have proved it for a long time.

The simple ipecacuanha may be used, especially if a disposition to diarrhœa should exist. The compound syrup of squills, (hive syrup) is a useful medicine. It may be used instead of the pills. In protracted cases where there is much lowness, with some ulcerations of the lungs, and disposition to diarrhœa, the cuprous powder becomes the most useful.* If the stomach should become irritated by the use of emetics at any time, they should be suspended for awhile, and a demulcent diet more strictly pursued.

s. *Cathartics.*

There is but little use for cathartics in phthisis; the antimonial pill just mentioned will often move the intestines sufficiently, and possibly too much sometimes. The mucous coat of the intestines being liable to become tuberculated and ulcerated, should not be irritated by cathartics, and yet costiveness should be obviated. When laxatives are needed, we have had a predilection for sulphur, combined as below.†

* R. Ipecacuanhæ	2 parts.
Sulph. Cupri	1 part.

Two or three grains, given in treacle, will excite emesis in a few minutes, and leave an appetite for refreshment. We have known patients use it every morning for a month in succession, even when much reduced. It is a tonic withal. A cup of broth sits well after it, and digestion is promoted. It should be used soon after being compounded, as the copper acts on the ipecacuanha.

† R. Sulphur.	2 parts.
Enulæ campanæ	1 part.
Glycyrrhizæ glab.	3 parts.

The proportions may be varied; we esteem it the best expectorant the patient can have, pulverized and mixed in treacle, or honey. If diarrhœa attends, the sulphur may be omitted. The electuary may be taken in the quantity of a coffee spoonful, three or four times in twentyfour hours, and continued a long time, if no particular objection arises.

Finally, the laxative pill, (see Index,) should have precedence on almost all occasions, when such articles are required.

t. Demulcents.

The whole tribe of demulcents may be employed in one form or another ; including the class of mucilages. These constitute the necessary expectorants instead of the very acrid articles of that class ; except on particular occasions of much viscid sputa. The Iceland moss, boiled in milk and water ; preserve of quinces, &c., may be used to advantage. Such articles compose a part of the diet, and when there is intense sensibility at the stomach, they should mostly be relied on for nutriment.

u. Counter-irritants.

We cannot take so favorable notice of these at present, as formerly. The external irritations are painful to the patient, and the stimulations are reverberated to the affected organs, and also to the whole system, occasioning some excitation. Their early use ought to be prohibited ; but ulteriorly, in cases giving fair prospects of restoration, they are often of use, by diverting the internal local irritations to the surface, by which the internal tissues obtain more safety.

A few epispastics may be applied to the thorax, after the principal part of the general treatment has been extended to its justifiable limits. When once drawn, their discharges should be continued for a week or ten days.

The antimonial ointment often gives more irritation than relief ; yet, in the more torpid cases of arterial action, and in instances of the recedence of chronic eruptions operating as a cause, it becomes useful when extensively applied.

Cupplings and leeching are, for the most part, superceded by the necessary remedies used to eliminate the constitutional

affection. Still some cases may be benefited by them, after general bleeding has been extended to its justifiable limits.

Setons are oftentimes useful, in keeping up a steady diversion of the local affection to the surface, and serving as centre points, in the event of any occasional aggravations of the disease, after the severity of the general disease has subsided. They should be applied late, and long continued; in such cases only, as show signs of restoration.

Plasters of Burgundy pitch may be used with considerable advantage, after a few weeks of the treatment; applied between the shoulder-blades, and on the sides. Where the warm bath is not used, they may be early employed, and if they do not excite manifest irritation on the surface, they ought to have a small admixture of cantharides; yet not so much as to excite vesication. They should be taken off when becoming loose, and the part wiped, and gently rubbed.

Patients confined to their rooms, and especially those considered as convalescent, should rub themselves universally, as far as they are able, twice every day; and they should also require the aid of the nurse. A woollen mitten is convenient, and it may sometimes be moistened with camphorated spirit.

v. Tonics.

No directly tonic, nor high stimulant medicaments, should be given during the continuance of much of a pyretic habit. As soon as this has chiefly subsided, some advantage may be obtained from them, used in a cautious manner. They are more especially useful when excavations exist in the lungs, of long standing, attended with large sputa.

We have often used Griffith's chalybeate, or myrrh mixture, and with considerable satisfaction. If the pyretic habit should increase, it ought to be suspended. Ulcerations in the lungs cicatrize more certainly by the use of tonics. When

the constitutional disease is essentially removed, quinine may sometimes be preferable to chalybeates, when the disease shows more distinct paroxysms of exhaustion, and the general state of disease is essentially removed. So also, wine with exercise.

Iodine, at present, promises to be the most useful tonic in the exhausted stage of phthisis. It possesses other properties than tonic. It appears to possess some peculiar properties of gently exciting action in the absorbent systems. It removes scrofulous swellings, whilst it shows a tonic influence generally. If this is its character, it must be well adapted to the state of phthisis, when not much remains of a pyretic habit. In this manner we have used it considerably, and with satisfaction. It is also well approved by many others. Lugol's preparation is the one we have preferred; as below.*

A syrup of the tincture of balsam of tolu is an agreeable cordial and restorative, in cases of considerable exhaustion. It may be used freely, and it is often rendered more grateful, by the addition of a few drops of the tincture of Gaultheria, or of peppermint. We have not been able to discover the benefits of the balsam of copaiba, as represented by Armstrong. We would not, however, discard it in conditions free of much fever.

w. Narcotics.

We do not wish to stop and dwell on negative treatment; but as these are recommended by even some late writers, and

* R. Iodini,	℞ j.
Potassæ Hydriodat.	℞ ij.
Aquæ dist.	℥ vij. M.

Begin with six drops twice a day, and increase one drop a day to what the patient will bear, without producing uneasiness at the stomach; perhaps to twenty or twentyfive. It should be taken in a large proportion of water, or half a pint of some demulcent drink. It should be continued several months. Large doses are hurtful.

so much used, they are introduced for the purpose of disapproval. From much observation of our own, we are assured no progress can be made in the removal of the constitutional pyretic affection, whilst opiates, or any other narcotic is used. Every case in which they have been used antecedently to the treatment, is sure to be rendered more uncertain, as respects a favorable result; unless we may except digitalis in a limited manner.

The same remarks already made in relation to the use of narcotics in the acute morbid habit, (Sec. xlvi. 1, i.) will apply in the chronic, and in an especial manner as relates to phthisis. We insist that no progress can be made in the removal of the disease whilst narcotics are used in any form. We impute the failures of those who have attempted the treatment of phthisis on some just principles, in a great measure, to the use of these deleterious agents, so freely intermingled with almost every other remedy. In part, however, in not having just views of the character of the disease.

We have, on several occasions, shown the illusions which have led to their use; and we may now merely notice, that they are the highest stimulants ever introduced into the materia medica. They retard the exhalations, absorptions and secretions; render the tissues dry; afford a delusive truce to painful sensations, by diminishing the sensibility of external relation, and ultimately aggravate every phenomena.

They co-operate with the *remote* and *proximate* causes of phthisis, and serve to fix the primary changes in the inmost tissues more permanently, and render them more difficult of removal. Internal engorgements, or infarctions, are increased by their use, even in small doses; and every post mortem examination in subjects destroyed by narcotics, shows a violent state of congestion in the internal tissues of the head, thorax, and abdomen, similar to those produced in the internal tissues in the most malignant fevers.

It is an unfortunate circumstance, that those who have ad-

vised their use in phthisis, have no better understood its pathological character, than the properties of these deleterious agents. There is something more than mere local irritation in the former, and the latter are something besides soothing sedatives. Many are more mistaken in these respects, than the deluded dram-drinker is in conceiving that another alcoholic draught will surely do him good. Their soothing influences are quite as brief, and their sequences more certainly pernicious.

We freely declare, if compelled to use laudanum, Dover's powder, opiate cordials, or cough drops, &c., we would never attempt a radical cure of phthisis pulmonalis in any of its varieties. In the last stage of a forlorn case, they are more justifiable, in small doses; and yet a previous well-conducted case will hardly need them, as the calm composure of the downward way is commonly disturbed by their use. In their omission, there is no running the risk of exciting a repulsive delirium, or a forbidding lethargy.

The articles placed in the class of narcotics by *materia medica* writers, are not precisely similar in their physiological effects in the system. The article *digitalis* may be used to some advantage in phthisis, after the pyretic habit is essentially subdued, but never until then. It is sufficiently narcotic to mitigate uneasy sensations, and possesses certain peculiar properties over the nutritive system of nerves. However, when too freely given it is liable to excite delirium, and a new train of typhoid phenomena. Of the saturated tincture, from fifteen to forty drops, two or three times a day, has been found useful to allay arterial irritation, diminish the frequency of the pulse, and allay the cough and uneasy sensations. It has a more sure composing effect, when combined with one fourth, or one half of a grain of tartarized antimony, previously dissolved in water. An emulsion of camphor, and also an infusion of hops, often produce some composure.

x. Regimen.

Some suggestions in relation to this have already been made. It may be observed, that the appetite, and even digestion of phthisical patients often remains measureably good, when not disturbed by much treatment; and they should be supplied with more mild, demulcent food, than in many other conditions of disease. Milk and vegetable food have been found by long experience the most proper. In protracted cases with exhaustion, broths, animal jellies, oysters, and white meats are commonly necessary, and useful; and sometimes moderate quantities of meat.

When the primary diseased state is essentially removed, and the patient can take exercise in the open air, he ought to have more generous and nutritious diet, if he desires it; for it assists, with exercise, to sustain the equilibrium of the minute circulations, especially when aided by a sufficiency of clothing. In cases attended with a thin expectoration, a more generous diet may be used whilst exercising, with a moderate use of port wine and milk, sweetened with loaf sugar.

y. Exercise.

The notions about exercise in phthisis, have been vague and undefined. In the early period of the disease, especially in cold seasons, exercise and exposures are as injurious as in any other pyretic disease, not excepting even chronic pleurisy. If there is any justness in the assigned causes, the morbid habit, and the preceding treatment proposed, it will directly appear manifest, how injurious exposures to cold air, and the agitations of exercise, must necessarily be in phthisis. This is not the period for obtaining benefit from out-door exercise, and we have known many injured by attempting riding under these circumstances.

Notwithstanding, there are other states of the disease in

which exercise, protracted even to fatigue, becomes beneficial. After the severity of the disease has passed by, and the morbid habit is essentially removed, as it often may be, whether there be ulcerations or not, exercise tends to keep up the centrifugal circulations, and promotes the secretions and excretions ; finally, it invigorates the whole system far better than any medicament ; and this for the obvious reason, that all tonic medicines are liable to act more on the susceptible arterial series, than on the absorbent, or centripetal series of circulations. This accounts for the increase of the pulsatory action on their use, and an aggravation of the pyretic phenomena, whilst muscular energy is diminished.

Exercise ought to be as steadily persisted in, as the ability of the patient may permit, either by sailing, riding, walking, or manual labor ; and in such a manner as to support the absorbent, or centripetal circulations, with the aid of suitable clothing, and well advised nutriment. The mind ought to be ardently engaged in some earnest pursuit, instead of going over and again the same ground as a task, in search after health.

On first attempting exercise in the open air after confinement, and the necessary treatment, patients should be very circumspect not to pass suddenly to this new state of things ; but use moderation, and take the necessary precaution of sufficient clothing, so that no chills be contracted, but a constant warmth on the surface sustained. At first it should be attempted in mild weather. We have seen many instances of injury by imprudence in these respects, so that the patient must necessarily take his room again, and endure another round of treatment.

On a successful adventure, the patient sometimes experiences so much benefit by exercise in riding, that he inclines to think his recovery had depended altogether on it ; whereas, without a previous preparation, he would have very surely been made worse by it. If it should be a cold season when

ready to take exercise in the open air, the patient had better wait a month or two for an agreeable mild season, and take such exercise as he can in a safe condition in the mean time. Walking, or gentle labor of some kind, are substitutes.

Those who travel into foreign; and milder climates for the preservation of their health, should undertake it before they contract a morbid habit. Those who have already contracted such a state, should most assuredly do every thing that can be done to be freed from it, before they set off; and before the tubercular deposits take place; otherwise, their pilgrimage will commonly be to find a grave in distant lands, away from the social intercourse, and comforting aids of their friends, in their last hours.

We have not exhausted this most difficult of all topics; much remains that might be said, and yet it must be abandoned. In decidedly asserting those principles we esteem just, we have had no intention of hurting feelings, or exciting sarcastic resentment. The subject is too important to be surrendered to the pride of any opinion, be it ever so dignified.

Although contrary to our general design, we may be under some obligation of inserting a case or two, in order more fully to illustrate the treatment of what we call phthisis pulmonalis.

z. Case of W. P. Gibson, M. D., made out by himself, not long after his recovery.

“I was engaged in the study of medicine, in 1818, with Dr Gustin of Croyden, N. H. In February of this year, he was attacked with the usual phenomena of phthisis. It progressed in its usual unrelenting form, until it occasioned his death, after about ten months sickness. I was very constantly about him, especially the last half of his sickness, rendering him many services.

“His treatment consisted chiefly of blood-root and opium.

He was once bled to the amount of six ounces. Took various of the common expectorant medicines, and of the restorative, or stimulating kinds, balsams, &c.; neglecting altogether any efficient remedies.

“ It may not be irrelevant to mention here, that in a few weeks after Dr Gustin’s death, his wife was attacked with symptoms very similar to his in the beginning, and through the whole course of her sickness, which terminated her existence in about the same length of time.

“ In November 1818, whilst along with Dr Gustin, I had some cough, and he told me he was fearful that I should have the consumption.* However, I got over the cough at that time, took a school in a neighboring town, and scarcely coughed any until the middle of February, 1819. But, in the mean time did not feel well, had a poor appetite, and lost flesh.

“ At this time walked two miles to meeting; became fatigued; sweat some; sat in the house until I became cold. Had slight chills before I got to my lodgings; a coldness, or chilly sensation followed me, more or less, through a great part of my subsequent sickness, with some modifications, until the month of August, and until after using the universal warm bath, to be mentioned presently.

“ A distressing dry cough, from this time, very constantly harassed me, both by day and by night; which in all respects, so far as I could discover, very exactly resembled that of Dr Gustin. Burnings in the palms of my hands and soles of my feet. Pain in the thorax, especially under the sternum and right scapula. The common phenomena of habitual fever were constantly upon me, and by the month of May had more regular exacerbations at noon, and in the evening. Sweats, and copious expectoration of rather a dark muco-purulent matter, had now become frequent.

* Dr Gibson is high in stature, thin flesh, rather long neck, dark complexion, and was about twentytwo years of age at the time; accustomed to exercise. Rather of the sanguineo-melancholic temperament.

“I went to Dr Gallup the middle of April 1819, with a hope of pursuing medical studies. Soon found it impossible to attend to any thing, except my distressed and forbidding state of health. For the first three weeks did not attend to much, if any regular treatment. Thinking it might be best to do something, had a talk, and concluded to attempt some rigid discipline, but with much hesitation. A summary of the treatment will be soon mentioned, as the daily record might be tedious.

“Latter part of June my case was no better; cough, pain about the chest, fever, night sweats all continued, and I now had serious doubts about the propriety of the treatment pursued. As all the other physicians passed sentence of death upon me, I concluded it would be as well to die under this treatment as any other.

I was not in a condition, or did neglect to keep myself as warm as I now think was necessary; by which I am fully persuaded I lost much of the benefits of the treatment. By the last of July I had been bled eight times, pretty full bleedings; blood for the most part coated, and cupped. Had taken repeatedly an antimonial pill in the morning, which had usually vomited two or three times, but sometimes not. This course was pursued more than a month, almost every day. Took also, tincture of digitalis with a small proportion of wine of antimony, as an alterative, for considerable length of time. Had epispastics in succession over the thorax. Frictions over the surface were used extensively. Occasionally took a moderate cathartic. Used for some time an electuary of sulphur, elecampane, and liquorice; besides several small medicines of but little importance. Diet consisted of simple vegetables and milk, variously prepared.

“Still the disease was severe upon me; although much relieved of pain and excess of fever, yet chills, sweats, hectic fever, lowness, &c., bore hard upon me. Cough fre-

quent, and expectoration large; pulse still rather hard, and averaged about 120 in a minute.

“The very last of July, Dr Gallup suggested using the universal warm bath every evening, with friction in the bath, and after; and, also, to bleed what might appear necessary in future, soon after coming from the bath; my friends, and several physicians had despaired of my recovery, and I began to be indifferent to every thing.*

“However, I immediately set about using the bath, continuing the same course of management in other respects. I experienced much benefit from it; my cold chills began to abate; my other remedies seemed to have a better effect, and my night sweats were very much relieved. I used it nearly every evening for about a month, and occasionally afterwards.

“Finally, besides the eight former bleedings, I was bled five times after beginning to use the bath, and the improvement in my health greatly exceeded my expectations. My cough abated with my chills, heats, and sweats. The frequency of my pulse soon diminished, and my expectorations were less.

“My appetite and strength improved also, and without using any tonics; rode a little by the last of August, and in the last of September, rode on horseback to Croydon, about thirty miles, and saw Mrs Gustin, not long before her death,

* We improve the opportunity of stating, that at this crisis, the case gave us much anxiety. About two days were mostly spent in reflecting on the most proper measures next to be taken. In addition to the refractory aspect of the case, a neighboring physician, whose opinion was entitled to respect, signified to me, that the case must be fatal. In this dilemma, the use of the warm bath occurred to my mind, as the most suitable of all auxiliary remedies in the case. This event was the origin of our partiality for this remedy, when used in the manner already specified. We had previously prescribed it on accidental occasions, but since then have esteemed it as a cardinal remedy, and seldom used it without satisfaction, when rightly performed. It greatly aids in giving an ascendancy of action to the absorbing circulations, and removing the nosodynamic state.

and felt gratitude to the Great Disposer of events, that I had apparently escaped the calamity she seemed destined to. I have been very well, since I had a little time to recover my strength.*

“ W. S. GIBSON.

Woodstock, Vt., October, 1820.”

Case of Mrs. ——.†

Became acquainted with this case in February 1820. The patient was aged about 38 years, tall and thin habit, dark complexion, dejected in mind; had a family. Was informed that she had lost her husband the year before; and for many years past had been subject to some accidental cough, but for the most part free.

She stated, that she had been unwell for about five months past; had a slight cough with transient pains about the tho-

* But few men have been more active, or successful in their profession, than the author of this case, for twelve years to our certain knowledge; but in a letter from him, Feb. 12, 1837, he states, “since I have been in Newport, within two years past, I have had two turns of cough, attended with some hæmoptysis, which have been suppressed precisely in the way my first cough was treated.”

He further mentions in this letter a new fact worthy of notice. “A female domestic who was in the family of Dr Gustin at the time of his sickness, soon showed symptoms of phthisis, lingered a year and a half, and died of consumption.”

Nov. 22nd, 1838. We now have to state, that his wife died about a year and a half ago, with the usual appearances of phthisis. He had now become some depreciated in his general health, and in a month or two had a new attack of hæmoptysis, shortness of breath, and the usual phenomena of phthisis. We saw him last June. He had become despondent in mind and made no hopeful attempts of relief, neither had he reason to expect it. He was able to pursue the studies of theology; attended to some small business, and mixed in society. He travelled about a hundred miles to Burlington, in Vermont, in the month of September, and died there in October last; having been afflicted with the usual phenomena of phthisis pulmonalis.

† As this lady resides at a distance, we have not obtained liberty to mention her name, but will give it to individuals, who may require it.

rax ; that of late, her cough had grown worse, and that she was disposed to have coldness generally through the system. The present appearances were, a general deficiency of function of the capillary circulations, settled coldness universally, rather than chills ; pale sallow complexion ; shrunken aspect ; dryness of the surface ; pulse small, 100 in a minute ; stitches of pain in various parts of the thorax ; frequent, short cough, with little or no sputa ; shortness of breath on exercise ; disturbed sleep ; absence of catamenia.

We considered this a slow typhoid state of phthisis ; its aspect was so forbidding we did not immediately enter upon so decided a course of treatment as we ought to have done. She was advised to keep a steadily warm condition, use frictions, and try the warm bath ; but by some accidents these were but partially attended to ; she took an emetic, and a few aromatic diaphoretics ; and applied epispastics.

We hesitated about taking blood ; therefore bled but once for three weeks. Used antimonial wine and tincture of digitalis, with occasional vomits ; squills ; ammonia ; infusion of senega, &c. Still little or no impression was made upon the disease, except a slight increase of vascular action.

We then decided on more efficient treatment ; warmth, baths, frictions, emetics, were increased ; more bleedings. In the course of two months, that is, to the middle of May, she was bled five times ; full bleedings of about twelve ounces, from the arm. These were well sustained ; she did not loose much, if any strength, although confined to a milk and vegetable diet, and without the aid of those articles called in medical language, tonics and stimulants.

There had now become a more equal circulation, and warmth, with a more free expectoration ; absence of pain, with rather an increase of the frequency of the pulse. Concluded not to take more blood, but continue the other general treatment as she might be able to bear it. We do not

mention various small medicines on which no dependence was placed, for radical treatment.

During the month of June, there was some manifest improvement in her health; a mitigation of all the symptoms. She had a desire to ride out the last of June, in which she was indulged prematurely. Had a few short rides without injury.

On the 4th of July rode with her daughter in a chaise, four miles outward. The weather became overcast; she was suddenly attacked with chills, pain in side, and dyspnœa so severe that she got home with much difficulty. Saw her in the evening, when she said it was impossible for her to lie down on account of the pain.

She was prevailed on at length to take a warm bed, and had steamed oats applied to the thorax. A free circulation took place; and she sweat freely. Took a pint of blood from the arm, and according to my minutes, a larger quantity next morning. It was a case of pleuritis, and the usual round of remedies was pursued. Blood was covered with a dense pellicle.

Bled again on the 9th and on the 12th of July, and still the inflammation continued with more or less severity. Yet soon after abated, and still she was not free from disease. According to my minutes, she was bled five times more, before the 24th of September, and every time with some relief. By about this time, the immediate danger of the case seemed to be overcome. In a short time she was as well as before this severe relapse, and continued to improve moderately, although expectoration was considerable.

By the 20th of October she had evidently improved; expectoration less; had gained some flesh and strength. Continued to improve through the winter of 1820-21, within doors, so that she required only monthly visits. Still, however slight expectoration, with the lighter phenomena of fever.

Having given many particulars of the first year's sickness,

we will rehearse the events of the second in a more summary manner, in order to shorten the case.

Although she passed the winter in rather a comfortable manner, still she was not considered as free from the disease. In the spring of 1821 the case became gradually worse in all respects. Although its aspect was very forbidding, she continued a very submissive patient, and willing to conform to rigid discipline. Pulse usually 150 a minute.

We now had the trials of patience and perseverance. Combated the disease in its various states of aggravation and mitigation, until into October, when every thing relating to it began to wear a brighter prospect. But, previous to this, she was so reduced by expectoration, hectic sweats, diarrhœa, &c. that for some length of time the inquiry amongst neighbors from day to day, was, is she alive?

During this space of time, there seemed to be a saving principle; the pulsatory and capillary actions were in some measure better sustained, and the case admitted of several bleedings to apparent advantage, and some slight encouragements were offered her. The whole number of bleedings she had during the two years, was twentyeight. No cuppings nor leechings, but many epispastics; setons much of the time, and sometimes two at once. Took no narcotic but digitalis in moderate doses. There occurred no hæmoptysis; but it was evidently a tubercular case.

She remained in a measure comfortable through the next winter, keeping within doors; greatly emaciated, but took more nutritious diet. In the spring was much better, although still emaciated; walked, and rode some. Had no more returns of aggravations; expectoration ceased, and by the next autumn she had acquired a considerable degree of strength, and fulness, and bestowed ordinary attention to her domestic concerns. She still improved; catamenia returned, and she considered herself well for eleven years to our knowledge;

but having moved away, we did not hear any thing particular for about three years.

Although she esteems herself perfectly well, there are evident tokens of small cavernous spaces in the lungs, which however, give her no trouble. Could this case have terminated favorably, if left to the natural processes undirected?*

Saw this patient again in October, 1837. She informed us, that for about two years past, she had some slight cough, and had expectorated. It would be aggravated on taking cold, but she was rarely confined by it for a day; she mixed in society, and bestowed ordinary attention to her concerns. The matter expectorated at this time, appeared to be a thin mucopurulency. She had used no remedies, and made use of common food; slept well, and passed the time with a good share of comfort. Comments are unnecessary.

5. *Pertussis, or Hooping Cough.*

a. Its character.

This disease sometimes affects districts of people almost simultaneously, like epidemic fevers. It, however, more frequently appears to be subject to the laws of contagion, and is manifestly communicable from one subject to another in succession, until it has passed through entire districts. The same subject is but rarely liable to the disease a second time, and this fact proves it to belong to the class of contagious diseases.

It most commonly spreads by a communicable aura, when it appears to resemble epidemics, being at such times, favored with an atmospheric afflatus increasing its facility of propagation. Its recurrence is so frequent, that its spread is chiefly amongst children, although no age is free from its primary influence.

* No opium, or other narcotic, except the small doses of digitalis, was used in either of these cases.

Being then a contagious disease, (Sect. xl.) it must necessarily affect the whole system in a primary manner; this is an universal fact, although so many have been deceived, as in other instances, on account of its local irritation in the lungs affording the most obtrusive symptoms, and in a manner to arrest the entire attention of both the patient and adviser. The common phenomena of the morbid habit are always present, and easily discoverable, especially in the more severe cases; such as frequency and hardness of pulse, furred tongue, slight pain in head or thorax, &c.

Its specific location is in the mucous tissue of the lungs, trachea, and larynx. In severe cases other tissues of the lungs become associated in the process of progressive inflammation; and post mortem examinations have revealed effusions, adhesions, &c., as in other cases of pneumonia, of the most decided phlogistic character. The affection often extends to other of the internal tissues; and even the stomach is very commonly associated, and manifests traits of inflammation. The same diathesis continues as long as any vestige of the disease remains, and is liable to be protracted in the form of some chronic disease.

The peculiarity of this morbid affection of the mucous tissue is, that it is attended with a state of adstriction of the tissues, rather than a profluvium. In consequence of this, they secrete from the follicles, and exhale from the capillaries, but very scantily. Their surface is prone to be dry, and the sequence is, an irritation liable to excite sudden and severe coughing.

The paroxysm is sudden; the involuntary movements prevail; the necessity of coughing, like as from dust thrown into the trachea, is so great, that the patient immediately expels air, without having time or ability to draw in his breath. These interrupted expirations continue, until the lungs expel as much as possible of the air of reservation, and to the utmost degree of contraction the muscles of respiration admit of.

Still the expiratory effort remains in a state of fixity, when no more contractions are practicable, until there is a great retardation of the circulation through the lungs, and perversion of many of the other functions of circulation. The subject remains breathless for a short time; the countenance dark and hyperæmic; blood sometimes bursts from the nostrils.

After very considerable exhaustion, the rigid fixity of the tissues relaxes, and inspiration takes place in a slow labored manner; the glottis, still partially contracted, admits a straightened current of air, with a peculiar sound, or *indrawn* whoop, which gave origin to whoop, or hooping cough.

Furthermore, this state of agitation forcibly impels from the mucous follicles and exhalants, their soft shielding fluids in considerable amount, so that the irritations are sheathed; the subject coughs, as in ordinary conditions, and spits off a viscid albumino-mucous fluid. The stomach also becomes oftentimes excited, and much of the increased membranous secretion is vomited; and by this very act, the lungs are more effectually disburthened, and the inflammatory state relieved.

The paroxysm now being over, the subject remains quiet until the tissues again become dry and irritable, when the involuntary conservative energies are again excited, and another paroxysm ensues. The further history of the disease may be learned from many writers.

Dr Hope remarks, in his *Morbid Anatomy*, p. 18, "Lobular and vesicular peripneumony are, according to my observation, frequent in pertussis, and are more common in children than in adults." He uses the term peripneumony, as synonymous with inflammation of the mucous vesicular, or aerial cells of the lungs. In describing the effects of inflammation in this tissue, he says, "the walls, instead of continuing to thicken, may either ulcerate, or secrete pus, or tubercle." But we also obtain evidence, that the inflammation extends into other tissues.

The adstrictive state of the tissues retards the exhalations, and more effectually than in ordinary states of inflammation. It is of a persistive character, and remains through the whole course of the disease. It is even apparent sometimes after the fever has essentially passed by. The same state of dryness and irritation of the turgid tissues, keeps up the paroxysms of cough, then erroneously called spasmodic.

The apparent spasm, is a part of the involuntary movements of the conservative power of the human economy, exerted to relieve the tissues of the intolerable irritation. So a child will have a similar exercise of coughing to expel dust, or even a few drops of water, from the trachea. The expulsive efforts will be sudden and irresistible, whilst inspiration is not admitted, as if by an intuition, that by this act the offending substances would gain further admittance into the lungs.

The false thesis of spasm, has led to very disastrous results in the treatment of pertussis. It has inducted into its service not only the most stimulating of the anti-spasmodics, but that most destructive of all narcotics, opium, in some form. Whilst all the phenomena of the general habit and local inflammation, show a fixed and persistive phlogistic state, this most incongruous of all stimulants is brought forth to insure destruction, and on the pretence of its being anti-spasmodic. The pathological error was conceived in darkness, and the remedy brought forth in ignorance.

Were the subject less important, we might be spared the pain of the above remarks. But, in consequence of an erroneous principle, the young sufferers in this disease are liberally fed with Dover's powder, black drop, morphia, paregoric, and the tribes of pedler's cough drops. We are not content to speak through pages which may never reach the public eye, but wish for a lengthened trumpet, that might tingle the ears of empirics and charlatans, in every avenue of their retreat.

b. Methodus medendi.

There is no necessary fixed period required for this disease to abide in the system, otherwise than what arises from the severity of the morbid habit, and inflamed tissues. In this it hardly accords with the character of the contagious diseases. After structural changes have taken place, if the subject is not destroyed, it may become changed into chronic disease. We have known cases commence with considerable severity, and every morbid condition pass off in two weeks. Neglected cases, and when exposures are frequent, may grow worse for three weeks, continue bad three or four more, and require as many more to pass off. Mild cases, without structural changes, very often pass off in two weeks.

Physicians are not commonly called until the disease has assumed a severe aspect, and it then has become more or less tenacious. In its incipient state it is simple in its diagnosis, and of easy treatment. All agree in the fact, that it is milder in warm seasons than in cold. This fact, without the aid of medical lore, ought to be sufficient to teach us the necessity of securing the tender subjects of its influence from cold, and that they should be effectually protected in cold seasons by warm clothing, and warm rooms; and in temperate seasons from atmospheric changes; also, by warm clothing for the season.

If at an early period capillary action is well sustained on the surface, internal inflammation moderated, and the exhalations promoted, the disease will become of easy management, and soon pass off.

If it manifests unusual severity, then moderate it at the earliest opportunity; and particularly promote the secretions of the pulmonary tissue, instead of suppressing them by stimulants. The means of accomplishing these indications

are very similar to those for other states of inflammation, and scarcely need to be repeated.

With regard to venesection in pertussis ; in severe cases it is as much required as in pneumonia, whilst the phenomena of pain, and fulness of pulse do not indicate its necessity half as much ; by which the adviser is liable to be deceived. Blood may be taken freely unless too great exhaustion has already taken place, when the bleeding point of the disease may have passed by. In young subjects when bleeding at the arm is very difficult, leeches may be applied to the thorax. In obstinate, and protracted cases, apply the ointment of tartarized antimony on the thorax.

It is a remark in the mouth of every nurse, that when children vomit in whooping cough after a paroxysm, they will do well. This shows that the tissues secrete, and the sooner this takes place the shorter will be the paroxysm of coughing. In order to promote this, many contrive to give them a domestic medicine of chamber-lye, molasses and hog's lard, warmed together. There is not a more eligible composition in any pharmacopœia. If it should fail in some cases, add a quarter of a grain, or more, of tartarized antimony, previously dissolved in warm water. Hive syrup is useful as an emetic, or as an alterative.

Occasionally give a cathartic of castor oil and calomel, or Rochelle salts dissolved in an infusion of liquorice root.

The warm bath may be often repeated ; or mild steams to the body universally whilst in bed, by any convenient apparatus ; also, mild inhalations of the steam of warm water, or an infusion of flax seed.

After venesection has been practised, if the case remains obstinate, it should be soon repeated, with epispastics to the thorax. Give mucilages and demulcents of various kinds, in the form of drinks, and also lozenges, to be held in the mouth. Acids are not so proper as alkalies dissolved in a large proportion of water. The preparation below has been

satisfactorily employed.* Let the patient take freely as much as may sit well on the stomach. More water may be taken with it, for it is necessary to dilute the fluids of the body, in order to supply the exhalations and secretions.

If anti-spasmodics are required, a watery emulsion of assa-fetida may be used. A more agreeable one may be found in a small quantity of gum camphor, ground with a large proportion of gum arabic and loaf sugar, in such a dose as may be agreeable to the stomach. Also, chloric ether, from ten to fifteen drops to a child five years old, diluted in water.

Fresh animal oils, as pig's foot oil, neat's foot oil, and that of wild animals, mixed with treacle, are often useful; also pure olive oil; they may be largely used, and if they should provoke emesis they will do more good.

A quarter of a clove of garlic, in the latter stage of severe cases, may be tried three times a day, for a child five years old. Also, onion syrup.

A thin, but wide pad of cotton wool or soft flannel, may be constantly worn around the neck. The neck may be often moistened with oil of almonds. In bad cases, poultices of garlick or onion to the feet. The diet should consist of demulcent articles in a fluid form, as oleaginous broths, &c.

6. Hemorrhage.

a. General Character.

Many subjects possess good health through a long life, with a fulness of blood. The capillaries are well filled, as manifested by distention, and floridity of countenance, with an equal balance of circulation. The processes of the economy maintain a nearly equal balance between the ingesta

* R. Carbonate of Potash	ʒ	2
Cochineal, ʒ	ʒ	2
Spring water	ʒ	10
Loaf sugar	ʒ	2

This may be diluted with mucilage of gum arabic.

and the egesta, and health is continued until this balance is interrupted. They suffer not so many contraventions of health commonly, as those of a less relative proportion of blood, because the activity of the capillaries sustains their action better, when exposed to the lædientia of disease.

Hemorrhages oftener occur in apparently less sanguine habits, and the same may be said of other diseases also ; yet, when they do occur they may be more profuse. In all hemorrhage, aside from lesions done the tissues, there first occurs a change in the economy of the system generally, and the circulatory apparatus experiences its part of the injury. The just balance of the circulation is interrupted, and so far as we can discover, in a very similar manner as in the access of the common morbid habit.

A disparity often obtains between the ingesta and excreta, producing plethora. This may be of some continuance, and still enhanced by the use of more nutriment than the system requires ; it may arise from the suppression of some accustomed evacuations ; or it may arise suddenly from numerous external circumstances constringing the capillary system. A disproportion between the amount of fluids and capacity of the vessels is the result ; this is a plethora or hyperæmia.

All the causes which co-operate in establishing a morbid habit, lay the basis of the hemorrhagic, and there will not probably be a hemorrhage without the existence of such an abnormal condition. The hemorrhagic habit implies a less state of severity than exists in the ordinary pyretic habit ; it still, however, makes near approximations to it. It is either in the forming or declining stages of the phlogistic, or of the typhoid diatheses, that hemorrhages occur. It is a more fortunate circumstance when they do appear early in the forming stage of disease, as it becomes mitigated on this account, if all other things are equal.

Yet, again, their appearance towards the close of pyretic disease, when its severity has become mitigated, is often

beneficial, and sometimes essential for the saving of the case, and ought not to be hastily suppressed:

All that has been said in Sect. xx. 5. et seq. in relation to the local emanations of the morbid habit, will apply to hemorrhages, the same as other local affections. They are invited to particular tissues by certain physiological idiosyncrasies, or some particular state of irritation of the parts. Their continuance, and amount of loss of blood depend on these conditions, and each of them may have an agency in the process. If there should be much hyperæmia, and a thin crisis of blood, there may be a large flow; but this will be modified by the state of the tissue admitting its egress. If the diathesis should approximate the phlogistic state, the flow will not be so free. Every process in arresting hemorrhage consists in condensing the tissues, and the crisis of the blood.

In the first place, there is an impetus of morbid impulse directed to the part; this acts as a stimulus to the tissues and the result is an accumulation of fluids in the part; it directly becomes turgid, and makes progress to a state of morbid excitation. But, before effusions or any important changes occur in the tissue, there intervenes what has been called an hemorrhagic effort in the capillary blood vessels of the part, and the blood is thrown out by the exhaling vessels on to the surface of the tissue; yet sometimes the vessels suffer a rupture. In some organs it has a ready outlet; in others it accumulates in masses. If this morbid concentration had been directed to the same tissues, not in a state admitting an egress of blood, there would have been effusion, preceded by inflammation; whereas it is now merely a state of excitation, liable to be transformed into inflammation.

The concentrations may be directed to other tissues than the mucous. In severe malignant diseases the serous have been affected, and transmit blood into their cavities. The serous membranes of the thorax and abdomen have been

found covered with thick, dense coagula of blood. Mr Paisely found a parturient uterus covered with a coagulum a foot and three inches long, twelve inches wide, and one fourth of an inch thick. When the impetus is directed to the brain, the effusions of blood occur by rupture, and are diffused in the connecting pia mater. The same may occur in the lungs, occasioning pulmonary apoplexy, or clots, with ecchymosis of the aerial cells. Or, it may distil from the mucous tissue.

When hemorrhage has continued for some time in the mucous tissue, the capillaries of the part take on, or assume a state of excitation, and act by their susceptibility independent of the heart; and in this event, continue to throw out blood, when even an exhaustion has taken place. So hemorrhage may continue even in a state of anæmia. It is at this period the interposition of art is required to suppress the flow of blood, and much discrimination is required to determine when the interference is necessary. The interference by astringents, is liable to be too early; the bystander is liable to be deceived in the quantity lost, as it spreads out and makes much show. The pulse best indicates the condition.

If the hemorrhage should be too early suppressed, the organ, or some contiguous one may suffer by inflammation. We should be slow and cautious in suppressing hemorrhage, when we consider, that but few cases of the more lingering kinds ever go to the excess of causing death. There is more danger in a sudden and impetuous flow, but not so much as many apprehend.

There is scarcely such a state as passive hemorrhage, any more than sub-inflammation. Although the vessels are more patulous, and transmit more readily in some instances, such cases require soonest the interference of art. The general habit in hemorrhage may be so modified as to save much of the pressure of blood upon the affected tissue. Venesection, by a sudden depletion, has a more beneficial effect in remov-

ing the hemorrhagic diathesis, than the gradual flow of blood from the part. Besides it is followed by a more uniform circulation, an essential circumstance to be regarded in suppressing hemorrhage.

Those hemorrhages which occur in a weakened crisis of the blood, are the most difficult to be restrained. There is a hemorrhagic idiosyncrasy affecting certain families; when receiving merely a slight wound, they bleed to excess, and scarcely any means are adequate to the object of suppressing it. There seems to be an extraordinary susceptibility in the capillaries, to take on the hemorrhagic effort.

7. *Epistaxis.*

Reference may be had to the nosography for a short definition.

This usually occurs in young persons near puberty; frequently at the commencement of fevers; also, during amenorrhœa. It is often preceded by a sensation of pressure, pain, or dizziness of the head. In such an event, no local measures should be taken to suppress it. The case should be treated by bleeding, saline cathartics, and low regimen. In amenorrhœa, by establishing the natural course.

If at any time it needs to be suppressed, applying cold may be sufficient, by wetting linen cloths in cold water, or salt and water, and laying them upon the face, the patient being quietly in bed, with the head elevated. If required, they may be applied to the back of the head. Sulphuric acid and cold water may be taken internally. Bathe the feet in warm water. Cathartic of sulphate of soda.

If the case should go to great excess, as sometimes occurs in a bad crisis of the blood, a plug may be used of linen, just so large as to pass into the nostril as far as it will go, first being dipped in cold water, and rolled in pulverized alum. It may be left in two or three days. Or, if the case

requires, a dossil of lint may be applied in the fauces to the velum palati, by a loop passed through the nostril, and tied over another dossil at the entrance of the nostrils. Quinine, in addition to sulphuric acid, may be freely used internally.

However, if epistaxis should be early suppressed at the onset of fever, attended with only slight pain in the head, phrenitis will be liable to occur.

8. *Hæmoptysis.*

a. Phenomena. Remarks.

Even when this discharge of blood from the lungs appears as vicarious of epistaxis, hæmorrhoids, or the sexual catamenia, it is preceded by a state, more or less, of hyperæmia, which implies an approximation to a morbid habit, although not always very intense. It is a morbid plethora.

In some instances the subject has no previous monition of its approach; but more commonly feels some pressure under the sternum, some soreness, and slight pain, or cough. There is some change in the taste of the saliva; perhaps chilliness and dyspnœa. The quantity spit off may be small, yet sometimes very large, and it may flow even so fast as to endanger suffocation. The exhalants of the aerial tissue, in an active state of excitation, may transmit large quantities of blood, without rupture of any blood vessels; still larger vessels may sometimes rupture, and discharge freely; and perhaps be attended with ecchymoses also.

In consequence of the mucous tissue of the lungs and nose being unprotected by adjacent organs, hæmorrhage occurs oftener in them than in any other parts, except the uterus. The great exercise of the mucous tissue of the lungs might be supposed to occasion it, oftener than it actually does occur. A turgid state of this tissue, supported by a mild morbid habit, is liable to be attended with hæmoptysis, whether there are

tubercles or not. Perhaps tubercles may not so often occasion hæmoptysis, as that state of the tissues which gives origin even to the tubercles ; for many cases of manifest tubercular phthisis have never been attended with it.

Again, many cases of hæmoptysis recover without phthisis following it. Even if phthisis should succeed, and on examination tubercles are found, it will be difficult to decide whether the tubercular formation had priority of the hæmoptysis, or not ; for both the tubercular deposits, and the hæmoptysis, we allege to be sequences of the general diseased state. Therefore, as soon as the one appears, the other is suspected; and the curative measures should be diligently employed, as proposed in the article phthisis ; if they had been hitherto neglected. Indeed, the early appearance of hæmoptysis may, perhaps, be considered a kind monitor to the negligent, and those of tardy apprehension, of the danger connected with every concentration to the lungs.

b. Methodus medendi.

After the remarks already made on phthisis and hæmorrhage, there need be but little said on the treatment of hæmoptysis. We begin with an earnest request, that opiates, narcotics, and astringents be totally withheld; until a severe exhaustion shall demand them; and this will but rarely happen.

Let no time be lost in effectually removing the constitutional affection, which gave origin to, and supports the hæmorrhage. Whether there are tubercles or not, the rule ought to be observed. Venesection repeated to the necessary extent ; saline cathartics ; antiphlogistic regimen (Sect. xlvi. 4) ; spare vegetable and milk diet ; epispastics to the thorax ; afterwards a seton in the side as a prophylactic. The amount of these must be adapted to circumstances. A slight emetic of ipecacuanha, has often relieved the flow of blood,

and been followed by a more equal circulation. If there should be a tendency to cough, small doses of digitalis, and demulcents. In case of necessity, one grain of opium and four of acetate of lead ; or, a table spoonful of salt with cold water ; alum, and vegetable astringents.

9. *Hæmatemesis, and Hæmorrhagia intestinalis.*

These are very much of a similar character, and in general terms, require like treatment. The diet should be very mild ; mucilaginous drinks ; wine whey ; arrow root, &c. Mild astringents may be employed, such as a decoction of log-wood with an infusion of elm bark, sweetened with loaf sugar. Or, extract of catechu one drachm, gum Arabic half an ounce, in a pint of water. The stomach should not be crowded with anything.

The patient may be supported with panada ; tea ; coffee ; if great exhaustion should appear, a spoonful of port wine occasionally. After the bleeding has ceased for thirtysix hours, give a laxative infusion of rhubarb and manna. Avoid drastic and all very active medicines. After cleansing the prima via, small doses of quinine and port wine.

In these cases there is commonly great exhaustion of fluids and vital force ; the supporting remedies should be of a mild character ; for if high stimulation should be resorted to, as some might incline to think necessary, it might soon extinguish the small remains of life, as it does in famished subjects.

Whenever the blood vessels of the mucous tissue of the stomach or intestines take on the hemorrhagic impetus, the flow of blood is commonly very large. It is liable to surprise the attendants, and there is danger of more being done, than is actually necessary or safe. It is always necessary that the flow should continue until the abdominal infarctions are removed.

The remaining affections of this order must be omitted.

ORDER III.

THE SEROUS TISSUES.

SECTION XLVIII.

1. *Preliminary Notices.*

IN attempting an inquiry into the harmonies, and reflex actions of the serous tissues, in health and disease, we have to explore an almost unbeaten way. Its physiological importance has been too much neglected; and in a pathological view, it has not received attention in proportion to the extensive influence exercised by it, in the morbid economy. It was a remark of Bichat that it was one of the tissues most exposed to inflammation; and whilst the cellular tissue had been shown to give a character to the phlegmonous, the dermoid to the erysipelatous, and the mucous to the catarrhal, we have not a general name to express that of the serous.*

This tissue is of greater extent than either the dermoid or mucous; it has an intimate connection with all the internal organs, closely investing those of the head, thorax and abdomen. By means of the arachnoides and pia mater, it holds an intimate association with the minutest divisions of the brain, and whole nervous system of external relation. As the envelope of the visceral ganglia are of similar structure with the serous tissues, may we not infer the existence of an unobtrusive harmony existing by its agency, between the internal and external nervous systems, especially during the increased sensibility of disease? The very circumstances,

*Gen. Anat. Vol. II. p. 31.

which essentially increase its sensibility, are liable to depress its functions.

In both the thorax and abdomen, we have proof of a ready associability of function of this tissue, in discovering so often the whole of the investing surface inflamed, even if the principal disease is confined to one organ, or even a single point. This is shown in pleuritis; also, in severe hysteritis, in which greater ravages of the disease are seen in the peritoneum, than in the uterus itself. Dropsies embrace extensive surfaces.

Bichat also suggests, that the internal motions of the serous tissues, "should be regarded as carrying through the whole machine a continual excitement, which supports and animates the forces of all the organs." And, again, "inflammation has a peculiar and distinctive character in it, of which all the serous membranes partake, with some modifications."*

In Sect. vii. 4, we have bestowed some attention to the character of this tissue in health and disease. We do not expect to say all that might be embodied in relation to it. In the physiological state, it possesses the common sensibility of the nutrient tissues, yet in a delicate manner; when irritated and excited, it receives the sensibility of external relation, by which the condition of this tissue, and often of the organs it invests, is transmitted to the centre of perception. The acuteness of pain on pressure, or motion of the thorax or abdomen, transmits the degree of suffering, in a manner to be quite accurately estimated. When, however, this tissue is relieved by the effusions so liable to flow through it, the sensibility becomes blunted. It is, therefore, in the more early stage of inflammation, that the degree of injury can be most accurately estimated by pain and tenderness in this tissue.

The serous tissues have suffered from inflammation oftener than is manifested in after examinations. It is a very attenu-

* Vol. III. pp. 138, and 154.

ated tissue, not admitting red blood in its physiological state, but quickly admits it in a pathological state. It, again, very soon gives up its blood to absorption, as soon as general life ceases. It may not show very obvious traits of inflammation in an hour or two after death, whilst the effusions in its sacs show it had existed. The experiments of the vivisectors show a turgid, reddened state of it during life, when moderately excited.

When one portion of this tissue receives the burthen of disease, the remotest parts are affected by a sudden consensus. In peritonitis the tissues of the brain partake also, sometimes giving pain, commonly slight delirium; yet on an early inspection they show no structural changes, even if such had existed.

We have endeavored to show, that all fevers have internal locations; not excepting the exanthemata, the eruptions being merely the translations of the internal, and becoming more permanent. These concentrations may affect extensively either the internal fibrous, mucous, or serous tissues of the head, thorax and abdomen, more or less, but always some one portion more than the rest, making the part what is called the seat of the disease. The diathetical difference consists in the circumstance, of which of the tissues is primarily affected. If it be the fibrous, the diathesis will mostly partake of the severe synochoid character; *synocha*. If it be the mucous, it inclines to the mild synochoid diathesis; *synochus*. These have been illustrated. It now remains to be shown, if the concentrations should essentially be on the serous tissues, the diathesis will savor of the mild typhoid kind; *typhus mitior*. And furthermore, when the causes of disease are overwhelming, and complex inflammation is induced, there appears to be an affection of more than one of these tissues, and the severest grade of the typhoid state is induced; *typhus gravior*; as in the fourth order.

The effects of these tissual inflammations prove the reality, and the importance of the distinction. The fibrous tissues yield the dense fibrinous effusions; the mucous, a modified increase of the fluids of the tissue, or a muco-albuminous discharge; the serous tissue yields serum of different grades of viscosity; whilst the state of complicated inflammation presents mixtures of all these, with the addition of exhaled blood sometimes. The complex inflammation of the serous tissues sometimes resembles erysipelas of the surface. The states of disease are mutable, passing one into the other, and affecting different habits modified by many circumstances, so that the results are not always precisely as stated, yet they maintain their general characters.

In the instance of a mild access of general disease locating essentially in the serous tissues, with venous congestions, the phenomena are of a peculiar kind; there is usually a vacillating state of all the functions; an inability of muscular motion; the heart and vascular tissues are deficient in force, but increased in frequency; calorification is deficient; inability of intellect, and disposition to sleep; hence the origin of the term *typhus*.

A congestive state of the capillary veins constantly attends, and is discoverable in the tissues of the head, thorax and abdomen. It appears that the nervous systems early suffer. We assign that the primary changes in the nutritive system early affect the entire capillary circulations and nervous systems. When these changes more immediately impress the serous tissues, the phenomena of the low typhoid diathesis appear.

The instances of arteritis and phlebitis might be alluded to, where there exist extensive excitations of the inner coats of the vessels, which are of the serous kind. The affection called delirium tremens is attended with a vacillating state of the nervous system, with injury done the serous tissues of the brain. Limpid serous effusions are very constantly found in

the arachnoid tissue when excited, in the cerebral ventricles, and investments of the spinal cord. In cases of this character, we find the prevailing diathesis considerably different from the synochoid; it constantly partakes of the mild typhoid aspect.

In sudden and fatal cases of the disease called spotted fever, the serous tissues of the head and thorax exhibit a congestive state, and a stellated appearance, with sudden collections of serum in the ventricles of the brain, after four hours sickness. There are acute and chronic dropsies. Finally, there are numerous modifications in the diseased habit having similar concentrations in the serous tissues, and attended with a feeble, vacillating state of vital movements, whilst there is a great weight of general disease accompanying it.

Besides the state of profluvium of the serous tissues, whereby they yield an excess of serosity, there is an adverse state, which may be considered as a state of adstriction, attended with dryness, and scantiness of exhalation, similar to what occurs in the skin and mucous surfaces. The parts do not move easily on each other, but attended with soreness. Chronic irruptions have been discovered in these tissues, and the retrocedent exanthemata sometimes fall on this tissue, and produce an alarming train of phenomena. When adhesions, false membranes, tubercles, &c., arise in the serous tissues, the subjacent fascia are implicated in the local determinations.

The serous tissues, then, being susceptible in their character, and extensive in their harmonies with the nervous tissues, show the necessity of diverting all internal excitations as much as possible, to the external, or dermoid tissue. Exanthematous diseases are often attended with great distress previous to appearing on the surface, arising from impressions on the visceral serous tissues.

2. *On Typhus mitior, or Typhoid Fever, or Dothineritis.*

a. We consider this the disease that has extensively prevailed in New England from its first settlement, and the most frequent form of continued fever that has afflicted both city and country. The remittent form is rarely seen here, and yet a mild fever often prevails of the character of synochus, of easy treatment when rightly directed. Typhoid fever sometimes prevails as an epidemic, or an endemic. It may persist only a few months in a place; and yet it commonly does for a year or two, with sometimes greater, at other times less severity. In some sections it has lingered for a greater length of time, progressing slowly from one town to another. It often attacks only a few families in a neighborhood, and only a part of such inmates may have the disease. At other times it affects entire families of ten or twelve in succession, requiring four or six months in passing through. The circumstances which arrest its progress are equally as obscure as those which give origin to it. It affects all ages and sexes, with the exception of very young children. It has prevailed in all seasons of the year, mostly, however, in the latter part of summer and beginning of winter; but seems to give place to other morbid influences, sometimes producing dysentery in summer, and pneumonia in winter, or some other form of disease.

Its attacks are commonly slow and insidious, and the disease is two or four days in becoming developed. It has been called slow fever, nervous fever, and for the last thirty or forty years, typhus, or typhus mitior. Very recently it has obtained the name of dothineritis, by the French pathologists, on account of a pretty constant affection of the inner coat of the lower portion of the small intestines, and the upper portion of the large, in the form of a furunculous exulceration. Unless the severity of the disease is mitigated by

efficient treatment at an early period, it persists from three to six weeks. It is said to be the most common form of continued fever at Paris, and even in France, and indeed in many northern sections of the world.

The phenomena of typhoid fever, dothineritis, or *typhus mitior*, as it has appeared in New England, manifest a greater prostration of vital energy than in synochus, as shown in the operations of the mind, in the muscular system, and the heart and arteries; the eyes have a dull aspect, the patient shuts them, and inclines to sleep. A preternatural sensibility occurs after many days, with an excitation of functions bordering on delirium, or alternate excitations and obscurity of intellect called coma-vigil. At the attack, slight chills, and increased sensibility to cold; dizziness; slight pains in the head, neck, and spine, sometimes in the limbs. Some cases incline to be attended with coldness, with slight occasional flushings; others with considerable heat, especially in the head; sometimes epistaxis. Surface dry, at the onset cold, followed by heat. Pulse commonly small and frequent, sometimes more full, from 90 to 120 in a minute; when 130, the event is liable to be unfortunate; it is often tremulous. Subsultus is frequent but not constant. Tongue tremulous, and covered with a white fur, which in a few days turns dark and rubs off, with sordes from the teeth, and mucous tissue of the mouth. Tenderness in the abdomen, occasional diarrhœa, tympanitis, and liability to intestinal hemorrhage, after about the third week. Some thoracic affection, cough slight, with a mucoïd expectoration. Urine at the attack often limpid, soon becoming scanty and high colored. As the disease progresses, many other consequential phenomena may become developed.

To this history of the phenomena may be added, the lesions most commonly found in the mucous glands in the neighborhood of the cæcum, and which give origin to the term dothineritis. In conformity to the most approved writers of

late, we consider these lesions as of secondary origin. They will receive attention as we proceed in the general history of the disease.

b. Much controversy has existed whether this form of disease, as it has prevailed in this country, is contagious or not. There seems to be nearly as much evidence on one side as the other; yet our prevailing opinion has always been in the negative, with the persuasion that a high concentration of effluvia from the sick, may act as an adjunct exciting cause on deeply impressed predispositions. The French pathologists are decided in its non-contagiousness; whilst they contend that typhus fever with petechiæ and absence of intestinal ulcerations is contagious. We shall not pursue this subject at present.

c. The affection under consideration seems not necessarily to be attended with an eruption. Sometimes, however, a few rose colored pimples appear on the surface, but we think oftener there is none, or we have been defective in observing them. Still we are certain, in relation to the disease that has so extensively prevailed in New England, under the appellation of typhus, that in some seasons we have seen certain cases, according to judgment one in fifteen, attended with a dusky skin, and manifest petechiæ extensively, and thick over the body. These cases have been considered as the same disease, yet of a more malignant character than the rest. From the neglect of autoptic examinations, we are not able to say, whether the intestinal lesions have existed in these cases or not. The sudamina have often been discovered, and they frequently depend on the degree of warmth used on the surface.

d. The intestinal lesions, giving origin to the term dothin-enteritis, have been described by many writers. Those which are most constant occupy the follicles, and the ganglia of the mesentery. It is the glands of Peyer which exhibit the greatest changes; next, those of Brunner are affec-

ted. A slightly yellowish white substance, one or two lines in thickness, forms beneath the mucous coat, which is now of a dark red color. In a short time this softens, and the follicles become enlarged, the coats of the tissue become thickened, and in a few days ulcerated. The edges are hardened, and in the dead subject assume a livid or bluish appearance. The mucous membrane becomes rugous, and soon shows ulcerations, affording a kind of purulency. The coats thicken, whilst the ulcerations extend still deeper, until the muscular coat becomes affected, and in lengthened cases even the serous. In protracted cases some of the ulcerations begin to cicatrize, whilst others are extending. This state of cicatrization probably continues in prosperous cases for some time after the crisis of the fever, and the injury is gradually restored. The extent of surface is different; generally two and a half feet from the cæcum upwards, and about one foot downwards into the colon. The cæcum suffers severely, and is sometimes half an inch in thickness. Sometimes the coats present a simple ulcer, and are thinner; at other times the muscular and adipose tissues, as well as the mucous, are hypertrophied, and almost of schirrhous hardness.

M. Chomel appears to consider these lesions as not having any influence whatever upon the violence or progress of the disease, except perhaps causing diarrhœa, and some abdominal disturbance. He considers them as effects merely of the morbid condition. "The lesions of the intestinal mucous follicles, and of the mesenteric glands do not present the same degree of development in every case. In some, all the grouped and isolated follicles are tumefied or ulcerated, in others there are only a certain number which are altered in structure; twenty, for example, in some cases, in others fifteen, and in others only five, three, two, or even one, and that too only partially. Now if all the symptoms of the disease and its severity, depended on the lesions of the follicles, there would certainly exist a relation between the phenomena dur-

ing life, and the extent of the lesions discovered after death ; whilst also the violence and danger of the case would be in direct proportion with the number of the follicles affected, and the extent of the alterations in each." But he remarks, this is not the fact.

e. Perforations sometimes occur in some portion most affected, and even whilst the patient is convalescent ; and by admitting the contents of the intestines into the abdominal cavity, prove fatal within a day or two, attended with much suffering. Perforations have occurred in the appendicula vermiformis. The mesenteric glands also suffer alterations, which may presently be noticed.

f. *Do these structural lesions attend the fevers of New England, denominated typhus or typhus mitior?* There has not been a sufficiency of observations to fully determine this question. It is not until lately that the attention of physicians has been directed to this object. The difficulty of making minute examinations in the country is known to every one. Whatever is done must be done hastily ; and this portion of the body has seldom been attended to, for the abdominal inspections have chiefly been directed to the exterior of organs ; to inflammations, engorgements of vessels, &c. And again, the attention in the few cases of autoptic examinations has essentially been directed to the head, and not without reason, as the phenomena during life have shown a morbid action in this part ; and lesions have almost constantly been found in the membranes of the brain and spinal cord, with traits of inflammation, together with venous engorgements. Besides these, alterations have occasionally been found in the lungs.

The phenomena of the intestinal affection have rarely been very obtrusive as to pain, although diarrhœa and tympanitis are common. It may be observed, that the very section of the intestines which receives no nerves of external relation,

is the part essentially affected, and of course few or no responses are made to the centre of perception, or at least not until the serous tissue becomes also involved. Even pressure gives scarcely any perception until this takes place in some degree. This may be another reason why attention was not earlier directed to this circumstance.

However, the attention of physicians in New England has been more directed to these lesions for a few years past, and similar ones have been detected, to those delineated by the French pathologists. Our intercourse has been too limited during this time, to make many references. Notwithstanding, we notice in Professor Jackson's memoirs of his son, J. Jackson, Jr., fourteen cases at Boston, in 1833, in which the autoptic appearances accorded with those of the French pathologists, in cases assigned to be typhoid fever. His statement is, "In the course of that season there were fourteen undoubted cases of typhus examined by myself, or my friends, and in every one the phenomena accorded with the descriptions given us by M. Louis." (p. 274.) Two of these cases were attended with perforations, and two others the same season positively inferred to be so, by unequivocal phenomena.

A case occurred at Dedham in March, 1835, which was inspected by four gentlemen, and published by Professor Jackson in the Boston Medical and Surgical Journal, which exhibited similar intestinal lesions. The reported phenomena indicated the same kind of typhoid affection. Eighteen inmates of a factory established there, were attacked in about two days, with a few other scattering cases before and after these, and the disease suddenly subsided without extending further.

A similar occurrence took place at Lowell a month or two previous, amongst the inmates of the Hamilton factory, the subjects being chiefly if not all young women. The number

was larger than at Dedham. Several cases proved fatal, and autoptic examinations were made by Dr. E. Bartlett, and are believed to have been published in the Boston Medical Magazine, which, however, is not on hand at this time. He showed me excellent preserved specimens of the intestines with their lesions, which seemed very accurately to accord with the descriptions of the French pathologists.

These specimens accorded with several cases of autoptic examinations we afterwards witnessed during one and a half years residence there; and furthermore, during this time we had an opportunity of verifying the phenomena and progress of the disease in that place, and comparing them with similar fevers in other places in New England, of former years. The fixed impression is, that the main features of the disease were very similar. In the fevers then examined, compared with those formerly observed, the same obtrusive cerebral symptoms were present, although the intestinal lesions were progressing in almost a silent manner. From all the observations combined, the conclusion seems to be enforced, that we have not found a new disease, but that we have discovered a new anatomical lesion, or concentration of morbid action. We seem to have much yet to be established in relation to the causes, character, and treatment of this affection.*

g. At what period of the disease do the follicles suffer

* Since writing the above, a Report on the Typhoid Fever in the Massachusetts General Hospital, by Professor J. Jackson, has come to our knowledge. (Boston, 1838.) He remarks;—"The work of M. Louis, on continued, or typhoid fever, is now, I trust, well known in this country. It was not until the year 1833, that it received from me the attention it merited. Since it has been known to me, I have found that the continued fever, which is so well known to us in this city, at least, *was the same as that which he has described.* The symptoms are essentially the same, and the appearances discovered in the body, after death, are precisely the same. From 1833, our fever has been the same it formerly was."

these morbid changes? This question cannot be answered with precision on account of the want of opportunity of such early examinations as might be necessary to establish it. M. Chomel states generally, that it is from the eighth day of the disease to the twelfth that ulceration takes place. But the tissue had suffered alteration previous to this. Some cases do not show ulceration until after the twentieth day of the attack.

h. At what period do these ulcerations cicatrize? They are found in greatest severity in those who die between about the twentieth and twentyfifth days of the disease; when the patient sinks at the end of six or eight weeks, the thickening of the tissues is absent, and the mucous membrane has become smooth, except some inequalities where the follicles were ulcerated; indeed the ulcerations may have cicatrized, or partially so. Patients who have an early crisis may probably still have ulcerations requiring some time for cicatrization.

i. The mesenteric glands present phenomena, also, very constant, and different at different periods of their examination. They increase in size, become discolored, at length soften, but never ulcerat . Those nearest the c cum suffer the greatest alteration, and it is here the follicles suffer the most. Sometimes the glands are only increased in bulk; sometimes softened, and when cut into, a kind of muco-purulency may be pressed out. When first enlarged they are red or rose colored; at a later period they exhibit a dark yellowish or slate color. As the ulcerated follicles change, the glands diminish, and as they cicatrize the enlargement diminishes, whilst they often assume a dark color, and for some time at least, remain hardened.

j. Are these lesions constant in typhoid fever? All the observations made in France, England, at the Pennsylvania Hospital, and elsewhere, go to establish the fact, that the above alterations, in greater or less degree, are always pres-

ent in the form of fever denominated typhoid, or dothineritis. And, also, a third phenomenon is almost always, but not constantly, present ; which is, that the spleen is, for the most part, enlarged and softened. Besides these, lesions are almost constantly found in the membranes of the head, especially of the serous tissues ; and in protracted cases, lesions are frequently discovered in the serous and mucous tissues of the lungs ; and redness with softening, in portions, or patches of the mucous tissue of the stomach.

k. Are these lesions peculiar to this form of fever ? They are no otherwise peculiar than as being pretty constant ; for very similar lesions are found in many other affections occasionally, and in some quite frequently, particularly in phthisis, in cholera, and in scarlatina. It may be proper to notice these briefly.

In phthisis, the lesions in the follicles, in the mucous and other tissues as well as in the solitary glands, are very frequent, and show a great resemblance to those in typhoid fever, although some nice distinctions are made by some pathologists.

In cholera, there are slight, but manifest traits of inflammation of the intestinal follicles, which is sometimes restricted to the glands of Brunner. The discoloration is not so great as in typhoid fever ; some have a grayish color, others are red, some of a deep brown. Although the lesion is sufficiently plain, it is not so prominent, and does not proceed to ulceration, but exhibits about the same appearances at the end of four weeks in protracted cases, as it does at the end of fortyeight hours in those that terminate suddenly.

In scarlatina, also, the thickening of tissues is slight compared with that in typhoid fever ; the tissues show redness, but never progress to ulceration.

l. What harmonies seem to exist between the phenomena in typhoid fever, and the intestinal lesions ? Indeed it is difficult to discover much, unless so far as relates to diarrhoea and

the meteorism, and these are not always constant, although very frequent. The ulcerations at any rate do not appear until many days after stupor and headache have been present. Yet there is undoubtedly an affection of the part previously.

The cerebral phenomena are very constant, and precede the ulceration if not the intestinal inflammation ; and although the progress of autoptic examinations have revealed important lesions in these tissues, yet the most imposing tragedies seem to be acting in the cerebral organs, and especially in their serous tissues. It is here the concentrations in the disease meet with the greatest force ; it is here the most prominent phenomena are elicited by excitations of the nervous system of external relation, and the ravages are sufficiently demonstrable in the autoptic appearances. Of fortytwo fatal cases stated at one time by M. Chomel, fortyone had cephalalgia. The same author considers the intestinal alterations as a sequence rather than an antecedent of the disease.

Notwithstanding, the intestinal lesions cannot be esteemed as unimportant ; they may have some share of influence in the silent harmonies of the nutritive system in disease, and by their reflex action modify the condition of the morbid habit in some degree. It however, behoves us to stop short at present as respects pathological references, until perhaps, other facts in connection become elicited, which may guide to some safer inductions. In the mean time we cannot think otherwise, than that the cerebral lesions are altogether the most important in a practical view ; and that they give origin to phenomena which must direct the treatment, and will always indicate the severity and danger of the disease.

m. Treatment of Typhoid Fever.

Whatever the causes of slow typhus may be, the physiological actions show a change having been made in the vital energies of the system. The whole series of the nutrient

system of blood vessels and nerves are engorged; the heart is enfeebled, and the absorbing systems are in a great measure suspended. The blood loiters in the brain, and offers considerable impediment, especially to the energies of the system of nerves of external relation.

We find a greater degree of disparity between the centrifugal and centripetal circulations, than in synochus. The case seems to demand direct stimulants internally, in proportion to the degree of inability of functions. But, as has been remarked heretofore, these do not afford a remedy suited to the physiological condition. They excite unavailing action more in the outward, than in the inward series of circulation, and for reasons often explained. Of course the case is made worse for them.

If direct stimulations can be applied to the absorbing series of circulations, increasing their functions, a way is opened for the recuperative powers to act, and restore a free circulation. When this is accomplished the proper curative treatment may be used to advantage.

This is a kind of morbid action that can seldom be so changed as to leave the system suddenly. It can be modified most commonly, so as to pass off without destroying the organization. It seems that some time is necessary for the preparation of the depositions, and their passing off by the proper outlets. These processes should be allowed to proceed without too great interference by medicine. The system needs, also, to be sustained by mild nutriment during a process of some length. (Sect. xlv. 4.)

However varied the causes of disease may be, and however different the degrees of injury done to the tissues, we find much similarity in the nature of the primary changes; and the remedies are rather similar in kind, although differing in degree, and manner of impressing the system. Hence the simplicity of disease at its onset.

n. Caloric.

In typhoid fever the first indication is, to excite the motions of the absorbent systems in as easy and compatible a manner as possible. When this is only in part effected, calorification takes place, and this serves as a natural excitant to continue capillary action. As caloric is so natural a stimulus, and now so deficient, it ought to be applied from without, as a substitute well suited to light up its internal evolution. If at a future period it should be evolved in excess, it ought to be diminished.

Warmth may be applied at the time of the chills, to the greatest advantage by the universal bath. Or, bathing the extremities, and covering well in bed, with the aid of mild and partial steams to the surface. At the same time may be used the more diffusible and evanescent stimuli internally. Camphorated julep in warm water; a few drops of diluted aqua ammonia; or, 25 drops of chloric, or vitriolic ether; the former is preferred. Also small and repeated doses of any of the most agreeable aromatic tinctures in warm water; infusion of saffron and senega root, &c. Some of these may be given in a manner most agreeable to the patient, but not too freely, nor too long continued, as internal heat and inflammation may be aggravated.

It is common for typhus patients to be attacked with universal distress, faintness, and sinking at various periods of the disease. We have seen nothing so effectual to relieve these as warm applications, and additional coverings; at the same time some light cordial, as the tinctures of lavender, or camphor, or gaultheria, &c. with nutmeg in hot water; sweetened or not.

o. Emesis.

The utility of the act of vomiting has been sufficiently explained. For the purpose of exciting universal vascular

action, promoting absorption, perspiration, &c. a mild emetic of ipecac should early be employed, and repeated every two or three days until the case shows amendment. If there should be distress at the epigastrium, the part may be freely bathed with the saponaceous tincture with opium. Or, a poultice of hop flowers and bran. In its absence a thick bat of cotton wool so as to cover the abdomen, unless there should be much heat. In moderate cases, when the patient is free from epigastric uneasiness, the emetics may be omitted.

p. Cathartics.

Most commonly a cathartic of three grains of calomel and six grains of rhubarb should be given a convenient time after the emetic at the onset of the disease. There are often accumulations of dark, viscid sordes in the intestinal canal, which ought to be gently moved off during considerable part of the time. These add irritation, and no doubt aggravate the inflammation in the mucous tissue, and increase the tympanic affection. We have had no trouble from the tympany when the laxatives have been sufficiently employed, and the abdomen kept warm.

Every other day the calomel and rhubarb may be used, or every third day, unless diarrhœa exists. In this case even, something laxative may be used. Care should be taken in using calomel where salivation has previously been practised on the patients, as they are liable soon to be salivated. If salivation should arise it will commonly be worse for the patient than the disease itself. The laxative pill (see index) may be advantageously used. If diarrhœa supervenes, about six grains of carbonate of magnesia with three grains of rhubarb may be given two or three times in twentyfour hours, or at discretion. At the same time eight or ten grains of prepared chalk, in water. Castor oil or manna may sometimes

be used. We are well assured of the utility of such a course in preference to allowing of constipation of the bowels, or of viscid accumulations, even if diarrhœa should attend. From a series of experiments at Paris, by M. Piedagnel, the results were greatly in favor of the purgative treatment, in the various degrees of severity of typhoid fever.

q. Venesection.

We are well aware of the terror excited in the minds of some, on the suggestion of bleeding in any typhoid state of disease. But, there is something more than *debility* to be contemplated and opposed. There is inability of functions from tissual embarrassments, which must somehow be removed before the case is rendered safe. Moderate bleedings at first are commonly well enough borne, and nothing is so effectual in giving opportunity for the exercise of the absorbent veins to take up the congested blood.

We do not wait for the pulse to indicate venesection as in pleurisy; even a small pulse shows some hardness oftentimes, and without much of this the case may require it. It may be necessary to take eight or twelve ounces of blood early in the disease. In twentyfour hours, it may be necessary to take a larger quantity; or, omit as the case may be. We can give no positive rule how often, or how large the bleedings should be; but according to the necessity of the case, until headache is removed; and in other cases until coma is moderated; and until excess of heat should be lessened, if it abounds.

The blood at first may be thin and dark; when vascular action has been more free for a short time, from the previous bleeding, it assumes more of a florid color, and more inclines to coagulate. Cases which have been bled early, bear after bleeding much better, if the phenomena should demand it. In many cases of prostration at the onset, we have taken

blood in the third week of the disease, that would show a dense pellicle ; whilst taken from one who had not been early bled, it would be dark as at the commencement. These cases may not be benefited by bleeding, but commonly better trusted to the recuperative powers, with diaphoresis and catharsis. However, some cases may occur in which it may be tried as a doubtful remedy. Many cases are benefited by late bleedings, when the vital force is not too much exhausted.

We meet with cases that do not require any bleeding ; others that require one, two, or three bleedings before the case is got through with. We have the utmost confidence of cases being saved by late bleedings in such as had the benefit of early bleedings. Cases so treated are not liable to be attended with intestinal hemorrhages, nor secondary coma. However, cups and leeches may often be substituted for general bleedings. Cups may be applied on the upper part of the spine, and sides of the neck, and leeches to the temples and epigastrium.

The use of blood-letting has been rigorously investigated in France of late, in relation to typhoid fever. It appears in an analysis of Professor Chomel's lectures, delivered at the Hotel-Dieu, of Paris, in 1834, that he approves of it. "He appeals to the tables published by M. Louis, in 1829, to show that blood-letting, practised at the beginning of the disease, exercises a beneficial influence on its duration and termination."*

r. Sedantia.

But few of the neutral mixtures are required in typhus. However, when heat and thirst prevail at the acme of the disease, the bicarbonate of soda and tartaric acid, or lemon

*Edinburgh Med. and Surg. Journal for July, 1838 ; p. 207.

juice, in the act of effervescence may be useful, and agreeable; it is often better to be sweetened.

We have found the most satisfaction in low cases, with heat and dry skin, in the use of the carbonate of ammonia and vinegar, in small doses, and the articles justly proportioned; in the act of effervescence. This is particularly useful in cases attended with thirst, and a brown tongue, after the injudicious use of opium.

Camphor, prepared with gum arabic and loaf sugar as before mentioned, is a grateful cordial and sedative to most patients, and may be taken at any stage of the disease at the pleasure of the patient, in six or twelve grain doses. It often induces sleep. Infusion of hop flowers occasionally.

With respect to opium, it is scarcely ever necessary, often does mischief, and but few cases require it. In a few cases where the responding actions are very dilatory, with coldness and a thready pulse, the patient may take a grain, or half a grain of opium, with four grains of the blue mercurial pill, night and morning, for two or three days. They help to excite equal action and warmth. If continued longer they might excite salivation, which would be a misfortune, as we have known perhaps, ten injured by it, where one has been benefited. As to the continuance of opium nothing could be more injurious. It should only be used under the above circumstances.

With regard to the use of cold water to the body, it is never required when the general treatment is well conducted. There is but one condition in which it ever ought to be applied to the head. That is at the latter stage of the disease, if there should be a light delirium with universal heat. In other cases it confirms tissual inflammation, and aggravates coma. This practice of applying cold water to the body, and the head in an indiscriminate manner, must have arisen

amongst those, who attend more to palliating troublesome symptoms, than radically removing their causes. (Section xxxvi. 9.)

s. Tonics.

There is not so much use for tonics as the advocates of an ever presiding debility insist on. However, a watery infusion of orange peel and gentian root may be used at any time. It is commonly agreeable to the stomach, moderately tonic and detergent. If diarrhœa prevails to considerable extent, quinia may be used in about two grain doses every four or six hours, with prepared chalk. A great variety of tonics may be employed; still but little reliance should be placed on them, or on more direct stimulants for the cure of typhus.

The nitras argenti is advised by Dr C. Hooker of New Haven in cases of meteorism and hemorrhage of the intestines. Although we cannot speak decidedly from our own experience, yet we do regard it favorably as a tonic in doses of one eighth of a grain in pills, every two or three hours. It deserves further trial.*

Cases of considerable lowness, coldness, and small pulse, admit of small quantities of wine, repeated at intervals. Port or Lisbon wine may be used in table-spoonful doses, but not oftener repeated than is necessary to remove faintness, or considerable depression. Some extreme states of depression may require a larger quantity for a short time. External warmth should be used at the same time.

The intention ought to be, to convert the embarrassed typhoid state into the mild synchoid; and then the curative processes may commonly be conducted with precision. But, as has been often insisted, this must be done by modify-

* See Boston Med. and Sur. Jour. for April, 1837.

ing the physiological movements by other means, than direct stimulants and tonics.

A mild nutritious diet in a fluid form commonly is more required in this, than in many other forms of fever.

t. Blisters and Frictions.

Epispastics are often useful in this habit of fever; but a very frequent use is not profitable. They irritate, and give too much trouble to a patient that is weak. The patient requires rest and quietness as much as may be convenient. In the case of coma or delirium, applied on the ankles they invite the circulation from the head. On the occasion of coma, they are useful, applied on the spine between the shoulder-blades, or back of the ears. In the instance of continued distress in the epigastric region, one may be placed there, and often affords essential relief. If the blistered surfaces look dark colored, it is a token the typhoid diathesis still prevails, and the case is in danger of going wrong.

Rubbing the surface of the body with flannel, or a woollen mitten, is useful. Also frequent lavings with a flannel wrung out of warm soap-suds, with the addition of some spirit. This may be often repeated and the process finished by rubbing with warm dry flannel.

If the patient should do well, he will require careful treatment during convalescence. Prudence is necessary in regard to diet, cold, and other circumstances which might excite a relapse.

u. We have hitherto neglected to notice an accidental occurrence very liable to happen in all cases of protracted fever, and which may often be avoided by suitable attention. This is, the occurrence of excoriations and sloughing of the nates, and parts covering the ossa innominata. They arise from the weight of the body where the circulations are feeble, and may commonly be avoided by an early attention to turn-

ing the patient into different positions, and when he lies on his back to placing a pillow under the loins. Also, the parts should be kept clean, and bathed night and morning with camphorated brandy, with a portion of white shaving soap dissolved in it.

These sores are not only very troublesome to the patient, but liable to fatal consequences in the extreme state of exhaustion of protracted fevers. All which may commonly be avoided by proper attention.

The treatment of the remaining diseases of this series may be conducted on similar principles to those already specified.

SECOND SERIES.

4. *Serous effusions into cavities not having apertures ; or Dropsies.*

We can only attend to making some general remarks on the pathological character of the hydropic diathesis.

These collections have been styled dropsies, or serous intumescences. They may arise in any part of the body where serous tissues are found, and these imply sacs without openings. The great sacs of the thorax and abdomen are isolated ; those of the brain communicate ; so, also, the innumerable small subcuticular sacs over the entire surface. When effusions occur, the upper portions of the fluid gravitate to the depending parts, until they are considerably distended ; after being filled over the body, the pressure on the inferior parts is sometimes so great as even to rupture the skin, gradually pouring out the fluids.

We speak of the hydropic diathesis, because we have no better term by which to designate the morbid state ; and from the circumstance of the tissues in their excited state yielding a serosity, whilst there is evidently a constitutional affection,

which is rather difficult to be designated from the common morbid habit. Indeed it is very common for diseases of the pyretic character, when only partially removed, eventually to terminate in dropsy.

It is not a little surprising that the true pathology of hydropic intumescences should be so long misapprehended; and in our estimation, it can only be accounted for from a fidelity to the false thesis of the local origin of diseases, so universally adhered to, and inculcated. Still the constitutional phenomena are very obtrusive, and described by every writer on the subject; viz. dryness of the skin; thirst, more or less intense; clammy, or viscid secretion in the mouth; dry cough, or sometimes a thickened mucus spit up; shortness of breath, especially on exercising; scanty, and high colored urine; costiveness; in the sanguiferous system, frequency of pulse, often very considerable, and more or less strong or feeble, as the disease may be acute or chronic, and modified by temperament; with muscular inability generally. Those phenomena commonly exist before accumulations take place, and afterwards increase in severity.

There appears to be no doubt of a pre-existing general diseased state, which we call the hydropic diathesis, and local concentrations follow in the serous tissues. If the concentrations should happen to be on other tissues, then some other form of disease would appear. The result in the hydropic state will be an excess of a modified exhalation into the serous cavities. It is retained there, whilst a result somewhat similar in principle occurring in the mucous tissues, the exhaled serosity finds an exit by some of their outlets. Instances are reported of diarrhoea treated by astringents and opiates, being converted into ascites.

At the same time we do not doubt, but that there are particular local irritations sometimes affecting portions of the serous tissues, or extended to them, producing an excess of serosity but little altered; such as hydrothorax from disease

of the heart, hydrocele and hydrops ovarii from similar local irritations. The part may eventually produce a morbid exhalation. So, also, we find ascites may be complicated with a diseased organ. The common morbid diathesis primarily concentrates on the organ, and through this the investing serous membrane receives its excitation, producing the effusions. We have before shown the readiness the whole serous tissue possesses, of becoming excited when a part is stimulated; the entire tissue acts harmoniously more readily than the mucous under similar excitations.

a. Characters of the Hydropic Diathesis.

The hydropic diathesis, for the most part, partakes very much of the synochoid character. The drawn blood, on cooling, commonly shows the fibrinous pellicle; the urine has so large a share of sero-fibrinous matter, that it coagulates by heat or acids, and becomes more or less dense as the diathesis is more or less strong. Notwithstanding, in protracted and exhausted cases, and especially when an organ has been primarily associated and spoiled, the diathesis approximates towards the typhoid character; in these cases the fibrinous pellicle does not form, nor the urine coagulate. The different diathetical states require a modified treatment, as in other diseases.

b. It may be acute or chronic.

The hydropic diathesis may be acute or chronic, and both incline to be persistive and obstinate of removal. Even if by some extreme effort of the salutary processes, excited spontaneously or by medicaments, absorption should take up the exhaled fluids, and they become eliminated, they are liable soon to accumulate again, so long as the general diseased state remains.

Acute hydrothorax, and acute ascites, are nearly allied to what are called chronic pleuritis, and chronic peritonitis. The exhalations are a dense serosity very difficult of absorption. If paracentesis should be practised, it affords only a few days respite from a fatal termination. The case is urged on by a strong diathesis, and it is the more uncontrollable when excited, as it too often is, by alcoholic potations. The visceral organs are suffering inflammation.

On the reverse, chronic ascites, with a mild hydropic diathesis and tissual excitation, with freedom from organic lesion, may continue an indefinite period of time. It may admit of paracentesis several dozens of times, with an astonishing amount of thin transparent serosity drawn off.* These cases sometimes admit of radical cures. When, however, the fluid becomes darkened in color, and turbid, it will ere long have an unfavorable termination, being connected with some spoiled organ.

The hydropic collections of the great cavities show, in magnitude, what the minute tissual depositories are, in miniature, in the case of œdema and anasarca. It is unphilosophical to say one series alone of the capillary circulations is in fault. The exhalants and absorbents are both deranged in function, as in most other cases of disease. Besides, the more severe the diathesis, the more dense are the fluids exhaled; and the more dense they are, the more difficult of absorption. If the general diseased state can be removed, and the absorbents become active, the thinner portions may be absorbed, whilst the more dense cannot be.

* A case is related in the N. Y. Med. Rep. by Dr Chatard, of a woman tapped seventy-nine times in about three years; seventysix of the tappings afforded 871 quarts, besides the first three by Dr Mathien.

c. Therapeutical remarks.

The proper treatment consists in removing the general diseased state, and in restoring the harmony of the capillary functions. General anasarca can more certainly be cured than hydrocephalus, hydrothorax, or ascites. It is probably because they are so often associated with some diseased organ.

Of the acute anasarcas, that which follows scarlatina is the most rapid and fatal, unless opposed by a severe round of bleedings and purgatives, even whilst the vital actions are greatly oppressed and depreciated. There is no time for alteratives to take effect on the kidneys, or any other organ, and diuretics are always capricious; the more stimulating diuretics increase the phlogistic habit, and are opposed to diuresis; they should be withheld at least until the constitutional state is removed by the proper remedies. We have often found the drawn blood in hydropic swellings after scarlatina, deeply cupped, when the pulse was very small.

The phenomena just now recited, cannot be doubted as pertaining to the united economy throughout the system, and prove an universal derangement existing. An adviser, having an opportunity of observing the lingering train of phenomena, may readily apprehend the liability to hydropic effusions, and ought early to anticipate the results, without looking on and waiting to see the extent of the injury which may be done. The fatal bloatings liable to follow scarlatina, may easily be anticipated and obviated. He needs to take a wider range in view, than those who apprehend nothing beyond mere tissual irritation or debility.

The morbid habit preceding uncomplicated dropsy, can commonly be removed; and when this is done, the precarious use of specifics, as the pretended diuretics, &c., is anticipated. Even if effusions have taken place, the affection can never be radically removed until the general diseased state is

altered. Our attention, therefore, ought, chiefly and seasonably, to be directed to this object; not only with a view to save the serous effusions, but also the resulting injury of the visceral organs, which often has so large a share in producing the effusion.

The phenomena themselves, both singly and collectively, indicate the necessary treatment. Take, for example, the dry harsh state of the skin. How shall its functions be restored? We have often indicated the safe and sure remedies to produce cutaneous exhalation; tepid bath; antimonial powders, &c. All the phenomena indicate a pyretic habit, and deficiency of secretion, exhalation, and absorption. The frequent, hard, though small pulse, tells the obstacles and labor in the sanguiferous system, and that venesection is most commonly necessary to thin the crasis of the blood, to give it a freer circulation by removing the tonicity of the capillaries, and by their depletion to ensure a better absorption also. Perspiration cannot soften the epidermis until the rigid condition of the tissues is removed, notwithstanding the inability of functions, and apparent debility. There is no necessity of repeating all the remedies adapted to answer the intention; the simplicity of disease is such, that the very means that have so often been proposed to remove the common morbid habit, are nearly the same to be used in this instance. To this, however, may be added, the iatritic treatment by ointments and frictions.

But, the ill-educated, and those who never profit by observation, will stop short of obtaining the object; they will cease to proceed when their work is only half done, for many erudite ones have said, that *debility* everywhere prevails in such like cases. Notwithstanding, such subjects often obtain strength by the use of debilitating remedies judiciously administered. As soon as the hydropic diathesis is removed, the exhalations and absorptions take their natural courses, and the serous tissues are relieved of their unnatural service.

Although there is a great difference in the severity of the hydropic diathesis of different individuals, still every case of the mildest character, consists in a state of morbid excitation. Some need but little reduction, but require that absorption be excited; and it is a fortunate circumstance when such articles as gum guaiacum, squills, senega, mustard, phytolacca decandra, colchicum, cantharides, &c., can be so directed as to excite secretion and absorption, aided by frictions and caloric, without adding hurtful irritations to the centrifugal circulations.

In the largest proportion of cases, the neutral salts will be the safest, and most useful to promote diuresis; such as the acetate and tartrate of potash; nitrate of potash, &c. The supertartrate of potash is useful, and has long kept its place as a diuretic in dropsy.

These saline substances are readily soluble in water, and soon taken up by the radicles of the veins, and diffused in the mass of circulating fluids, and in an unchanged state. They possess the property of exciting action in the eliminating organs, without greatly disturbing the general circulatory system. They are, therefore, safe excitants; they may be used in either the synochoid or typhoid states of the system. They should be exhibited in large doses, and suspended in a full proportion of water. The quantity should be regulated by the ability of the patient. On ordinary occasions, an ounce of the acetate of potash should be taken every twentyfour hours, in divided doses; and of the nitrate of potash, from one to two scruples in the same length of time; yet only one of these should be used at the same time. All these saline substances are taken to the best advantage, in some pleasant bitter infusion, as orange peel or gentian, and sweetened with refined sugar; or an infusion of some of the reputed diuretics, as juniper berries, senega, or even a draught of new ale. Some habits may require larger doses than the above mentioned.

However, neither these nor any other diuretics can take

effect on the eliminating organs, until the synochoid diathesis is principally removed by the proper remedies, viz : blood-letting to the necessary point ; emesis ; diaphoretics ; purgatives, and the avoiding stimulating food and drinks: These measures should always precede every attempt to excite diuresis, where the phenomena indicate a synochoid diathesis. In the reverse state, when the urine does not show a coagulum by heat, acid, or alcohol, nor the blood a buff, the preparatory treatment will be short ; perhaps merely the tepid bath and an emetic. It is best to begin the treatment by the above method, and if it succeeds in dissipating the accumulations, there will be but little necessity of resorting to the uncertain use of diuretics. If diuretics should be used afterwards, the patient should be exposed to a moderately cool air, with exercise, for diaphoresis and diuresis can rarely be excited to much advantage at the same time.

d. On Emesis.

Perhaps there is no more effectual method of exciting the absorbent processes, than the act of emesis ; whilst it does this, it also diminishes the rigid nosodynamic state existing throughout the entire system, in greater or less degree. It seems to affect the remotest tissues, and we verily think we have witnessed as much benefit from this as any other means, in relieving hydropic collections in any section of the system. It is most useful in anasarcous swellings, and directly after using the universal bath, and being well covered in bed.

Emesis excites the absorbents to take up the fluids, and causes them to be eliminated by the cutaneous emunctories. It is often difficult to produce emesis at first, where the accumulations are large, (Sect. xlvi. 9, i.) By repetitions it may be quite easily effected ; it should be practised every other day for a considerable length of time, or according to circumstances. When the patient can bear it, a purgative

should be interposed on the intermediate days. Wine of antimony may be used as an emetic; or tartarized antimony; or the red antimonial pill as in p. 278. Other emetics may be used, and the lobelia inflata would be very eligible, if we could be sure of avoiding its deleterious properties. The method of preparing and using it, may be found in various writings on the materia medica.

e. On Cathartics.

Purging has often been successful in removing hydropic collections; yet these are more liable to return than when treated by some other methods. In order to be permanently useful, cathartics must be repeated, and in many cases the patient can hardly endure their frequent repetition. It is better to alternate them with emetics, according to the ability of the patient to endure them. Where there is evidence of disease in any of the visceral organs, the cathartics, and indeed all the other remedies, should be directed for its removal, rather than for the evacuation of the fluids; still, however, it is an encouraging circumstance that the same treatment may benefit both these conditions. Anasarca is oftener cured than local dropsy, which so often stands related to spoiled organs.

The saline preparations mentioned above often prove cathartic, and if they occasion the discharge of much liquid matter, their use ought not to be interrupted by other measures, and more especially if they promote diuresis. In cases admitting more drastic operations, the composition long used by the former physicians is worthy of trial.* This often proves hydragogue without producing great exhaustion.

*Supertartrate of potash, 20 grains; Jalap, 15 grains. To be used for one dose to an adult; or according to circumstances. Sometimes three or four grains of calomel may be added.

Elatin is too drastic, and liable to be attended by extreme exhaustion, and in cases attended with inflamed viscera, adds irritation.

The cathartic pill mentioned p. 233, containing the veratrum viride and gamboge, often proves hydragogue, and is a mild and eligible cathartic in dropsy.

f. Remarks on Hydrocephalus internus.

Perhaps it may be esteemed difficult to demonstrate the existence of this affection; but so far as the usual series of the external phenomena indicate it, and in accordance with the opinion of several physicians, we are prepared to state its removal in three instances at least, by cathartics. All the cases had lingered two or three weeks, whilst the general state of disease had seemed very much to have subsided, although the subjects had become greatly reduced. They occurred in children from four to ten years of age. Such subjects cannot bear very drastic purgatives, but they need to be repeated, and the morbid energies sometimes may seem to be very much directed to the stomach and intestines. As the serosity in the ventricles is but slightly albuminous, (not coagulating by heat,) it may more easily be absorbed. One case, and seemingly a hopeless one, was overcome by the use of the Tinctura Sennæ composita, formerly the *Elixir Salutis*. It took effect from small doses of only a tea-spoonful once in four hours, and afterwards only once or twice a day. The case had been attended with frequent vomitings. There were ten or twelve dejections daily, chiefly of fluid matter. It was gratifying to discover, that the strength and appetite of the little emaciated sufferer daily improved, although these operations were continued for ten or twelve days in succession. The vomiting immediately ceased. No other medicine was used, only a mild, and agreeable aliment

consisting chiefly of panada, porridge, and broths. This subject recovered, however, with the entire loss of hearing. The others fully recovered by the use of various cathartics according to their ability of enduring them.

g. Remarks on digitalis in Dropsy.

This article in various forms, has been used with some success in exciting absorption from serous cavities, and promoting diuresis, and thereby removing hydropic collections. For this purpose it is necessary to be given in repeated, yet cautious doses until something like a state of narcotism is induced. It however seems to affect more essentially the system of internal susceptibility than the external; and particularly in the first instance, by diminishing the frequency of the cardiac actions.

It is probable, as it belong to the narcotic tribe, that its effect on the capillary systems has some affinity to what is represented by Cazenave of repeated doses of opium, in rheumatism (Sect. xlvi. 9, k.) If the dose should be pushed too far, and in cases more strictly synochoid, it is liable to unpleasant, and even fatal consequences, by producing headache or comatose delirium; increasing the frequency of the pulse after retarding it, and entirely exhausting the vital force. We have witnessed such cases in other diseases, and have perhaps in consequence been too timid in the use of it to insure success. We cannot therefore, say much in favor of its use in dropsy, although we have often used it to considerable extent. It appears that Dr Withering had very considerable success from its use in dropsy. Dr Ferriar had less success on thorough trials with it, whilst Dr Lett-som in fair trials, had no success at all. On the whole we must confess, we have had ill success in the radical treatment of any disease, by the extended use of narcotics.

h. On Anasarca following Scarlatina.

As this is of very frequent, and fatal occurrence, it seems to merit some further passing remarks. It is a very treacherous, as well as formidable state of disease; often proving suddenly fatal without much warning to those not familiar with its character.

This kind of anasarcaous bloating, occurs in about three or five weeks after the disappearance of the eruption in scarlatina, or scarlatina anginosa; it is most likely to occur after cases so mild, as not to require much treatment, or in those previously treated by tonics and stimulants, to the neglect of proper evacuating remedies.

The effusion is more viscid than in ordinary anasarca; it is equally diffused, being as much in the face as in the lower parts. It extends to the cellular tissue of organs internally. It is attended with shortness of breath, and a very frequent, small, and oppressed pulse. The patient may often be up and about the house for only a few hours before death; yet sometimes he is comatose, and complains of distress, and perhaps has some pains. The phenomena are not usually obtrusive in proportion to the danger of the case. We consider this state a sequel, or continuance of the previous disease, it not having been radically removed.

From the smallness of the pulse, though very frequent, with the other specious phenomena, the inexperienced adviser may be much inclined to make use of tonic and exciting remedies, to the neglect of free evacuations. If so, his patient will most probably be lost in a short time. "The first case I met with was suddenly fatal, in 1795. A boy of about six years; by the account of his parents, had the epidemic three weeks before; showed but small signs of disease afterwards until a short time before I saw him, and then nothing to greatly alarm the family. The day previous to my seeing him, which was in the evening, he showed more signs

of indisposition ; appeared drowsy, and complained of some pain ; there was a fulness over his body, as much in his face as in his feet ; shortness of breath, &c. His pulse was most astonishingly frequent, small and tremulous, and could scarcely be counted. The family were surprised when I told them, although the case was new to me, that it was my opinion he could not continue but a few hours. He died that night. He took a portion only of common physic !*

Since then in different epidemics, we have met with many cases apparently as formidable as this, which have been restored by the treatment about to be detailed.

If the case should be of a milder kind, perhaps free cathartics may be efficacious in removing the anasarcaous effusions, and relieving the organism of oppression. For this purpose efficient doses of calomel and jalap may be employed, and repeated until relief is obtained.

However, most cases require more efficient remedies. Notwithstanding the smallness of the pulse and the *apparent debility*, the taking of blood freely is indispensable. It should be taken from the arm, and in sufficiency to relieve the embarrassment of the organs. This should be followed by the cathartic just mentioned, or some other equally active, in doses sufficient to insure free operations. If it should prove emetic, it will be of more utility.

It is gratifying to see how soon the sufferer will gain energy of body and mind, after these operations ; together with a more expanded and less frequent pulse, whilst the bloating is being dissipated.

The blood uniformly shows signs of a synochoid state, being covered with a pellicle and cupped. It is truly a marked state of disease. We have often been obliged to repeat the bleedings two or three times, together with the cathartics, before the affection might be considered effectually removed, and safety insured. Furthermore, in cases that remain more

* Author's Sketches of Epidemic Diseases, p. 354.

obstinate, emetics may be used to much advantage, alternately with the cathartics.

Patients in this condition cannot be made to sweat but with much difficulty, on account of the dynamic state of the system ; it need not be attempted ; yet the tepid bath and external rubbings are useful. Trust the remaining treatment to gentle antiphlogistic measures, together with mild nutriment.

Dropsy following measles and rheumatism requires quite similar treatment, whether the collections are in the cellular tissue, or in some of the internal cavities.

ORDER IV.

HABITUS TYPHOIDES GRAVIOR ; USUALLY STYLED
ATAXIA, OR ADYNAMIA.

SECTION XLIX.

1. *Remarks on the pathological character of severe typhoid fevers.*

a. We now approach the most formidable order of diseases to which the human family is incident ; and which under different modifications, with modified trains of phenomena, have destroyed vast multitudes at different periods, and in various sections of the world.

Although these severe scourges of mankind may arise from different causes, and exhibit some discordant phenomena, yet we discover in their intrinsic character many things in com-

mon, linking them together, and proving them to be nearly allied. The close connection that exists between the two great nervous centres, often occasions some confusion and a preponderance of phenomena, showing a disturbance more in the one than in the other, whilst the real seat of the pathological derangements exists almost exclusively in the primary nutritive tissues. (Sect. xvi. 3.) In order to separate these phenomena, we need have reference to the distinct physiological susceptibilities, to the harmonies existing in health, and the divergencies occasioned by the perturbed actions of the pathological state; and these should be regarded both in organs dependent on the vital force of internal, and of external relation.

For the purpose of duly appreciating these formidable states of disease, it will be necessary to reflect on all that has been said on the causes and character of disease in general, the manner by which the causes impress the tissues, the state of the tissues at the time, and the repulsive efforts thereby excited. (Sect. xxiii. 2.)

Ataxia.

b. We contend that the causes are always excitant; that they produce an acceleration of motion in the contractile fibres. But, the constitution of the nervous tissues is such, that an excess of stimulation suddenly exhausts their susceptibility, and the organs are left in a state of paresis. When such causes are overwhelming, the entire nervous systems may become paralyzed, and a fatal quietus must be the result. Such instances have sometimes occurred in many of the affections of this order, as history and observation prove, and will be likely to occur again, at such times as a concentration of the causes may be combined. (Sect. xxiv. 3.)

Fortunately, however, such severe impressions in any considerable degree, are not very frequent. In the range of dis-

eases of an ordinary caste they never occur ; but when the impressions are severe, yet not overwhelming, there is liable to be a train of sequential phenomena of an alarming kind, and following in quick succession, especially in the organs depending on the nerves of external relation. And furthermore, the sudden and severe impressions produce much irregularity in the succeeding phenomena ; the movements are unsteady, and consequently the results are unequal ; the disease presents many anomalous phenomena, and such states have been denominated ataxia. (Sect. xxii. 1.)

In such conditions of a more severe morbid impression, the functional exercise of many organs becomes suspended, whilst others may be increased. Some portions of the system may be unable to evolve animal heat, whilst another evolves it in excess. Whilst one organ may secrete in excess, another may be dormant. Indeed the same organ may experience these changes in a very little time. So we see the intellectual organs at one time shrouded in obscurity, and in a short time again manifesting perception and increased energy. The muscular system most commonly harmonizes with the intellect. The secretion of bile may be entirely suspended, and in a short time again produced in excess. These discrepancies are most manifest in this order of diseases at their onset ; after a little while, a few days, the local concentrations become more fixed, and the disease assumes a more steady character.

Adynamia.

c. On account of the manifest deficiency of many functions at the onset of this order of diseases, the epithet of *adynamia* has been bestowed upon it. We consider this term equivalent to the term debility. We apply it, if in any sense, to express the inability of functions, but not to denote the pathological state of the tissues in disease. We have en-

deavored to show in Sect. xviii. that an increased state of tonicity exists in the most intimate tissues in disease, and have denominated it a state of nosodynamia. This is a state directly opposed to debility. On this thesis we explain most of the phenomena, and by induction from facts, the treatment also; all which we have endeavored to establish by direct proof, in the above section, and other parts of the pathology, and particularly from the most successful treatment.

The two series of Circulation.

d. In all these affections, although not peculiar to them, we immediately discover the equable balance severed between the converging, and diverging capillary circulations. Some of the first manifestations of disease are legible in the countenance, and perceived on the dermoid surface by a looker on, whilst the suffering subject expresses a corresponding internal distress. The balance of circulation is interrupted, as is proved by many phenomena. Absorption is at least partially suspended throughout the system, not totally; for if so, life must soon close, as in the tragical cases; yet sufficiently so as to produce more or less discrepancy of function in all the organs. In the secreting organs the same changes take place, with the same despoiled functional exercise; and each one in a small circle, represents in miniature that of the entire system.

Engorgements and maculæ.

e. The causes, if applied externally, suddenly impress the entire organization through the agency of the nervous susceptibilities. The derangements of the internal tissues are nearly synchronous with the exposed surface. The most manifest pathological changes that are discovered in the cases of unfortunate termination at an early period, seem to be the

distention of capillary veins, called congestions, or engorgements. They may frequently be discovered in the serous tissues of the three cavities. The engorgements of many organs, as the liver, spleen, and others, seem to be of quite a similar character.

In many of the diseases called malignant, we also discover maculæ on the dermoid tissue, in the form of petechiæ, vibices, ecchymoses, &c. with a dusky color of the skin. These depend on the same changes as those of the internal tissues, only the density of texture alters the appearance. These external phenomena may be absent, but the internal congestive state is never wanting in the diseases of this order; they are often found in milder states of pyretic diseases, which shows that all diseases of excitation possess some affinity.

Adstrictive state of Capillaries.

f. Shall we consider these ostensible phenomena as the primary cause of the disease? Very certainly they are secondary, and should be considered as merely one link in the catenation of sequences of the morbid changes. It appears incumbent on us then to inquire, what the antecedent cause may be, in order to induct a rational method of treatment. The enquirer after facts and truth is desired to turn back to Section xxi. 3, 4, and 5, for some short expositions on this subject, which may essentially assist in the present illustrations.

We must not lose sight of the fact, that the centrifugal circulations possess a nervous susceptibility, whilst the venous, converging circulations are destitute, and depend on the vegetative force. The arteries soonest feel the impression of exciting agents, and hold out their physiological movements the longest. The veins are more readily distensible than arteries. The blood now is forced into the capillaries faster than the venous radicles can absorb. And furthermore,

the nosodynamic adstrictive force has already affected the internal capillaries, as well as the external. The free egress of the easy circulation of health is retarded, whilst the veins are incapable of a quick performance of their function. The result is as might have been anticipated from the premises, an accumulation of blood distending the origins of veins, producing engorgements, and also a retardation in the capillaries, showing a darkened color of the tissues. The blood assumes a darkened color partly from the delay, and partly from deficient pulmonary absorption, and aeration.

Notwithstanding all these embarrassments, a partial absorption takes place in ordinary cases, and the tissues assume an increase of sensibility. Directly, if life is prolonged, the arterial capillaries act with more force, their blood assumes more of a florid color, and the process of inflammation commences. This increased action is partially extended to the venous absorbents, and by a forced impetus their congestions are partially removed, and the more manifest phenomena of excitation appear. A severe tissual conflict arises. This is the condition of cases more likely to be prosperous under discreet management; whilst those going on to a fatal termination remain as at first, with carbonized blood. The tissues now show an injection of red arterial blood, and soon are liable to be attended with effusions of various characters according to the diathesis, unless arrested by a mitigation of the general diseased habit, either by the efforts of the restorative processes, or as assisted by art. If not, both arteries and veins exhibit dark blood.

The morbid conditions of the capillaries in the tissues of the lungs, are very similar to those in other portions of the system. The origin of the pneumogastric nerve in the encephalon suffers impediments; and the same circumstances occur in its distribution in the tissues of the lungs. In consequence of this, the blood is not aerated, but remains dark. The dark blood serves further to diminish nervous energy.

The patient breathes often, both for the purpose of increasing the circulation, and also, to promote the absorption of oxygen. Still he gains but little relief, neither can he so long as the primary changes in the tissues remain. The nervous inability is sometimes so great that the external respiratory muscles become weakened, and the respirations are slow.

That something very similar to the preceding takes place, in all the diseases of this order, has been abundantly proved by many autoptic examinations. And it pertains also, in all the anomalous epidemics which casually appear in different seasons, and sections of the world, (receiving names after the places they happen to exist in,) and which make severe devastations of human life.

Especial local concentrations.

g. Besides the state of venous engorgements, the general diseased impetus is directed to some point, or tissue, or organ, in every habit of disease, unless the vital force is too greatly exhausted. These concentrations become more or less severe, according as the degree of general morbid impression, and as the vital energy may be more or less free. In *ordinary* states of disease the concentrations are directly made on some of the simple tissues of the organs. They are wont to remain so, but as disease advances, the morbid harmonies often associate other adjoining tissues, and the local affection at length becomes of a complicated kind. So the effusions on, and between tissues of different organs in the course of the alterations they suffer, are liable to associate adjoining tissues, producing eventually a complicated state of local affection.

The topical concentrations in the present order of diseases, appear to derange the order of our tissual nosography. They often impress all the tissues of organs, by the great weight of general disease, and in so effectual a manner as to suspend

their functions, and even retard the circulations, so that the part suddenly dissolves in gangrene. Or, if not quite so severely, the part is quickly urged through the stages of effusion, and wasting suppuration. It is in consequence of this circumstance, that the appellation of *diathesis fervida complexa* is bestowed on diseases of this order. If these circumstances do not attend all the milder cases, they do often occur.

We discover in the affection called pneumonia typhoides, an indistinguishable impression on all the tissues of the lungs; sometimes with various effusions from the mucous and serous tissues, with infiltrations of the connecting cellular tissue; or we find a large portion of this organ in a state of hepatization and disorganization; all these changes taking place, perhaps, in fortyeight hours. So buboes and carbuncles suddenly appear in the plague, assume hardness in the parts, affecting several tissues, and liable to sudden gangrene. We have seen the scrotum and the penis suddenly affected, and turning black in a few hours, and passing into gangrene.

If we should be enquired of, in relation to what pathological circumstances give origin to these severe local affections, we must answer, that they receive their chief force from the *onus* of disease pervading the general system; and that such a condition implies a severe nosodynamic state, attended with alterations of the fluids, and ataxic phenomena. We have repeated, that such a state manifests the severest condition of disease; although, some parts of the system may be nearly in a state of quietus, not eliciting strong tokens of disease. We have made various allusions to the typhoid state, and reference may particularly be made to Sect. xxii. and Sect. xlv. 1, 2.

This state is manifest at the onset of disease; there is a greater deficiency of circulation on the surface, than in ordinary diseases. The centrifugal forces are inadequate to overcome the obstacles existing, from the deranged condition of the tissues. These impediments exist in many diseases;

but in the present instance they exist in an eminent degree, and in some fatal cases reaction never obtains.

Deficiency of Caloric.

h. Not only does coldness exist on the surface, but sometimes throughout the internal organization. The deficiency of animal heat is so great, that patients having an integrity of intellect, complain of an internal sensation of coldness, and sometimes demand very hot drinks, and in severe intermittents have eaten the pods of red pepper. In cholera there exists a great deficiency of internal heat, in the first and most dangerous stage of the disease. It has been demonstrated that enemata of heated liquors will soon be returned of a temperature far below the natural standard of 98° ; the breath, also, is cold to a person in health. All these circumstances prove, that more or less of the same impediments, which derange the external circulation, exist internally, especially in the lungs; from a deficiency of capillary circulation, there must be a deficiency of calorification. The importance of using early and efficient means to restore capillary circulation, must be apparent to every one.

When the capillary circulation does obtain, it is partially at first; and as the diseased state progresses, is liable to go to excess. The tissues acquire a morbid sensibility, and the vibratory action is such, that the circulation becomes vehement, with an extrication of high heat. There are some cases of the typhoid state, in which high heat is present without much previous coldness. The severe typhoid fevers of hot climates afford the most examples of this early and ardent state of fever.

Cardiac actions, and ganglia.

i. As diseases of this order show phenomena of a general

disordered state externally, so likewise there is proof of a general derangement of organs in all the three visceral cavities. The impression is always more severe in one cavity than in any other, and in one organ more than another. Notwithstanding, if today the concentration should be most in the thorax, perhaps in the same subject, it may tomorrow appear most in the head.

The heart suffers impediments like other organs. Its pulsatory motions may be unperceived, but its prolongations, the arteries, bring it close to the touch, and its force may be quite satisfactorily estimated. There is a change at the very onset of disease, its motions being more or less feeble and vacillating. The rythm of the heart is commonly unequal, with but little force and small volume of the arterial current. It is soon either retiring in fatal cases, with great frequency, or rising into considerable force, with from 100 to 130 pulsations in a minute. The very state of adstriction of contractile tissues, produced by morbid stimuli, serves to embarrass the functions of the nervous ganglia and plexuses, thereby impeding the nervous force due to the heart. Yet we know there is a force exciting its movements when separated from all nerves. Its motions, like other organs, will be wavering and unstable. The abdominal and thoracic ganglia, have been shown to be enveloped in a red vascular tissue in health, and the undue concentration of blood paralyzes their functions in greater or less degree; and in proportion to these lesions will the functions of organs be, that are dependent on their vital influence. The same adstrictive state that constitutes nosodynamia, and gives origin to congestions, also operates here.

In this view of the subject, a morbidly exciting force is acting, but in a manner to paralyze, instead of affording organic energy. When, however, this morbid force becomes relaxed, so as to allow of vital energy to organs, these act

impetuously from the remaining morbid force in the tissues, and, in a degree, difficult to be restrained.

Dr Rush, with all his views of debility, practised rational treatment, although inconsistent with his theory. It seems that he, as well as Dr Southwood Smith, could discern through the dark vista of physiological movements, something besides mere debility in the exalted movements of disease. The latter is explicit and bold when he says, "The brain (*ganglia*?) is overwhelmed by the intensity of its affection; the energy that should animate the system, and of which it is the great source, is withheld; but that energy is suspended, not destroyed; and the debility which seems to be the result, is not real, but apparent, not direct, but indirect."* His very mode of explanation shows the cloud he was enveloped in; although he could cut the cord that held the "giant" bound, he could not untie the knot. However, his work does honor to himself, and demands the thanks of the community.

Cerebral Functions.

j. With respect to the cerebral organs of external relation, the same circumstances exist as in the abdominal ganglia and plexuses; we discover in autoptical examinations, similar congestions on the surface, and clots internally, or small masses of blood dispersed in the substance of the brain. The blood does not move naturally through the cortical portions, but suffers more or less of a remora. The nervous force suffers delay, and the organs a paresis. Intellect is obscured; muscular motion is deficient, and the external sensations blunted, from derangements in the sanguineous capillaries. Yet, as soon as the impediments are removed, all these functions rise in preternatural force; as displayed in the brilliancy of intellect, energy of muscular force, and acuteness of sensi-

* Treatise on Fever, p. 176.

bility, constituting the state of delirium. Notwithstanding, these phenomena are dependent on the modifications of capillary vessels, under the influence of the nutritive system of nerves.* (Sect. xvi.)

Dr. Cartwright of Natchez has made many valuable contributions to morbid anatomy, in his *Essays on Yellow Fever* of that place, in the *Medical Recorder*, Vol. IX. They are particularly interesting, on account of his having made inspections very early after death, and bestowing particular attention to lesions of the abdominal ganglia and plexuses. A specimen may be taken from page 256. "The membranes of the brain, the dura mater excepted, were very highly inflamed. The tissue immediately investing the medulla spinalis was of a light scarlet color. Membranes about the root of the lungs, and those particularly investing the posterior pulmonary plexus, were black with inflammation. The lungs were heavy and abounded with a frothy substance. The tissues immediately investing the semilunar ganglion, and all the primitive plexuses, together with those near the situation of these plexuses, were very highly inflamed." In the next case he says "the tissues investing the ganglions, and the nerves of organic life were of a deep scarlet." And the same of many other cases. In cases where redness appears, they have been of some continuance.

Therapeutical remarks on the first stage of severe typhoid fevers.

k. As we do not intend to treat extensively on all the different diseases of this order, we will devote some attention

*The following is a remark of M. Lobstein, on the sympathetic nerve: "It has been long taught, that sudden deaths invade the body in three different ways; by the cerebrum, heart, and lungs; and I add a fourth, the solar plexus, the source and centre of the abdominal nerves; a plexus which, by a sudden commotion, vellication, or any grave derangement whatever, is affected with paralysis, followed by sudden death."

to their general treatment at their onset, as well as to their affinity of character. This may be the more convenient, to expose the simplicity of treatment, in opposition to the empirical, and even charlatanical oppression of a vast amount of medicaments, which far oftener do mischief, rather than good. In all our investigations of the character of disease, we are constrained to acknowledge a great similarity in the primary changes wrought in the minute tissues, as well as the phenomena, and even when induced by different causes; yet differing in degree. It seems that noxious agents do not excite general disease, until they effect certain changes of a similar, and permanent kind. When this is once done, there follows a train of sequences constituting diseased action. At other times the causes, although in close contact, are not succeeded by injurious effects, on account of these morbid changes not being induced.

We have endeavored to investigate these changes, and find them to be few and simple, until other destructive alterations take place as sequences of diseased organic action. The condition of disease now becomes complex, the organization becomes more or less marred, and a new series of complicated phenomena are presented to view. It now becomes difficult to predetermine what the most appropriate treatment should be, as it must be predicated on the existing state of the diathesis as manifested by the phenomena.

If the foregoing pathological conclusions are correct, the indications of treatment of even the prostrate state of disease, are apprehended to be few and simple at the onset. They will indeed be very similar to those of other states of fever, having suitable regard to the degrees of severity, and liability of sudden collapse. They may be reduced to two cardinal indications.

1st. To restore the broken balance of the circulation.

2d. To remove the impediments, particularly the state of nosodynamia.

A strict attention will be required to both of these circumstances at the same time, rather than in succession.

Having in Section xlii. attempted some illustration of the phenomena of disease, we discovered a shrivelled, aspect externally, sometimes attended with chills; at other times a settled coldness without chills. This last condition most commonly obtains in the malignant states of disease, when the recuperative powers of the system are incapable of resisting the rigid state of the capillary tissues, and eliciting circulation and animal heat. All the functions are in danger of being suspended, unless capillary circulation, and its result, absorption, are restored. The same derangements exist internally, that are so plainly manifested externally, in common with other states of disease.

Animal heat is indispensable for the purpose of exciting the tissues in the performance of their functions; and we see how liberally it is provided in the natural state, when the circulations are free and unembarrassed. But as soon as any causes intervene interrupting this function, it is deficient, and this directly becomes a cause of other derangements. As a substitute, we need to apply caloric externally in one form or another, to all the accessible surfaces; that is, 1st, to the dermoid tissue; 2d, to the mucous tissue of the stomach; 3d, sometimes to that of the intestines, by enemata; and also, 4th, to the lungs, by means of mild steam.

The methods of applying caloric, to the surface are numerous. In the first place it will be necessary for the patient to be in a warm apartment, yet not to that degree rendering it liable to be oppressive; nor should the air be too confined, so as to deprive the patient of free oxygen.

The affected should be easily placed in bed, with a sufficiency of covering. This must always be directed by the judgment of the attendant, and in accordance with the sensation of the sick, when they possess intelligence. They should be induced as far as possible, to keep quiet and still.

Various warm substances should be laid around the body, not so hot but that they may be placed in pretty close contact ; such as heated sand in small bags partly filled ; bricks, or suitable sized stones wrapped in cloths ; brands of fire quenched, after much of the steam has subsided ; billets of wood from heated water ; bladders of warm water, &c.

If the subject should be affected with cold sweatings, dry warmth will be preferable ; if the surface should be dry as well as cold, mild steams ought to have the preference. This may be accomplished by many ingenious methods of conveying it through heated lamps, or otherwise. The vapor of burning alcohol by Jennings' apparatus is convenient, and in much lowness preferable to the steam of water. It may be used whether the patient has sweatings or not, only care should be taken that too much heat does not accumulate, but that it be applied uniformly over the body by means of a light rack.

After the patient has laid a little while in this condition, the surface may be carefully rubbed, by putting the hand under the bed clothes with a woollen mitten, previously moistened in a tincture of capsicum and camphor. These rubbings should be continued, in a moderate manner, until warmth is restored uniformly over the body, if practicable.

If circumstances should permit, the universal warm bath may be preferable to any other method of applying caloric. In all the milder forms of attack it should have the precedence, but the patient is often too prostrate to admit of it, especially in cholera.

If a freshness should appear in the countenance, a warm fluid sweat may arise, and this will be a token of the good success of the process. The capillaries now begin to act, and the sweating should be continued in a careful manner, for some length of time. Still the heat should not be urged excessively, whether the patient sweats or not. It should be noticed, that much heat ought not to be applied to the surface

in the eruptive, or exanthematous diseases ; for, as the natural tendency of the local affection is to the surface, the eruption will be liable to become greatly aggravated. It is, however, admissible in dark petechial eruptions.

Removing atmospheric pressure.

1. One especial benefit of the patient being placed under coverings, besides the retention of caloric, is, that the rarified air relieves, in some degree, the atmospheric pressure on the surface ; and if this is only of a small amount it becomes very important, by inviting the circulation to the surface, and thereby relieving the internal congestions.

Some intimation is made in the Boston Medical and Surgical Journal, for January, 1838, of an ingenious method proposed by Sir James Murray, of relieving atmospheric pressure by a kind of "slipper bath," with a bladder at one end of a tube, and tied tight around, say, under the arms, with an air pump fixed to it. By taking a pound of atmosphere the surface is relieved of a ton of pressure. The capillaries of the surface become turgid ; the circulation being invited outwardly, assists in removing visceral congestions. It may be used on the extremities very conveniently. Further experience may be necessary to establish its actual utility, but the contrivance seems to promise several advantages. A mild steam might be moderately admitted into the box, as the air is pumped out, and if this should be done, the air would not require to be so much exhausted.

During some of the above processes, a portion of steam might commingle with the air the patient breathes, and this may easily be increased by many contrivances, diffusing it with the air he respire, without its extending throughout the apartment. Care should be taken to use no more than is altogether agreeable, and easy to the patient.

Light stimuli.

m. The stomach should be supplied with warm aromatic infusions, and such as may be most agreeable. The tinctures of gaultheria, mentha piperita, &c. may be mixed with warm water, as hot as the patient can conveniently use, and taken liberally; cajeput oil, four or six drops in a teaspoonful or two of alcohol, with a gill of hot water sweetened, may be taken, and repeated according to circumstances. These articles may be varied, and others of a similar character substituted; especially gum camphor in doses of four or eight grains, with gum arabic and loaf sugar. Also, wine in warm water with nutmeg, sweetened.

Where there is great nervous commotion, or much vomiting and purging as in malignant dysentery, cholera, &c. about thirty or fifty drops of laudanum may be used at the onset; but it should not be repeated without much caution; for the subsequent reaction, or recuperative force, is liable to be greatly aggravated by it. If it, or opium, should be given in the quantities advised by some, it would increase the morbidly tonic state of the tissues, so that the object would be totally defeated that we are aiming at; that is, to elicit the actions pertaining to the synochoid diathesis. The congestions become more fixed by it, instead of being resolved, with equal diffused action in the system.

Injections.

n. Some cases of ataxic diseases not only admit, but require warm enemata of large bulk, at their commencement. Malignant enteritis, attended with vomiting; some of the severest grades of dysentery at the onset, before the rectum has acquired so much sensibility as to preclude their use; in the first stage of cholera, &c. They should be composed of mucilaginous substances in a large proportion of water, with

two or four ounces of brandy, when there is coldness with a small, tremulous pulse. They may be repeated every two hours for a reasonable time, as they may seem to be useful. They act as an internal bath, and by their distention relieve the intestines of spasm and the danger of intussusceptions. They also do much in exciting equal action.

Tobacco has a peculiar effect to quiet disturbances in the organs supplied by the ganglial nerves. From half a drachm to a drachm of solid tobacco infused in a large proportion of water may be used as an enema, and in cholera two ounces of alcohol may be added. There is much danger in using too strong an infusion of tobacco. It always ought to be weighed. It should not be repeated oftener than once in two, or four hours, nor then if the pulse shall have become smaller, and more tremulous. In large quantities and frequently repeated, the tobacco injections are liable to extinguish the vital forces in a short time. It should therefore, be used cautiously, and in a judicious manner, it essentially relieves the adstrictive state of the tissues, and produces quietness. It is not liable to all the objections of opium, unless used too freely.

o. Some or all of the above measures should be used assiduously at the onset, and their repetition should be determined by the subsequent appearances. There will be injury done by extending their use too far. When capillary circulation is well established on the surface, their use should be partially suspended. But still, it should be borne in mind, that a steady action should be sustained on the surface, either by the stability of the morbid impetus, or a continuance of external warmth, with some other of the means suggested. If these circumstances are neglected, with exposure to cold, the case most certainly will be followed by a retrocession of morbid force to the central tissues, attended with faintness, sinking, and perhaps death. So liable are the functions to

suffer collapse, that these circumstances should steadily be regarded.

Through the whole of these processes, the patient may use agreeable nutriment in a fluid form, if he desire it. In such cases as the recuperative powers act very tardily, a little wine may be used, with nutmeg and sugar ; or in water alone if most agreeable. Still, diluted alcohol may be equally useful, and either of them far preferable to opium in any form. Their influence soon passes off.

Second indication.

p. The previous remedial course has been chiefly directed to the accomplishment of our first indication ; but this can rarely be attained without further means, and the fulfilment of each of them ought to progress together ; so that, together with the preceding operations, other measures should not be neglected. We shall confine our remarks chiefly to two agencies, emesis and blood-letting, for the accomplishment of the second indication:

Emesis.

It may be questioned whether emesis fulfils more directly the first, or second indication. We assign it to have an influence in both. Nausea and emesis promote the capillary circulation, and at the same time alter the condition of nosodynamia. Nausea relaxes tissues in the physiological state, and has been used to render luxations more easily reducible, and the pangs of parturition less severe. All experience proves its utility in reducing the rigid condition of tissues in the pathological state. Whilst the state of nausea exists, the process of emesis excites reaction, or the recuperative process. The derangement in the circulation is very considerably removed by it, and exhalation, absorption, and secretion

promoted. With these results, when moderately and judiciously used, the processes of nausea and vomiting become very useful auxiliaries in the removal of primary derangements, constituting pathological movements at the onset.

It might be supposed by some, that if the impression is made on the system, it is immaterial what the agents may be which are employed. There are many substances liable to produce emesis, which would undoubtedly prove injurious in other respects. In accordance with the views of a large portion of practitioners, we are inclined to give the preference to preparations of antimony ; occasionally using ipecacuanha. The wine of antimony then may be used ; ordinarily to an adult, from ten to twenty drops or more every hour from the onset, and whilst the preceding measures are in progress.

This course may be pursued unless emesis take place spontaneously, and then it may be suspended for a time. It performs useful purposes in promoting the circulations even without nausea, or emesis, and it rarely ought to be employed in a full dose, with a full determination to excite sudden vomiting. In some prostrate states of vital movements, early and full vomiting, has been known to be manifestly injurious, and even hastening a fatal termination. Still when used in the manner proposed, the patient being warm in bed, and the medicine making slow as well as favorable alterations in the tissues, by removing their rigid adstrictive state, it is very constantly attended with useful results. The countenance becomes expanded and more florid, and what obtains here, takes place universally.

If the medicine should be attended with universal warm sweats, its utility will be more certain, yet it should constantly be kept in mind, not to extend the heat, nor protract the sweats too largely, for fear of dissipating too great a portion of the fluids, and exhausting the susceptibility of the solids. Not only this, but heat protracted beyond the point

required, aggravates the congestive state, and even the succeeding state of tissual inflammation.

Venesection.

q. Our attention may now be directed in a more particular manner to the accomplishment of the *second* indication, which is, to remove the impediments embarrassing the free action of the preservative powers of the system. We discover an active and opposing force existing in the inmost tissues, instead of an inappreciable and indefinable debility. It has been repeatedly shown to consist of a morbid tonicity, and we need not recapitulate the facts which direct to this inference.

The remedies adapted to the removal of this condition, which renders the morbid habit so persistent, are of a relaxing kind, giving freedom to the repulsive and recuperative exercise of the tissues. Bearing constantly in mind, that we are investigating the remedial agents of the first stage of typhoid diseases of the severest grade, we now examine the influence of blood-letting in this exciting state of disease.

The attacks are liable to be sudden; the history of disease teaches, that some subjects fall and suddenly perish. In such cases there is no opportunity to interpose remedies; the favorable moment of probable relief has passed by; there exists no more opportunity indeed, than in the most abrupt cases of cerebral apoplexy. Such sequences we assign to be brought about by a series of events, in the abdominal ganglia and plexuses, very similar to cerebral congestive apoplexy. Even this is produced by derangements in the nutritive tissues. The exciting causes act with great force on predisposed habits, and suddenly produce a suffusion on the ganglia, plexuses, and entire prolongations of this order of nerves, sufficient to paralyze their energies, and in consequence the functions of all their dependent organism.

Fortunately, however, these cases are comparatively few; and when a more moderate impression is made, we discover the faithful repulsive efforts aroused into action; and this effort is more or less visible, according as tissual ability is more or less left at liberty; or, as it may be enchained by the severity of the primary acting cause. In every case in which vitality persists from one to six hours, there may be perceived an internal conflict between the tissual derangements, and constrained repulsive forces. It might appear for a time that the contest is equal, and indeed very trivial circumstances sometimes seem to decide it, and the scale may be turned one way or the other. If science interposes to aid the recuperative powers, it is supposed to be enlightened by a right knowledge of the existing state of things; or, it is otherwise personified by ignorance, and assumes the garb of empiricism, drawing conclusions from certain exterior, and superficial appearances; the most palpable of all errors is, the mistaking of debility for inability.

Pursuing then the principles already advanced, we assign, that reducing the amount of fluids contained in the vascular system is always followed by a debilitating effect. If the vascular system acts more freely, it is on account of the reduction of morbid constraint. We use blood-letting then for the purpose of diminishing the morbidly tonic state of the tissues. If the physiological susceptibility suffers a little, temporarily, manifested by faintness, this soon passes by, and the recuperative movements gain some advantage. The nosodynamic force is more weakened than the restorative powers, on a revival. The relative plethora, which was suddenly produced by the universal contractility of vessels on their fluids, is removed by the abstraction. The general circulation obtains more freedom of action; a florid aspect takes the place of a pallid, and the internal congestions are being removed by the renovated activity of absorbing veins. In the abstraction of blood in such cases, particular re-

gard should be had as to the time of its employment. If the assault of the disease should be sudden, it is common for some faintness to supervene ; this is not the time. Let the patient have rest, and also the use of external warmth, as has been proposed ; it may soon be perceived that the pulsatory actions will be making some impetus, although feeble and faltering. The time should not long be delayed, for the oppressing influences may, by and by, gain an ascendancy, when it may be too late to abstract blood. There is then a bleeding point ; and this is, as soon as the first shock of the impression is passed by, and the time when the restorative energies are becoming overpowered by the morbid force. If the collateral aids are diligently regarded, the abstraction of appropriate quantities of blood is quite certain to afford more or less freedom of vascular action, and eventually to make an approximation towards the expanded action of the synchoid diathesis.

If venesection should have been delayed beyond the bleeding point, its utility will be more doubtful, and in proportion as internal changes may have occurred ; the tissues are suffering changes, and becoming more incapable of a restoration. The medical adviser is often placed in a very unenviable and as responsible a predicament as is possible. The alternatives are, to abandon the case as hopeless, or trust it to doubtful expedients. The former must not be done. If the case shall have passed to a great degree of oppression, it may be most proper to trust to the preservative powers, with such aids as may be indicated, especially warmth and evanescent stimuli.

It is often a critical question for an occasional visitor to determine, whether the most favorable bleeding point be passed or not. This period is very indefinite, depending on the severity of the attack, the attending phenomena, and many personal circumstances. In some sudden attacks it may have gone by in two, four, or twelve hours. Ordinarily not until

twentyfour hours. In some less severe cases, it may not have passed by for two, five, or even more days. If there should be some force in the pulsatory action at the wrist, and the beats do not exceed about one hundred and twenty in a minute, it may not have passed by. Some evidence may be obtained by examining the chest, and discovering whether the heart possesses some considerable force. If so, bleeding will be justifiable, even if the arterial action should have failed considerably, or even ceased. But, if the heart itself should act very feebly, we should be more cautious.

The bleedings always ought to be practised before the tissues give out their effusions. The earlier they are employed after the first responding actions, the greater the chances of utility will be, and the probability of bearing subsequent bleedings to advantage.

In the incipient stage of the prostrate state of the severe typhoid diathesis, the bleedings ought invariably to be taken whilst the patient is warm in bed, and in a recumbent position. If he is in a cool condition, we lose the chief of the advantages of the restorative powers re-establishing the circulation, for cold always increases the morbid derangements of capillaries; and as the surface is affected, so are the internal tissues simultaneously.

It is an injudicious practice to bleed in an erect position in any condition of disease. Faintness is liable to supervene before a sufficiency of blood is taken to ensure much benefit. In the present condition of disease, we never ought to bleed at first with a view to produce syncope, yet it is liable to occur, and if it does may probably be of greater utility. Still we do not advise it in these wavering cases. We never, however, knew an instance but that resuscitation followed syncope from bleeding. One case of spotted fever gave serious alarm; an abstract of which we will make from *Sketches of Epidemics*. A girl about nine years old, was visited on the third day of sickness. It appeared to be a hopeless case,

and the parents desired any rational expedients to be tried. About ten ounces of blood were taken from the arm, when syncope suddenly took place. Having staid two hours, and used all the ordinary means of resuscitation, we were obliged to leave her, and with the impression she could not survive, being then cold, insensible, and pulseless. Saw her in two days after, and was told, that soon after leaving her, she revived, and directly appeared to be almost well. She then needed no further treatment; appeared cheerful, and in a few days her health was perfectly established. It would have been more safe to have taken less blood at first, and repeated according to circumstances; which probably might not be long.

When bleeding is practised in the erect position, either standing or sitting, the patient is liable to faint before the necessary quantity is taken, and a repetition will soon be required. In the act of syncope, the nosodynamic state of the tissues appears to be prostrated, and the returning energies of the restorative powers seem to gain the ascendancy; and with a little attention to warmth, and small evanescent stimuli, they may commonly be enabled to retain it.

In many cases of children, and enervated subjects, a sufficient depletion and revulsion may oftentimes be made from the internal tissues by leechings, and emollient poultices to the extremities, abdomen, and spine. Still, the diseases of children are rapid, and require early and efficient remedies. Leechings have a favorable impression on the general system, as well as locally; although the more sudden abstraction has still greater. Yet, in cases of much prostration, and where doubts may exist in relation to venesection at the arm, leechings and cuppings may be employed to great advantage. These ought to be applied as near to the known concentrations internally as may be convenient.

After taking some blood in this manner, dry cuppings may be extensively used on different parts of the body. They

answer some temporary useful purposes, by inviting the circulation exteriorly, and prepare the system for future general abstractions of blood.

We have undoubted evidence, that there is a great burden of disease in the prostrate state of malignant fevers. The constrained, embarrassed condition of the tissues acts as an obstacle to its development, into the ordinary character of affections of the synchoid diathesis. It is fortunate, when these deceptive states can be converted into the open, free, and tangible condition of this diathesis. The treatment then becomes plain, and only requires to be seasonably applied to the point of safety. In either condition, stimulants should be but sparingly employed. In a case where there was a state of acrotismus for more than two hours, with only the slightest degree of vitality remaining, the pulse returned, and the case progressed in about three days into the most unequivocal state of sthenic fever we ever witnessed, and four full bleedings were practised in the course of about as many days, before it took on even a safe range; yet the case was fortunate in the end.

All stimuli of any considerable importance were withheld in this case during the absence of pulse, and extreme exhaustion; and on the persuasion, that much excitants at such a time, would be liable to overact, and extinguish the flickering flame of life. We have the most solemn conviction, that multitudes of cases of vital depression have proved unfortunate, on account of too much stimuli having been used for their restoration.

r. We are well aware of the fastidiousness which some indulge in their raillery against the practice of bleeding, unless the most obtrusive phenomena demand it. Theorems are fabricated, and published under the patronage of much specious pretence. So, again, some servile imitators of the *incendiary treatment* have been very vociferous in vindication

of principles, which are capable of destroying more than the pestilence itself.

Let us turn from such unpleasant topics, and listen to men who have bared their arms to the contest, and opposed the destroyer in the midst of hecatombs of victims. We might fill our pages with authorities of the first rank, in favor of the utility of early bleeding in fevers, and even in very malignant states. Many advocate this treatment, also, who have adopted, apparently, sincere views of an existing state of debility throughout the entire system. If such men advocate bleeding, it must be, that their experience warrants it in opposition to their theory.

It might seem invidious in us to select only a few of the many authorities that might be brought, only from the modern time of Huxham to the present. As specimens we will make only a few short references. Dr Jameson in a report of the Medical Board of Bengal, not long after the rise of the late epidemic cholera in India, on the subject of bleeding, states in general the common practice to be, to tie up the arm, and bleed, if the blood could be made to flow. And in cases where the pulse was already small, and rapidly sinking. Thereby "cutting short the disease, resolving spasm, allaying gastric and intestinal irritability, and removing the depression of the system."

In the yellow fever at Philadelphia in 1793, Dr Rush states, "The effects of bleeding on the system were as follows; it raised the pulse when depressed, and equalized it when it was preternaturally slow, or subject to intermissions. Blood-letting when used early on the first day, frequently strangled the disease in its birth."*

In the N. E. Journal (1820) a writer remarks; "The active practice of the East and West India physicians is making great progress in England; the use especially of blood-

* Inquiry, Vol. III, pp. 257 and 261.

letting is supported by a host of writers, some of them of great talents and experience. This treatment is adopted even in fevers of the typhoid character in their early stage, and apparently with much success. In a late English journal, there is a case of *debility* cured by blood-letting" !

We now turn from making any further reflections on the first stage of the severe typhoid diathesis, to some considerations on the particular diseases, which have from their severity, been placed in this order. As we proceed there will be opportunities of further developing the treatment.

2. *Typhus Gravior ; Severe Typhus ; or Jail, Camp, Hospital, or Putrid Fever.*

Phenomena.

a. In relation to the causes of these fevers, we can make no further references than those contained in our animadversions in etiology. The nosographic definition of typhus gravior was taken from Dr Good ; it requires a more extended history. At the commencement some cases are attended with much embarrassment in the functions, and require certain of the measures recommended in the preceding article, to aid their inability, and produce a freedom of vascular action. Yet this is not so often needed as in some other affections, as in cholera, the plague, and spotted fever. There is frequently from the onset, an elevated state of action, and the phenomena proceed on a high grade of action. The repulsive movements are heightened by an exquisite state of sensibility throughout the tissues.

The rigors are considerable, alternating with heats, and often continuing more or less, for about the first twentyfour hours, and yet without sweats. The disease thence continues with high heat, although sometimes with sudden lowness and chills. Severe vomitings often attend at the commence-

ment; intense pain in the frontal region, extending backwards and along the spine; eyes often injected, and face bloated. Pulsatory action in the head extreme, with heat; whilst the pulse at the wrist may be small, and extremities cold. Soon again the pulse becomes full and throbbing; it is full and frequent in many cases, yet destitute of the firm impress on the finger as in synocha. In other cases not so frequent, the pulse is embarrassed, small and scarcely to be perceived, yet often with great frequency, or else intermittent and slow.

There is liable to be extreme faintness, and soon again an appearance of unusual strength for a while. There has been noticed to exist an extreme disproportion in the phenomena compared with other fevers. Whilst some of the ordinary phenomena of fevers may be absent, others are present in excess, and often changing in such a manner as to present great irregularity, from which circumstance fevers of this character have been called *ataxic*; and the severity of the disease being liable to a sudden state of prostration of vital force, they have been styled *malignant*. And furthermore, as the vital action of the vascular system is perverted, and disabled to impress the blood, in a manner to sustain the integrity of its crisis, it suffers changes, which have been denominated *putrid*, typhoid, or adynamic.

Local inflammations of a severe kind are liable to occur in some parts, and prone to become gangrenous. They sometimes assume the erysipelatous character. The heat is often very considerable, amounting to what has been called *calor mordicans*, giving a pungent sensation to the touch. The tongue is covered at the onset with a whitish fur, but soon grows dark colored, and even black. Respiration is frequent, oppressed, and laborious; the breath hot, with offensive effluvia; the urine high colored, often scalding, and assuming a dark color. Emesis is liable to attend, with ejections of dark bilious matter. The skin is liable to a dingy

color, and often beset with petechiæ, and purple spots of different sizes, or vibices.

In this grade of disease, the pain and other phenomena are intense from the beginning ; there is, therefore, less liability to deep coma, but a disturbed state of insensibility, attended with jactitation and moanings. Delirium commonly succeeds after a few days, and this is liable to be followed by secondary coma, a presage of an unfortunate termination. If the disease does not take on a favorable course, the stools become blackish and fetid ; clammy colliquitive sweats supervene ; often convulsions ; hemorrhages occur from different organs, with the train of fatal phenomena described in Sect. xlv. 4. b.

The duration of fevers of this character is various, from the third to the fourteenth day ; depending on numerous circumstances in relation to the severity of the causes, and idiosyncrasies of the sick. They have been called jail, hospital fevers, &c. from often arising in such situations. Fevers of similar character, with some slight modifications of phenomena, sometimes appear endemically, and are called after the places they may happen to visit. All being of one family, depending on similar causes, and requiring one general method of treatment, only to be varied by the intensity of the phenomena.

Pathological remarks.

b. The remote causes whatever they may be, producing the state of predisposition, appear to have excited a high degree of tissual susceptibility ; when, therefore, disease is excited, the responding movements are on an elevated grade, they exhibit much intensity of action, unless enchained by the causes producing a severe congestive inundation on the nutritive nerves. We discover very similar conditions as in low typhus, except as relates to severity, or the general

amount of morbid derangements. The internal organs are all affected more or less ; they receive a severe shock, and their increased sensibility renders them impatient to act with strong repulsive movements. In every case of this description, where organic force is free, we find expanded action in all the organs, and disease fully developed ; for there is a preternatural morbid strength existing throughout the entire system.

When, on the reverse, we meet a case which has been exposed to similar causes, the phenomena may be liable to induce some to suppose there is existing a real state of debility ; when in reality there is more strength and a greater burden of disease than in the other ; yet it resembles a smothered coal-pit struggling for vent. The distress is great, but the patient is mainly insensible of it ; he writhes about, utters moans, and is chiefly unconscious of his malady ; he may soon expire if no friendly hand administers relief. Such cases may often be relieved if time should be improved, and by the most simple means.

Methodus medendi.

c. When the character of a disease is well understood, the treatment becomes familiar ; provided the favorable period for the use of remedies shall not have passed by. The burden of disease is sufficient to be borne, without an intolerable farago of internal medicaments. The superficial appearances of debility may induce some to load the irritable stomach in such cases, with wine, opium, and quinia, together with a crowd of alterants, as calomel, capsicum, &c. Such a course will insure a speedy and unfortunate termination of the case. We only name these for the purpose of expunging them from the table of the sick room. The stomach cannot endure much in such cases of increased sensibility, and if we were not possessed of other means of altering the condition than

through the agency of this organ, we might well despair of affording relief to suffering mortals.

The pride of medical science is liable to extend its researches into the circle of mysterious agencies, and invite to its aid a host of auxiliaries more burdensome than the supernumeraries of Xerxes' army. Yet we find the further the primary morbid changes in disease are pursued to their origin, the more simple and plain they appear; and they require equally as few and simple means, well directed, for their removal. If it should be suggested, that the remedies we propose are very similar, even too much alike, it need only to be answered, that the primary derangements constituting disease with all its sequences, are found to be equally simple and very similar, but not in degree. The great disparity in their severity, in the different organs affected, and personal idiosyncrasies, are subjects meriting severe scrutiny, and the exercise of deliberate judgment.

d. In the instance just mentioned, of an embarrassed condition of the functions of organs, we need to put in operation some of the means proposed in the last article; keeping in mind not to apply external heat too far; not so far as in low typhus. For, the responding movements sooner make their appearance, when heat is liable to become excessive. Perhaps bathing the hands and feet in warm water, with slight external warmth may be sufficient. For it should be kept in mind, that the burden of adstrictive force is so great, that the subject cannot be made to sweat, and in this instance heat is liable to become intolerable and injurious.

Other means may be necessary to be employed, before the vital actions can emerge from their embarrassments, and elicit internal heat. Here, again, the benefits of taking a little blood, are as conspicuous as in any condition whatever. It is sometimes truly surprising, to observe how soon the load of embarrassments may be removed, when it is timely employed, and before the organism suffers essential lesions. In-

ternal distress is mitigated, although the pains may ere long become more severe. The intellect begins to be disburthened; the circulations become more equal, distributing a uniformity of heat; and finally, an approximation is made to a more free and expanded circulation universally.

Still the disease is not removed, it has only assumed a more tangible condition, and if left to its own energies will very certainly overact, and produce more certain and irremediable lesions of organs, or exhaust the vital susceptibility totally. The disease now manifests its giant strength, and must be met by efficient means. Shall we rely on the aids of feeble alterants? As well may we spend our breath against the northern blasts of winter. The same means that have relieved the tonic state of the tissues admitting the circulations to obtain freedom, if pursued, will remove the excess of morbid impetus, which is now liable to make irreparable lesions in the organs. Although the recuperative powers are essential to the restoration of health, yet the increased sensibility of the vascular tissues urges all the movements to a destructive excess; they are now to be restrained and guided to safe results. It becomes necessary, then, to repeat the bleedings until the morbidly tonic state is reduced to the point of safety.

But how shall we know when we have attained this point? It is never attained until there appears a relaxation of the adstrictive state of the external exhalants; nor until the centripetal circulations shall have obtained an ascendancy over the centrifugal. As soon as this is effected, the recuperative forces become enabled to restore ordinary lesions, and re-establish healthy action. If there should have been morbid changes in the blood, the depurations will take place by the relaxed emunctories, or even the same of any peccant humors. Bleedings ought to be practised freely, and to the extent of accomplishing the objects in an essential degree, although other means may be used as adjuvants. After fever

is established, some time will be required for the deperations to take place.

If syncope should be induced, it may save the loss of much blood; for it shows the object has been considerably obtained, as has been already illustrated on other occasions. It manifests a subduction of the relative plethora of vessels, and relaxation of the nosodynamic force. Still the remains of a severe morbid habit may again rally, and require further subduction. It is the morbid tonicity that causes a contraction of vessels on their contents, otherwise the loss of so much blood could not be endured; most certainly it could not in ordinary health. If the bleedings have been early practised, they may safely be extended to the full extent required. If they are employed rather late, it will not be necessary to practise them to so great an extent, but leave something to be done by the slower operations of the restorative processes.

No rule can be proposed as to the amount of blood necessary to be taken; this must be determined by the demand indicated by the phenomena of the case. It is common, however, to take two or four bleedings, each one of a sufficient quantity to make some impression on the pulse. They should be followed in as quick succession as the pulse indicates the repetition. Experience and observation are necessary to enable the medical adviser to decide on the extent of this remedy, as well as others. Every remedy carried to excess, becomes injurious; but to stop short of the object aimed at, is equally hurtful. The object is to remove the rigid state of nosodynamia, so as to ensure capillary absorption.

Those who practise bleeding with doubt and timidity, are liable to stop short of obtaining the object. The disease still progresses with sufficient force to destroy the organism; and they then conclude the bleeding was injurious, whilst the injury results from too little having been taken. Such medi-

cal attendants are greatly prone to be rather liberal in the use of cordials and tonics, and thereby lose all the benefits of the bleedings, by the use of such opposing remedies. The patient might have done as well, or even better, to have been let alone, trusting to nature entirely. If they do not employ these counteracting means exactly at the same time, they commonly use them as soon as they have bled as far as they dare to, for fear of debility; and by this neutral practice the disease may suffer a fearful renewal, or a lengthy protraction.

e. Emetics should be cautiously used on account of the morbid sensibility of the stomach, and its liability to inflammation in its mucous coat; yet where spontaneous emesis has not occurred, if there should be some epigastric distress, it will be proper to exhibit a slow emetic. The phosphate of antimony, called James's powders, may be given in small doses to excite general secretion in an insensible manner. As long as there may be a disposition to coldness, the sudorific aromatics may be used as adjuvants. The use of these means should follow venesection. Full emesis, however, is often indicated.

As soon as the patient has had some respite, a cathartic will become necessary. During the protraction of the fever, and after as much blood has been taken as may be necessary, they should be repeated rather often, or as the patient may seem to bear them. The first dose may be calomel, perhaps ten grains. If it should not be sufficiently operative, it may be assisted by a solution of acetate of potash, or phosphate of soda, or Rochelle salts. These may be taken in solution, along with bicarbonate of soda and tartaric acid in a state of effervescence, and sweetened, if desired by the patient.

The sick have commonly a desire for acids, and they may be freely used, both mineral and vegetable. They should be so diluted as to be pleasant to the taste, and this is a convenient method of replenishing the system with fluids. Tamarinds, vinegar, bicarbonate of soda, lemon juice, &c.

Cold water internally and externally.

f. When thirst is great, with high internal heat, the patient desires cold drinks, and he may commonly be indulged. When the heat exceeds 100° of Fah., they may induce sweatings of a salutary tendency. If there should, however, at any time be chills, and pain follow their use, they ought to be withheld. The thirst will not be great until vascular action has become quite free, and the absorbing processes have obtained some degree of inactivity; and these phenomena indicate an approximation to the synochoid diathesis, although it possesses much severity as yet. Still they indicate an ascendancy of the preservative force.

After the subductive treatment has been carried to a considerable extent, if there should be an equal action established universally in the system, not attended with internal pain, and at the same time a heat of about 101° or 102° of Fah., then cold sponging of the surface may be employed, and probably to advantage, especially in hot seasons. Cloths wet in cold water may be applied to the head, and indeed considerably over the surface. Its effects should be watched, and if the system is not prepared for its use, it will be liable to induce chills and increase pain; if so, it will be an indication that the state of nosodynamia predominates, and certainly requires further subduction. (Sect. xxxvi. 9.) The same circumstances which render large quantities of cold drink admissible, will justify the use of external cold applications. When not used at the proper time, or in an unsuitable manner, they both may prove injurious. An exposure to cool air will often be preferable.

Neither of these remedies can ever be justified at the onset of the disease, nor until internal inflammation is greatly resolved by the antecedent treatment; nor until the heat is intense, and the phenomena indicate a free and expanded state of circulation. All this implies a continuance of dis-

ease for some length of time, and the phenomena now indicate that absorption, or the centripetal circulations, have obtained a considerable advantage. If this were not the case, the fluids taken in would not be so soon absorbed. (Sect. xlvi. 1, b.)

We have many instances of patients, urged by the extremity of thirst, taking largely of cold water of their own accord, in fever, and being cured by it; and, also, of their even running away when delirious, and being exposed to cold and snow, and greatly benefited.* We may enquire whether all these cases were not such as have passed the stage of depression long since, and when the nosodynamic state is greatly reduced, and the recuperative powers have obtained an ascendancy? Such cases have had considerable continuance, and are already approximating to a favorable issue. The tonic force of cold may now give energy to the restorative powers, and the cure is rapidly expedited. Still we have experienced irremediable injury to patients suffering by one night's exposure to cold, near the onset, by neglect of watchers.

So, also, in the instance of sudden cures of fevers and other diseases, by the stimulus of surprize, as that of the house being on fire. Do not the absorbing powers receive a severe stimulation, and having already some advantage over the state of morbid tonicity already weakened, they are excited to salutary purposes, and the natural processes become established. Under certain adverse circumstances, terror has been known to destroy life suddenly; and we see how much patients are made worse on some occasions by surprize. Although this may be a powerful agent in the treatment of disease, yet the laws by which it acts, and the circumstances under which it may be admissible, ought to be better studied. (Sect. xviii. 8 and 9.)

g. If towards the close of severe typhoid affections, there should be much exhaustion, with a slow and feeble pulse,

* Good's Study, Vol. II. p. 140.

some tonic medicine may be required. An infusion of gentian and orange peel, with the addition of two or four grains of sulphate of quinia may be used, once in three or four hours. Wine must be used with much caution. Animal broths and jellies afford suitable nutriment, with the necessary caution.

When diseases of this grade prevail in districts subject to intermittents, they are liable to take on an intermittent character. In such cases, after using the necessary preparative measures to an extent sufficient to arrest the severity of their march, quinia may be given in large doses, say ten or twelve grains about an hour before the expected paroxysm. It will not be safe nor proper to continue this very long, whilst great caution will be necessary to obviate the injurious tendency to hypertrophy, and other lesions of the internal organs.

When the proper treatment has been early applied, and to a sufficient extent, the physiological actions approximate so fully towards the synochoid diathesis, that the tendency of the fluids to putridity is obviated, and the oppressive state of adynamia does not very manifestly appear. Such cases should be treated like synocha.

When fevers even of the present grade have been treated in a judicious manner, they pass off without any very alarming crisis. Yet they are liable to exhibit some critical evacuations by a mild crisis. But, when left very much to their natural progress, or under a mere expectant treatment, they often terminate by very abrupt crises. For an account of such terminations, reference may be had to Section xliii. 4.

3. *Plague and Yellow Fever.*

a. These subjects, the 2d and 3d Genera, in the Nosography, will be passed with a few cursory remarks. Their severity, and fatal tendency will be discovered in every history of them, which has been published. A compendium may be found in Tytler's Treatise.

The phenomena are well portrayed by numerous writers. With respect to their origin, and whether communicable from one subject to another, is still not fully agreed on. However, from their histories, the balance of proof is in favor of their observing the laws of other epidemics. The plague has its rise, progress, and decline like them, in particular seasons, and becoming milder in its decline. They depend on similar meteorological circumstances for their origin, under certain modifications, and are no more communicable than epidemic lung fever or cholera. This is the opinion of some medical men who have been familiar with the plague, notwithstanding so much has been said in relation to its contagiousness. It is now the general opinion that yellow fever is not communicable.

No doubt the plague has destroyed more of human life than any other malady. Even the cholera is not so destructive, nor has it been so frequent. The plague has been known in ancient and modern history to be on many occasions far more destructive, sparing in some instances only half, or one third of the inhabitants in the places of its visitations. Its attacks are very sudden, some even dropping down dead, and on ordinary occasions the scale is soon turned on the side of life or death.

The rapidity of its course is so great, that but little opportunity is given for the interposition of remedies, when the means are at hand; much less in the consternation of such periods; the disease occurring in armies, and thick settled places, there cannot be much systematic treatment employed, even if the methods of treatment were agreed on. The destitute are the most exposed to have the disease excited in them, and at the same time possess the least means of averting its rage. The Journalist says of the plague of London in 1665, "The misery of that time lay chiefly upon the poor, who being infected, had neither food nor physic; neither physician nor apothecary to assist them, nor nurse to attend

them." Of the physicians, Dr Hodges says, "that many died whilst prescribing for others."*

Pathological remarks:

b. An intense state of predisposition is readily affected by exciting causes, producing severe and perturbed action, very quickly interrupting the free play of the vital forces; and sometimes so great as to destroy life immediately. Commonly, however, the repulsive forces act, or strive to make an effort; and they commonly so far obtain an ascendancy as to develop the characteristic phenomena of the disease. Yet again, they may only partially be developed, on account of embarrassments, which have been already explained.

The entire histories of the phenomena of the plague and yellow fever go to prove a similar state of pathological character as exists in typhus gravior. The local concentrations are on different tissues, and organs, which give origin to some change of the phenomena, and occasion some inappreciable modifications of diathesis. Still we find the most successful methods of treatment to be predicated on similar principles. If these principles are correct, they go far to demonstrate the general affinity existing in disease. The yellow fever has been treated with much success by many efficient practitioners in the United States, and in the West Indies, and we have no doubt the plague might be so likewise, wherever circumstances might permit; especially by those who would approach the sick free from prophylactics in their noses, and without a tobacco leaf interposed between the finger and the pulse. It will not be expedient for us to proceed any further than general views, in relation to these diseases.

* Tyler, p. 552.

4. *Cynanche maligna*, Malignant Sore-throat; *Scarlatina anginosa*, Canker rash.

Preliminaries.

a. This might have been placed in the order of eruptive diseases; but as it sometimes appears clothed in the garb of the severe typhoid character it has a place assigned it here, for the purpose of grouping the most important diseases of this kind together in one order. Although the term *malignant* is applied to it, yet the greatest proportion by far of the cases, as they have appeared in different epidemic seasons since the year 1793, have been of the synchoid character. It is believed the term malignant, or putrid sore-throat, has too much biased the treatment towards the tonic, or antiseptic method.

When it prevailed extensively from 1793 to 1796 in New England, there were a larger number of cases of the typhoid character than in the later epidemics. From the previous history of the disease, we might be inclined to believe, that the former epidemics were still more inclined to the typhoid character, or that they were made to be such by the almost invariable practice of treating the disease by high stimulation. Taking the whole time together since 1793, we might estimate, that not more than one in twenty had a primary, typhoid diathesis. Still physicians might not judge alike respecting the diathesis of particular cases.

In consequence of some of the epidemics in Scotland manifesting a typhoid diathesis, and at other times mostly the synchoid, Dr Cullen was led to the erroneous conclusion that they were two distinct diseases, depending on different specific contagions. Nothing is more obvious than that the same disease, whether from contagion or otherwise, appears sometimes in the synchoid, and other times in the typhoid livery, in the same season; and indeed in members of the

same family. We therefore consider there is but one disease, subject to the same laws as other epidemics, yet like most of these, even the small pox, liable to exhibit different aspects, the typhoid and synochoid ; and this is only saying, that some cases are more severe than others.

Phenomena.

b. A breviary of the phenomena of this disease will show, that the affection is ushered in with the common symptoms of the pyretic habit, together with a local concentration in the fauces and larynx ; attended with stiffness in the neck, a red and thickened state of mucous tissue of the throat, tonsils, &c. There is some subjacent tumefaction, often extending to the parotid glands, which frequently become tumefied and tender. The affection of the mucous tissue extends to the nares, and along the Eustachian tube ; at the same time the trachea is affected, extending more or less into the mucous tissue of the lungs.

The fauces become covered with a thin exudation, showing ash-colored spots ; at the same time there is some spitting ; and in the typhoid variety, the exudation assumes a dark, or black color, with an ichorous coryza. Some cases are attended with the effusion of croup, and the false membrane has occasionally been thrown up almost entire, towards the termination of the disease. Deglutition and respiration are sometimes very difficult to be performed. In the progress, especially in protracted cases, the affection spreads through the alimentary canal, attended with epigastric tenderness, producing diarrhoea, with excoriations at the anus.

It is common, but not constant, for a bright efflorescence, or rash to appear on the surface, between the first and third day, spreading from above downwards over the whole body. The heat is very intense, amounting to 106° or 108° Fah., and some have thought it more. In consequence of

the intense determination to the dermoid and mucous tissues, the internal serous membranes and nervous tissues are not so severely affected as in ordinary fevers, so there is more muscular energy, and freedom of intellect.

In the typhoid variety, the eruption is often quite imperfect, rather dark, and sometimes wanting. Sloughing ulcerations of the fauces and larynx are liable to follow, injuring the cartilages, in protracted cases. These are rare cases; the disease commonly terminating in about seven or eleven days, under proper treatment, and the epidermis is cast off in branny scales.

There is an universal increased susceptibility in the organism, and this is shown by a more frequent pulse than attends ordinary fevers; it often being from one hundred and fifteen to one hundred and thirtyfive or even more, in a minute; sometimes very small, but often full and hard. The disease is most frequent amongst children, probably on account of those more advanced, having previously had the disease. Those who have once been affected, are not very liable to a second attack, yet there are exceptions. In two or three weeks after the disappearance of the eruption, these are liable to anasarcaous swellings universally, which have been already noticed under the article dropsy.

Methodus medendi.

Typhoid variety.

c. For the treatment of the variety scarlatina typhoides, or maligna, we make reference to article first of this section, the principles are there explained; they are further illustrated in the author's Sketches of Epidemic Diseases, with specifications. Primary cases of the typhoid character rather seldom appear in ordinary seasons of its prevalence; but many are converted into it by neglect of proper treatment, or

the employment of incendiary measures, the principal of which is some preparation of opium, under the pretence of calming irritation.

These cases have a scanty efflorescence, a dingy complexion, dark crimsoned cheeks, whilst the chief force of the disease is thrown upon the internal tissues, and the nervous force is impaired. The pulse is very frequent; one hundred and thirty or one hundred and forty in a minute, small and oppressed. Notwithstanding these untoward appearances, many cases have been conducted to a favorable termination by taking four, six, or eight ounces of blood from the arm; and also, by a repeated use of the warm bath, with continued but moderate frictions. Moderate emesis is very useful, by promoting cutaneous circulation, and cleansing the throat of viscid sordes, which is often so abundant as to render deglutition difficult, and respiration laborious.

We have used the bath three times in the course of twenty-four hours, for fifteen or twenty minutes each time, with frictions over the surface whilst in it, merely by the naked hand. As the pulse and other phenomena indicate, so the bleedings may be repeated.

Steam of warm water and vinegar may be moderately inhaled, and detergent gargles often used. Amongst others, a decoction of marsh rosemary, or senega root, and honey. When the fauces are much excoriated, a solution of nitrate of silver, ten grains to the ounce of water, may be freely applied with a small swab, or camel's-hair brush. The throat externally may be bathed in camphorated liniment, but no epispastic should be applied to it, or to any other part. As deglutition is difficult, we can but rarely make use of alterative medicines. If the camphorated emulsion can be swallowed, it has a cordial and calming effect. Some cases of this character, with a pulse of one hundred and forty in a minute, have been soon arrested, and attended with a speedy and favorable termination.

In other respects the general treatment for this order of diseases may be pursued.

Synochoid variety.

d. The treatment of scarlatina synochoides ought to be conducted on the general principles of treating fevers of this diathesis. The increased sensibility of the tissues is so intense, that the phenomena proceed on an elevated grade, and the contest will soon be decided. As it is a fact, that small means improperly employed, aggravate the affection very sensibly; so, inconsiderable, but right treatment, never fails, if in season, to moderate its severity, and in a manner that it soon passes off without any disaster. Every case manifesting any considerable severity, should be treated by bleeding at the arm. It should be repeated as the phenomena may indicate, being guided by the same rules as in other pyretic habits, of a synochoid character. We have sometimes bled even three or four times, when the disease is more protracted, and with the most happy effects; the blood exhibiting the phlogistic pellicle, and cupped. When there is much pain and swelling in the throat, the ranular veins may be cut, and even scarifications into the sides of the tongue. If blood issues but scantily, apply leeches externally.

It is sometimes proper, in warm seasons especially, and when there is a vivid eruption with intense heat, to use cold water externally. This affords a striking instance of the diversity of treatment in the same disease, under different circumstances. Still, if the bleedings are practised, it will but seldom be necessary.

As the patient lies on a mattress, or even straw bed, with a sheet over him, the water may leisurely be applied to the superior parts, and gradually sprinkled, or dashed over the body. But it is not necessary to drench him very severely. The evaporation gives a soothing sensation, and it may be

repeated as the clothes grow dry, until the excess of heat is abated, and the eruption begins to fade away. This will commonly be effected in six or eight hours, if the bleedings have been previously practised. As all the internal mucous tissues are very turgid with blood, especially the lungs, the cold applications ought not to be urged too far. The use of cold water as above, should only be practised in urgent cases, with a vivid eruption.

Avoid all internal stimulants, as opium, wine, calomel, and a host of others. Use occasionally mild, saline cathartics. Notwithstanding the results of this affection, throughout the country, are commonly very disastrous, we have a sincere belief, that when the proper treatment is reasonably and judiciously employed, there would not be more, perhaps, than one case in fifty prove fatal; perhaps not so many.

5. *Pneumonitis complexa; Pneumonia typhoides, or Epidemic Lung Fever.*

a. Although this disease might occupy much space, our remarks will be few, considering the general principles have already been illustrated. It is a frequent epidemy in northern latitudes, occurring in cold seasons. It has often prevailed in Europe; and it seems as though other preceding, or accompanying diseases were converted into it, by a change of season, or certain extraneous circumstances. In the winter of 1795-6 it was in close connection with scarlatina, and in 1812-13 with the spotted fever. It affects the most robust at the middle periods of life, and males oftener than the other sex. Many heads of families have been destroyed by it. (See Author's Sketches of Epidemic Diseases.)

Phenomena:

b. The general diathesis is of the severe typhoid aspect, with a concentration to the thorax, the principal seat being the lungs. There are chills and rigors, but often not severe; paleness, or a sublivid color of the face; but as responding action begins, the cheeks look of a crimson color. Distress internally, with pain in one, or both sides; oppression of respiration; cough, for the most part attended with sero-mucous discharges, colored with blood.

There is a prostration of vital force at the commencement; pulse is small, irregular, and oppressed; but, if the disease becomes developed, it is full, strong, and hard. Muscular motion is impaired, and the patient would be disposed to sleep, if distress did not prevent. As the disease progresses the common phenomena of fever appear, or otherwise they are strangled, and the blood retains a dark color.

This disease has had a fatal termination oftentimes on the third day, in some at a later period. Even the earliest deaths show extensive lesions in the organs of the chest; the pleura, mediastinum, diaphragm, pericardium, heart, and lungs manifest the usual appearances of inflammation, with adhesions, and effusions; the effusions often sanguineous. The lungs are engorged with dark blood, which is often effused in their cellular tissue, but more commonly into the aerial cells. The bronchial vessels are filled with a sanguineous sero-mucous fluid. The affection sometimes extends to the larynx, producing croup-like effusions. There is neither opportunity, nor necessity for the use of the stethoscope in this affection, for the disastrous events must be anticipated, and obviated, by a discernment of the prominent physiological derangement of the functions, if opportunity presents. Both the effusions externally on the lungs, and the great increase in the sputa, demonstrate a morbidly tonic force existing universally.

Methodus medendi.

c. The prostration of vital force constantly presents to the superficial observer, the existence of debility ; and therefore, the treatment is liable to be pursued with stimulants, to the neglect of the remedial course that will insure safety. Although this disease is of a formidable character, it can most commonly be disarmed of its violence, if treated early, and in an efficient manner ; and this assertion is made from no inconsiderable observation.

As the principles of the diseases of this character have now been largely explained, and the treatment illustrated sufficiently, we need not dwell upon it very long. There is much inability of function existing, with a strong state of morbid tonicity, embarrassing more or less the physiological movements.

External warmth is indispensable, and attempts should be made to promote a diaphoresis. The universal warm bath possesses high claims to preference, but as it is so often inconvenient, or impracticable, it must commonly be dispensed with. A warm apartment, warm bed, and external warm applications may be sufficient.

As soon as the patient begins to grow warm, blood should be taken freely from the arm, even if the patient should suffer syncope. The bleedings should be repeated in as quick succession as the pain and the pulse indicate, and until pain is removed. Still the diaphoresis should be encouraged. Early and free bleedings save the loss of larger amounts, when longer delayed, and which then have less utility.

The cardiac action should be examined, and if it should be found more feeble than the arterial, the external warmth will do much in promoting an even balance. In such cases the first bleedings should be small, and time given for the recuperative movements ; for they cannot be dispensed with. We have taken blood from persons more than eighty years of age, and with happy effect, and on some occasions re-

peated it several times, when the disease had made considerable progress before its employment. It is always desirable to arrest the disease, before it has made any permanent organic changes.

Emesis may follow bleeding to great advantage. A solution of antimony may occasionally be used as an alterative, but not too frequently in the early treatment ; or, the compound syrup of squills.

Aromatic infusions may be used to promote diaphoresis, and sustain action on the surface, but no Dovers' powder, nor any medicine that contains any narcotic principle. Mild steams of mucilaginous substances in water, may be inhaled into the lungs, by any convenient apparatus, yet in a manner not to give any fatigue to the patient, nor impede respiration.

The following epithem should be extensively applied to the thorax, and something similar to the feet. Hop flowers, four ounces, digested in three quarts of water ; thickened to stiffness with wheaten bran, and moderately dusted over with flour of mustard seed. Let it be extensively applied over the thorax and spine, and renewed about every four, or six hours, and repeated longer than any pain remains. When discontinued, cover the thorax with cotton batting, after bathing in camphorated liniment. These measures will commonly supersede the necessity of epispastics ; they are more comfortable, and are commonly efficacious ; if not epispastics may be used.

External heat to a certain amount, is indispeasable at the commencement of the disease ; but after the circulations have become established, it should not be urged too far. Still it will be dangerous to expose to cool air, or cold drinks. As this affection occurs in cold seasons, we have constantly observed, that a mild perspiration kept up, obviates the excess of heat. It is therefore safest, and conduces to the more speedy removal of the disease, to remain in a warm bed, and promote mild diaphoresis quite steadily, with pleasant diluent

drinks, for about the first week at least ; during this time the disease may commonly be rendered safe ; and soon pass away.

On the second or third day, if the previous medicines have not been sufficiently laxative, some use may be made of calomel, castor oil, or neutral salts ; but much purging should not be employed. If a strict regard be had to the measures proposed, the expectoration, which is liable to follow for some time, will commonly remain free and easy. Sometimes an electuary of sulphur and liquorice root, each three parts, and senega root one part, made up with treacle, will be useful to be taken leisurely. If there should be much restlessness with heat, take of gum camphor and nitrate of potash, each eight grains, ground with gum arabic twenty grains, for one dose for an adult ; repeat according to circumstances.

The remedial measures may be varied to the particular condition of the case ; yet strict regard should be had to extend them to the point of removal of the nosodynamic force, and establishing the ascendancy of the centripetal circulations over the centrifugal ; when the rest of the cure will be expeditious and safe. By a strict adherence to the above simple treatment the disease can most commonly, in otherwise sound habits, be conducted to a favorable termination, if seasonably used. If organic changes should have supervened, before the use of proper remedies, still very similar treatment should be pursued, but without expecting certain and speedy relief.

6. *Typhus petechialis ; Spotted Fever.*

a. See definition in the nosography. For a more extended history of its phenomena and character, than can be here made, reference may be had to the Author's Sketches on Epidemic Diseases, p. 223.

It is a disease of cold seasons ; and seems to have an origin, in connection with an atmospheric afflatus and cold. It has the peculiar trait of affecting children, and young persons most commonly ; and in this it is different from the disease of the last article, pneumonia, which sometimes immediately follows it, affecting the most robust males. The severe epidemic, or spotted fever of 1811, and 1812, appeared to be converted into pneumonia, as has been intimated. The spotted fever first appeared, and the next year pneumonia, and also spotted fever.

Perhaps there is no disease of the pyretic character, more irregular in its external phenomena than this ; being accompanied with what some have denominated nervous, or proreptic symptoms. It presents a good specimen of ataxic fever ; many of the ordinary phenomena of fever being absent at the attack. Its most prominent feature appears to be an impression on the abdominal ganglia generally, or the system of nutritive nerves, producing a paresis of organs, especially of the heart. Still, an impression is soon transmitted to the encephalon, exciting many anomalous phenomena. The eruption which has given origin to its name, is often absent. The most constant phenomenon is the frontal pain ; but still the chief seat of pain is often in some of the extremities, and sometimes in the head or abdomen.

When the disease becomes developed, it is almost always concentrated in the serous membranes of the head and spine. At its onset it affects the system of the abdominal nutritive nerves, as is demonstrated by the phenomena in the circulations depending on this system ; by the numerous congestions there, and by the internal petechiæ, or stellated appearance of the serous tissues, and their sublivid appearance likewise.

It sometimes proved fatal in two, or four hours ; often in less than twentyfour hours, or sometimes not until after the first week, when the phenomena of the pyretic habit had been developed. Sometimes the patient would expire before

the arrival of the physician, and perhaps another in the family be taken sick. Cases that extended beyond about the third day, were liable to assume the progressive grade of slow typhoid fevers. Its first attack had some resemblance to an anomalous, ephemeral remittent. There would sometimes be an irregular remission; and the disease be again renewed, by a more severe and fatal paroxysm, but without rigors.

The heart very early suffers more or less of a paresis; the systolic contractions become feeble and retiring. Soon it increases in frequency, whilst the arterial action is small, and the pulse thready. There is a salutary cardiac effort, but the resisting forces may have gained strength, and there is danger of their obtaining an ascendancy. As the physiological movements preponderate, so the case must terminate. In these early efforts of severe cases, the pulsatory actions amount to 140, 160, or 180 in a minute, being small and tremulous in proportion to their increasing frequency. In unfortunate cases, an acrotismus or cessation of pulse commonly takes place an hour or two before death. We have known the pulse return after an hour or two, and the patient recover, but never when the acrotismus succeeds to such great frequency of cardiac action.

In the case of a strong athletic man, on the contrary, who had taken large quantities of opium, alcohol, and other stimulants, by the advice of his physician, with a view to sustain the vital energies, the pulse continued to beat distinctly at the wrist for about a minute or more, after respiration ceased, and every appearance of death was present in the functions of external relation. We saw him only a few minutes before this event. In this instance, the greatest state of apoplectic oppression seemed to be in the head, attended with coma, and a florid countenance; whilst in ordinary cases it is in the abdomen, with a pallid appearance.

Methodus medendi.

b. In relation to the treatment in this affection, it may be remarked, that when it has assumed the type of slow typhoid fever, it requires very similar management. The difficulty and danger consist in guiding the pathological movements at the onset, in a manner to relieve visceral engorgements, and that they assume a more stable course. The time is usually short, and like as in cholera, but little opportunity is sometimes afforded, to do as much as might be done, under more favorable circumstances. This is especially the case in country practice, where a single hour may be of vast importance.

For an essential part of the treatment in the ataxic stage of this affection, we must make reference to the first article in this section, which is unnecessary to be repeated here. The *juvantia* should be adjusted, as far as possible, to oppose the impediments in any particular case. There is need of much discernment and discrimination; an opinion must be formed directly, amidst hurry, and often confusion. The most difficult cases occur in children, who are then, at least, incapable of giving any account of their sensations. The disease may have so far progressed, that the recuperative powers are about succumbing before the severity of the morbid derangements, which are similar to those which have often been shown to exist in the severe typhoid state.

The restorative force requires aid; but, how can this be effected without aiding the rigid nosodynamic state? Unless remedies can be found to answer this intention, many cases will be subject to an unpropitious termination. We have given the best advice we are capable of in this particular, in our expositions on the severe typhoid diathesis. It should be noticed, that the vital susceptibility of children is very exquisite; and as the morbid changes in disease are liable to be impressive; so also, medicinal excitants are liable to provoke ready and severe movements. A remedial agent

out of time, and of disproportioned amount, may assist the disease instead of suppressing it.

External warmth should be used according to the specified directions already advanced. That certain excitants by the stomach are indicated sometimes by the external phenomena, we do not doubt, and, we conceive, under particular restrictions, are admissible. But, we must attempt to discern and look at the internal changes also, and well regard the pathological derangements existing there. If we can select excitants that will more surely aid the recuperative powers than the opposing morbid tonicity, they may find a ready place in the therapeutical catalogue. We will venture to propose some ; such as the chloric, and vitriolic ethers ; carbonate of ammonia ; the various more agreeable essentials oils, diffused in alcohol, such as peppermint, horsemint, pennyroyal, cajeput, juniper, annis, without reference to their technical names. These, or some of them, may be diluted in warm water, and made agreeable. Also, gum camphor suitably prepared and given in substance. So again, aqueous infusions of sage, saffron, lavender, valerian and senega root, perhaps capsicum. These should be attended with warmth and frictions, as formerly suggested.

All these may be styled evanescent excitants, in moderate quantities. They pervade the system very quickly, and excite cutaneous action. It is impossible to specify the amount that may be proper to use. We can only say they may be rather freely used, until it may be ascertained that some favorable change in the circulation becomes manifest. Yet, they ought not to be so freely used as to overact, and by this means depress the vital actions ; always having in view, that high stimulations are liable to end in exhaustion. Where reaction is slow in appearing, and danger of a sudden and severe paroxysm is apprehended, about two grains of sulphate of quinine may be employed for a child two years old, about once in four hours, for a short time.

If more powerful stimuli should be deemed necessary for those of adult age, alcohol in moderate quantities will be preferable to opium or any other narcotic. It should be well diluted with warm water, to which may be added allspice and loaf sugar. Or, an infusion of camomile flowers, to which add spirit, lemon juice, and loaf sugar. All articles of this character should be withheld as soon as the pulse shows any considerable force, and especially if heat should appear on the surface. Still nothing can be gained by high stimulation.

Having made some suggestions in relation to excitations of the restorative processes, we may now enquire, whether we possess any means of diminishing the relative plethora of the vascular tissues, and also weakening the abnormal, more than the normal state of the tissues? We assign that such a remedy may be found in blood-letting, as experience testifies, and sound physiological inductions warrant, when conducted in a suitable manner. As this subject has been detailed in various places, especially in the first article of this section, we may pass it without further illustration. We will only say further, if the system should be emancipated from its state of embarrassment, and the recuperative powers in their turn become triumphant, and, in connexion with the morbid condition, threaten to excessive action, the same remedy may now be used to suppress it, until safety is insured to the organism.

There is scarcely room for the employment of emetics in these cases; and we have known several instances, in which their use in children appeared to hasten the fatal event.

7. Cholera.

Preliminaries.

a. This affection frequently appears sporadically in New England, mostly at the close of the hot season of the year, when

warm days are succeeded by cold nights ; but was never seen as a wide spreading epidemic until 1832 ; and then it was not so severe here as in many other places. The spasmodic epidemic cholera is evidently an aggravated state of disease, as compared with the casual sporadic kind. It may merely be remarked, that the late cholera asphyxia, or spasmodica, is the only instance on record of a wide spread epidemic of this affection ; or rather it may be called pandemic ; although it has from time immemorial prevailed as an endemic in many sections of the eastern continent, and occasionally in Europe. It appears to show the versatility of disease, and the ready conversion of its causes in a manner to excite new modifications. We consider the common cholera morbus, and the late epidemic in America, as nearly allied in their intrinsic characters, and bearing the same affinity to each other as ordinary remittent fevers do to yellow fever ; yet with a difference in the intensity of predisposing causes. The cholera asphyxia being attended with a more severe typhoid diathesis ; yet spasms attend both of them.

The phenomena are so much the subjects of history, that they do not require to be repeated. See nosographic definition. Our expositions on cholera will be restricted very exclusively to its pathology.

Pathological remarks.

b. We consider that this peculiar habit of disease, ought to have a place at the head of the climax of malignant diseases, or beside the oriental plague. The circumstance, of having destroyed between sixty or seventy millions of human beings, in its late peregrinations is sufficient to confer on it this distinction.

We will say no more in relation to its causes than has been expressed in the preceding etiology. It appears that certain extraneous causes have produced changes in the econo-

my of the system ; and we infer that these changes consist in an altered state of the tissues. Whatever changes may arise in the circulating fluids, either the blood or the secretions, ought rather to be considered as secondary. As these subjects have already been sufficiently discussed, no further observations will be made on them.

Notwithstanding this affection appears clothed with many anomalous phenomena at its access, yet it must be contemplated as belonging to the family of the severe pyretic diseases. The circumstance of its development always manifesting many of the phenomena of the general morbid habit, although ataxic, is sufficient to establish this fact. The phenomena at the onset are but little more eccentric than those of the disease last treated of, although considerably different ; and this may be explained by the circumstance of its local determination being directed, by the peculiarity of the predisposing causes, to a different order of tissues.

c. Our attention then may be directed, for an investigation of its intrinsic character, to the general state of the vital solids, and the condition of the tissues most emphatically impressed.

Fearless of contradiction, and any opposing facts, we assert there is no debility in the vital solids, but they show every where an elevated tonicity ; a state of ataxia also prevails ; for whilst some organs are elevated, others are depressed in function. The facts and illustrations have already been adduced in the preceding pathological investigations, and reference here may only be made to the shrivelled and contracted state of the body, as proof. There is a manifest condensation of all the vascular tissues. The vessels strongly compress the fluids, a relative plethora is suddenly induced, and it is agreeable to true physiological inductions, that such a state impedes secretion and absorption.

Furthermore, the nosodynamic force of the tissues is adequate to the impeding of glandular secretion, and all the absorb-

ing processes. Even the centrifugal circulations are performed with difficulty, except those tissues most emphatically affected by a concentration of local irritation, such as the intestinal exhalants. Every morbid process is conducted impetuously where the tissues are left free to act, which implies energy, instead of weakness. And, again, those cases which surmount the ataxic stage, and when the morbid habit becomes developed, constantly manifest more or less of the synochoid diathesis: and besides, all the phenomena in the moving powers of the tissues prove such a state; the blood declares the diathesis by a buffy and cupped appearance, as soon as vascular impulse takes place.

If any further proofs are needed of the existence of a morbid tonic, we might allude as collateral evidence, to the opinion of many practitioners, who have attempted to treat the disease by tonics and stimulants. We will only make reference to a few instances. M. M. Gerardin and Gaimard were sent as an embassy from the Royal Academy of Medicine of France to Russia, Prussia, and Austria, to study the cholera then raging. In reference to the treatment, they make this remark in relation to stimulants; "all practitioners agreed in regarding them as often inefficacious, and still more frequently as aggravating the symptoms they were given to relieve." Again, "Bark and its preparations administered with the view of treating algid cholera as a malignant intermittent, have not produced the beneficial effects which were expected." So indeed will be the result of every remedy predicated on the asthenic hypothesis.

The most prevailing opinions of physicians in America, who have had extensive experience in cholera, appear to be, that high excitants are injurious; many might be quoted. We will merely mention the views of Prof. J. W. Francis of New York, in his lucid letter to Dr. Read. "Need I say any thing to you on the preposterous practice of large doses of opium or laudanum in any of the stages of this complaint?" p. 19.

More recently in an excellent treatise "On the Relation between the Respiratory and Circulating Functions," by Dr C. Hooper of New Haven, Conn. in the Boston Medical and Surgical Journal, Vol. XVIII. p. 279, we find the following remark; "Most physicians, like myself, from mistaken views of the pathology of this disease, (cholera) treated their first cases by attempting to arouse the action of the heart by opium, alcohol and other stimulants." Although he pursues the adynamic hypothesis in explaining the relations of the phenomena of disease, yet he seems forced to the conclusion, that stimulants are injurious.

Coldness is so prominent a feature, that it has been called algid cholera. The adstrictive state of the capillary tissues prevents that free vital circulation, which is necessary for the extrication of animal heat. The same circumstances existing in the tissues of the lungs, embarrass the calorific processes there. And, furthermore, the delay of venous absorption of the skin and internal tissues, gives occasion to the dark or blue color externally, and congestive state internally, as has already been amply illustrated in other malignant states. A great force of nosodynamia exists; the fever is of the ataxic, malignant character.

Particular tissues affected.

d. Having made allusions to the morbidly tonic state of the general system, we may turn our attention to the state of tissues most emphatically impressed.

It is characteristic of all epidemic diseases, that the remote causes, whatever they may be, possess a certain specific property of affecting or increasing the susceptibility of particular tissues; so that, when disease is excited, the local concentrations are made on such tissues. We assert this as a law made plain to our understandings, without attempting to specify the *modus operandi*. We can only suggest, that

it consists of a series of excitations on these tissues, and that their susceptibility becomes increased when so affected. Influenza and epidemic pneumonia may be cited as examples ; and if more should be required, we might suggest dysentery as an instance in point. In this affection the mucous coat of the rectum and colon are the points of local concentration.

Now it cannot do much violence to correct logical inductions, to extend the analogy in cholera to the mucous tissues of the ileum, jejunum, and duodenum, with all their follicles and exhalants ; neither, indeed, if it were to embrace those of the stomach also. The extent of surface then might not be greater than that of the inner surface of the lungs, and but a little more than that of the colon and rectum in dysentery. The concentrations sometimes embrace large surfaces, as the membranes of the head and abdomen in typhoid fevers, and the entire surface in simple scarlatina.

We have good evidence of the whole of the mucous tissue of the alimentary canal being involved in this disease ; perhaps the three upper divisions the most. Lesions of this tissue have been noticed by many investigators, but the most positive proof seems to be shown by Professor Horner, in his detecting at the Philadelphia almshouse, in a cholera subject, a pseudo-membrane on the mucous tissue of the small intestines. This membrane, in all essential respects, is represented as resembling the membrane often lining the trachea in croup, but much thinner. This is sufficient to demonstrate the local affection being in this tissue, and in accordance with other phenomena proves its synchoid character. Still, tissues may suffer by local concentration without leaving any traits of injury.

We are aware that tissues in a state of excitation sometimes possess an adstrictive condition, and remain dry ; but we are as well assured they are as often subject to a state of profluvium, by the agency of which they pour out large quantities of fluids, either in a normal or abnormal state. Dysen-

tery, diabetes, and diarrhœa serosa may be cited, as instances. There is then nothing exciting surprise in cholera, except the great amount of serous discharge, in proportion to the surface affected, and the extreme pressure of the disease.

Cholera discharges.

e. We are, moreover, assured, that the cholera discharges are sometimes tinged with blood ; in this we trace an analogy in the mucous membrane of the lungs in pneumonia typhoides ; in the intestines in dysentery; in the sudor anglicus or bloody sweats on the skin ; in the mouth of those salivated by mercury ; in hæmatemesis, and many other affections. The exhalant openings transmit particles of the cruor, urged on by the great force of vascular impulsion, and not by debility.

The loss of the serosity, along with some albumen and saline substances is very great, and effected in a short space of time. It has been computed to be from twenty to forty pounds in two days. The remaining portions of the blood become more dense, and less fit to perform healthy purposes. M. Whittstock, of Berlin, found the blood taken from the right ventricle, of persons who had died of cholera, to contain thirty per cent. of solid matter on drying, whilst in health, blood only yields twentyone per cent. The albumen was also increased, as it is in other cases of sthenic disease. Along with the serum discharged, pass also the saline substances of the blood, which are always suspended in it. The loss of these and other alterations occasion essential changes in the integrity of the blood, which no doubt contributes to the fatal termination.

We fully assign these immense intestinal serous discharges to come from the exhalants of the mucous tissue, directly through the arterial capillaries, increased in some measure by the secretions of the mucous follicles. At the same time

they are not wholly excited by the irritations in this tissue. The severe state of morbid tonicity, pervading the whole of the vascular tissues, propels forward the circulations in their vessels, and with an increased velocity greatly above the normal state. The diathesis always modifies and even controls the local concentrations, whether in the form of inflammations, profluvia, or muscular contractions.

The exhalants act inordinately in a comparative view, from the circumstance of the centrifugal circulations possessing an ascendancy of nervous force, as has been heretofore illustrated. In consequence, the exhalants of the dermoid tissue, also pour out the serosity very freely in cholera, which condenses on the cold surface, in the form of sweat. In the *sudor anglicus* this tissue was the seat of concentration of the morbid force, and so intense was this state, that blood was exhaled along with the serosity. In this instance, had the concentration been on the mucous tissue of the small intestines instead of the skin, there is but little doubt the disease would have mimicked the unrelenting cholera, and the historic poet would have had no occasion to sing of

The sweats o'erflowing; but in a clammy tide;
Of tinctures various, as the temperature
Had mix'd with blood; and rank with fetid steams.

Although the cholera discharges in some particulars resemble those in diarrhœa serosa, the latter disease depends on other remote causes, and is not founded on the severe malignant state of the cholera diathesis; and is therefore in all its stages a comparatively mild disease.

Organic secretion.

f. The secretory organs maintain circles of vascular circulation, similar to the entire aortal circulation, extending to the periphery. As impediments are offered in this, so the same takes place in the visceral organs; so they also assume an

adstrictive state. The blood circulates through with great difficulty; and an inability of secretion is the consequence. In cholera this is shown most clearly in the liver and kidneys. Secretion is suspended; and a relaxation of this rigid state, attended with secretion, is a sure pledge of a favorable crisis. The diathesis in the common sporadic cholera, is not ordinarily so intense as to interrupt the secretion of bile, but the mere increased irritation promotes it, as it does in epidemic cholera as soon as secretion is permitted to take effect; the bile then appears.

Deficient absorption.

g. We have no evidence of much of the continuance of absorption in cholera, only just enough to sustain the circulations for a little time. The blood in the skin is not absorbed, but continues to give it a peculiar darkened complexion to the last. So, likewise, the internal congestive state remains long after death.

We have no evidence of any absorption by the alimentary mucous tissue, in the severest state of the disease. It is true that thirst is intense, from the want experienced in the circulatory vessels. But fluids are not taken with great avidity unless cold. Cold drinks are sought for to soothe the erethism of the mucous tissues, and they afford some momentary relief; the fluids are either vomited, or discharged with the abundant exhalations, but they are not absorbed to supply the waste of fluids, and the whole body suffers a rapid marasmus; even so much so that the skin becomes wrinkled. Still it should be understood that the shrivelled state of the skin is occasioned by the adstrictive, or tonic state of this tissue.

Spasms.

h. It is nothing extraordinary, and indeed very much in accordance with other severe affections, that spasm should

compose a part of the group of symptoms of the first stage of cholera, like most other malignant diseases. The abdominal nutritive nerves experience much of the primary assault of disease. These spasms arise from irritations on the extremities of these nerves distributed to the muscles, along the coats of arteries. The great derangements of the circulation throughout the muscular tissues, and want of warm oxygenated blood, will be liable to excite involuntary movements in the muscular tissues. Their contractions may be severe and painful. No exercise of the muscles can have much effect in moving onward the blood, so long as the capillaries are held bound by the rigid nosodynamic force; still we may even regard these muscular movements, as a part of the recuperative force, attempting to overcome the impediments. Tonic spasm is also present in the internal canals; many instances are recorded of the common biliary duct being found contracted in autoptic examinations, in a manner to interrupt the passage of the bile; the same is often found in the intestines. Vomiting in cholera is of the spasmodic kind; and spasms constantly attend the alvine dejections.

Resuscitation.

i. Spasms and jerkings of muscles, so as to move the limbs, commonly occur several hours after apparent death; and they show an attempt in the vegetative susceptibility towards resuscitation. In cholera, different from what occurs in apoplexy, the organs of external relation are the last to die. Intellect and sensibility often remain to the last. The fatal impression is on the system of the nutritive nerves, and these first cease in their functions, even whilst there may be some gleams of intellect for a short time. Still both these systems of nerves may be in a state of paresis, and all their functions have ceased, whilst there is yet a redeeming trace of animation left in the primitive susceptibility. (Sect. v. 3 and 7.)

There may yet be hope of resuscitation, when under all these adverse circumstances, the death of the nervous systems should give opportunity for the relaxation of the nosodynamic force, and afford opportunity for the absorbing processes to take some effect, by an effort of the vegetative susceptibility. We esteem these briefly expressed views as something more than mere chimeras. Surely there have been many instances of reanimation, even after some length of time, in various affections not complicated with irredeemable lesions of the organs.

There are some facts recorded of resuscitation having actually taken place in cholera; and others manifesting signs of such an event; which, if suitably aided at the proper time, might perhaps have been successful. It has often been remarked, that several hours after apparent death, the body grows warm, that had been as cold as marble; and the countenance assumes some degree of freshness, which before death resembled the cadaver. Yet in most of these instances there was not enough of returning vital energy to effect resuscitation.

There is quite satisfactory evidence of resuscitation having taken place in cholera sometimes, and without going abroad. A sufficient amount for our present purpose may be found near home, in an excellent essay on cholera, by Dr Thomas Spencer, of New York; even enough to astound the sceptical incredulity of any consistent mind. The liberty will be taken of making some transcripts.

Speaking of resuscitation from apparent death following a state of collapse, he says, "Facts sustain this conclusion. In answer to a circular, inviting information on this subject, Professor Potter, of Baltimore, says: 'I saw no case of apparent death from collapse, followed by convalescence, though I have learned from high medical authority, that two cases, apparently dead from collapse, were resuscitated. They are now in good health. I have seen them both within

the last week.' Dr Noyes Palmer, of Cayuga, remarks : ' that two had recovered from apparent death, one of whom was actually laid out upon the board, and the coffin preparing.' Dr Lyman Celary, of Salina, remarks : I saw a child, three years old, in which, at two hours from the attack, respiration and pulsation ceased ; the child was laid by, and a shroud prepared. Some hours after, the child was perceived to move, and recovered so as to call its mother by name. It died, however, about fourteen hours from the attack.' Alderman Barnes, and Mr Gore, of New York, mentioned two cases of the kind within their knowledge, one of whom, a woman, was apparently dead from an hour to an hour and a half, and subsequently recovered. The other case was a man, who was apparently dead for a longer time, afterwards revived, but subsequently died of consecutive fever. Alderman Coxe, of the same place, mentioned to me that there were some cases in the Bellevue almshouse, that were apparently dead for several hours, and afterwards recovered."

We might remark that the evidence is of too loose a nature to be received in a court of judicature, and yet we may give it full credence. So, also, we might add, that we were credibly informed of two cases at Montreal, in 1832, of resuscitation after apparent death by cholera, but we are unable to say more.

Indication of Treatment.

j. After having stated in the most concise manner what we conceive to be the fundamental principles of the pathology of cholera, we shall decline any attempt to suggest a remedy. Still we are free to suggest, that if ever a successful method of treatment should be found, it will consist in means directed to the removal of the strong nosodynamic state of the tissues ; (Sect. xviii. 4, 10,) thereby affording opportunity for other adjuvants to establish all the physiological movements in their proper courses.

8. *Dysentery maligna.**Preliminaries.*

a. The history of the phenomena of this disease is so well described by many writers, and so well known, that we do not need to say more than is mentioned in the nosography. It most commonly prevails in hot seasons, particularly July, August, and September, and sometimes later. We once knew it as an endemic in the month of March, when the weather was cold, and the ground covered with snow, but the disease was not of the malignant kind. It is not contagious, but great numbers may be affected at the same time, and especially on a change of weather from hot to cold. Slight causes excite it, when the system is prepared for it by the remote causes. It finally obeys the laws of other epidemics, but the local concentrations of irritation and inflammation are in the rectum and colon, and give occasion to a modified train of local phenomena; whilst the diathesis is subject to the same modifications as other pyretic diseases.

It has often proved very fatal in New England, and may be esteemed as one of the great scourges of mankind, in different regions, destroying armies and collections of people nearly equal to the plague, and has been denominated the plague in the bowels, camp disease, bloody flux. Dr Mosely observes, "The page of military history weeps less for the slain in battle, than for those fallen victims to this calamity."

Pathological Character.

b. Like all other epidemics, this disease appears sometimes in the synchoid, and at other times in the severe typhoid character. It is the latter state we are more restricted to treat of in this place, but our expositions may easily embrace both conditions, by making reference to the previous illustrations on these different states.

Perhaps the character of this disease was never so well portrayed as in the laconic definition of Sydenham, when he said, *it was a fever turned inwards upon the intestines*. It truly consists of a fever ; but the intensity of visceral erethism is so great, that the surface is anæmic and cold, so that a superficial observer might conclude there was an absence of fever. The same venous congestions are found on autoptic examinations, as in typhoid fever, with a membranous inflammation in the mucous coat of the rectum, and extending along the colon, often its whole length, and in solitary patches some further. Sometimes the muscular and serous coats are slightly affected, and liable to become gangrenous.

The mucous surface of the intestine is covered with a viscid sanies, which being scraped off, show red inflamed points from which blood is exhaled along with serum, and uniting with the secreted mucus in some abundance. It consists of an extended membranous inflammation, which is most intense at the sphincter ani, exciting severe tenesmus. In the synchoid state, the excited mucous surface presents an extended red appearance, whilst in the typhoid it is dark, and sometimes nearly black. The whole of the intestinal canal is moderately distended with gas, and rarely contains much besides some mucous sanies. When in severe cases the disease mitigates, the mucous surface of the rectum is liable to be cast off, and discharged in shreds, followed by a muco-purulent discharge, constituting chronic dysentery, with an excitation extending to the other intestines.

Methodus medendi.

c. The severity of typhoid dysentery is often so intense, as to destroy life in a few hours ; it therefore requires to be met with decision in the treatment. When it prevails in epidemic seasons, no time should be lost at the onset, of employing the most efficient means to arrest the severity of its

progress, and these same measures often greatly cut short the disease. If other typhoid states of disease require a diversion to be made to the external surface, then surely this disease most imperiously demands it. We discover in every habit of disease at the onset, a retrocession of vital action from the surface to the internal tissues, unless the exantheas may be considered exceptions; and even these do not show their eruptions sometimes, without difficulty. As dysentery has a fixed point of concentration internally, attended with much distress, this requires to be diverted from the part, and action more equally eliminated to other organs, and to the surface in particular. The intention then will be, to divert the circulation from the centre to the circumference, and guard on the one hand against a fatal collapse, and on the other, in due time, against excess of responding action.

External warmth is always required at the access of this disease; and not only warmth but sweating is necessary. The capillary vessels of the skin should be made turgid with blood, in order to save the internal pressure and injury of the tissues. This action requires to be sustained for a considerable length of time, until the force of the disease may be subdued. Having been particular in describing the treatment of the typhoid diathesis, we need not spend much time on this habit of disease, for it requires very similar management; it is only another modification of severe typhoid disease, or fever.

Emesis has a very favorable effect in this disease; it propels circulation to the surface, and promotes sweats. A full and free vomiting, together with sweating, we have often known to arrest the disease in a short time; but it is not sure to be so prosperous, without the aid of blood-letting; even these are not always sure to arrest it suddenly. Cerated glass of antimony, ipecacuanha, or tartarized antimony may be used. Vomiting may be practised nearly every day until the disease becomes mild.

Bleedings should be extended to the point of relief in children, as well as adults, and taken from the arm. The first shows a carbonized blood, but if repeated, the after bleedings show a more florid blood, and probably the synochoid diathesis may be developed, when the case may be easily managed.

The warm bath is very useful, and when convenient may be frequently repeated, until there is a mitigation of the disease. By this, capillary action is more steadily sustained on the surface; besides its softening and cleansing the skin. The false notion of exposing the body to cool air, in order to obviate gangrene, is most absurd, and has caused the death of thousands.

The abdomen and perineum should be frequently bathed with a tincture of opium and camphor; then well covered, unless heat prevails, with cotton batting, made tight by a bandage. Sometimes cloths dipped in a warm decoction of aromatic herbs, or in warm milk, may be applied, after being well wrung out. These applications should be used with discretion; sometimes omitted, and dry substances applied. No opium should be given internally, unless a single dose at the beginning, when the disease is attended with great tormina, and perhaps much vomiting. It is better to aim at a radical cure, than to smother the disease, for it will show itself with more violence, after the use of this article. Still, nature will triumph sometimes, over very improper treatment. The same as in other pyretic cases, opium only gives a deceptive respite, and the disease will be more prolonged, and made more dangerous by its use. It often occasions a suppression of urine. This symptom never has occurred in our observation where opium has been withheld. This accords with the experience of Dr W. Philip. "Many writers mention suppression of urine among the symptoms of this disease (dysentery), but as I have never seen anything like it occur, where opiates or astringents had not been improperly used, I consider it rather as a symptom of mismanagement

than of the disease. From opium I have often observed this effect ; and I have speedily removed it by increasing perspiration, and giving a cup of strong, clear, good coffee, every few hours.*

No purgatives should be given until the third or fourth day ; and we may wait still longer, unless pain at the umbilical region exists. They are sometimes necessary to dislodge the contents of the colon and cæcum ; but not otherwise, for they are liable to give unnecessary irritation to the lower intestines. A solution of tartarized antimony in small doses, and repeated once in four hours, will often operate as a laxative ; or it may be assisted by castor oil, or an infusion of senna and rhubarb, with tartrate of potash. Dislodging the hardened collections in the colon, often relieves spasmodic pains and tenesmus.

Mucilaginous and demulcent drinks may be used as the patient may incline to take them, being made as pleasant as possible. Also, crust coffee, chocolate, beef tea, and chicken broth ; but in the early stage of the disease no cold drinks.

If the cure proceeds successfully, there may be a time, after several days, commonly a week, when vascular action has become permanent, with heat, and a florid countenance ; at which time thirst may be great, and the absorbing processes are established. The patient may now desire cold water, and it may be allowed him by spoonfuls at first. If it is found not to produce pain in the abdomen, it may be given more freely. We have known some patients indulge largely in cold water for several days, and with very beneficial effects. Absorption having taken its course, and the warmth become permanent, the system receives no injury, but the blood vessels become filled with the simplest and most agreeable of all diluents. In some cases attended with vomiting, this has ceased on the use of cold water, and the patients soon restored without other remedies.

* Treatise on Febrile Diseases, p. 405

The chronic state of dysentery requires a strict regard to diet, and avoiding of cold. Farinaceous, and demulcent food mostly in a liquid form, animal jellies, and broths, are the most proper. Some astringents may be used, as a decoction of logwood, with gum arabic and allspice, sweetened with loaf sugar; also, souchong tea, two ounces, boiled in milk and water, a pint each, and sweetened with loaf sugar, may be freely taken. According to circumstances it may be changed for prepared chalk, four parts, with carbonate of iron one part. Bayberry tallow and loaf sugar may be freely given. Also the nitrate of silver in pills containing one sixteenth of a grain each, three times in twentyfour hours.

9. *Enteritis maligna, and Ileus.*

a. There seems to be some ambiguity, and not a little confusion amongst nosologists, in their classifications and definitions of acute diseases of the intestines. The great extent of these organs, and being folded on themselves, their arbitrary divisions, their being composed of different tissues, and performing functions in many respects considerably different, all serve to make discriminations of their particular diseased state rather difficult. The embarrassment is increased by the change of one apparent state of disease into another, and often the want of discriminating phenomena, to identify the existing state. Thus, a mere distension of an intestine by air may suddenly be attended with intolerance of pressure, without any traits of inflammation discoverable on dissection. The first stage of inflammation may be more sensible to pressure; but after effusion has taken place, pressure can sometimes be borne without much increase of pain, even whilst the greatest destruction of organization is taking place. Other cases apparently similar have more sensibility.

The natural signs are deceptive sometimes, not only on account of the chief force of disease being thrown on tissues of

different sensibility, but on account of the different degrees of susceptibility for the time being bestowed on these tissues, by the abdominal nerves. The phenomena in the incipient stage of acute diseases of these organs manifest a state of ataxia, especially previous to their development. Some portions suffer a paresis, whilst others, as the stomach, may possess an increase of sensibility, and spasmodic action, with vomiting.

We need to have in view certain cardinal principles in connection with general phenomena, which will indicate the state of the organs and the safest course to be pursued. Thus sudden and extreme pain and distention of the abdomen, with a frequent hard pulse, is certain to be succeeded by destruction, not only of the functions of the organs, but of their organization, unless seasonably obviated. It is proper to seek for every phenomenon that will indicate the particular state of the organs.

Phenomena.

b. The patient is suddenly seized with severe pain in some part of the abdomen, most commonly at the umbilical region. It is so intense in ileus, that he soon may be compelled to scream aloud, and toss about. The recti muscles are contracted in ridges, and become tense. There is soon a reflex action directed upwards to the stomach, which excites a distressing spasmodic vomiting. This has the effect of a natural effort to relieve the morbid derangements, and the pain suffers some mitigation. It soon, however, returns, and the same process is repeated in quick succession. This course is followed in enteritis, and also in ileus.

The pain is more constant in enteritis and ileus, after the inflammation has become established. Still it is more severe at some times than at others, and the abdominal muscles are not drawn into ridges. The pulse is more full and hard. In this state there may be no constipation, and cathartics may

operate freely in enteritis, but still give no relief, further than the mere expulsion of fecal matter, and if repeated they are liable to produce aggravation. The patient becomes thirsty, and if he takes drinks in either case, they are soon expelled by vomiting; in ileus there is liable to be thrown up, by an inverted action of the intestines, not only the contents of the duodenum, but also of the jejunum, ileum, colon and rectum, unless there exist some obstacles as constipation or intussusception, to interrupt the perverted movements. The vomitings in these cases are repeated to the last, and are ultimately effected by a convulsive effort of the stomach alone, mere belchings, without the aid of the abdominal muscles.

Tympanitic swelling of the abdomen is liable to occur early, both in ileus and enteritis, most often in the former. As the disease advances the abdomen may be largely distended. Pain becomes moderated at last, as sensibility diminishes on the approach of a fatal termination. This is the common event, unless the disease should be early removed.

From the commencement, and in every variety of the internal affections, whether from inflammation, obstruction, intussusception, or hernia, the surface is pale and anæmic, the countenance fallen, and expressive of anguish, whilst the internal tissues are loaded with blood as in typhoid fever. Cold sweats also are very common.

The pulse sometimes in ileus, is not accelerated until several hours, and even several days after the attack, or until inflammation supervenes. It then increases in frequency to 100 or 140 in a minute, whilst it is very small and feeble. The more strictly marked cases of enteritis, are commonly attended with a full and hard pulse for a time; but if unfortunate, the same kind of thready pulse soon supervenes. The morbid force now gains an ascendancy over the recuperative.

The duration of these affections when not removed, are as various as their pathological conditions. Severe enteritis usually terminates about the third or fourth day; yet some

have been destroyed within fortyeight, or even twentyfour hours. All the other affections may have nearly as speedy terminations, but are liable to be more protracted ; as the fever and inflammation less early are manifested. There are cases of obstruction, of ileus, and hernia that have been protracted for a fortnight, and then have had a favorable termination. In these cases inflammation has not been so severe as to end in disorganization. Sometimes the subject becomes exhausted by fever and pain, whilst the organization remains entire.

A case occurred within our knowledge, of intussusception of a fortnight duration, in a girl twelve years of age, in which no very judicious treatment was adopted. On dissection an intussusception of the ileum was found from above downwards of five inches, and doubled on itself in folds making three times this length. No inflammation proper was found, and the part was easily drawn out, and without adhesion. There were only rather slight vascular injections ; no distention nor accumulation. It was attended with tormenting pains, returning at short intervals.

Pathological Character and Lesions.

c. Much has already been advanced in relation to impressions made on the nutritive ganglia and their plexuses, in various habits of disease. The organs now under review are in the neighborhood of these nervous tissues. Besides the circumstances of a primary general impression, they suffer more or less excitation from their contiguity to the seats of local concentration. Every excessive impression on these tissues has the effect of diminishing their nervous force, and the organs under their charge suffer in consequence, more or less of a paresis. This is so much the case, that all inflammations of the abdominal organs, even on the muscular and serous tissues, are never attended with the strong and full

pulse of similar inflammations in the head or thorax, or even the external dense tissues. They are liable to show an early appearance of what is styled the typhoid state of disease. The weight of disease is concealed and liable to deceive. So in all the inflammations liable to supervene in the instances under consideration, their course is short, with a few exceptions, and all the phenomena partake more or less of this diathesis. Even the most distinct cases of enteritis, where all the tissues of the intestine are involved, are attended with rather a small typhoid pulse, liable to become tremulous and soon cease.

In cases of ileus, the numerous autoptic examinations of different authors show, that gangrene may take place without the strong phenomena of inflammation, and rather suddenly; this shows an embarrassed state of the vital force of the organs. And again, Dr Abercrombie in his *Researches on Diseases of the Abdomen*, has shown, that in ileus, some portions of the intestine, for twelve or eighteen inches, are greatly distended with gas and some fluid matter, whilst other portions are empty and contracted, as in health. Thus alternately, contraction and distention. Substances are propelled along the calibers of the apparently contracted, or healthy parts, whilst the other parts have lost their contractility, and suffer great distention; even so much as sometimes to rupture. These distensible portions, also, admit the contracted portions into their calibers, forming invaginations. Still this often takes place when no distention exists.

May we not safely infer, that this inability of portions of the muscular coat to contract, arises from a deficiency in certain ganglia to transmit nervous force to these particular tissues, whereby they suffer a paresis? It is a common opinion that the contracted parts are held by a rigid spasm; but we fully agree with Dr Abercrombie in his suggestions, that these parts have retained nearly their former contractility, being easily dilatable and looking healthy, whilst the distended

parts are those suffering inability, and affected with inflammation and gangrene. Parts confined in hernia are deprived of their nervous force and circulation, so they quickly terminate in gangrene.

There are instances of fecal collections attending ileus, which afford relief when they can be dislodged; but the disease runs through its fatal course the same when there are no collections, as when they exist. Cathartics are often inefficient in ileus; they cannot excite movements in the distended parts, and often increase distress and vomiting when used, until the nervous force is restored to the tissues.

The quantity of fluid matter thrown up in ileus, by vomiting, shows that exhalations are made into the stomach and intestines, which have free communications with the stomach. The dilated portions of intestine contain some fluids, but the chief agent of distention is the air, or gas exhaled from the circulation.

As stated in the preceding case, we have seen ileus without distention of gas, or any other collections. Such cases are liable to occur in various malignant fevers, but they have of late been particularly noticed in subjects who have died of yellow fever. Many lucid specimens may be found in Dr Cartwright's *Essays on Yellow Fever at Natches*, in 1825. From a very interesting case in the ninth volume of the *Medical Recorder*, page 254, we extract the following as appertaining to ileus. The case was a protracted one of fourteen days, in a robust man of twentyfive years of age. The dissection began *five minutes* after death. "The stomach and duodenum contained a quantity of matter termed black vomit. Introsusception had taken place in two or more places in the small intestines. These intestines were very much contracted in several places, and *on moving the bowels, which were yet warm, I found that introsusception would readily take place.*" "The membranes about the root of the cœliac artery were inflamed, but not so much so as in less

protracted cases. The semilunar ganglion, and the plexuses of nerves proceeding from them, were evidently diseased; the fine tissues enveloping them being of a scarlet redness."

The next case was that of a man thirtyfive years of age, who died at the end of the first twentyfour hours; took no medicine. "Dissection immediately after death." "The membranes immediately investing the hepatic plexus of nerves, the semilunar ganglion, and all the primitive plexuses proceeding from it, were very much inflamed; so were those about the root of the lungs." Intussusceptions were found in this, and in many other cases.

These cases, along with many others, show the state of embarrassment that the abdominal ganglia and plexuses must labor under in diseases of the typhoid character. Most certainly their nerves distributed to organs, must suffer various incapacities, and alter the organic movements, if not destroy them. The extraordinary circumstance, that invagination followed on moving the bowels in a case examined five minutes after death, whilst the tissues were yet warm and excitable, seems to demonstrate, that it takes place in consequence of the complex actions of the circular and longitudinal fibres of the muscular coat of the intestines. These invaginations are commonly from below upwards. Are they sometimes excited by vomiting? We have no doubt that these displacements are oftentimes restored, when the constitutional disease is removed in due season, and healthy action otherwise established.

It appears as a fair conclusion from the existing phenomena in ileus, also in enteritis in all its forms, and in adstrictive hernia, that there exists a primary change in the tissues universally, of a rigid adstrictive kind, as in other diseases of excitation, which may be denominated nosodynamia, with concentrations essentially in the region of the ganglia. This state first occurs, although the patient may not be sensible of it, nor be able to trace the causes. It is the primary cause in the morbid state. (Sect. xviii. 4, 7.)

Soon after the above changes, spasmodic contractions of muscular tissues are liable to follow, and these are always attended with pain, and prone to be extended to other organs. Even tetanus is a secondary state, and may change into fever, and fever into that.

Herniæ of all kinds are liable to be attended with very similar constitutional phenomena, to those which occur in ileus; and there are various instances of the intestines being bound down by a kind of ligamentary portion of old adhesions passing over, or entwining them, in some of their convolutions, so as to intercept their functions. In every case of supposed intussusception, there ought to be a careful enquiry, whether an obvious or concealed hernia exists. A partial hernia may exist at the abdominal rings, which cannot be detected, unless some slight pain at this point might render it probable.

Methodus medendi.

d. Notwithstanding the complexity of phenomena attending the affections under consideration, the chief attention requires to be bestowed on the general state of the system, having a special regard to the various existing modifications, and to the safety of the internal organs affected. The same intentions should be had in view, as heretofore suggested in malignant fever. We will first bestow some attention on

[*Enteritis.*

e. This has been styled malignant on account of its severity, sometimes destroying life in one day, and before the disease becomes fully developed. The patient is afflicted with extreme pain in the abdomen, and prostration of strength. The location is in all the tissues of the intestine, sometimes limited, but on account of the associability of the peritoneum, it often occupies almost the whole extent of the intestines,

attended with effusions of various kinds, and sometimes gangrene. Vomiting often attends, and many ataxic phenomena.

When this is the case, it may be proper at the onset to give a single dose of opium of two grains, with ten grains of gum camphor ; or eight drops of cajeput oil may be used instead of the camphor. Heat should immediately be applied to the surface, as it is always cold and anæmic ; it should be continued until warmth is established on the surface, and the mesenteric engorgements are relieved. The warm bath is the most effectual, and we have before advised the manner in which this should be conducted. In addition, the abdomen should be bathed in a spirituous tincture of opium and camphor. This may be followed by a large epithem of a decoction of aromatic herbs ; or an emollient poultice ; and these may be alternated.

A full bleeding should now be taken, and it will have a far more happy effect, if it should be attended with syncope. The bleedings should be free even in patients apparently feeble. The pulse should be but little regarded in the early bleedings, for the paresis of the heart and arteries is such, as not to indicate the danger of the case, nor the necessity of the abstraction of blood. However, after these organs act freely, the pulse should be the index to determine the amount to be taken to render the case safe.

The pain may be mitigated by the first bleeding, but if it should return in an hour, more blood should be taken, and it should be suffered to flow until the pain is removed, and without any additional dose of opium. Finally the bleedings should be carefully repeated as long as there is any return of pain, and until a free warm sweat appears. The sooner the bleedings are extended to the point of relief, the less amount of blood will be required to be taken, as is well remarked by Dr Abercrombie ; and we may add, it will tend to the greater safety of the organs. Leeching at the epigastrium, especially in children, is also advantageous.

From the commencement of the treatment, an adult patient should take one grain of tartarized antimony every hour until emesis is effected. As soon as this occurs he should take about the same quantity every four hours, unless a favorable change takes place, when it should be stopped. He may be supplied with simple and agreeable drinks, but not cold ones at this stage, even if he should desire them.

It is probable the tartarized antimony will have moved the intestines, if not by the second day some gentle cathartic may be used, but nothing that is drastic. If there should be any difficulty in procuring a discharge, a large emollient injection may be used. The usual light diffusive cordials may be used as opportunity presents; also, beef tea, broths, &c.

If the above treatment should be early begun and properly persisted in, we have much confidence of success; but it may not be likely to succeed if we wait for a full development of the disease, and a full pulse; for the most extensive organic changes may take place before this event. Often twentyfour hours decides the case.

Ileus, or Intussusception.

e. Every measure in relation to the treatment of ileus is of a doubtful character. It is often difficult to make accurate discriminations, and sometimes more so to remove obstacles. There is a concealed state of disease which gives origin to the local impediments, and this ought first to be removed, or moderated as far as circumstances may permit.

It is questionable whether intussusception, or incarcerated hernia ever occurs without a previous constitutional change. Hernia may continue for a long time with impunity, but suddenly a change occurs in the general habit, it becomes confined, and cannot be set at liberty by ordinary means, and all the connecting tissues have embarrassed movements; the tissues have assumed a morbidly tonic state. Intussusceptions

arise in a similar manner, and sometimes in the severest states of general disease, as in malignant fevers, in which, had it not been for this condition, they would not have occurred. Constipations are always aggravated by a general diseased state.

The diathesis in ileus is of a concealed typhoid character, and it is sometimes not developed until the tissues are disorganized. The pulse does not indicate the state of the parts, but this must be learned by the pain, and general aspect. The heart as an organ is deficient of nervous energy, and cannot act with much force until the susceptibility of the nervous tissues is restored. We have already endeavored to enforce the importance of early attention to this condition of the morbid system. We know of no more efficient measures than have already been detailed. The indications are the same as in other typhoid states, and are to be accomplished by the same means; external warmth; bleeding according to the circumstances of the case; agreeable diffusives, but evanescent stimuli, often repeated; moderate vomiting, &c. In case of extreme exhaustion some wine may be given.

If cathartics should be indicated on account of constipation, they should not consist of the more drastic kind. We may give six grains of calomel with large doses of castor oil, or pure olive oil; or in infusion of senna, manna, and aniseed, to which may be added sulphate of magnesia, &c. Tobacco injections may be used; ten or fifteen grains infused in a large proportion of water. The effect should be constantly watched, and if no bad results are observed, the injection may be repeated every hour, for several hours. We have seen sudden and destructive effects from using tobacco injections too freely; the dose ought to be weighed. In some instances after using purgatives to a considerable amount, a large dose of opium, three or four grains, has been known to procure discharges by relieving spasm. It is, however,

liable to be followed by injurious effects on the general state of disease.

The impediments to intestinal movements in ileus may be of the following kinds ; 1st, ligamentary bands of old adhesions ; 2d, condensed collections of fecal matter ; 3d, inability of some portion of intestine to act with peristaltic force on its contents ; 4th, intussusception of the intestine in some part, or several parts ; 5th, collections of gas producing meteorism, preventing peristaltic action. If the case should otherwise do well the gas may be absorbed ; and perhaps, the invaginations removed.

The first impediment admits of no other chance of relief than the removal of general disease, and this is doubtful. The second may be relieved by the means already proposed, but the effects are doubtful. When the means to remove constipation have failed, and there is good evidence to believe it exists from collections of fecal matter, we recommend the employment of galvanism, as suggested in Dr Abercrombie's fiftyfirst case of his collections. It consists in the application of galvanism to the part of the abdomen which may be hard and tense. It is said "the application was almost immediately followed by copious evacuations from the bowels, and it was continued daily for about ten days with the same uniform result." The application was usually continued about twenty minutes each time, but sometimes the discharges would take place sooner. "The tension, and tenderness of the right side of the abdomen rapidly subsided, and in a few days every feeling of uneasiness was gone." The feces were black and hardened. The patient recovered.

This process merits further trials. If galvanism really possesses the power of exciting diseased tissues as in this instance, it may be an important remedial agent. That it is a severe excitant in the physiological, and even lifeless state, has been amply demonstrated.

Removal of Intussusception by suction.

f. It is probable this accident occurs more frequently than has generally been supposed, since it is often discovered in autoptic examinations when not expected. It is liable to occur in cases that are called cholera morbus, and cholera infantum, and many affections of the bowels. It has been mentioned that invaginations occur in malignant fevers, but they also attend more moderate fevers, and sometimes without giving great uneasiness, as it is a fact that inflammation does not always attend it. Sometimes the inflammation first concentrates on the part, and is very intense, and effusion takes place in about two days.

Various methods have been proposed to reduce these displacements. Very large injections of fluids, either warm or cold, have been tried, but so far as can now be recollected with very little success. Filling the intestines with air, and swallowing several ounces of quicksilver, we think have been alike unsuccessful. The invagination can sometimes be detected externally, and gastrotomy has at various times been practised, but with little success. One case in a child six months old, was readily detected externally, and after various expedients had been tried, Professor J. C. Warren performed gastrotomy, but it was unfortunate; for although a recent case, inflammation and effusion had taken place. This has been the most common event of this operation, and yet a few have been successful.

In the ninth volume of the *Medical Recorder*, a successful case is recorded, as occurring in the practice of a German physician in 1825; the patient was an adult. It had been of ten days' standing, attended with extreme periodical pains, and after the failure of all the common expedients, even the swallowing of five ounces of quicksilver, gastrotomy was practised. The invagination was detected externally a little above the umbilicus. This case is alluded to for the purpose

chiefly of showing, that although of so long standing, there was no inflammation, nor collection of fecal matter, only one worm; two feet of intestine were involved. This was easily reduced, and the case was prosperous. Perhaps other cases by an operation have been successful, but it is believed they are rare.

The following case fell to our lot in 1833, the substance of which was published in the Medical Magazine at Boston, in July, 1835. It was in a robust man of about thirty-five years of age; he was attacked suddenly with a tormenting, and as he expressed it, a twisting pain in the right iliac, or rather hypogastric region. It was pointed out by him as being near the internal abdominal ring; however, upon a close examination, it was judged to be a little higher up than the ring. Nothing like a tumor could be discovered upon the most accurate touch; the adipose tissue was rather thick. In the course of two full days, the usual measures of bleeding, sweating, attempts at purgatives, &c., had all failed, and still the pain continued, and vomitings were very frequent. By this time there began to be a failure of vital strength. Our attention began to be turned on the propriety of the operation of gastrotomy; but still opinion was divided between the case being intussusception, or hernia at the abdominal ring, between the muscular plates of the abdomen. The latter view was rather increased by the circumstance of his having had inguinal hernia on the left side for several years, although it gave him no trouble at this time.

In the perplexity of the moment, the recollection came to mind, of having read in some journal an account of hernia being frequently reduced, in Russia, by means of heated earthen pots applied to the abdomen, so as to produce suction. We have since found it to be in the seventh volume of the New England Journal of Medicine and Surgery, for 1818.

In this case the abdomen was distended, but not very

greatly, yet so far as to present a considerable large surface. A four quart glass vessel, tumbler shaped, was procured. The atmospheric air in the vessel was rarified by burning a strip of bibulous paper dipped in common proof spirit. It was suddenly applied, by placing one margin about an inch and a half from the pained part above, and dropping the remainder upwards, so as to include a large portion of the umbilical region. The suction was powerful, and a large concavity of the peritoneal surface of the parietes must have been the effect. He bore the process without any inconvenience after the first shock. The vessel was suffered to remain about half an hour.

The event of the process was, that the patient complained but little or nothing of his former pain, but merely a soreness. He vomited only three or four times after, although very frequently before, and in twelve hours had intestinal discharges freely, which gave evidence of their perviousness. His febrile symptoms soon vanished, and he was immediately convalescent. We cannot say with precision whether this was a case of hernia or intussusception; but from all the circumstances, think it was most probably the latter; whichever it might have been, it is difficult to resist the evidence that the displacement was restored, by the process used making changes in the organs, or their position. Until some opposing evidence may be adduced, we shall consider this method as a very efficient means of altering the displacements both in hernia, and intussusception.

It may be well to notice, that the process can be conducted more safely and agreeably, by exhausting the air of the receiver by an air pump, as this gradual manner may not be so likely to injure the intestines as a sudden displacement might, whilst at the same time the degree of necessary exhaustion can be better graduated. The diameter of the open end of the exhausting glasses ought to be in proportion to the size

of the abdomen, and the adipose thickness of the parietes. The intention is to produce a concavity of considerable size for the rush of the intestines into it, and increase the chances of the invaginations being drawn out.

Receivers of different sizes will become necessary in different subjects. It may be suggested, whether in intussusceptions it may not be well to apply one on each side of the supposed spot? Still, perhaps a single large one may be better. The operation may leisurely be repeated until some change is produced, but if adhesions have already formed, it may not be available; neither in the case of gangrene; it ought, therefore, to be one of the early processes.

May we not calculate on some further advantages in this process, than merely reducing misplacements? One especially may be, the influence it may have in exciting circulation in the *minima vascula* of the abdominal organs and tissues, at an early period, before much inflammation has supervened. It promises to be a safe and effectual excitant, bearing some relation to external frictions, yet still more powerful. In this view, it may be useful in some states of enteritis, by producing another kind of action. In every point of view, it ought to be one of the early remedies, not, however, to be used until preceded by the warm bath and bleeding. It will be likely to be more efficacious before much inflammation or meteorism supervene, in which last event a concavity of sufficient size cannot be formed.

In some invaginations of the small intestines there may be fifteen or twentyfour inches of the tube involved, and such a state might require several applications, to be used leisurely, before an evolution might take place. It may need to be repeated in hernia, and commonly at a little distance from the part affected. Much will depend on many particular adjustments to suit the case. We have at present a decided confidence that many advantages will attend the process when

rightly conducted, but it requires to be tested by further experience.*

A slow state of intestinal movement is liable to produce constipation, which aggravates every condition of disease to which these organs are liable, and which ought to be obviated. For the purpose of exciting easy movements, we continue to urge the employment of the following *laxative pill* :

R. Aloes socot.	2 $\frac{3}{4}$
Gambogiæ,	2 3
Rhei,	4 3
Sapo. Castil.	2 3
Ammonia Mur.	1 3
Vin. antimonii,	q. s. ft. mas. pil.

One pill of four or six grains, commonly acts mildly in the morning, if taken at bed time. It excites exhalation in dry states of the intestines, and may be used in slow pyretic cases to much advantage.

10. *Hysteritis Typhoides. Puerperal Fever.*

Preliminaries.

a. The diseases of this order are of the graver kinds, and designated by the term typhoides. Still this disease like all other fevers, partakes oftentimes much of the manifest appearance of the synochoid diathesis. We have heretofore insisted that these are only modified states of the morbid habit, and that they are convertible. In the present disease, the common synochoid grade, by the severity of causes, or

*Since writing the above, our attention has accidentally been turned to a notice in the Boston Medical and Surgical Journal, Vol. XVII. p. 163, entitled, Use of the Air Pump in Strangulated Hernia. "In five cases of strangulated hernia, lately treated by Dr Reuter, at Berlin, he assures us that he succeeded in reducing three by means of the air-pump, although the symptoms of strangulation were of the most unequivocal nature." Why may it not as well succeed in intussusceptions?

by neglect, or ill advised treatment, &c., may be converted into the typhoid variety. The general plan of treatment must be nearly the same, with certain modifications; for we can only view the typhoid as a more aggravated state of disease.

This affection is peculiar to child-bed women, and although it is usually treated of in obstetrical works, it ought not to be separated from the order of diseases which manifest a malignant appearance; and we may thereby divest it of the mystery usually attached to it, and show that it ought to be subject to quite similar treatment. The more obvious appearances are of a nature to deceive and mislead those, who chiefly confine their views to exterior circumstances, without bringing into the account the real state of the internal economy.

A woman in the puerperal state, appears in a prostrate condition. Truly she has borne many oppressions in the progress of gestation and parturition, both in body and mind. She is suffering the customary discharges; her general aspect declares some considerable degree of exhaustion, which is often styled debility, and draws forth the finest sympathetic feelings in presenting her restoratives for her comfort and support. Active but misplaced benevolence is obtrusive in offering the choicest viands and richest caudles to obviate the debility, and ensure energy of body, and hilarity of mind.

Prima facie evidence may give some occasion for such usage, but a review of the morbid economy will present a series of facts, which strongly militate against this kind of management. An inquiry into the condition of child-bed women, will develop a state of increased susceptibility, which fully demonstrates the incompatibility of using even the ordinary stimulations of health. Not only the hypogastric organs, but those of the whole abdomen, and the entire system, are suffering a state of morbid excitation. An intense state of predisposition actually exists, bordering close on disease, and

which requires vigilance on the part of the attendants to obviate. Disease is now readily excited.

Predisposition.

b. It may not be amiss to advert to some of the circumstances which serve to form this state of predisposition. The first periods of gestation are connected with a state of irritation. The new stimulations set up by the change of functions and dilatations of organs, although a natural process, produce a state of universal excitation. The phenomena all indicate an approximation to a pyretic habit, such as costiveness or diarrhœa, anorexy, vomiting, dryness and paleness of surface, pains in the back, head, and otherwise; hyperæmia from retention of menstruation not required for fœtal nourishment for the three first months; dizziness, fulness and hardness of the pulse, &c. Blood taken at any period shows the phlogistic pellicle on cooling.

A part of the foregoing circumstances continue the whole term of gestation, whilst others are occurring which have a tendency to keep up a state of excitation. The uterus greatly enlarges, it becomes highly vascular, it suffers much irritation, sometimes acquires too much hardness, at other times a state of mollescence, and liable to rupture on the approach of parturient pains, or give occasion to severe hemorrhage on separation of the placenta. The elevation of the uterus into the abdomen carries on its surface a great extension of its peritoneal covering, and displaces the viscera, producing compression, and often retarding their functions. There is liable to be but a small secretion of bile, pancreatic fluid, &c., for the greatest physiological energies are directed to the uterus to support its functions. Costiveness exists, with collections of fecal matter accumulating in the colon and cæcum, partly from the compression they experience; and sufficient care is not usually bestowed to obviate this circumstance.

Consider for a moment the condition of things at the time of parturition. The convulsive throes have agitated the entire system, and perverted, more or less, many functions. The circulation has been deranged; the entire muscular systems exerted to their utmost ability, followed by exhaustion for a time, and left in an irritative state with soreness. The uterus after the most severe exertions, suddenly collapsing on itself, and leaving the abdominal organs directly to resume their former positions, whilst they partly lack the support of the abdominal parietes. The peritoneum has suffered many frictions on itself, and now suddenly contracts; that portion covering the uterus suffers immense alterations. The uterus, os internum, vagina, labiæ, and urinary bladder, have suffered necessary and sometimes unnecessary contusions.

The recuperative powers become active in every restorative process, and in effecting alterations in the economy for the sustenance of the offspring from without. A new series of physiological movements take place, directed to the mammæ; within fortyeight hours, and these organs become filled with a lactescent fluid. This natural process is necessarily attended with some commotion in the general economy, more or less nearly allied to a pyretic habit. Still the subject of our charge may do well, provided the strict rules of hygiene are well observed. But, how often are the salutary rules of prophylactics disregarded, and even obnoxious measures intruded? Instead of repose, gentle warmth, a mild fluid and farinaceous regimen, there often are obtruded spiced and spirituous cordials, opiates, high-seasoned food, and exposures to cold, with neglect of the alvine discharges. Surely under these circumstances, there exists a high degree of predisposition, which requires only a slight excitation to light the burning torch of the pyretic habit.

The various feminine idiosyncrasies modify the gestative phenomena. Some enjoy better than ordinary health; but the greatest number, especially those of sanguine tempera-

ments, suffer from hyperæmia, and the irritations resulting from it. To be in part secured from the probabilities of contracting puerperal fever, such subjects should be careful to preserve an open state of the intestines, and occasionally have some blood abstracted during gestation; and especially at the commencement of labor pains; provided there should be pains about the body, with dry skin and thirst; and also when parturient pains make slow progress, with a rigid state of the os internum. Emollient injections and a dose of castor oil will afford facilities for a more easy labor. An attention to these circumstances will lessen the chances of an attack of the disease.

The subsequent pains, called *after-pains*, are of a repulsive kind, and excited for the removal of coagula, which are liable to collect in the uterus from the want of sudden contraction. These ought not to be suddenly suppressed, but require to be moderated. Warm camphorated spirituous embrocations will do much in relieving these, if followed by a large piece of cotton batting over the abdomen, and moderately secured by a broad swathe. It may sometimes be justifiable to give a small dose of an opiate in such cases, but in seasons when puerperal fevers are rife, a conscientious and intelligent practitioner will be very cautious in this particular, and avoid as much as possible the probability of doing injury, for the sake of present ease. The liability to an attack will be increased by opiates, notwithstanding many have often used them with seeming impunity. These pains have considerable resemblance to the pains of puerperal fever, but they have evident remissions, whilst the pains of this state are more constant, and attended with a more frequent pulse, and tenderness in the hypogastric region.

Phenomena.

c. The previous sketch of the circumstances attending gestation and parturition, has brought us within a period of

two or three days after delivery, when the system has got wrought up to the highest state of predisposition. This is the most common time for the attack of the disease, and whilst the system is most susceptible of extraneous impressions. Sometimes, however, it commences a little before delivery, or immediately after. Yet, there are some instances of its not occurring for a week afterwards. Most commonly there has been a slight exposure to cold air, especially with dampness, a very short time before; or after using cold drink, or handling cold damp clothes, or stepping on to a cold floor.

A rigor more or less severe first takes place; or a succession of chills over the body. These are soon followed with pains in the hypogastric region, and perhaps in other parts of the body. The uterus soon enlarges and rises upwards, attended with a sensation of soreness on pressure. There is sometimes pain in the head, with nausea and vomiting. Sometimes costiveness exists, but diarrhoea is soon liable to attend, and may continue in a severe manner. A change in the lochia takes place, sometimes being wholly suppressed, and these are usually the worst cases. A return of this discharge is favorable, as it helps to disburthen the organ of its congestive state. Soreness and tenderness exist over the whole abdomen, with considerable enlargement. If the milk had been secreted, it ceases to be furnished. The general aspect is fallen, and indicates suffering; mind is anxious, and full of solicitude. If delirium shows itself early, it is an unfavorable sign. The common phenomena of fever attend, with intumescence of the abdomen.

The pulse becomes accelerated from the first, and soon amounts to 120 or 140 pulsations in a minute. It has sometimes considerable fulness and hardness, but in many cases partaking more or less of the typhoid diathesis, it is quite small at first, and soon becomes very frequent and smaller. Hiccough is liable to occur, which aggravates the soreness in

the abdomen ; petechiæ sometimes appear, also miliary eruptions. The stools are commonly dark colored and fetid, and often hardened ; they are voided unconsciously in the worst cases. All the phenomena proceed rapidly, and the case terminates commonly in two or five days, either by a salutary crisis, or in death.

A second chill or rigor sometimes occurs at uncertain intervals, which is a very unfavorable sign ; it shows that efficient measures have not been employed to remove the general state of disease, or that warmth has not been sufficiently maintained on the surface ; or that some imprudent exposure has occurred, when the case may be doing well otherwise.

Organic changes.

d. Autoptic examinations reveal extensive lesions in most of the abdominal viscera, which are produced in a short time, commonly in two or three days. The uterus and its appendages are found in a state of inflammation, sometimes, however, only slight. It is usually encrusted with a dense effusion from the peritoneal surface, with a milky serosity diffused in the cavity, and commonly flakes of floating albuminous matter ; it is enlarged and spongy ; a sloughy state of the os internum, and internally at the place of placental adhesion ; its veins sometimes distended with purulency. The ovaria softened in texture and livid.

The bladder is often inflamed ; the omentum and intestines, with the mesentery, manifest traits of inflammation, by effusions and adhesions generally. The most imposing phenomena appear of course on the peritoneal coat, which has induced some to consider this tissue as the chief seat of the disease, and they insist it should be styled peritonitis instead of hysteritis. Still, the most important and leading phenomena point out, that the latter is the primary diseased organ. The associability of the serous tissue when inflamed, received what attention we could give it, Sect. xlvi. Art. 1st.

Pathological Remarks.

e. It is a consideration of the first importance, that puerperal patients should receive attention, not only during parturition, but for a sufficient length of time afterwards, for the irritated state of the tissues to subside. It is a critical period, for whilst laboring under a state of predisposition so intense, the most trifling circumstances may excite a morbid habit of much severity. Cold, spirituous drinks, opiates, high seasoned animal food, affections of the mind, and many other circumstances may excite it.

When this takes place under all these circumstances, the changes occur in the minutest tissues extensively, the same as in other conditions of fever, which have been illustrated. There is a morbidly dynamic state induced. The vital tissues suffer an incredible state of condensation at the attack; the vascular system is immediately contracted. Previous to the occurrence of this state, the subject would have suffered much inconvenience from the loss of more blood; but under these morbid alterations, she bears large proportions of blood to be abstracted; from thirty to fifty ounces, or even more, with advantage, as discovered by our own observation, and declared by Denman, Heys, and many other practitioners. Finally, the pathological alterations are quite similar to other severe states of disease.

Although puerperal fever most commonly fixes its seat directly on the organs above mentioned in the abdomen, yet certain idiosyncrasies determine the focal points to other organs and tissues. It is sometimes determined to the encephalon, producing insanity. At other times to various parts producing inflammation and abscess. Sometimes to the mammae, by which the uterus and its appendages are saved; so also, if it essentially affects the bladder. Dr Denman says, "It is remarkable, that not one instance has been observed of any woman who had an abscess in the breasts being

attended with this fever ; nor of one in consequence of her labor, who had such an affection of her bladder as to occasion a suppression of her urine."

So, again, in the instance of phlegmatia dolens attacking puerperal women in one of the lower limbs in its peculiar characteristic manner ; this never fails to save the uterus, and peritoneum from the dangers of puerperal inflammation, under suitable management. As this topic has been quite fully illustrated in Section xlvi. 10, under the article phlegmatia dolens, we need pursue it no further.

Methodus medendi.

f. After having made the preceding expositions in relation to hysteritis puerperalis, and traced its analogy with other kindred affections, and as we have heretofore found that similar pathological derangements are removable by similar agents, in different habits of disease, it might appear unnecessary to make much rehearsal of the measures to be pursued, except by general reference. Still so much depends on time, place, and quantity, together with the adaptations to individual habits, it seems proper to make some specifications, and without intending to exhaust the subject. Furthermore, the early sympathies excited in years gone by for the casualties of that sex, which is doomed to much suffering and danger, in the propagation of the human kind, are still vivid, and prompt to the fulfilment of every imposing duty, and to leave as little chance for error, or misconception as possible.

Our therapeutical notices will be very brief, and partly on the supposition, that every medical attendant will be able to make certain definite modifications, and substitutes according to his best judgment ; never forgetting to discipline nurses agreeable to the strictest rules of hygiene. We will then take our departure from the moment the chill or rigor shows itself ; and we may be assured the pathological changes in

tissues are now formed, although the disease may require further time for its development. The intensity of disease will bear much proportion, if left to itself, to the severity of the rigors; still not exactly in all cases. The rigors should be shortened as far as convenient by the use of external warmth, and internally by warm aromatic drinks, as sage, hyssop, catmint, &c., but without the use of spirituous cordials; unless in small quantities in the more depressed conditions, when the recuperative powers are slow in reacting. Strong stimulations are liable to produce an unnecessary amount of responding^raction, and do violence to the organs before it can be restrained; or to suddenly exhaust the vital force. No narcotic should be used, for it is our duty to aim at a radical and speedy cure, without stifling the disease, but rather let it show all its rage at the earliest period.

The feet, legs, and arms should be bathed in warm water, well rubbed, and afterwards kept warm by substances applied in the usual way. The abdomen should be freely and repeatedly bathed in warm tincture of opium and camphor, then covered with epithems made of hop flowers, leaves of tansy, &c. Care should be taken that the heat be not so severe as to become very oppressive, but some inconvenience will be experienced until sweat appears, after which they will be borne with ease. Reference may be had to the method of conducting sweats heretofore described. They must be steadily continued when once effected, but not so severely but that the patient can sustain them without much inconvenience. After about twelve hours the epithems may commonly be dispensed with, and large pieces of cotton batting laid over the abdomen, and moderately secured by a broad swathe.

As soon as the patient is prepared for sweating, she should take either four grains of ipecacuanha every hour until emesis takes place, or two grains of tartarized antimony with ten of prepared chalk; we prefer the latter. This should be done whether there is nausea, or even some vomiting, or not.

These should be continued until three or four vomitings have occurred. The process of vomiting is very efficacious in restoring tissual derangements, as has been heretofore shown.

As soon as the chills have ceased, and even before, if they continue long, blood should be taken from the arm. The amount must be determined by the case ; at any rate it ought to be sufficient to make a decided impression on the circulatory system ; say from twelve to twenty ounces. It will be a fortunate circumstance if syncope should take place. Restoration is sure to follow, and along with it probably, vomiting and sweating, succeeded by relief.

By this proceeding, in two or three hours we have gained a decided advantage over the diseased condition. The energies of the morbid state begin to be employed in the establishment of the natural processes, instead of destroying the internal organism. The amount of morbid tonicity acquired at the access of the disease is incredible, compared with exterior appearances, and not to be appreciated, without strict observation of the intensity of the phenomena, when the disease is universally diffused ; or on an observance of the extensive ravages done to the organism, when allowed to pursue its course.

Notwithstanding the severity of the measures proposed, the patient does not lose either in muscular or vital force ; she will speak with more freedom, turn more easily in bed, and the pulse increases in force and fulness, provided warmth is still sustained on the surface. In either grade of this affection, whether synochoid or typhoid, we have the solemn trust of altering the state of the system in twelve hours at farthest ; and it can be often done in six. By altering the state of the system we mean, to sever the morbid catenations tending to the destruction of the organism, and exciting the natural, physiological movements, and sustaining these, until the easy and equable motions of health are established.

We mean to help and encourage the natural processes ;

but, we mean to be expressly understood in cases of this character, that it is our duty to snatch such out of the control of perverse physiological actions, tending to destruction, and turn them to safe courses ; as much so, as it is the duty of a guardian to oppose the bent of a froward child going precipitately to moral ruin. We are now prepared to say, we have not succeeded in sufficiently diminishing the morbid tonicity, and re-establishing the normal movements, until the centripetal, absorbing processes have obtained an ascendancy over the centrifugal, distributing processes. When this is once effected, and suitably sustained, the labor of future treatment becomes easy. It consists in merely guarding against excess of salutary processes ; for nature in her resentment as it were, for injuries received, becomes vindictive, and now requires restraint. The most efficient agent we possess for this purpose is blood-letting, and this should be used to the necessary point of safety to the organism. The pathological investigations heretofore discussed, will afford sufficient illustrations for the comprehension of this paragraph.

The amount of means to be used, depends altogether on the condition of the individual case. What we do to save the case must be soon done ; and it cannot be certain of being accomplished unless early begun. The disease should be opposed on the first access of the chills, or rigor. Every hour of neglect is invaluable time lost. Still the practitioner is too often denied this privilege, but exertions should be made to redeem the time, and this can be often done. The rapidity of abnormal movements is sometimes so great, that in six or eight hours from the rigor, the case becomes irrecoverable, or at any rate, success is rendered very doubtful ; whilst at the access it might have been controlled. In such events, we have to divide the chances of success with the disease, by using more internal stimuli of an evanescent kind in cases of great exhaustion, with a hope of aiding the recuperative pow-

ers more than the morbid fixity. Then as occasion presents, in weakening the last by the first mentioned remedies, as far as the enlightened judgment of the adviser may direct. The condition of the medical attendant is not enviable, his responsibility is great, whilst the event so depending on contingencies may be doubtful. At all events the case must not be abandoned, so long as respiration continues; for sometimes even in the struggles of apparent death, the recuperative powers gain an ascendancy, unless the organism is already too greatly spoiled.

From these casual remarks, we may now turn back to the treatment begun in ordinary cases, and in good season. The first process of treatment will raise an indication for the second. If the patient at the end of three or four hours from the commencement of the treatment, should be free from pain, sweats moderately with a warm surface, and has inclination for repose, she ought not to be disturbed with any thing further for the present, except light nourishing drinks, and to see if all necessary adjustments are as they ought to be. Still she should be watched from hour to hour. If finally, at any time during the first twelve hours there should be abdominal pain, with tenderness on pressure, and especially some slight intumescence, then another bleeding should be taken, without having so much regard to the pulse as in many other pyretic cases. The rule should be, to suppress the disease as early as possible, by a sufficiency of bleeding to render the case safe, and no more. Some experience is necessary in these cases, in order to conduct the treatment to the greatest advantage. Sometimes, one, at other times two, three, or four bleedings may be required in a short time, say two or three days. We have pursued such treatment with the highest satisfaction, and patients so treated almost invariably become convalescent by the third day. If not, the previous treatment has prepared the system to bear further depletion, if a continuance of severity of the disease should

require it. Action on the surface should be steadily sustained ; if the circulation is not free it should be aided by external warmth.

As soon as vomiting has ceased, and the patient had some respite, and if diarrhœa does not attend, a cathartic should be given of sufficient force to effect three or four operations. It will not be proper to give the most drastic kinds ; yet, the intestines are commonly loaded. Perhaps three grains of calomel, with half an ounce of castor oil ; or an infusion of rhubarb, senna, and anise-seed, to which may be added sulphate of magnesia. Even if some diarrhœa should be present, the upper intestines should be unloaded by cathartics. If these should seem to go to excess, still the discharges should not be suppressed by opiates and astringents ; nothing more than demulcents should be used ; for, this is often a critical discharge, and as such are the efforts of the recuperative powers, they ought to be respectfully regarded. In ordinary cases there should be an evacuation of the intestines every six or eight hours for several days.

In the early stage of this affection, there is seldom much opportunity for alterative medicines as they are called. Camphor in powder, or emulsion, may be used at any time when it seems agreeable to the patient. If thirst should be considerable after the disease has made some progress, the patient may take thirty or forty drops of nitrous ether in tepid water, every hour or two ; or small and suitably adjusted proportions of carbonate of ammonia and vinegar. Small doses of evanescent cordials may be given in cases of lowness, or faintness, as heretofore proposed ; also beef tea, chicken water, gruel, &c., but nothing of this kind should be much urged.

Warm emollient injections are oftentimes useful ; not so much for aiding the catharsis, as an internal bath to ease pain and excite absorption. They may be made with linseed meal, oatmeal, slippery elm, or even milk and water. They

should be retained as long as may be convenient. If pains should persist in the abdomen, apparently spasmodic or inflammatory, an emollient poultice may be used along with the embrocations at later periods. There is but little opportunity for epispastics, and neither have we much confidence in them; they are very troublesome, and more advantage may be gained by the embrocations, epithems, and poultices in exciting perspiration and absorption. In order to relieve any pains at a late period, after general bleedings have been extended as far as may be judged prudent, leeching would be preferable to epispastics.

The termination of hysteritis is speedy, but uncertain. Ordinary cases may have an unfavorable termination between the second and seventh day. Successful cases may have a crisis between the second and fifth day. A favorable crisis is attended with ease, mild perspiration, yet sometimes profuse sweat, or diarrhœa; renewed secretion of milk, and commonly some appearance of the lochia. Much depends on the treatment, and the time it was begun. Every case ought so to be treated, that in twelve hours from the rigors, the absorbing processes are steadily conducting the case to a favorable termination in two or three days, and without pain or any distressing symptom.

Yet sometimes by some accident, the disease will suddenly be renewed, with a chill. In this event, we have to repeat the treatment. We need oftentimes to bleed; we have taken full bleedings in some relapses, after we had but a day or two before taken as much as the system could reasonably bear. We have before expressed our surprise at the sudden replenishment of the sanguineous vessels, and also, their quick contractions in the production of a morbidly plethoric state.

We insist, that the phenomena, treatment, and autoptic examinations all agree in establishing the character of this disease; and its pathology cannot without violence be separated from other affections of acute inflammations of the vis-

cera, and often partaking of the malignant, or typhoid grade. We need not therefore pursue the treatment through all its minutiae, as these have been often repeated.

We need only advert to the employment of opiates or narcotics for a moment, as these are recommended by some, and liable to be used to give relief of pain. We have refrained from advising them in any instance for many years, because the character of the disease, and our own observations actually forbid them. Much opinion might be brought on both sides. We have conducted many successful cases for a succession of years, without using a dose of opium; and always feel the most confidence of success by so doing; when especially considering our early trials of it, and observing the practice of others. Those who have made the most use of opium have done it, either with false views of the pathology of the disease, or of the properties of the article. Believing that opium is a mere sedative, they give it to relieve pains, and do not look for its stimulant effect; but they consider every increase of fever, as the necessary result of the diseased state.

Drs Gordon and Heys, both bled very largely to twenty, thirty, and even sometimes to seventy ounces, at or near the onset, according to circumstances, that is, to the point of effectual relief. The former occasionally, but especially "every night," gave a full dose of opium; whilst the latter seldom gave any, and he expressly says, "the respite they afforded was but an insidious truce, and rather tended to prolong the disease." And again, "I frequently tried opiates, (*in hysteritis*,) but I think never with advantage."—The results were, that Dr Gordon's patients generally had crises delayed to the fifth day, whilst Mr Heys' patients had almost uniformly favorable crises "within two days."

It is rather extraordinary, that Dr Armstrong should place as much reliance on opiates as on bleeding; the last he carried to the utmost extent, and at the same time gave large

doses of opium. A contravention of the nature of things. Blowing hot and cold at the same time. We cannot discover why opium is of any more use in inflammation of the uterus and serous membranes of the abdomen, than in the serous tissues of the head, which are liable to terminate in hydrocephalus. It is believed but few would employ it in this case, if any.

It is believed that some have been deceived by certain spasmodic, or neuraglic pains, colics, and after pains, which puerperal women are liable to, and which are relieved by opium. These ought to be discriminated from hysteritis. The spasmodic pains have intermissions, and are destitute of the severe state of fever, frequent pulse, enlargement, and tenderness of the uterus, which occur in hysteritis; whilst in this the pains are rather constant, or only with very slight remissions, and the pulse frequent and small.

Some writers have divided this disease in the manner it appears, into *sporadic* and *epidemic*. The same division might be made in almost all diseases. When it appears epidemically, that is, more extensively, it is proof that the remote causes act with greater intensity; so, not only more cases occur, but the morbid diathesis is more severe, and of course inclines more to the typhoid state; and further, that this state requires a more early and efficient treatment. This was noticed by that decided practitioner Mr Hey, and he came to the conclusion in this disease, however contrary to the notions of some, *that in its epidemic form, it requires much larger bleeding than in the sporadic*. This is in accordance with our own observations. It is the opinion of some, that in its epidemic form it is really contagious; but, at present we are extremely sceptical on this subject, as we cannot trace such an analogy in the whole nomenclature of disease.

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