A treatise on the sympathetic relation between the stomach and the brain ... in the causation and cure of diseases. With an appendix ... on certain points connected with the treatment of chronic disease and it's [sic] attendant debility / by Charles Wightman.

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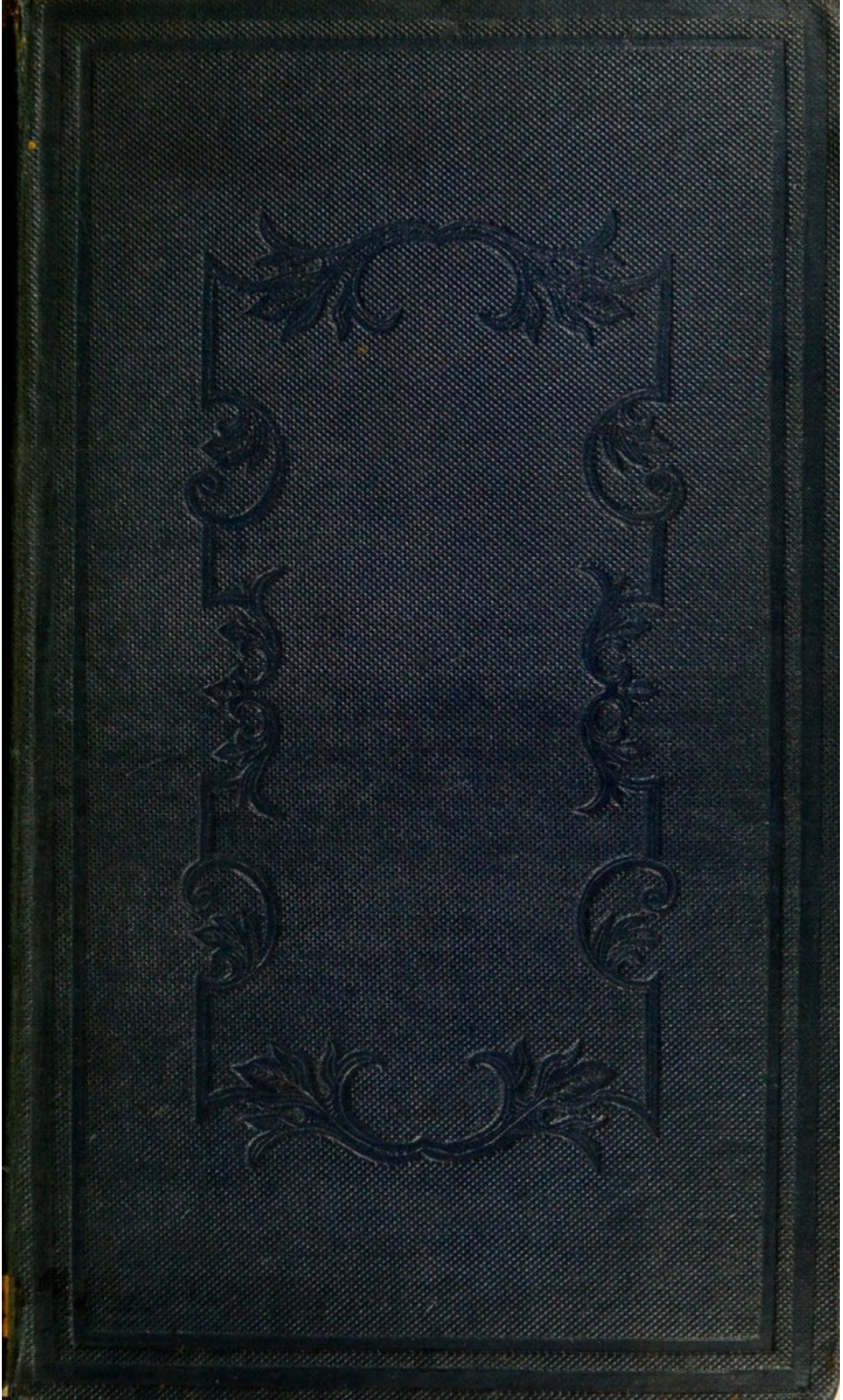

ON THE

SYMPATHETIC RELATION

BETWEEN

THE STOMACH AND THE BRAIN,

ETC., ETC.

A

TREATISE

ON THE

SYMPATHETIC RELATION

BETWEEN

THE STOMACH AND THE BRAIN,

AND, THROUGHOUT, BETWEEN

THE DIGESTIVE AND THE NERVOUS SYSTEMS,

IN THE

CAUSATION AND CURE OF DISEASES.

WITH AN APPENDIX

CONTAINING A FEW OBSERVATIONS ON CERTAIN POINTS CONNECTED WITH THE TREATMENT OF CHRONIC DISEASE AND IT'S ATTENDANT DEBILITY.

By CHARLES WIGHTMAN, M.D.,

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LONDON:
SIMPKIN, MARSHALL, AND CO.

1840

CONTENTS.

PREFACE.

In the following pages I presume to offer to the Medical Profession, a short Treatise on what all will allow to be a most interesting and important subject, whatever shall be the opinion of those, who may peruse the treatise, of the manner in which that subject has been discussed. On graduating at Edinburgh in 1808, it was selected by me as that of my Inaugural Dissertation, which was entitled "De Consensu Ventriculum inter et Cerebrum." That dissertation having been the groundwork of the present treatise, my attention has been directed to the subject from a very early period. So important do I consider it, that it has long been to me a cause of much astonishment, that hitherto no specific treatise upon it has existed in the English language. Indeed I was not aware that there was any extant in any language, until, in the 4th edition of Blumenbach's Physiology translated by Dr. Elliotson, I perceived these notices at page 321;

"*J. H. Rahn.* Mirum inter Caput et Viscera Abdominis Commercium. *Gotting.* 1771, 4to."

"*Dit.* **Vegens.* De Sympathia inter Ventriculum et Caput. *L. B.* 1784, 4to."

And in the Bibliography compiled with laborious industry by Dr. Forbes, and forming part of the Cyclopædia of Practical Medicine, I have since observed, under the word "Sympathy," these references to other editions;

"1787. **Veegens, D.* De Sympathia inter Ventriculum et Caput. (Schlegel de Sympathia.) *Lips.* 8vo."

"1795. *Rahn, J. H.* M.D. De miro inter Caput et Viscera abdominis commercio. (Ludw: Script: Neur. IV.) *Lips.* 4to."

How far my treatise may coincide in general plan and in detail with those, which are now, doubtless, of rather old date, I can form no conception. I have endeavoured to procure them through the agency of foreign booksellers, but without success. If then, there should be any similarity between

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* In regard to the diverse spelling of this name in these two instances, I think it right to state that I have copied each, *literatim*, as it appears in each of the books, from which I have extracted the notices.

them and my own treatise, it must be regarded as a circumstance purely accidental; for upon the same subject of general observation and importance, it can scarcely otherwise happen, than that the statements and reasonings must be in many respects alike. But I wish it to be distinctly known, that to no author who has written *expressly* upon the subject, have I been indebted for a single remark connected therewith. The only production which I have seen, bearing a title in any degree akin to that of my treatise, is the chapter in Hoffman's works, to which I have more than once referred, "De consensu partium Nervosarum ge-"neratim, et sigillatim cum Ventriculo." It may, however, be naturally conceived, that a subject so important, so interesting, and from early study and contemplation to myself so peculiarly attractive, should have been ever present to my mind, not only in the opportunities I have had of observing and treating those diseases which afford it's illustrations, but also in the course of my reading; for whatever I have found relating to it interspersed through the writings of various authors, has al-

ways obtained my zealous attention, as will be manifest in the references and quotations which I have introduced. Such as the treatise is, I now submit it with deference and respect to the consideration of those members of the profession, who may be attracted by the title to honour it with a perusal.

I may take this opportunity of stating, that if any gentleman, among the number of those readers, should possess a copy of one or both of the works above-mentioned, and should be inclined to favour me with the loan of them for a short period, I should be under deep obligations to him. In that case, for the purpose of preventing more than one copy of the books being sent, —which might happen if several were disposed to comply with the wish I have now intimated,—each intending lender is requested in the first place to take the trouble of informing me to this effect by post; on which I shall, in my reply, apprise him, either by what conveyance they may be transmitted, or that his polite intention has been anticipated. After I have had the satisfaction of pe-

rusing them, I hereby engage to return them in safety, with the expression of my heartfelt thanks for the important favour which will thus have been conferred upon me.

The following notice is also contained in Dr. Forbes's Medical Bibliography,

"1721. *Rega, H. J.* De Sympathia potissimum Ventriculi in statu morboso. *Haerl.* 8vo."

I may now state that, though I have perceived references by authors to this work, I have never seen it, and therefore take the liberty of saying that the loan of this, in addition, for perusal, would singularly oblige me.

Any interesting observations, which the readers of this treatise may have made upon the subject, in the course of their practical experience, I may also notify, will be deemed by me a most acceptable present. And, if a second edition of the treatise should be called for, I shall be most happy to insert such observations, assigning at the same time, in respect to these, his just claims to every such contributor.

Newcastle-upon-Tyne, November, 1840.

ERRATA.

Page 105, line 6, *for* in so much *read* insomuch.

Page 112, line 13, *for* we *read* he.

Page 120, in the note of reference, *for* Hage *read* Page.

Page 159, lines 24 and 25, *for the words*, "and of course, "to the degree of fatigue which they are capable of endur- "ing," *substitute these*, "implying their capability of rapid "movement without much fatigue."

A TREATISE

ON

THE SYMPATHETIC RELATION

BETWEEN

THE STOMACH AND THE BRAIN,

AND, THROUGHOUT, BETWEEN

THE DIGESTIVE AND THE NERVOUS SYSTEMS,

IN THE

CAUSATION AND CURE OF DISEASES.

INTRODUCTION.

THAT a most intimate sympathy exists between the Stomach and the Brain, is a fact with which all medical practitioners must be conversant. So wonderful, indeed, and so powerful is the mutual influence of these organs upon each other, that seldom is either of them morbidly affected, without the other at the same time suffering severely. It also frequently happens, that diseases which have their seat in the one, manifest themselves by morbid symptoms in the other; and thus, from the neglect of a due investigation of the case, mistakes have at times been committed, especially by the superficial observer; and dis-

cases of the brain have been pronounced to be diseases of the stomach, and treated as the latter; and conversely, diseases of the stomach have been, with the like fallacy, regarded and treated as diseases of the brain.

But it cannot be denied, that in certain instances the diagnosis is exceedingly difficult even to the sagacious practitioner, who is accustomed to investigate cases with the most sedulous attention; and who, even after the most patient and careful enquiry, may sometimes come to an erroneous conclusion respecting the seat of the disease. In some examples, however, the source of the morbid affection is so manifest, that it cannot escape the most superficial.

When a person previously in the full enjoyment of health, and possessed of great strength of body, receives a severe blow upon the head, in addition to the abolition of sense and motion, the direct effect of the concussion of the brain, vomiting in general almost immediately takes place; and not only are the contents of the stomach itself rejected, but a quantity of bile of a dark green colour, entirely different from the healthy appearance of this fluid, is thrown up. Most individuals who have been unaccustomed to sailing, while affected, on going to sea, with certain indications of disordered brain, such as vertigo,

anxiety, and prostration of strength, are also seized with nausea and vomiting, the symptoms of disordered stomach, more especially if the weather be tempestuous, and consequently much tossing of the vessel upon the waves. There are some persons, also, whose nervous system is so irritable, that they experience the same symptoms of stomach-disorder from dancing for any length of time; from riding in a carriage, particularly if they be drawn backwards; from swinging, and from turning their bodies in rapid gyration. In all these cases it is evident, that the morbid affection of the stomach is only secondary, or the consequence of this organ sympathizing with the brain; the functions of which are in the first place disordered by the blow inflicted upon the head, the motion of the carriage, the tossing of the vessel upon the waves, and the rapid circuitous movement of the body; indeed, in the latter instances, this is sufficiently demonstrated by the vertiginous sensation primarily induced. This disorder of the functions of the brain occurs in these cases, although there is no lesion or disorganization of its structure; but solely from its commotion excited by the causes mentioned; by which commotion the nervous influence is disturbed—interrupted at its source; a suspension of the balance between the brain and the stomach

consequently takes place, and the latter by sympathy manifests the disorder of its functions.

On the other hand, a common example of morbid affection of the brain, arising from sympathy with the stomach as the organ primarily disordered, is presented to our notice by the effects of the indigestion of aliment. It is undeniable, that, if food either difficult of digestion or in too great quantity be received into the stomach, not only will this organ be oppressed, as shewn by its own proper symptoms of nausea and vomiting; and a quantity of sordes will be accumulated in the bowels, occasioning diseases in these; but also headach, vertigo, diminution and depravation of sight in various ways, deafness, noises in the head, and confusion of the internal senses, the well-known indications of cerebral disorder, will be induced; all which symptoms will disappear on the offending matters being discharged from the stomach by the operation of emetics, and from the bowels by that of purgatives.

I have brought forward the preceding, as *familiar* examples of the influence of this sympathy between the brain, the centre of the nervous system, and the stomach, the chief of the digestive organs. In these, indeed, there can be no room for doubt, which is the organ primarily affected, and which is excited into morbid action merely

through sympathy with the other; and therefore, in these there can be no hesitation in the mind of any one, as to the application of remedies to the seat of the disorder, for the purpose of relieving or removing the morbid symptoms. It must, however, be confessed, that there are many instances of disease in the stomach and in the brain singly, and also in the more extended circle of the digestive organs and the nervous system generally, wherein it is exceedingly difficult to distinguish, in which the primary affection resides. It will thus be apparent of what importance it is to make a just discrimination, in order that we may explain the symptoms of these diseases in a satisfactory and philosophical manner; and that we may adapt our remedies, not to the symptoms merely, but to the seat of the disease, the source from which the symptoms flow. Here, I must remark, that in a state of health the functions of these organs are in just and accurate balance; but, that whenever this balance is destroyed by any morbid cause acting upon either, the functions of the other are almost invariably deranged; and, although it is incumbent upon practitioners to endeavour, by patient investigation, to ascertain whether the brain and nervous system on the one hand, or the stomach and its auxiliary organs on the other, are affected primarily, or only seconda-

rily through sympathy with the other system; that it is yet of the highest consequence in every disease of the one, to pay the strictest attention to the state of the other. Before, however, I enter on the consideration of this sympathy between the digestive and nervous systems, in the causation and cure of the various diseases *specifically*, in which it is manifested, it will be proper to make some observations upon the said sympathy *generally*, which accordingly I now proceed to do.

GENERAL OBSERVATIONS

ON THE

SYMPATHETIC RELATION

BETWEEN THE

DIGESTIVE AND NERVOUS SYSTEMS.

The great influence of the stomach in the animal economy, must be evident to all who consider the nature of the important office which it performs. While the stomach is discharging its functions in a free and healthy manner, not only does alacrity of mind prevail, but all the other organs of the body are in a vigorous and active state; and, on the contrary, our feelings sufficiently apprize us, that when it has been long without the necessary supply of food, or when from any cause it is disordered and enfeebled, how effete are all our powers both of body and of mind; and also, that when it is oppressed either with more food than it can easily digest, or with that which is of an indigestible nature, how indolent we become, and how incapable we are of

either corporeal or mental exertion. So extensive, indeed, is the influence of the stomach, that it has been regarded by Serenus Sammonicus as the sovereign of the body; which opinion he has expressed in the following lines, having evidently had in view its sympathy particularly with the brain:

"Qui stomachum regem totius corporis esse
"Contendunt, niti vera ratione videntur,
"Hujus enim validus firmat tenor omnia membra,
"Et contra ejusdem infirmantur cuncta dolore.
"Quin etiam, (nisi cura juvat) vitiare cerebrum
"Fertur, et integros illinc avertere sensus."

With so delicate and tender a texture, and so exquisite a degree of sensibility is the stomach endowed, that, by Van Helmont, its upper orifice, the cardia, was esteemed the seat of the soul. The vascularity of this organ is great, and demonstrates the large supply of blood which is thereto appropriated, for its important secretion of the gastric fluid. From the numerous nerves which are distributed upon it, and especially from its immediate connection with the brain by the pars vaga of the eighth pair, we at once see the cause of the peculiar sympathy which subsists between it and the brain. The late Professor Gregory, in reference to this, in his elegant language has thus

written:—*"Nulla autem pars corporis consensu "magis prompto aut generali cum toto genere ner- "voso, et ideo cum toto corpore pollet,——quam "ventriculus, cum ob plurimos quibus instruitur "nervos, tum ob insignem suam mobilitatem, tum "forte ob consensum illum egregium quem cum "cerebro habere videtur." It is owing to this remarkable sympathy, that the effects of all things taken into the stomach, be these food, poison, or medicine, are propagated, in various degrees, to every part of the system, through the medium of the nervous influence emanating, more or less, to these parts, from the brain.

In the stomach, (as we know,) is performed the function of digestion, by which—the first stage of the process—preparation is made for the formation of that fluid, which is destined to supply the daily waste of all the solids and fluids in the system; and by which the growth of the body to the periods of youth and manhood is conducted. On the due digestion of the food, therefore, in the first place, and the proper assimilation of the chyle, afterwards, into the mass of blood, must depend the healthy condition of every other organ. Without attending to the fanciful notion of Van Helmont, which I mentioned merely to indicate

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* Conspectus Medicinæ Theoreticæ, 1163.

the high importance which he has attached to the stomach; or even yielding our entire assent to the opinion of the late Dr. Webster,* who considered the influence of this organ in the economy to be more varied and wonderful than has been generally believed; it is certain, that, while the functions of the other organs are going on in the system without our knowledge or consent, nature has, for the wisest purposes, implanted in us an irresistible impulse to satisfy the craving demands of the stomach, whenever, from the exhausted state of that organ by the failure of its nervous energy, as well as of the other parts of the body from the same defect, *we feel*, and because we feel, *we know*, that the supply is required. To this law of nature all ranks and all ages must bend; the noble and the peasant, the philosopher and the ignorant, the young and the old: and wise is the man who can proportion his supply of food, both as to quantity and quality, to the real, unvitiated, demands of the stomach.

By no organ of the body is the change induced upon the stomach by a proper supply of food, so immediately and so sensibly experienced as by the brain. The restoration of tone and vigour over

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* I here refer to his treatise, entitled "Facts tending to shew the Connection of the Stomach with Life, Disease, and Recovery." 1793.

the whole frame, when it has previously been in a state of languor and fatigue, after partaking of a full grateful meal, with a few glasses of generous wine or other cordials, is a sufficient proof of this. By the intervention of the brain the action of the heart is increased, the circulation of the blood goes on more rapidly, the pulse becomes firmer and stronger; and all the secretions of the system are more forcibly performed. The brain, on the other hand, *being thus excited to proper action*, transmits, in return, an increased supply of nervous energy to the stomach, by which this organ is enabled to perform properly the process of digestion; and thus, by a due reciprocal action of the brain and the stomach upon each other, the functions of all the other organs are regulated, and a healthy state of the system is supported.

A morbid state, however, of the brain, and, through its intervention, of the other parts of the body, is induced, if an inordinate quantity of food, and that of a stimulating nature, be taken into the stomach; and especially if a more than proper quantity of wine and other fermented liquors, or of distilled spirits, be added to it; of which the explanation is obvious. Too great a degree of excitement takes place in the brain; the functions of this organ are disordered and interrupted; a want of recollection and of judgment appears;

ideas, being transmitted to the sensorium through a diseased medium, are distorted and discoloured; sensation and motion are gradually impaired. With this diseased state of the brain the stomach constantly sympathizes. From the want of a due supply of nervous energy to the latter organ, vomiting is commonly induced. But, when this effect does not follow, a great degree of indirect debility takes place; by which the stomach is rendered unfit to receive and digest that quantity of food, which is necessary for supporting a healthy state of the system. When excesses of this kind do not frequently succeed each other, the injury done to the system is repaired by that wonderful institution of nature which throws off what is hurtful to it; and, by taking a supply of food suited to the demand, and no more, the restoration of a healthy state of the system is accomplished. If, however, these excesses in food and stimulating liquors come in quick succession, so that time has not been allowed for the *Vis Naturæ Medicatrix* to repair the injury inflicted on the constitution, diseases of the most formidable nature, proceeding, in the first place, from the destruction of the due balance betwixt the functions of the stomach and the brain, and thence, among those of the other organs throughout the system, are the inevitable consequences.

But, if a due supply of the food indispensable for repairing the daily exhaustion of the powers be not received into the stomach, certain changes take place in the system, evidently arising from the want of that nervous energy, which the different organs require to be expended upon them, for the proper performance of their functions. Nor is the explanation difficult. That degree of excitement in the brain necessary for supporting a healthy state of the system is restrained. Hence follow languor, lassitude, depression of spirits, interrupted sleep, and unfitness for performing the many voluntary motions which are requisite—"frigent effœtæ in corpore vires." In the first instance, and especially, the stomach suffers. From the want of a due supply of nervous energy, this organ is enfeebled to an extreme degree; and if the same cause continue to operate for any length of time, the body emaciates and gradually succumbs in debility; the motion of the heart and arteries becomes weaker; every function of the system is improperly performed; and a general cachectic state prevails; in consequence of which the body is rendered obnoxious to many diseases, of which some may be rapidly fatal, and others will consume the sufferer by slow decay. In certain instances, from the protracted want of food, dangerous and alarming symptoms, such as tender-

ness in the epigastrium, ardent thirst, gnawing pain of stomach which afterwards becomes acute, and fever, have come on; and also indications of cerebral irritation, as violent delirium, and even inflammation of the brain, have been known to supervene. Unsalutary and ungrateful articles taken into the stomach, in situations of famine, where the afflicted individuals are impelled by its cravings thus to supply the want of wholesome food, disorder the constitution in a similar manner. For nature has provided the human system with efficacious means of protecting itself against the evils resulting from the excess of aliment or stimulants; but none by which it can successfully struggle against those which arise from the necessary supply being withheld.

From the preceding considerations on the extensive influence of the stomach in the animal economy, it is obvious, that diseases hence originating must produce disorder in the functions of the other organs; and, that diseases in the other organs, those more especially of a sensitive nature and nervous structure, must, in turn, occasion disorder of the stomach. It will at once be apparent, that this action of the stomach upon other organs, and of these upon the stomach, is effected through the intervention of the brain, the source and centre of all nervous sympathy. There are various

morbid affections, which, if not universally, are at least frequently, dependent upon, and are at all times materially influenced by, an unhealthy condition of the stomach, and the other viscera subservient to it in perfecting the processes of digestion and chylification. By this unhealthy condition of these organs, the system is kept in a constant state of irritation; and is thus rendered liable to be affected by extraneous causes, which would otherwise produce no effect. A careful investigation of the history and progress of each case will prove, that it is through the nervous system that such diseases consecutive to primary disorder of the digestive organs manifest themselves; and if any part of the body is more particularly prone than others to diseased action of any kind, *there* will such morbid impressions be generally found. To this last observation we are led by that great master Celsus:* "Concotio, sicut "in omnibus corporis affectibus, necessaria est, "cruditas enim id maxime lædit, et quoties corpus "offensum est, *vitiosa pars maxime sentit.*" Although, in some of these cases, there may be no evident symptom on a first inspection to denote any derangement in the functions of the digestive and chylopoietic organs, sufficient proof of this on

* De Re Medica—Lib: I. Cap. IX.

a more minute examination may often be discovered; and by remedies directed solely with a view to correct or remove the disorders of these organs, the parts which have been secondarily impressed, will, through the intervention of the brain and nervous system, regain their natural condition; and the frame throughout its whole extent, from a state of languor and disease, will arise into healthy and vigorous action.

Having thus endeavoured to shew in what manner the brain, and, by the intervention of the nervous system, the other parts of the body are affected by the state of the stomach and its auxiliary organs; it is now to be considered in what a wonderful way, the stomach, in performing the process of digestion, is influenced by the brain.

From the number and importance of the nerves with which the stomach is supplied, and, as already observed, from its direct communication with the brain by the par vagum, we might safely infer and assume, that, in the performance of its function, it is indebted to the brain for the supply of the nervous influence requisite for the purpose. But this has, indeed, been proved beyond all doubt, by the results of certain experiments which have been instituted by physiologists. For it has been found, that in consequence of a

ligature placed upon the eighth pair of nerves in dogs, they have become affected with various symptoms of disordered stomach, such as nausea, indigestion, and flatulence; and further, by those of that distinguished physiologist and physician, Dr. Wilson Philip, it has been ascertained from many trials, (I quote his own words)* "that when "the eighth pair of nerves is divided in the neck of a "rabbit, and one portion of each nerve folded back, "immediately after the animal has taken a full meal, "after a fast of whatever continuance; none but "undigested food is found in its stomach, provided "it has been allowed to live a certain number of "hours after the operation." He took the necessary precaution of folding back a portion of each nerve, as "it has been found by repeated experi- "ments, that if neither of the divided ends be dis- "placed, some nervous influence still passes by the "divided nerve, and that although the divided "ends be separated by a space of even a quarter "of an inch."

That the stomach is dependent on the brain for its appetites and sensations in craving a supply of food, as well as for the power of digesting it, has been proved by the experiments of M. Brachet.

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* Treatise on Indigestion and its Consequences, 5th edition pp. 57-8.

He divided the eighth pair of nerves in a dog, whose sense of hunger had been intensely increased by a protracted fast of twenty-four hours. The consequence was, that the creature although previously ravenous immediately lost all sense of hunger, and lay quietly down. The same result followed from the introduction of a few grains of opium into the stomach of a hungry dog, for it left untouched the food that was placed before it. The opium acted in this instance, by interrupting the development of the nervous influence in the brain; consequently, none being transmitted to the stomach, this organ was deprived of the power of feeling that intense and craving sensation, which hunger produces when the communication is free.

The various affections of the mind, in the impressions which they make upon the human body, operate, we cannot doubt, through the brain as their organ; and we know that the most sudden and wonderful changes in the system are often produced by their agency. It is undeniable, that the exhilarating passions, such as joy, desire, hope, and confidence, by exciting in the first place the action of the brain, will increase the secretion of the gastric juice; improve the tone of the stomach and of the whole system; and will thus enable a person to undergo almost incredible fatigue with only a very scanty supply of food. It is well

known, that, during the prevalence of enthusiasm, the greatest hardships have been endured unheeded; the sensibility to external impressions has been impaired; the want of sleep, the extremes of heat and of cold, of hunger and of thirst, have been alike disregarded; and the expected paroxysms of periodical diseases have been, for a time, arrested. While, on the other hand, the depressing passions, such as fear, shame, grief, and anxiety, by diminishing in a remarkable degree the action and excitement of the brain, and thus preventing the development of the nervous influence, will, from the sympathy of which I am treating, exert their effects particularly upon the stomach; will appall the keenest appetite; occasion thirst, a white tongue, (the indication of depraved stomach;) lessen the secretion of the saliva and the gastric juice; and thus prove material obstacles to digestion. In some cases they produce diarrhœa, and, when long continued, will entirely destroy the tone of the stomach, and the powers of the whole digestive system.

The effects of the depressing passions are sometimes very suddenly experienced, of which a striking instance has occasionally been observed on the reception of afflicting intelligence. A person just before dinner receives a piece of bad news, when the effects are immediately felt in every part

of the system, but most remarkably at the stomach; for the appetite, however keen it may have previously been, is utterly extinguished, and the hapless individual cannot taste even the smallest morsel of food. This circumstance did not escape the notice of that most acute observer of human nature, our immortal poet Shakspeare. When King Henry the Eighth detected the correspondence between Cardinal Wolsey and the Pope, he is represented as putting into the hands of the former the intercepted letters, and as addressing him in these words:—

"Read over this,
"And after, this; and then to breakfast with
"What appetite you may."

Some, indeed, there have been, whose powers of stomach were so weak, as to be affected by the very slightest causes, and in whom intelligence of an afflicting nature, and other occasions of grief have not merely interrupted the digestive process, but have even excited vomiting. This is more especially likely to occur, if food has been previously taken; when the stomach, in consequence of the mental emotion excited by grief, being deprived of its nervous influence from the brain, is no longer capable of digesting it. The alimentary mass, therefore, becomes an oppressive load,

which must either be ejected by vomiting to the relief of the system; or, by remaining in its receptacle, will give rise to the various symptoms of dyspepsia, disordering not only the stomach and the rest of the chylopoietic organs, but the entire economy of the corporeal fabric, through the medium of the brain and nervous system.

I have already observed, that the mode in which the depressing passions act, in producing disorder of the stomach, is by preventing the development, in the brain, of the nervous influence, on which the performance of the process of digestion depends. The same effects follow if the nervous influence, already developed, is withdrawn from the stomach for other purposes. Hence we find that intense study, especially after meals, essentially impedes the progress of digestion. This is occasioned not merely by the want of that proper degree of exercise, which is necessary to excite the brain to impart the nervous energy to the stomach, for the due performance of its functions; but also, and, as it appears to me, principally, in consequence of the nervous influence, after its development, being to a greater or less degree detained within the brain, for the occupation of the mind in studious researches. Thus, a less degree than the proper one is expended upon the stomach; and, from this deficiency of supply, im-

perfect digestion and all its concomitant bad effects on the system ensue.

Although a moderate degree of exercise is highly necessary for digestion, yet, a violent degree of it, especially if taken *after meals*, is found materially to impede it. Thus the brain, instead of being gently excited, is thrown into such a state of commotion, that the nervous influence is very much diminished; and that portion which is developed, is expended upon the muscles engaged in exercise. In consequence of this, the stomach being deprived of its necessary supply, the same effects, imperfect, or prevented digestion follow, just as when the necessary exercise has been wholly neglected. In order to determine the operation of violent exercise upon the functions of the stomach, Dr. Harwood, the Professor of Anatomy at Cambridge, instituted, as is generally well known, the following experiment. He procured two dogs of equal age and size, and kept both of them an equal time without food. He then gave both a full meal, after which he kept one in constant exercise for more than two hours, while the other was allowed to sleep at home upon the carpet. At the expiration of this time both dogs were killed; and it was found, that in the stomach of the dog which had been allowed to remain at rest, the digestion of the

food was nearly completed; but, that in the stomach of the other, which had been exercised in hunting, the process was scarcely begun. To the consideration of the subject of exercise I shall recur, when I come to treat of the reciprocal influence of the nervous and digestive systems, in the causation and cure of that general disorder of the bodily health, which so commonly accompanies indigestion.

The sympathetic relation between the stomach and the brain, and the dependence of the former upon the latter for the proper performance of its function, are also decidedly manifested in the effect of sleep, "Tired Nature's sweet restorer." The brain when it has been long in action, from any cause requiring for the work a large supply of nervous influence, becomes exhausted and debilitated, like the other organs of the body which have been overtasked. Consequently, without its natural repose, which is sleep, it is incapable of supplying the other organs with their needful measure of the nervous power. Accordingly we find, that, after long-continued watching and fatigue, either in bodily or in mental occupations, the stomach, for want of its due supply of nervous energy from the brain, is unable to perform the process of digestion. The appetite indeed is impaired, with thirst, and an arid state of the mouth

and tongue, and more or less of febrile excitement of the system; but if, notwithstanding this, food be taken on the supposition that the body from fatigue and exhaustion requires nourishment, all relish for it is lost; and from a deficiency in the supply of the gastric fluid, (the secretion of which, like that of all the other fluids, depends on the nervous influence,) little, if any, change is effected upon the contents of the stomach. The mass, in consequence of this, becomes a source of grievous irritation to the offended organ, oppressing the system, and increasing the intensity of the febrile symptoms, which had previously been excited by the want of sleep. And it is not until after a period has been passed in sleep, a period varying in different individuals, partly from original constitution, and partly from acquired habits, during which the brain has been permitted to regain its power, that the nervous energy is supplied to the stomach; on which digestion again goes on, the secretions of the stomach and mouth are re-established, the skin becomes cool, the febrile symptoms all disappear, and the general system recovers its usual vigour.

ILLUSTRATIONS OF THIS SYMPATHETIC RELATION

IN THE

CAUSATION AND CURE OF VARIOUS DISEASES.

PRELIMINARY REMARKS.

HAVING now, I hope, satisfactorily demonstrated the intimate connection between the stomach and the brain, and throughout, between the digestive and the nervous systems generally; I proceed to consider the subject more particularly, as the one or the other of these organs or systems is affected, in several of the diseases to which the human constitution is liable. It would, unquestionably, be of much practical utility, if we could in every case beyond all doubt ascertain, in which the primary derangement takes place. But as this cannot universally be done with unerring certainty, we ought always to bear in mind, that in every case wherein the functions of either of them are interrupted, it is of the most beneficial consequence to attend to the state of the other. That in diseases wherein the brain and nervous system seem most

materially affected, the best results will be obtained from a due regulation of the powers of the digestive organs ; while, on the other hand, when the stomach and bowels seem principally to suffer, it is incumbent on practitioners to pay particular attention to the state of the brain and nervous system, that the balance betwixt them may be restored.

This observation I make in reference to those cases, in which the difficulty of ascertaining the seat of disease is acknowledged, and, in forming our opinion as to which, our principal guide is the disturbance of the functions of either system, but in which the real seat of the disease *may be* in the other. But in those cases in which, notwithstanding such disturbance of functions in the one system, we *have* ascertained the seat of the disease to be actually in the other, although our remedies must then be principally directed to the seat of the disease, *fonti et origini mali*, I am anxious to repeat the great, the important requisition to which I alluded in the introduction, that, namely, of bestowing the strictest attention also on the system sympathetically affected. We must always keep in view the possible, nay, the probable, translation of morbid action from the original seat to the organ in the first instance affected by mere sympathy ; because neither can

be *long* the subject of actual disease, without the other being also excited into *real morbid action*, through the disorder of its functions, which *at first* shall have been *purely sympathetic*. If this highly necessary caution be not observed, to prevent the conversion of disease from sympathy, the *secondary* may afterwards *predominate* and become the *principal* disease, and then, in *reflex order*, affect the organ which was the original seat of disease, through the medium of that sympathy by which this secondary disease was established. To such an extent does this conversion sometimes take place, that the secondary affection shall even be *more intense* than the original disease; and it may, moreover, happen, that the *original disease shall subside altogether, and the organ at first sympathetically affected shall prove to be under the exclusive influence of morbid action.* How important therefore it is, in all diseases of the one organ or system, to pay the most watchful attention to the state of the other.

The careful consideration of this sympathy will be found, in our intercourse with the sick, to have a most essential influence in guiding us to a proper diagnosis; and, as a necessary consequence, in enabling us to direct the successful mode of treatment. Although it is undoubtedly a point of very great importance in the investigation of any

case, with the view of discovering the original seat of the malady, to regard with due attention in its invasion and progress, the order of the symptoms, as they appear in the one system or in the other; it must be acknowledged that it is as certainly an error to suppose, that such order affords sufficient grounds, always—in every case indiscriminately—to refer its origin to the organ or system in which the signs of disordered action were *first* observed. I have known some medical men express their opinion, that *surely* the disease was seated in *this* organ or in *that*, because *in it* the symptoms *first appeared.* But it must be obvious that this argument, although in some instances borne out by the real state of the case, must, if universally applied, be exceedingly fallacious. It has been remarked by Dr. Samuel Johnson in his biography of Boerhaave, that this illustrious physician well knew, that "the origi-"nals of distempers are often at a distance from "their visible effects;" and the namesake of the biographer, Dr. James Johnson, the well-known editor of the Medico-Chirurgical review, alluding to the difficulty of ascertaining the actual seats of diseases, "in consequence of their manifestations "being often at a distance from their original and "fixed abodes," further observes in his charac-

teristic and emphatic style, "the* play of the "sympathies enables maladies to appear before "us *en masque*, and thus to mock our most sapient "conclusions." "In fact," says he, "they verify "to the very letter the fable of Proteus." In illustration of the fact now stated, I may notice the disease of the hip-joint manifesting itself by pain of the knee; an irritation in the lungs being often felt at the epiglottis; inflammation of the liver causing pain of the shoulder; affections of the kidney exciting pain in the thigh with pain and retraction of the testicle; calculus in the bladder occasioning pain in the glans penis; and spasmodic disease of the colon causing pain at the umbilicus. In diseases of the brain, and of the stomach and other digestive organs, we must beware, in like manner, of pronouncing them to be seated in either organ or system, from the external manifestations; for that man must ever be prone to error, who, in his examination of any case, regards these exclusively. Let us always bear in our remembrance the power of sympathy; and well consider, that, although the other may present no outward indications, still, the peccant cause may be therein immured. Let it therefore

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* Medico-Chirurgical Review—Analytical Series—Vol. II. P. 440—1821-2.

be our endeavour by our skill, to drag it from its lurking place, and to make it yield to the suitable remedies.

IN THE CONSEQUENCES OF INJURIES OF THE HEAD.

One of the most simple and manifest examples of disorder of the stomach, from its sympathy with the brain, is observed in the effects of injuries of the head from external violence, contusions and wounds. In such cases, the first symptoms being generally sickness and vomiting, in order to restrain these, no practitioner of discrimination would ever think of exhibiting emetics, as he would do, in certain affections of the stomach, wherein the symptoms now stated arise from causes acting directly upon that organ, and wherein they are required to expel the cause which excites the vomiting. Unquestionably, although the sympathetic affections of the stomach, the sickness and the vomiting after injuries of the brain, may *appear* to be the *most urgent* symptoms, our first consideration ought to be directed to the *removal of the cause* on which they depend. This being the affection of the brain, general bleeding*

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* While here recommending the employment of bleeding in

from the system, the topical detraction of blood from the head by the application of leeches to the temples, and to the posterior auricular vessels, the utmost quietude of mind, and absolute rest in the horizontal posture, with the free exhibition of cathartics in order to produce their full effects, will be the most appropriate remedies; and thus by relieving or removing the primary affection of the brain, the sympathetic affections of the stomach are also simultaneously relieved or removed.

To this effect I had expressed myself before I perused the opinion of Sir Astley Cooper in regard to the treatment of concussion of the brain, as it appears in his published lectures. I perceive that he states having seen great benefit from the vomiting produced by emetics. He says, "I have "always considered the efforts of nature to relieve "herself after injuries salutary; and thus the vo- "miting which is excited in cases of concussion "acts beneficially by relieving the stomach of its

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concussion as a remedy for the symptoms of stomach disorder which are dependent on the affection of the brain, it must not be inferred that I forget the caution requisite in its administration, and the propriety of deferring it, in cases wherein the shock has been great, the countenance is pale, the pulse depressed, perhaps scarcely to be felt—until symptoms of reaction become manifest.

"contents, as the accident generally happens to "persons in a state of intoxication; and also by "propelling the blood to the brain and thus "restoring the powers of life." He adds, however,—"When emetics are exhibited as a remedy "for concussion, there is only one thing that I "fear from their use; when there is any extravasation of blood in the brain, or any tendency "to apoplexy, then they should be employed "with caution; and it is on that account that I "wait for three or four hours after the accident "before I order them." In this caution he has expressed a great deal; enough, certainly, to corroborate the view which I had previously taken of the danger of their exhibition in injuries of the head, and such caution it will be judicious always to bear in mind. And further, I have the satisfaction of observing, that Mr Samuel Cooper has expressed his want of confidence in them, and also much doubt even as to their safety; especially as he says it is often difficult to decide, whether the disorder may not be complicated with extravasation.

Every experienced surgeon has, I doubt not, frequently met with cases in which, after external injury to the head, when all symptoms of disease in the brain have been removed, various distressing morbid affections of the stomach and the other

chylopoietic organs take place, as nausea, vomiting, furred tongue, loss of appetite, deranged digestion, and constipation of the bowels. These sympathetic affections occasionally proceed to such an extent, as to resemble in an exquisite degree the symptoms of idiopathic dyspepsia,* and continue to harass the patient for a considerable time. But in some cases a reaction is at length established in the brain; a relapse of the primary disorder of that organ apparently occurs, as the headach, vertigo, delirium and other symptoms return. The unreflecting practitioner unaccustomed to take into consideration the sympathetic origin of diseases, will find himself puzzled to account in a satisfactory manner for this change in the case; but the fact will at once be obvious to those who look not at symptoms merely, but also search for their pathological cause. It is thus explained. The stomach and bowels having been deranged sympathetically in the first instance, and unable to perform their functions properly, digestion and chylification being either much impeded, or almost interrupted, these organs are oppressed with a load of undigested aliment, becoming by

* This important practical information I first learned from a lecture delivered in 1807 by the late James Russell, Esq., Professor of Clinical Surgery in the University of Edinburgh.

the retention putrid and offensive, which thus proves a source of irritation and excitement to the brain and nervous system ; and, through these, to all other parts of the animal frame. Hence the symptoms in the head already enumerated. Should any other proof be required of the truth of what I have now advanced, it is afforded by the effects of the remedies. The stomach and bowels having thus become the organs *chiefly, mainly* affected, although the morbid cause of their deranged actions was in the *first instance* in the brain ; *now*, from the reaction that has taken place, the brain *in its turn* becomes the organ *secondarily* affected in the new morbid association. The exhibition of mercurial purgatives combined with other active cathartics, by removing the noxious and irritating cause from the alimentary canal, and promoting the free secretion of bile and the intestinal fluids, will often suffice to remove all the morbid symptoms in the brain and nervous system thus induced through mere sympathy, and without any remedies directly applied to the latter. If, notwithstanding the free operation of these remedies, the morbid symptoms in the brain continue, we have ample evidence that a derangement of the functions of the stomach and bowels has, at this late period, re-excited into actual disease, the brain and its

membranes, on the principle "*Ubi irritatio, ibi fluxus;*" an undue determination of blood taking place, and producing, if not counteracted, symptoms of inflammation itself, and requiring for its removal, in addition to a perseverance in the purgatives with a view to their depleting influence, the active employment of direct remedies for controlling the circulation, as general bleeding; as well as for subduing the increased impetus of the vessels within the head, as the topical abstraction of blood in the various ways above mentioned, shaving the head, and the application thereto of refrigerating epithems, and also the exhibition of antimonials, and of mercury to produce its constitutional antiphlogistic influence. For here we have a second time to combat a severe affection of the brain induced entirely by sympathy with those organs, which, in the original train of morbid action, were only secondarily affected; thus presenting a clear and decisive proof of the soundness of the maxim which I propounded at the first, that in all cases, in whichever of these systems the primary seat of disease may be, it is of the most vital importance assiduously to attend to the state of the other.

In young persons at, or soon after, the age of puberty, the period of life when the vessels of the brain acquire a higher degree of tension, if we

find—either with or without headach, vertigo, confusion of the intellect, and other indications of cerebral disorder—the symptoms of nausea and vomiting persevering, it will be of paramount importance to trace the history of the case through the previous years; and to make particular enquiry whether any injury had been inflicted on the cranium at an early period of life. For this scrutiny may sometimes prompt the recollection, on the part either of the patient or his friends, of his having received when at school a blow on the head from the fist of one of his juvenile companions, or from a stone having been thrown at him, or from a fall off horseback, the top of a wall or the like; although, before this special interrogation, such accidents may, by reason of the lapse of time, and more especially if no serious disturbance of the health followed the first impression produced by them, have quite escaped their memory. The propriety, the necessity of this investigation will be the more apparent, when we reflect on the fact, that there is often a family-predisposition to disease of the brain; and if in any case which we are called upon to treat, such predisposition has been ascertained, we ought to consider that these accidents may very probably have laid the foundation of cerebral disease, while, in individuals not thus predisposed, they might

have produced no effect whatever of this nature. The discovery of such an injury having occurred several years before, in a member of a predisposed family, will lead to the appropriate mode of treatment, by remedies directed with a regard to the cerebral source of the symptoms, such as the topical abstraction of blood, purgatives, the exhibition of mercury, and a drain by an extensive issue in the scalp, or a seton in the neck. The interrogation above suggested may often, in an obscure case, clear the way to the detection of the cerebral origin of the disease, when the symptoms would indicate its residence to be in the stomach and *only there*.

As an apposite illustration of the morbid sympathy which is the subject of these observations, as it is manifested in severe disorder of the digestive organs consequent upon injury of the head, and also as being likely to possess a local interest with the profession in Newcastle and its neighbourhood, I am much inclined to introduce here, a reference to the case of the late Dr. John Clark,* long an eminent physician in this town. Notices thereof will be found interspersed in

* Author of "Observations on the Diseases which prevail in long voyages to hot climates," and Father of the present Professor of Anatomy in the University of Cambridge.

the elegant "Sketch" of his professional life, which proceeded from the pen of his highly-talented and intimate friend Dr. J. R. Fenwick, of Durham; and in which we are informed, that at a very early period of life, when about sixteen years of age, he received a wound on the head by the accident of a slate falling from a house, "which "gave rise to very severe headachs and general "nervous complaints, and was soon followed by a "disordered state of the organs of digestion; a "disease from which he was destined to suffer "through life," often to a most distressing degree, and which at last terminated in organic disease.

IN THE EFFECTS OF EXTERNAL VIOLENCE ON THE EPIGASTRIUM.

From the sympathy of the stomach with the brain, and through the brain and nervous system with every part of the body, we are best enabled to explain the effects of blows and contusions on the region of the stomach. In some cases, besides the usual symptoms of disorder of the digestive organs, these occasion a temporary stupor, delirium, and other indications of affection of the brain; while in others they have been known to produce sudden death, as we may learn from the

annals of pugilism. There can be little doubt, I think, that this is the effect of the impression primarily made upon the nerves of the stomach,* and propagated almost instantaneously to the brain and nervous system. The late Dr. Gregory related in his lectures a case, in which instant death was produced by a blow upon the region of the stomach, and in which, on inspection of the body, nothing remarkable appeared in that organ, but some effusion was observed on the surface of the brain. In reference to this view of the subject, I quote from Hoffman the following sentence†:—"Et profecto res est maximi "momenti et subtilioris indaginis, quod nonnulli, "percusso fortius, pugno vel duro alio instru-"mento, exterius cordis scrobiculo, sub quo py-"lorus reconditur, cito ac insperato perierint, "inventa post mortem nulla læsionis mortiferæ "nota sed macula tantum ex flavo rubra, circa

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* The above I had written long previously to the publication in the journals, of the abstract of the observations, as to the cause of death in such cases, read by Dr. Holland, of Sheffield, before the Medical Section of the British Association at Liverpool, in 1837; and my opinion is not in the least altered by the arguments adduced by that gentleman in favour of his own explanation.

† De consensu partium Nervosarum generatim, et sigillatim cum Ventriculo.—Sect. I. cap v. § xv.

" diaphragmatis et inferiorem ventriculi partem,
" *quales casus, ambigentibus de lethalitate medicis,*
" *aliquoties ordini nostro ad decidendum oblati.*"

I may also observe that the fatal effect resulting from the concussion produced by a cannon ball passing over the epigastrium, without any mark of external injury, on that account called the " Wind of the cannon ball," is explained on the same principle, namely, the sympathy of the brain and nervous system with the stomach.

IN FEVER.—TYPHUS.

In the orders of Febres and Exanthemata a very great affection of the brain and nervous system, as well as disorder of the stomach and digestive organs, is generally observed. In the Typhus, in all the various forms in which it makes its appearance, we always meet with prostration of strength and disturbance of the functions of the brain, such as vertigo, headach, and delirium, more or less, according to the degree of violence of the disease and the power of the contagion. These affections of the brain are almost invariably accompanied by symptoms of derangement of the stomach and bowels, as nausea, vomiting, loss of appetite, white or loaded tongue, and generally by costiveness. I consider it highly probable that

the diminished energy of the brain is the primary affection in this disease; and that the disorder of the stomach and of the other parts of the digestive system is only secondary or consequent thereon, from the deprivation which the latter have suffered of that measure of nervous energy which they had been accustomed to receive from the brain, this organ, by reason of its primary disturbance, having been rendered incapable of supplying it. Although this is my own view of the question, yet, as it is my wish to avoid all remarks of a controversial nature upon that much disputed point, the proximate cause, or, more correctly speaking, the *essence* of fever, I shall not do more than thus refer to it. I cannot, however, in this place omit all mention of the opinion of that able and zealous physician, Dr. Clutterbuck, in regard to the cause, which he asserts to be inflammation of the brain; but in considering this opinion as untenable, I find myself obliged to concur with the great majority of the profession. Nevertheless, I now allude to it, as the author's observations on the state of the stomach are well deserving of notice; for he remarks that such is the disturbance of the functions of this organ, not only on the attack of fever, but throughout its whole course, and that the symptoms of this are so common and striking, that many have

considered the stomach to be the principal and primary seat of the disease—"admitting," says he, "that the* functions of the stomach are commonly disturbed in fever, the same is more "especially true of the functions of the brain; "which never fail to be perverted in this disease, "thus shewing an essential connexion between "them. The disordered state of the brain, "therefore, may with less difficulty be supposed "the primary cause of the disturbance observed "in the functions of the stomach in fever, than "the reverse;" and this, he adds, "I have no "doubt, is actually the case."

In illustration of the sympathetic relation between the stomach and the brain, as presented to us by the cure of this disease, it may be observed that the utility of emetics in the beginning, with the view of arresting it at this stage, by exciting the action of the brain, and thus enabling it to dispense the nervous energy to the other organs; and if the disease cannot be at once arrested, of breaking its force, and mitigating the symptoms, has been admitted as an established fact by almost every writer on the subject. Since the late respected physician of

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* Inquiry into the Nature and Seat of Fever. Second Edition. Page 90. 1825.

the Royal Infirmary of Edinburgh, the acute and judicious Dr. Hamilton, favoured the professional public with his observations on the beneficial effects of purgatives in this disease, and the evident relief which was obtained from the operation of these, in evacuating quantities of dark-coloured fæculent matter from the bowels, the attention of practitioners has been particularly directed to note the result of this practice; and I believe the utility thereof has been, for many years, almost universally acknowledged. Dr. Hamilton, indeed, states, that ever since he experienced the benefit arising from the administration of purgatives in Typhus, he had been accustomed to confide in these alone, and had, therefore, in almost every instance, given up the use of emetics. He has, however, expressed his belief, that cases may occur in which emetics will be proper. So far as my opportunity of observation has extended, I can confidently state that I have seen the most excellent effects from emetics in the beginning of fever; and I am inclined to consider it in general a very judicious and useful mode of treatment. I am, at the same time, decidedly opposed to the practice of carrying the employment of *nauseating* medicines to that extent which was done, when the theory of fever being caused and kept up by an atony of the

extreme vessels, and their consequent spasm, was prevalent among practitioners; for removing which spasm they considered it necessary to exhibit frequently repeated doses of emetics and nauseants. These I do certainly, in the most unequivocal manner, condemn. All I wish to observe is, that as in Typhus the stomach and bowels are evidently loaded with putrid and offensive accumulations of sordes, the consequence of imperfect digestion, an emetic at the commencement is very often attended with the most beneficial consequences in repressing the severity of many of the symptoms, and insuring the favourable progress of the disease through its subsequent stages. And in its course, if there be much nausea and oppression of the stomach, with parched and loaded tongue,—and further, as headach, delirium, and other symptoms of disorder of the brain are frequently produced by undigested matters and vitiated secretions lodged in the stomach and upper part of the intestinal canal, which have become more acrid and corrupted during the continuance of the disease—provided we can be assured that there does not exist any degree of gastric inflammation, an emetic may be occasionally useful, by removing the symptoms above mentioned, rendering the others milder, and the subsequent progress of the

malady more propitious. Bearing in mind the high probability, that the brain is the organ primarily disordered, and the important necessity I am so anxious to inculcate, of directing our most vigilant attention to that which suffers only by sympathy, I may say in the words of Dr. Clutterbuck himself, that "in* order to account for the efficacy of emetics in the cure of "fever, it is only necessary to advert to the intimate relation that subsists between the brain "and the stomach, and the influence exerted by "each over the other reciprocally." After the emetic practice has been judiciously premised in the cases best suited for its successful operation, then, I can, without the hazard of question, assert, that the exhibition of purgatives to the extent not merely of evacuating the bowels of all extraneous fæculent deposits, according to the views of Dr. Hamilton; but also, without however inducing copious purging, of exciting and improving the secretions of the liver and intestines, is often attended with the effect of relieving the delirium, vertigo, headach, and other symptoms of oppression of the brain.

But, while I most cordially subscribe to the beneficial results of the purgative treatment as

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* The Book previously quoted. Page 355.

recommended by Dr. Hamilton, and to the propriety of following it out to the utmost extent to which it can with safety be carried, it is not to be passed over in silence, that the state of the brain especially requires and merits our most solicitous attention. Not only have the passions and affections of the mind, according to their nature and their tendency, a very great influence in producing this formidable disease, and in aggravating it when already formed; but in alleviating many of its symptoms, and thus contributing towards its favourable termination. It is acknowledged and admitted, that persons under the influence of the debilitating passions, as fear, grief, and anxiety, will, if exposed to the contagion of typhus, be most liable to its invasion; while others who are under the impressions of the exciting ones, as joy, hope, and confidence, may be exposed to its action and escape uninjured.

Nor is the power of the mental affections and passions less remarkable in the cure, than in the causation of typhus. All respectable writers and practitioners agree in the propriety of guarding, during the course of the malady, with the most sedulous care, against the pernicious effects of the debilitating passions; while, on the other hand, the agreeable stimulus of those which *gently* excite the brain, when its energy is in a state of extreme

depression, is studiously to be employed as having been frequently known to produce the most surprising and salutary consequences: I here particularly allude to inspiring confidence in the remedial measures, and the hope of recovery. That the brain is often much affected in the course of fever, the suffused eyes, the stupor, the disturbance and interruption of the functions of this organ, unequivocally demonstrate; and the application of means intended to remedy directly this affection of the brain, every practitioner is imperiously called upon to prescribe. These are the abstraction of blood from the forehead and temples, and from the posterior auricular part of the cranium by leeches; the application of cold in the form of iced water, or of refrigerating lotions and epithems to the shaved scalp; and of blisters either to the scalp itself or to the nucha, according to the state of the symptoms and the stage of the disease. That the prudent application of remedies such as these, suited to the removal of the diseased state of the brain and nervous system, has also a great effect in amending the condition of the stomach and bowels, is as certain on the one hand; as, on the other, that the removal of undigested aliment from the stomach by emetics, and of accumulated fæcal deposits from the bowels by purgatives, will not only operate powerfully and beneficially on the

stomach, mouth, and tongue, relieving thirst, restoring and improving the secretions of the liver and intestinal canal, and thus ameliorating the state of the whole system of the digestive organs; but will also alleviate the head-ach, the vertigo, the confusion, and delirium, and the other symptoms of oppression of the brain, to a degree that will scarcely be credited by those who have not followed this practice; thus affording a clear and ample demonstration of the great influence exercised by the stomach and other digestive organs over the brain and nervous system—and conversely—in the *cure* as well as in the *causation* of fever.

To the same sympathetic influence in this disease, as well as in every other, wherein the powers of life are at a low ebb, must be attributed the good effects of stimulant and cordial remedies. It is indeed surprising, how restorative the judicious exhibition of wine in larger or smaller quantities, according to circumstances, will often prove; how the brain will be improved in tone, as evinced by the subsidence of the muttering delirium, the subsultus, the floccitation, and other marks of failure of the sensorial power; and will thus be enabled to dispense its energy to the other organs, more especially to the stomach and the rest of the digestive apparatus, relieving the thirst, rendering the

tongue cleaner and moister, and removing the sordes from the lips and teeth: and in like manner are we to account for the influence, in convalescence from fever, of the medicines called tonics, if the appetite and digestion continue depressed, while the tongue is clean and moist. By the primary impression which these make upon the nerves of the stomach, the brain is gently excited to transmit its energy to that organ, for the improvement of the appetite and digestion; and by the moderate and suitable portion of light and wholesome food, which the stomach is thus enabled to desire, (if I may use the expression,) and to digest, the strength is recruited and diffused over the whole corporeal frame, by the agency of the nervous power, radiating in all directions from the brain.

Before concluding the consideration of this sympathy in the treatment of fever, I must observe, how necessary it is to guard, during the early stage of convalescence, a period when the nervous system is peculiarly susceptible, against all irritation of the stomach from too great a quantity, or from the improper quality of food. By any error of this kind, sympathetic disorder of the nervous system is very apt to be excited, and sometimes this proceeds so far as to cause a relapse of the fever, more dangerous, indeed, than the disease in its first career; as, by reason of the

debility that has already been induced, the body is unable to endure a repetition of those measures, which were successful in subduing the morbid affections following the primary attack.

IN ACUTE GASTRITIS.

In some cases of this disease, death has been known to take place in a much more speedy manner than can be explained on the principle of the progress of active inflammation, such as we observe in this morbid condition of other organs; and the only cause we can assign for this rapid fatality is the remarkable sympathy between the stomach and the brain and nervous system, these being, through the medium of this sympathy, impressed with a shock which they do not suffer, in the active inflammation of other parts of the body. There has not been time in such cases for the supervention of suppuration or of gangrene, neither of which terminations, indeed, has been perceived upon anatomical inspection. In certain instances general convulsions have taken place; and these, as well as the delirium, vertigo, and blindness, which sometimes occur, are referrible to the same sympathy.

This rapid fatality in inflammation of the stomach may be considered as bearing a very close

analogy to some other cases, in which sudden death occurs; I may here allude to the effects of external violence on the epigastrium, on which I have already made some observations. A draught of cold water, also, for example, when the body is overheated, has been known to prove as suddenly fatal as the impetus of a cannon ball. This has sometimes happened to soldiers on a very long march in a warm climate, during which the thirst occasioned by the heat and fatigue is peculiarly urgent; and when, in order to assuage it, they have indulged in drinking a large quantity of cold water, they have dropped down dead as soon as they had swallowed it. In other cases from this pernicious practice, when it has not proved instantaneously fatal, inflammation of the stomach has arisen, accompanied with the most intolerable anguish, and followed in a few hours afterwards by death; which can receive its explanation in no other way, than that, from the highly nervous structure of the stomach, its sympathetic influence on the brain prostrates the energy of this organ in an extreme degree.

IN APOPLEXY.

Although in this disease the brain is the organ primarily affected, the stomach very generally

sympathizes with it. In many cases vomiting occurs in a degree so violent, that at first sight a practitioner of slight experience and reflection is apt to believe, and the ignorant by-standers for the most part declare, that the patient's disorder is seated in the stomach. Of the expression of such opinion among the by-standers I have seen several instances; than which, sometimes uttered with the most determined obstinacy, nothing can be more provoking at such a time. It has been the opinion of several authors, that this disease originates in the stomach; the cerebral affections, those frequently premonitory of the attack, as headach, vertigo, tinnitus aurium, and confusion of thought; as well as those which take place on the invasion, namely, the abolition of sense and motion, and the stertorous breathing, being regarded as symptomatic of—consequent upon—the primary disease of the stomach.

By Selle of Berlin, and Stoll of Vienna, a tripartite distinction of the disease has been made, one species being referred to the stomach and designated *Apoplexia Gastrica;* the others being called the *Sanguinea* and *Serosa*. Dr. Kirkland, the author of a commentary on apoplectic and paralytic affections, confines the designation of apoplexy to a disease, of which none of the symptoms, according to his view, are produced by compres-

sion of the brain; but, at the same time, he acknowledges the difficulty of determining what is the peculiar derangement, which, (as he has styled it,) the *Brainular** system suffers; stating that the living principle is injured, with a violent struggle for life, but that, in the vehement form, death had invariably happened in every instance he had either seen or heard of, in the course of fifty years. To this disease he has given the name of the *Nervous Apoplexy*; asserting that, although an extreme degree of irritability of the nerves of any part of the body may produce it, there is yet reason to believe that it mostly originates in the *Stomach* or *some part of the Abdominal Viscera*; for, says he, people subject to apoplexies have commonly acquired this diathesis by inactivity and full living, as regards both eating and drinking; the nerves of the stomach being of course first affected, and sometimes having become so susceptible of impression, as to cause instant death

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* Dr. Kirkland considered the brain diffused through and over every fibre in the whole body, forming one continued and connected substance; hence, he observes, the well-known consent of parts; and consequently, he says, he uses the words *Brain* and *Nerves* synonymously, both being comprehended under the term *Brainular* system.

Commentary referred to, Preface, Pages v.-vi.

on being offended. In proof of this opinion, he has referred to the vertigo, which often precedes this apoplexy, and which he states to be the least or lowest symptom of the disease; as it is often brought on by the nerves of the stomach being irritated or otherwise offended, in those habits, where not the nerves of the stomach alone, but the whole *Brainular* system, have acquired a preternatural degree of irritability; remarking, that nervous affections are seldom local; that the nerves of the abdominal viscera have, in particular, a wonderful power over the whole body; and that this is to be considered the true cause of the vertigo, he infers from the fact of the symptom being dispelled and the patient cured, by the removal of the offending matter from the stomach, and the administration of remedies that allay the species of irritability which he asserts to exist.

For the sake of discrimination from this apoplexy, he has given the name of *Coma* to that species of sudden attack arising from plethora and rupture of the vessels of the brain; and from the description of which, as demanding the free evacuation of blood for its removal, and as entirely contraindicating the use of emetics, he observes that the employment of the former has been so generally recommended in *all* species of apoplexy, and the exhibition of emetics has been by many

condemned, without attending to the distinction which he has pointed out between the nervous apoplexy, and that generally called apoplexy, but by himself designated, from its principal characteristic symptom, *Coma*.

It has, however, by no means been proved, that such a disease as the nervous apoplexy really exists; and I apprehend that in some of the cases, of which Dr. Kirkland has seen the fatal result, it would have been found, upon examination, that pressure on the brain had existed, from the extravasation of blood or serum. His description of the disease in question is a purely general one, based, it would appear, on the conceptions he had formed from his own experience; no cases are related in detail, and consequently there is no account of lesions, which might have been displayed on anatomical inspection. It is well known, that in many cases of apoplexy, whereof the subjects have exhibited the infallible characteristics of the disease, as well as of the previous tendency thereto, no abnormal appearances, after the most careful examination, have been found to account for death, such a state being designated by Dr. Abercrombie as that of *Simple Apoplexy*. It should also be remarked, that in certain instances the face is absolutely pale, sometimes even of a cadaverous aspect, (doubtless owing to the accumulation of

blood in the internal vessels of the head,) in which relief has been obtained as soon as blood has been got to flow from venesection; the symptoms of pressure on the brain gradually diminishing, and the paleness of the countenance giving place to the natural colour. Moreover, in some fatal cases of the latter description, distension of the vessels of the brain has been perceived, also the rupture of these, and the consequent extravasation of blood. We must, therefore, take with much latitude the assertion of Dr. Kirkland, because, if such a doctrine obtained credence, the most disastrous results would frequently take place, —where they might have been prevented—from the omission of that powerful remedy, the abstraction of blood; and from the substitution, in its stead, of the use of emetics, a measure tending to produce great injury, from their effects in propelling the blood with too much force to the head.

Besides, the vehement form of the nervous apoplexy, asserted by Dr. Kirkland to have been fatal in every instance, he has described a milder form, which, he says, although not very easily, he has yet known to be cured in several instances; and that such milder form is of that kind, which very often leaves a hemiplegia behind it. Now, the very circumstance of hemiplegia having taken place, is quite conclusive in my mind as to the

existence of pressure upon the brain; and in any case where there has been hemiplegia at a former period of life, if, upon an attack of apoplexy, the treatment be conducted on the principle, that the symptoms depended upon merely an irritated condition of the nerves of the stomach, it would lead to fatal errors in practice, both of commission and omission; of the former, I need scarcely repeat, by the exhibition of emetics; of the latter, by leaving the abstraction of blood undone.

Here I have to introduce the consideration of a subject, which has been long in question among the practitioners of modern times; the propriety, namely, of administering emetics in apoplexy; a mode of treatment which has been recommended by some of the ancients. Much has been said on both sides of the question. Reason and sound experience have decided against it, when the disease occurs in persons of a plethoric habit; and in which cases its invasion is caused by a determination of blood to the brain, with particular fulness of the vascular system of this organ, or the extravasation of blood upon its surface, or into its cavities, and throughout its substance. But it must be admitted that, in support of the practice referred to, much *ingenuity* has been shewn in the *arguments* that have been adduced. As many are the degrees of force

with which the attacks of apoplexy take place, it might perhaps be supposed, that in the slighter cases there would be less danger in their exhibition; but there is evident danger in this supposition, because it is ever to be feared, that by the action* of vomiting the determination of blood will be still further increased, even to the effect of lacerating vessels which would otherwise have escaped the lesion; or, if any have been but slightly lacerated, that the rupture will be enlarged, and that thus the extravasation will be rendered still more abundant. In that which has been called the *Strong Apoplexy*, where the disease, severe in all its symptoms, has occurred in a person of a highly plethoric diathesis, there can be no question—at least, there ought to be none—emetics must, in such a case, by all means be scrupulously avoided, until other advisable and powerful remedies have been employed in vain.

The practice now under discussion has, however, been recommended by many authors of note, of whom I may mention Sydenham, Fothergill, Pitcairn, and Kirkland. Sydenham advises an emetic to be administered after blood-letting

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* This is the recorded opinion of Burserius; but had he never expressed it, it must have been equally that of every reflecting mind.

from the arm and the jugular veins, in which opinion Dr. Pitcairn agrees, stating that the emetic should be strong, and in a full dose. But, notwithstanding Sydenham's recommendation of emetics in this disease, they were losing favour in the estimation of practitioners, until Dr. Fothergill recalled attention to their exhibition; and although, during several years subsequent to the publication of his "Considerations," *his* was the authority on which the practice then rather generally adopted was founded; so far as my own opportunities have extended of observing the treatment pursued by other practitioners, they have, in later years, been very rarely employed. But, in a discussion so intimately connected with the doctrine of the sympathy between the stomach and the brain, I feel myself called upon to advert to the opinion of so celebrated a man as Dr. Fothergill was, how much soever I may consider it my duty to differ from him; for I agree most decidedly with Dr. Cheyne in his expression of regret, that Dr. Fothergill's remarks on the subsect of apoplexy were ever published; and also, in the opinion he has recorded, that if* there "were many passages in Dr. Fothergill's works "equally crude and inaccurate, in conception and

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* Observations on Apoplexy and Lethargy—P. 67.—1812.

"expression, with that in which he treats of apo-
"plexy, his medical opinions would now command
"but little respect."

Emetics are recommended by Dr. Fothergill, on the principle, that the disease is often produced by a large undigested meal distending the stomach, pressing on the abdominal aorta, obstructing the free expansion of the lungs, by which a greater quantity of blood is transmitted to the head; and accordingly, in recommending these remedies, he thus expresses himself. "We* are to remove the "obvious cause as speedily as possible, that is, to "endeavour, by all the means we can, to remove "the load by emetics and purgatives," (of the decided propriety of employing the latter, though not altogether on the same principle as is here stated, there can be, of course, but one opinion,) and he further observes, "We need not be under "much restraint in the use of these medicines, till "thorough evacuations are procured. The stimu-"lus exerted on the stomach, and the room pro-"vided for a freer circulation, are almost alike "beneficial, and without diminishing the patient's "strength, make way for his recovery." It is, however, more than doubtful, whether the disease can ever be produced in the manner described by

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† Medical Observations and Inquiries.—Vol IV.—P. 84.

Dr. Fothergill, as the stomach when over-distended, instead of pressing upon the abdominal aorta, projects anteriorly—in an outward direction. It is far more reasonable to infer, that the reception of a full meal into the stomach, frequently with the addition of wine, malt liquor and ardent spirits, acts as a stimulus to the heart and arteries, accelerating the circulation, as well as increasing its force; and, that the flow of blood being especially directed to the head, this disease is induced. In all injuries of the brain arising from compression, whether the compressing cause be external or internal, the stomach is, by sympathy, almost uniformly affected; and, as to the occurrence of apoplexy after a full meal, as Dr. Clutterbuck has aptly observed, "*The brain is "still the part from the affection of which the "apoplectic state arises; the stomach is merely "the medium through which the brain is impress-"ed." The sickness and vomiting, which are symptoms so prominent on the attack, are occasioned, as I have already stated, through the sympathy of the stomach with the brain; to suppose them primary affections of the stomach, is indeed, in Dr. Clutterbuck's words again, "rather taking

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*Cyclopædia of Practical Medicine—Vol. I–Page 124—in the article "Cerebral Apoplexy."

"the effect for the cause." Therefore, in some cases, although apoplexy does occur after repletion of the stomach with a copious dinner of meat and drink; yet, before emetics are exhibited to evacuate this organ of such contents, but more especially in any case, wherein it is apparent that the blood is determined with force to the brain, blood-letting should undoubtedly be premised. This important consideration ought never to be forgotten.

From the view taken by Dr. Kirkland, of the origin of the common nervous apoplexy in the stomach, or some part of the abdominal viscera, it follows as a matter of course, that the exhibition of emetics was with him the principal part of the treatment; while, in this species as distinguished from his *coma*, he altogether rejected the employment of blood-letting; and accordingly he states, "*When there is no plethora, more dependence "is to be had upon vomiting and purging than "upon bleeding, and seemingly the effects of "vomits are not to be dreaded in this instance. "I have ordered them myself, and have repeat-"edly seen them ordered by others, with safety "and advantage." But I would here just refer to what has been stated at the foot of page 55, and top of page 56 of the present treatise.

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* Commentary, Pages 48–49.

In the seventh volume of the Medical and Physical Journal, there is a communication by a writer under the assumed signature of Pyrrho, (supposed to have been the late Dr. Lubbock of Norwich,) who, in a controversy which arose in the year 1801, between Dr. Langslow, physician at Halesworth, and Mr. Crowfoot, surgeon at Beccles in Suffolk, in regard to the cause and treatment of a case of apoplexy, thought proper to enter the field in favour of the latter. Mr. Crowfoot had advised an emetic, on the supposition that the case was one of the nervous apoplexy of Kirkland, and was dependent on the state of the stomach. This was interdicted by Dr. Langslow on his arrival, as an improper piece of practice, on account of its increasing the determination of blood to the head, and incurring the hazard of rupturing the vessels of the brain. The anonymous writer, in reference to the administration of emetics in this disease, after stating the names of several eminent men who have recommended the practice, has thus expressed himself: "In turning "from authority to the dictates of reason, in this "matter, I would ask, is it certain that from the "action of a vomit upon the system, there is an "increased impetus or determination of blood to "the brain? Or supposing that there is an in-"creased determination of blood, does it follow,

" necessarily, that a rupture of vessels, or effusion,
" would take place? It seems to me, in re-
" flecting upon the effect of an emetic upon
" the system, that the first circumstance that as-
" sails the attention, is a great diminution or en-
" feebled action of the vascular system in general;
" this is observable during the nausea preceding
" the act of vomiting; in this state there is great
" pallor of body, faint sweats, the pulse is feeble
" and unsteady, and the respiration is affected;
" and there are evident marks of lessened action
" in the heart and arteries. It will not, therefore,
" be asserted by the enemies of emetics, that in
" nausea the blood is sent to the brain, either
" with greater force or in greater quantity; on
" the contrary, it is reasonable to suppose, that
" in this state there is a smaller quantity of blood,
" and less forcibly sent to the brain."

As to the induction of nausea set forth in so captivating a view by this writer, as above quoted; if that could be *safely* done, I especially mean, if it could be made to stop short of retching, the repeated strong but impotent efforts to vomit, which, I should conceive, as forcibly propelling the blood to the head, more dangerous than even vomiting itself, I should indeed say, *so far, so well.* But, however favourable the prospect of such a mode of alleviation might be, if nausea

alone, with its depressing influence on the circulation could be ensured, it is much to be feared, that the action of any medicine given with this intention could never, with any certainty, be restrained to go so far and no farther; and that there must ever be the danger of producing those effects, against which, thinking as I do, I should be so particularly anxious to guard.

Dr. Cheyne has expressed his opinion, that when apoplexy from a surfeit or from intoxication is *only threatened*, the emptying of the stomach may, indeed, afford the most prompt relief; but, that the emetic used ought to be of the mildest kind. That, however, in a *confirmed* apoplexy, even the mildest means of inducing vomiting cannot be employed without danger. He conceives, that, in an *actual* attack of the disease from a surfeit, an emetic is a very doubtful remedy, which is the opinion of Burserius and also of Quarin in such a case; and they remark that the vomiting, which here occurs spontaneously, may depend on compression of the brain. Burserius, in corroboration of his objections to the exhibition of emetics in the sanguineous apoplexy, (already referred to,) quotes a case from Morgagni, in which an emetic given to a person labouring under hemiplegia, produced a fatal apoplexy.

Although, in France, emetics have been very

generally administered in this disease, we find Portal contending against their employment, supporting his objections by the array of many facts, and adducing numerous arguments on the side which he espoused, even in the cases in which the practice was so strongly recommended by Fothergill. He has stated his belief, that its danger lies in the effect of determining too great a flow of blood to the brain, and thus increasing the cause of the disease. It appears, however, that with a singular inconsistency he ordered emetics in some of the special cases, wherein he had pointed out the danger of this practice, and the necessity of blood-letting.

The opinion of the illustrious Cullen is thus expressed: "Vomiting has been recommended "by some practitioners and writers; but, ap- "prehending that this might impel the blood "with too much violence into the vessels of "the head, I have never employed it." Dr. Abercrombie, whose authority will ever command respect, has upon this subject written as follows. "The use of emetics in apoplexy is as old as the "days of Aretæus, and they have been employed "at different times by physicians of the first "eminence, among whom may be mentioned, "Etmuller, Sydenham, Boerhaave and Lieutaud; "and the practice must therefore have some foun-

"dation in observation and experience. There "can be little doubt that in the early stage of any "apoplectic affection, the use of an emetic would "be a very hazardous practice, and, at any period "of apoplexy with extravasation of blood, it "probably would be injurious; but in simple "apoplexy, after the system has been reduced by "repeated evacuations as far as seems expedient, "and yet the coma has not been removed, it "seems very probable that the action of a mild "emetic might be beneficial. The delicacy of "the practice, however, consists in the difficulty "of distinguishing simple apoplexy from apoplexy "with extravasation of blood." It is to be inferred from this passage, that the distinguished physician had not, at the time of writing it, (I quote from the first edition* of his work on diseases of the brain,) exhibited an emetic in such cases as those he has referred to. It will be perceived, that he agrees in the propriety of all I have advanced, as to the danger of the practice in the early stage. After, however, liberal and repeated evacuations by general and topical bleeding and purging, if the apoplectic stupor and coma should still continue, I perfectly con-

* Page 294.—I have since seen the third edition in which the observations are repeated without alteration or addition.

cur in the soundness of the suggestion, that the use of emetics would be quite admissible; and this also coincides with the sentiments of Dr. Cooke, from whose eclectic and well-constructed work, I have derived much instruction and gratification. This judicious author observes, that if he were to give* an opinion on this very important question, he would state it to be, that our practice ought to be guided by the particular circumstances of each case: that, in the strong apoplexy, as there might be danger of determining too much blood to the head by the act of vomiting, he would not venture to prescribe an emetic, till the safer remedies had been unsuccessfully employed: but that, after free and repeated evacuations of blood, both general and topical, and the other usual modes of practice had been resorted to without any appearance of amendment, he would endeavour to excite the action of the *vis naturæ medicatrix*, by the exhibition of an emetic of speedy operation, such as the sulphates of zinc or copper: that, in favour of this practice *under certain circumstances*, he would observe, that some instances might be adduced of restoration, from even the strong apoplexy, on the exhibition of an emetic; and that he himself had witnessed

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* A treatise on nervous diseases, Vol. I., Page 330. 1820.

one case of recovery from the disease in a somewhat milder form, by this remedy, when bleeding and other measures had been prescribed without benefit: that, if an attack of the strong apoplexy should occur soon after eating, followed by spontaneous vomiting, he would have more than usual hope of success from this practice, notwithstanding the statements of Burserius and Quarin; but, that on two such occasions he had then recently prescribed an emetic, without the smallest apparent advantage: that the prospect of success from this remedy in the strong apoplexy is certainly not flattering, yet that he would, after unsuccessful depletion, rather give it a trial, than leave the patient to sink under the pressure of the disease, on the supposition that the case was hopeless; believing with Celsus, and I most cordially respond to the sentiment, that in cases of such a character, (and I think it right forcibly to reiterate,) *wherein liberal depletion by bleeding and purging had been repeatedly employed without avail*, "Satius "est anceps auxilium expiriri, quam nullum."

Sir Gilbert Blane has expressed his opinion, "that *nothing is more certain than that a full "meal may bring on apoplexy, whether from "compression of the descending aorta, or from

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Dr. Cooke's Treatise, Vol. I., Page 329.

" sympathetic action; and this is, perhaps, he " says, the only case in which the administration " of an emetic is justifiable. He thinks that if the " stupor or sopor from overeating were carefully " watched, the fit or stroke might be prevented, " and that the utility of emetics in such circum- " stances would be among the first suggestions of " reason. Sir Gilbert once knew this practice " employed by an extra-professional person, ap- " parently to the saving of life."

Emetics have been by some foreign physicians regarded as almost specific remedies in apoplexy, and Dr. Cooke states that " Wepfer describes a " case from Grubelius, in the treatment of which, " that physician having administered an emetic " without effect, expressed the utmost surprise, " observing, that, from Van Helmont and others, " it would appear that the infallible secret of " curing apoplexy consists in the exhibition of " emetics."

The practice of exhibiting emetics in apoplexy having originated in the supposition, that the disease is symptomatic of primary disorder of the stomach, the followers of this course object, as may be expected, to the abstraction of blood, often, in this disease a powerful and most efficacious remedy. But I feel, that the title and the purpose of this treatise point out the propriety of

abstaining here, from any discussion upon the subject. So far as the consideration of the treatment of apoplexy was connected with the doctrine of the sympathetic relation between the stomach and the brain, I have entered into it; further to do so would be quite out of place.

With regard, however, to the use of purgatives, whatever notions various practitioners may entertain respecting the cause of apoplexy, there can be little or no difference of opinion as to the propriety of the administration of this class of medicines. Those who ascribe the disease to an irritated condition of the nerves of the stomach and the intestinal canal, will exhibit them for the purpose of removing the irritating cause; while those who consider it to be seated in the brain, and as originating from a determination of blood to that organ with a preternatural distension of its vessels, or the extravasation of blood, will administer them as a powerful auxiliary mode of depleting the vessels of the head, by the fluid evacuations which they produce, on the principle of derivation; their operation causing an increased flow of blood to the mucous surface of the intestines, and thus relieving the brain from pressure.

Although I altogether repudiate the notion that apoplexy originates in the stomach, it cannot be

questioned, that a state simulating the disease in so many particulars, as in some cases to have been with difficulty distinguished from it, has been known to arise from a morbid condition of this organ, produced by repletion and irritation. In reference to this, I shall make no apology for transferring to these pages, the following extract from the treatise of Dr. Stone, on diseases of the stomach, as I deem the observations peculiarly apposite and instructive. "There* is a state of the sto-
"mach which it is of importance to notice parti-
"cularly, as it has been sometimes mistaken for
"apoplexy: it may happen at any age, but has
"more commonly occurred in those who are some-
"what advanced in life, and where the time of tak-
"ing dinner has by accident been delayed to a dis-
"tant period from the hour of breakfast or from the
"last time of eating, where the sensation of hunger
"has been unusually prevalent:—a man, accus-
"tomed to good living and unaccustomed to any
"sensation of hunger, sits down with eagerness,
"and not unfrequently makes a remarkably hearty
"meal:—when he has eaten largely of fish, fowl
"and flesh, he feels satisfied, but on the appear-
"ance of fresh dainties in a second course, he
"craves again, and eats again, and again: he

* Paragraph 25. Pages 60–3. 1806.

" sits long at the table, and probably stirs not fur-
" ther than the adjoining drawing-room till the hour
" of rest:—he goes to bed, sometimes complaining
" of a slight sickness, a weight about the præcordia,
" and commonly goes to sleep; and soon after, is
" found in a state of apoplectic stertor, from which
" not unfrequently it is difficult to rouse him: and
" which has been found to depend on the enor-
" mous quantity of the contents of the stomach
" distending and pressing on the coats of that
" viscus, so as to have brought it into a state of
" paralysis, and to have prevented all possibility
" of digestion from the time of its repletion, and
" *the* sympathy of the brain with the stomach re-*
" *duces the patient to a state very nearly resembling*
" *apoplexy from extravasation on the brain itself:*
" it requires some sagacity, and is of very great
" consequence, to distinguish this state of a patient
" from that consequent upon repletion of the
" blood-vessels, which is also very often the result
" of a hearty meal: since in this case, if the sto-
" mach be not relieved, the stupor increases and
" the patient is lost:—the pulse is not always a
" sure index of the diagnosis, as it becomes full
" from the sympathetic affection of the brain:—
" sometimes from pressure on the epigastrium

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* Of these, Dr. Stone's words, the *exhibition* in *italics* is by myself.

" fulness of the stomach may be discovered; and " the symptoms of hemiplegia never depend upon " this cause:—the patient may commonly be awak- " ened so as to swallow medicines, and that the " eyes may be examined:—if the pupils equally " contract; if there be no evident fixed palsy on " either side; and if, from the history of the com- " plaint, it may be traced to such a meal as has " been described; there will be good reason to " believe that the stomach alone requires relief."

" The over-filled* stomach, which brings the " patient into an apoplectic state, is a case which " requires the instantaneous exhibition of the " most powerful emetics; a strong solution of " vitriolated zinc is the most proper medicine for " this purpose; it is preferable to any form of " antimony, because the latter, even in a large " dose, will commonly have no emetic effect at " all in the torpid state of the stomach, which is " here the alarming symptom, but the patient will " be thrown by it into a violent debilitating per- " spiration, and the time for relieving his stomach " and saving his life will be lost for ever. As " soon as the stomach is relieved, and the efforts " to vomit have ceased, a large dose of mercurial " purgative should be given, and he will com-

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* Paragraph 82, page 193.

"monly require all the after-treatment necessary "for a stomach in a state of debility, and parti- "cularly the use of acrid stimuli."

From a review of the preceding description of symptoms of a state so closely resembling apoplexy, I think it cannot be doubted, that, in consequence of the stimulus which is imparted to the action of the heart and arteries, a determination of blood in such cases takes place to the brain, and also a congestion of its vessels from the impeded return of the blood to the heart; and therefore, notwithstanding the paralytic state of the stomach, from which, in the first instance, this condition of the patient has arisen, I am of opinion that it would be most injudicious to exhibit emetics, until free bleeding had been premised, in order to prevent the evil consequences which are to be apprehended, from the increased impulsion of blood into the vessels of the brain, by the straining efforts to vomit.

Two cases of gastric irritation, producing many symptoms resembling the apoplectic state, have been detailed by Professor Wood, of Philadelphia, in the North American Medical and Surgical Journal, No. XV.; and have been reprinted in several of the medical repositories in this country. Viewed in relation to the sympathetic intercourse between the stomach and the brain, these cases

are, unquestionably, of great value. The issue of both was complete recovery. I shall not reiterate the statements here, as they would occupy too much space; but should any of those who honour this treatise with a perusal, wish to give to the cases their deliberate consideration, I take leave to refer them to the records* specified below.

Under the head of "Sympathetic Apoplexy," is presented, (I guess by the editor as one of the physicians in attendance,) the† summary of a case fully as interesting as, or even more so than, those above referred to. "A gentleman, aged 68, who "had long shewn symptoms of what Rostan and "others would have termed '*Ramollissement du* "'*Cerveau*' fell down in a fit of apoplexy; and "not the slightest impression was made by all "the means which a trio of physicians could sug- "gest. The cupper employed left the patient "for dead, after taking four ounces of blood from "the head. He was apparently in articulo mortis, "after 48 hours of general paralysis and total "insensibility, with stertorous breathing, glassy

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* Medico-Chirurgical Review, New Series, Vol. XII., Page 251.
Medical Gazette, 1829–30. Vol. II., Page 59.
Medical and Physical Journal, Vol. LXIII., Page 362.

† Medico-Chirurgical Review, New Series, Vol. VIII., Page 455.

"appearance of the eyes and 'dead rattles' in "the throat. The physicians parted—to meet "no more—at least in that case. The ordinary "physician" (am I right in guessing the editor?) "took his leave at midnight requesting to be in- "formed in the morning at what hour the patient "died. No message having been sent, the physi- "cian called in the morning, and found to his no "small *surprise* the patient at breakfast, quite "sensible, and with the full power of all his mus- "cles!! The patient, soon after this, disgorged "some pints of fetid bile, and had no return of apo- "plectic or paralytic symptoms. This," adds the reporter, "is one of the many cases, where *irrita-* "*tion* of the chylopoietic nerves will simulate dis- "eases of the most fatal character,—and especially "those of the brain and nervous system generally."

From the increased secretion of bile, and the morbid change frequently exhibited in the colour of this fluid, it might be conceived, that, in the production of symptoms resembling those of apoplexy and other diseases of the brain, the liver, the functions of which in the economy are acknowledged to be so highly important, is as much concerned as the stomach itself. By some writers and practitioners, indeed, this viscus has, in such cases, been considered as involved to a greater extent than the stomach; and by others,—

aptly styled the "Iatro-Hepatici"—as the sole source of such affections, while they believe that the stomach is implicated merely in consequence of the diseased state of the liver. Although we know, that the stomach never performs its office in a satisfactory manner, when the liver is diseased; it is also indisputably true, that a healthy condition of the stomach is indispensable towards a right discharge of the functions of the liver. Nor can we be surprised at this, when we consider that the function of the stomach is the first stage of the process of chylification, in which the liver has, undoubtedly, its important part to perform, but this is in order secondary to that of the stomach. And as, from intemperance by overfeeding, and indulgence in the use of inebriating liquors, the stomach is the organ which receives the first morbid impression, we cannot justly come to any other conclusion, than that in disease, the morbid action, like the function of the liver in a state of health, follows that of the stomach in secondary order. An additional argument, in favour of this conclusion, is derived from the effects consequent upon injury of the cranium, and upon the vertigo which is induced by sailing on sea; in both of which examples the stomach is affected before the liver, the vomiting of its contents in the first instance taking place, and afterwards of bile not

only in large quantity, but of an appearance entirely altered from that of the fluid in its healthy state.

IN EPILEPSY.

Of all the instances of disease, in which our attention should be directed to the careful investigation of the share which the sympathetic action existing between the digestive and the nervous systems may have had in its causation, there is scarcely one which is more important and interesting than epilepsy, as it appears more especially in children and young persons; whether we regard the frightful and distressing phenomena of its paroxysms, or the drivelling fatuity in which its victims are frequently involved, continuing to the close of life, and rendering that life while it lasts, a spectacle of the extreme of woe. When it has commenced in childhood as it often does, "it acquires* a hold, and is confirmed by the "repetition of the fits till the frequency of their "recurrence, and the force of habit fix it, and "make it a constitutional disease for life." And it has been justly remarked by Dr. Prichard, that

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* Observations on the Utility and Administration of Purgative Medicines in several Diseases. By James Hamilton, M.D., Page 63. 1st Edition. 1805.

when epilepsy has become permanent, it has been taken for an idiopathic affection, and that too little attention has been bestowed upon its sympathetic origin; such a view, as every judicious and reflecting practitioner must now admit, being calculated to occasion many errors in the treatment, since the treatment of all diseases must, of course, depend upon the views taken of their origin.

When it has been found impossible, however, to remove the primary irritation; or when the disease has been allowed, by frequent repetition of the paroxysms causing long continued morbid action in the brain, to take a firm hold of the constitution; this malady, though arising in the first instance from disorder of the alimentary canal, becomes permanent; and in all its phenomena, and effects on the system, must then be considered in the relation of an idiopathic disease of the brain. "The longer the duration of the "disease has been," says Dr. Prichard,* "the less "prospect is there of entirely overcoming it; still, "if the disorder in the abdominal functions is "within the reach of medicine, the case is not, "after any period of time, altogether desperate. "Nature sometimes effects a cure after a patient "has been many years subject to the recurrence

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* Treatise on Diseases of the Nervous System. Page 253. 1822.

"of fits, and even after the brain has manifestly "sustained much injury."—He adds—"Similar "changes in the state of the constitution to those "which take place spontaneously, may be expect-"ed sometimes to follow the efforts of art." Dr. Prichard has adduced some cases, and I myself have seen several, which prove, although epilepsy originating from the alimentary canal "is occa-"sionally a deplorably obstinate disease," that it may, sometimes, even of long standing, be much relieved, if not altogether removed; which affords peculiar encouragement to persevere in the appropriate mode of treatment.

We cannot, I think, too highly appreciate the accurate observation of Dr. Hamilton, in suggesting a plain and simple method, by which, in many instances, this distressing disease may be arrested, before the attacks shall have become so frequent, as to rivet the disease in the constitution for life. He has demonstrated in the most satisfactory manner, that the general constitutional derangement, to which he has given the name of Marasmus, does, by the continued irritation excited and kept up in the bowels, sometimes affect the irritability of the system to such a degree as to produce epilepsy. The existence of worms in the intestinal canal has been by authors enumerated among the causes of this disease. These

can act upon the brain, only through the long-continued irritation, which they excite in the nerves of the alimentary canal. But, it may with equal reason be presumed, that any other cause of irritation, as the accumulation of acrid and vitiated secretions, or of a mass of undigested and putrescent cibarious matter in the stomach, and of fœcal deposits in the bowels, long retained and become morbific by the retention, will have the same effect in the production of the disease. This, in fact, has been amply and incontestably proved, by the success of the treatment directed on this view of its cause. For, by the steady and long-continued operation of judiciously selected and combined purgative medicines, followed up by a course of gently stimulating and tonic remedies, peculiarly suited to this morbid condition of the nerves of the alimentary canal, the disease has often disappeared; and this, even when no worms, after the most careful examination of the evacuations that had been procured by the purgative medicines, have been detected. This gives some reason to doubt, even where vermination does exist, whether, as Dr. Prichard says, "the "fits are occasioned by the irritation of worms; "or by the noxious effects arising from vitiated "secretions, and from the accumulated sordes in "the canal which are co-existent with worms."

In all cases, therefore, when the cause is not sufficiently obvious; and if, at the same time, there be constipation of the bowels, attended with fætor of the breath, distension of the abdomen, and especially in a pallid leucophlegmatic habit, it behoves us in a particular manner to attend to the state of the alimentary canal, as, by the course of treatment above mentioned, the disease may, in seasonable time, be arrested; which, if allowed to recur again and again, may in the end prove utterly incurable, and embitter all the days of the patient's future existence.

The affection of the brain in this form of epilepsy, although sympathetic in the first instance, at length, by frequent repetition of the paroxysms exciting irritation in this organ, becomes real; and a flow of blood then takes place towards it, requiring for its removal, depletion by general bleeding, leeching, or cupping. If the symptoms of the paroxysms be very severe, this will, on their invasion, be urgently demanded; but if, in the intervals, the patient be subject to indications of vascular fulness of the brain, as stupor, drowsiness, dilatation of the pupils, vertigo, starting during sleep, the repetition of these measures will be required from time to time. But, if the more urgent symptoms have been mitigated, all that will be afterwards necessary may be accom-

plished by repeated leeching on the temples; or, as more efficacious, on the internal nasal membrane lining the septum, or on the space behind the ears. The other auxiliary measures for the relief of vascular cerebral fulness must also be had recourse to, such as the application of cold, an elevated position of the head, the excitement of warmth in the feet, and of a gentle determination to the surface; but above all, as derivative, the free evacuation of the serous portion of the blood, by powerful cathartics.

In attacks of this disease on their first appearance and early repetitions, great caution, as in all other cases of determination to the head, must be observed in the use of emetics. These are never, without much consideration and circumspection, to be exhibited. If the disease has been evidently caused by certain indigestible or poisonous substances taken into the stomach, then they may not only be safely administered, but they are imperatively called for. When the malady recurs after frequent repetition, provided there are no symptoms of vascular cerebral plethora, but in persons of an atonic constitution, marked by a pallid aspect and flaccid fibre, and if it should be obvious, on proper investigation, that the recurrence of the fits is promoted by the force of habit; and if there be premonitory symptoms of

continuance sufficiently long to enable us to exhibit emetics; then their use may be beneficial, by arresting the paroxysm, and thus breaking the force of the habit. If the patient has been addicted to a gross mode of living, and from this cause is subject to symptoms of dyspepsia, in such case even in the intervals, their occasional use to evacuate the stomach, and also to change the habit, may be advantageous. If emetics should be exhibited, on account of indications presented by the state of the stomach, in any case where there are signs of sanguineous determination to the head, the vascular fulness must always, in the first instance, be relieved by bleeding general and topical, and the free administration of purgatives, according to the degree in which this fulness exists.

There is a certain class of cases of epilepsy, wherein much benefit has been obtained from the exhibition of the oil of turpentine; which cases may be adduced as affording special and satisfactory evidence of the symphathetic relation between the digestive organs and the brain; as these originate in a morbid state of the alimentary canal, which has been caused by depraved secretions, or other noxious matters, irritating the nervous fabric distributed upon its mucous membrane. The beneficial effects of this remedy are, no doubt, partly to be attributed to its action as a

purgative. This operation, however, may generally be more certainly accomplished, by other cathartics combined with calomel, or by a dose of calomel exhibited previously to a purgative dose of the oil of turpentine. But the efficacy of the medicine, when administered in smaller and repeated doses, is to be ascribed to its benign, its composing influence on the irritated nervous fabric of the intestinal canal. I can, unequivocally, bear my testimony to the accuracy of Dr. Prichard's observation, that it very soon materially changes the state of the mucous membrane of the alimentary canal, occasioning moderate and regular evacuations, correcting the tendency to a frequent repetition of griping and irritating stools; at the same time exerting a peculiar sedative or tranquillizing power over the nervous system, lessening irritability, the disposition to starting and convulsive twitching of the muscular fibres, and promoting sleep; this curative power of the remedy being, as well as the irritation which it removes, effected through the sympathy of the brain and nervous system with the digestive organs; and thus the influence of their reciprocal action is proved, both in the cure and in the causation of this disease. When the malady is either originally idiopathic; or the morbid action, by frequent repetition, has been altogether re-

moved from the intestinal canal to the brain, and the disease in this secondary way has become purely cerebral, just as if it had been originally so; the oil of turpentine can exert no beneficial influence upon it. In these instances, there can be no objection to a trial of the remedy; but if, after sufficient perseverance in it, the paroxysms continue unmitigated in severity, and recurring as frequently as before, there are then good grounds for believing that the brain has been seriously involved in the morbid action, and that the disease is of that character, in which this medicine can have no good effect whatever, and that therefore it is worse than useless further to persevere in it.

In the epilepsy sympathetic of intestinal disorder, after the morbid cause has been removed by a judicious exhibition of carefully selected and combined cathartics, and, if deemed proper, by the occasional use of emetics, the employment of those medicines known by the designation of *Antispasmodic* and *Nervine*, such as the fœtid gums, camphor and valerian, simultaneously with tonics, as cinchona either in substance or in the form of the disulphate of quina, and the sesquioxide of iron, will often prove highly advantageous. Some persons are disposed to underrate the value of such antispasmodic or nervine

medicines; but, when cases have been found to yield after their exhibition, which had previously resisted other remedial treatment, there is surely reason to conclude favourably of their operation in subduing the disease. This operation is doubtless to be explained, on the principle of their influence on the nervous system, communicated thereto from the primary impression made upon the nerves of the digestive organs.

IN THE CEREBRAL DISEASE, COMMONLY* NAMED HYDROCEPHALUS.

In this deeply interesting and dangerous disease, to which childhood and early youth are prone, we

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* I am decidedly averse to the employment of any words in a merely conventional sense, whether in the language of science, or in that of the ordinary affairs of life, as being peculiarly hostile to the progress and establishment of truth. I therefore, with M. Rostan, who, indeed, is not singular in this opinion, consider it full time that the word *Hydrocephalus* should be for ever expunged as the name of this disease; implying, as it does, *effusion, as its essential characteristic*; whereas, every well-informed member of the profession is aware, that, although this takes place in the *majority* of fatal instances, it is yet far from being an *uniform* consequence of the preceding morbid process which constitutes the disease, even when that terminates in death. The name, that we require for its designation, is one which shall indicate its *uniform character, whether it issues*

have an apposite and convincing illustration, not only in its invasion, but in its progress also, of the wonderful sympathy existing between the stomach with its subservient organs, and the brainand nervous system. Symptoms of derangement, at an early period, often appear in the former; and from the irritation excited by sympathy in the brain, the most alarming indications of morbid action, in this susceptible organ, afterwards manifest themselves.

Dr. Yeats has performed a signal service to the profession in calling, in an especial manner, the

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in recovery or death. Dr. Rush proposed *phrenicula*, considering the disease as a diminutive species of phrenitis; by which latter word was understood common acute inflammation of the brain. But, this being derived from Φρην the mind, I would discard it altogether. *Encephalitis*, as it is derived from Ἐγκέφαλος, the contents of the head, I consider distinctive of inflammation of the brain and its membranes. Although the disease named hydrocephalus is generally of a subacute inflammatory character; yet this inflammatory character is of a *peculiar* kind, and not a mere modification, or lower degree, of common inflammation of the brain and its membranes. Still, in taking the liberty, which I now do, of suggesting the name of ENCEPHALITILIS, as indicating the *uniformly inflammatory* nature of the disease, I conceive we should have a name which would sufficiently designate what we wish to express, whatever might be the issue of the morbid process; and if that should be in death, whether effusion should be perceived or not, on the anatomical inspection.

attention of practitioners generally, to those gradual deviations from health, as indicated by symptoms of derangement in the digestive organs; which, if not removed by timely measures, in many cases lay the foundation of this destructive malady. But it must be admitted, that this had been previously done by that acute observer Dr. Hamilton, in his chapter on the use of purgatives in that disordered state of the system, by himself denominated *Marasmus;* to which I have already had occasion to allude. It would appear, however, that Dr. Hamilton did not consider the disease when consecutive to Marasmus, as the result of inflammatory excitement in the brain, which the pathological researches of recent authors, both in this and other countries, have now incontrovertibly established; for it will be perceived, that he supposed this morbid state of the system, Marasmus, to operate by "impairing* the vigour of the con-
"stitution, and favouring serous effusion into the
"ventricles of the brain." The fact, however, is beyond all question, that he had often observed that "Hydrocephalus steals slowly on the devoted
"victim, with symptoms resembling those of in-
"cipient Marasmus;" and therefore to him is due the merit of having fixed the attention of the pro-

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* Dr. Hamilton's Observations on Purgatives: Page 62.

fession on the frequent abdominal origin of this fatal disease. To this end, also, Dr. Cheyne, in his first essay on Hydrocephalus, long previous to the publication of Dr. Yeats, contributed in a very considerable degree; and this indeed has been conceded by Dr. Yeats, who, in reference to the subject, has these words, "Dr. Cheyne appears to "be the first who directed the attention to the "morbid state of the abdominal viscera;" and, as Dr. Cheyne's opinion is stated in a treatise on the disease itself, it has been justly held by practitioners, as the first which was *distinctly pronounced* upon the subject; the disease, when at last appearing in the brain, being considered by the author, as depending on that *specific* inflammatory action which pathologists have ascertained to exist, followed, or not, as it may be, by the hydropic effusion. But it seems to me, that this distinguished physician, Dr. Cheyne, in estimating the amount of the abdominal source of the malady, has attributed too little to the morbid state of the stomach and intestines; and too much to that of the hepatic system, the derangement of which, as I formerly observed, is in most instances excited by, and consequent upon, that of the primary chylopoietic organs.

In the illustration of my subject in this disease, I have to remark, that the patient is generally

affected with most intense pain of the head, which is almost always accompanied with vomiting to a greater or less degree. Dr. Whytt, in his treatise on the disease, has affirmed that in two cases only out of twenty which he had observed, was this symptom absent; and the same sympathetic affection of the stomach has been remarked as an *almost* constant occurrence, by the practitioners of subsequent time. In the first stage, while the febrile state continues, there is loss of appetite; the tongue is in general covered with a white fur, though sometimes only in a slight degree; the breath has often a sickly odour; the thirst is in some cases urgent; the bowels are for the most part constipated, and sometimes so torpid as to resist the operation of the most powerful cathartics; in addition to which in many instances, when alvine evacuations have been procured, they are found to be* peculiarly changed from the healthy state,

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* I cannot insert this reference to the state of the bowels, without particular notice of the remark of Dr. Abercrombie, which I perceive in the third edition of his work on Diseases of the Brain. Pages 17–18. This, I presume to be an answer, indirectly, to the observations, in the review of the first edition, which appeared in Dr. Johnson's Medico-Chirurgical Review, Vol. VIII., New Series, Page 350. My own opportunities have certainly led me to remark the highly depraved state of the alvine secretions in this disease; and

being at times of a dark-greenish colour, of a glairy and glutinous consistence, sometimes mixed with matter of a yeasty appearance; and also to have a remarkable fætor. All these symptoms indicate, certainly, disorder in the primæ viæ; but, whether they are to be attributed to primary disease in these, or to be considered sympathetic of a morbid condition of the brain, is often a question of most difficult solution, especially as in such cases, intense headach and intolerable nausea by turns harrass the sufferer; and, while the nausea continues, the patient occasionally complains of pain in the region of the stomach. The irritabi-

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although I would by no means go so far, as to dogmatize this state as pathognomonic—as invariably present,—yet, from the general derangement of the chylopoietic organs in which this disease so often originates; and with which, whether primarily or secondarily, it is mostly associated; I am disposed to think, with all due deference to so high an authority, that it may be held as having often, at least, an intimate relation to the existence of the disease. And this, I consider, as not being inconsistent with Dr. Abercrombie's remark, "that even at the "most advanced period of the disease, the evacuations may often "be found perfectly natural;" because, when they have been disordered in the early stage, the treatment then adopted may have corrected the derangement of the hepatic and alvine secretions, by the immediate action of the remedies on the organs which supply them; while the cerebral disease itself persists, and approaches its fatal termination.

lity of the stomach is often so great, that retching and vomiting are induced by any changes of posture, the slightest movement of the head, and almost always by an attempt to sit upright in bed.

If the early symptoms of derangement of the primæ viæ have been so strongly marked, as to attract, in a particular manner, the attention of the little patient's friends or anxious relatives; although, at the time the practitioner is summoned, the brain, in consequence of the sympathy, is already excited into decided morbid action, as evinced by intense headach, with great heat of the scalp, delirium, knitting of the eyebrows, irritability of the pupil, intolerance of light and noise, screaming, convulsive twitchings of the muscles of the face, strabismus, double vision, perhaps dilatation of the pupils and coma; there can, I say, notwithstanding these symptoms, be no question where the original source of the disease *has been:* yet, in other cases, if the premonitory symptoms already referred to have escaped observation, and if there be a doubt whether they have ever existed or not, there must be an uncertainty in regard to the organ in which the disease *originated;* an uncertainty which is increased by the fact, that the principal symptoms *now* attracting observation are those above stated of the brain; and since no deviations from the healthy functions

of the digestive organs had been in the first instance perceived, it is just as reasonable to conclude that the affections of these, which, simultaneously with the symptoms in the brain, or consecutively to the latter, appear in the course of the malady, are symptomatic of disease of the brain; as that the disease of the brain has been the consequence of primary irritation in the primæ viæ.

Other causes may have operated upon a susceptible brain and nervous system, and produced the primary disease *there;* of which the disorder of the chylopoietic organs may have been merely the consequence. Or, if the gastric and intestinal disorder have been but slight, and if, in this case also, the brain and nervous system are naturally highly susceptible; these even may, from this slight irritation in the primæ viæ, have been by sympathy affected, and *that so intensely*, that notwithstanding the first symptoms of disease having been in the stomach and other digestive organs, and without which in precedence, the brain might never have been implicated; yet, this disorder of the stomach and intestines having appeared trivial to the friends and the medical practicioner; and the brain, from its peculiar susceptibility, having, at an early stage, taken on the morbid action; the disease in *every practical consideration* must be held as being *located in the brain;* for the brain is

then *decidedly—especially*—if it has *not* been *originally* impressed; and we are bound to regard the malady as *being of the brain*, and the symptoms which afterwards take place in the primæ viæ, as being decidedly sympathetic of this morbid state of the brain. In this view of the case we must treat it accordingly; and of the treatment conducted on this principle, an essential part, as in my general considerations I have insisted on, will be, to attend to the state of the digestive organs, without which, indeed, the most serious mischief would often arise. Thus then we see, that, from slight beginnings of disorder of the first passages, when the irritation has, by sympathy, been communicated to a highly susceptible brain, on account of the reciprocal influence existing between the nervous and vascular systems, as before observed,—*ubi irritatio, ibi fluxus*,—the brain becomes the principal seat of disease; and in many cases wherein this translation takes place, the malady marches on with all its striking peculiar symptoms. The affections of the stomach and bowels which now shew themselves, are to be considered symptomatic; thus proving what I formerly stated, that the organ impressed in the second instance may become the principal seat of morbid action; and in turn again affect, by what may be called the reflex or secondary sym-

pathy, the part which was the original seat of disease.

If the sympathetic relation between the brain and the digestive system be not well perpended, in estimating the prevalence of morbid action in the one or in the other, in each individual case, we shall be continually liable to fall into error. Although willing, at all times, to attribute the symptoms to primary irritation in the digestive organs, where the history of the case from the commencement unequivocally points this out; and more especially when I reflect on the fact, that in childhood this part of the system is more exposed, than any other, to causes of irritation; I should indeed commit the most egregious blunders, if I were to adopt, in all cases indiscriminately, this opinion of the origin of the malady, and of the source of the existing state of symptoms. And yet it is to be apprehended, that such has been the fascination of the doctrine of the general prevalence of *Gastro-enteritis*, that some of its most distinguished advocates, in many instances, deny the existence of the encephalic disease which we are now considering, where it is actually established; and will go so far as to maintain, that the disease before their eyes is gastro enteritis; explaining away the symptoms, asserting that the absence of pain in the digestive organs is owing

to the cerebral irritation secondarily excited; and arguing, "that pain being the result of a sensation "perceived by the brain, whatever alters its func- "tions removes this symptom of the inflamma- "tion." These words are quoted by Dr. Stokes* from Lallemand, and he himself says, "that where "the sympathetic excitement of the nervous sys- "tem is severe, many of the proper symptoms of "the original disease," (the gastro-enteritis,) are "absent." In confirmation of the assumed correctness of this argument, he has further adduced the following remark from the same author: "If this inflammation be intense, it is not "influenced in its development by the cerebral "affection, and all its other phenomena continue, "because, unlike the sensibility, they are not un- "der the dominion of the brain: *the disease runs its* "*course in a more dangerous manner, because it is* "*more difficult to recognize, and causes death, which* "*is attributed to the cerebral affection, although* "*this is but a secondary disease.*" So strongly inclined does Dr. Stokes appear to take into favour this gastro-enteritis; or, I should more correctly say, to accuse it, as the cause of disease, as to state that many cases of arachnitis, (by which I

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* Cyclopædia of Practical Medicine, Vol. II., Page 336, in the article Gastro-Enteritis.

would here understand the disease commonly named hydrocephalus,) and especially that of children are improperly treated; the cure, he says, being "attempted by revulsion upon the ori- "ginally suffering organ." He adds, "In* the "language of the day, the purging practice gets "'*a fair trial*,' and the child dies more often of "the exasperated intestinal inflammation than of "the disease in the brain."

Far indeed am I from opposing the practice of leeching the epigastrium, where gastro-enteric inflammation is *undoubtedly ascertained to exist.* But, to persevere in this course, on the mere supposition of the existence of this morbid state, there is too much reason to believe, has often led to the injury, and sometimes the death, of the tender sufferers. So considerate truly ought we to be, before adopting the notion of gastro-enteritis, that, if we find a child labouring under either constant irrepressible vomiting, or occasional vomiting with sickness in the intervals, which has been recurring day after day, or even with intermissions of one or two days; we should always put this question to ourselves, and to those who may be associated with us in attendance, *whether it does not depend upon disease of the brain;* for it ought then to be

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* The same book, page 335. in the same article.

well recollected, since the stomach by its intercourse with the brain affects so many organs, how readily it may, through the same intervention, be affected by disease in other organs; but far more remarkably by *disease of the brain itself*, with which it *so peculiarly, so directly sympathizes.*

The symptoms of disorder of the primæ viæ, which, in addition to others, gradually precede the supervention of disease in the brain, are impaired and capricious appetite, white or loaded tongue, constipated or variable state of bowels, and the altered appearance of the dejections. If these symptoms have been overlooked, or have not existed in any case to which we are called, and in which vomiting with or without headach is a prominent symptom, having resisted all the usual means, employed on the supposition of its gastric origin, to repress it, we then have reason to conclude, that disease in the brain, whether idiopathic or symptomatic, is *established;* and the vomiting must be regarded *not* as the indication of a primary affection of the stomach, but as symptomatic of cerebral disease; just as this symptom is occasioned by contusions and injuries of the head; and further, we have reason to conclude, that this specific encephalic inflammation is the cause, which has produced all the symptoms so

pertinaciously ascribed by the Broussaian disciples to the persistence of gastro-enteritis; symptoms which, instead of leeches to the epigastrium, demand their application to the temples and the space behind the ears; blisters to the nape of the neck; evaporating lotions or cold epithems to the head, or the direction of a stream of cold water thereupon; the exhibition of purgatives with all due care to ensure, if possible, their retention upon the stomach; a warm pediluvium rendered irritating and derivative by the addition of mustard; the speedy influence of the mercurial action; with the proper elevation of the head, and the seclusion of the patient in quietude and darkness. I shall not apologize for repeating, because it is a most important remark, that we shall never take a proper pathological view of any case, and of course can never establish a rational method of treatment, while an undue preference is given to either the brain and nervous system on the one hand, or the stomach and its subservient viscera on the other; while the remarkable sympathy existing between the two systems is not fairly taken into account, in weighing all the symptoms in every case. If Dr. Yeats has too exclusively viewed the disease as originating in the primæ viæ, he has qualified the doctrine in no inconsiderable degree, by stating his opinion, that whe-

ther there is a conversion of disease from the digestive organs to the brain, or a synchronous morbid action existing between them, the *brain should be an object of watchful practice*, without neglecting to pay particular attention to the former. Although, however, this excellent physician is so strongly inclined to the belief, that in the great majority of examples of this disease, it is symptomatic of primary disorder of the chylopoietic organs, he does not deny—*that* we must do him the justice to say—the occasional occurrence of the idiopathic disease, independent of previous disorder of any other organ.

Some practitioners of eminence, Dr. Abercrombie of the number, consider that too much importance has been attached to the alleged production of this disease, from preceding disorder in the digestive organs. It is the opinion of the latter, that, as it may appear in connection with disease of any other organ, the affections of the liver and bowels, arising in an unhealthy constitution disposed to take on inflammatory action, are the mere concomitants, and are not to be considered as the cause of this disease of the brain. It is certain that other morbid conditions of the body, as well as derangements of the chylopoietic viscera, sometimes produce the disease; in other words, dispose the system to its ready

invasion; as it is known to have been consequent upon fever, continued or remittent, scarlatina, and measles; and, in children, we are aware how irritable the brain generally is, and how prone it is to inflammation, from any causes exciting febrile commotion. That the process of dentition has occasionally favoured its production, is a fact also well known to practitioners; for, although many of the symptoms excited by this cause, resembling those of the disease in question, may be removed by scarifying the gums, the appropriate use of leeches, and the exhibition of purgative medicines; still, if those remedies had *not* been timely applied, and the symptoms, from neglect of such treatment, had been allowed to proceed unrepressed, the affection would, we have strong reasons to conclude, in many cases have terminated in this disease. All this being perfectly clear then, I conceive that we cannot justly deny the very frequent causation of the disease, by primary derangement of the digestive organs. In stating this opinion, I may refer to the occasional affection of the brain in other examples of disease, from causes acting in the first instance on the stomach and bowels, and their removal by the operation of remedies directed to the removal of such causes of irritation; and in the disease now claiming our attention, we must take into consideration the vast

extent of the mucous membrane of the alimentary canal; the numerous sentient nervous papillæ, and the important vascular apparatus distributed upon it, by means of which it is endowed with the function of secreting abundantly; its exposure to the action of irritating causes, these being its own vitiated secretions, and improper indigestible articles of food, and those things of confectionary and the like which are often, from mistaken kindness, so lavishly given to children. As the febrile irritation, which takes place in the body from chylopoietic derangement, is produced through the agency of the brain and nervous system upon the heart and arteries, we clearly perceive why the *organic medium itself, the brain*, by reason of its peculiar susceptibility, and the irritation therein soliciting an increase of blood in its vessels, is excited in an especial manner, and often to such an extent as to assume that inflammatory state, which, when fatal, with other morbid lesions, most frequently displays the effusion, from which the disease has obtained its common name.

Dr. Yeats has, with great judgment, illustrated this ready sympathetic affection* of the brain in early youth from irritation of the digestive organs,

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* Medico-Chirurgical Journal, 1818-20. Vol. I. Page 612, in a letter from Dr. Yeats to the editor.

by the fact of the great supply of blood which is carried thither during its growth, for the full development of the sensorium; and, in illustration of the rapidity, with which morbid action is sometimes transmitted from one part of the body to another, in so much that there shall be no trace whatever of disease in the first affected organ, while that which has been ultimately excited shall alone prove fatal; he has referred to the retrocession of rheumatism* to the heart, of gout to the stomach, and of erysipelas to the brain; no mark of these diseases appearing *after* the retrocession, although sufficiently evident and severe *previous* thereto; in which instances, the heart, the stomach, and the brain are found diseased on examination after death, which organs had exhibited no symptoms of disease *before* such retrocession. This observation, he says, is equally applicable to the connection between the irritation of the digestive organs and the production

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* I may here notice, that the opinion, of metastasis of rheumatism to the pericardium and heart, has recently been considered, by some eminent practitioners, as unfounded. They assert, from their observation, that the affections of the heart and joints are in some cases *simultaneous*; while, in others, that the affection of the pericardium is *antecedent* to that of the joints.

of hydrencephalus ;* in which disease in this way produced, the brain *alone* shall be found to exhibit extensive morbid alteration. Whether the process has commenced in the head or in the abdominal organs, he justly remarks, that the reciprocal sympathy is such, that neither can be long much affected without some part of the other being called into morbid action; but that, from considering hydrencephalus as a disease of the head only, without regarding the state of the digestive organs, has arisen the fatality, which, on this supposition, has almost uniformly attended it.

In medical works, we find great importance attached to the necessity of distinguishing hydrocephalus from the diseases, which, in many of their symptoms, have been observed strongly to resemble it, such as worm fever, and the infantile remittent fever. From the latter, in the most recent treatise on the disease, that by Dr. Joy in the Cyclopædia of Practical Medicine, I perceive a numerous host of symptoms detailed with a view to this diagnosis. But, if the origin of this dangerous disease of the brain is so frequently to be looked for in the primæ viæ, it of course

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* It has been thus named by Dr. Yeats as more appropriate than *hydrocephalus*.

points out to us the great necessity of directing appropriate means to this part of the system, with the intention of preventing the formidable consequences which we have reason to anticipate; and while we bear this in mind, these minutiæ of distinction would appear almost superfluous, of which, indeed, this author seems to be aware, as the following sentence testifies: "Amidst* our "efforts to establish a diagnosis in any particular "case, we must not forget that diseases are at "times, in the language of the older writers, "convertible into each other; or that, to use the "more moderate phrase, complications may arise "in their course, and the secondary affection "eventually predominate over the original. It "is thus that in the course of infantile fevers hy-"drocephalus frequently comes on, and often with "such insidious advances as altogether to elude "observation almost up to the very moment of "its fatal termination; we confess we have even "remained doubtful as to the existence of the "disease within the head till the scalpel revealed "its presence." In the infantile fever, the greater the degree of abdominal disorder, and the more acute the febrile commotion of the system; in

* Cyclopædia of Practical Medicine, Vol. II. Page 459, in the article hydrocephalus.

short, the more strongly marked the affection is by constitutional derangement, the better chance is afforded of preventing cerebral disease; for an active practice is thus directed to the source of the malady, which these timely measures may at once arrest, or so far alleviate, as to take away all danger of the supervention of encephalic disease, and to facilitate the subsequent progress of the case to a favourable issue. When the abdominal disorder is slight; when the symptoms of general constitutional derangement are less prominent; when the affection takes place in scrofulous habits, and proceeds in an insidious manner, when the attendant fever is of a slow and languid type; and when the active treatment indicated in the first state alluded to cannot be adopted, because there is not the same ground to work upon for the successful operation of remedies, as in such cases the strength of the patients would be reduced without making a satisfactory impression on the disease;—this, I would observe, is the state of symptoms most likely to be followed by cerebral disease, which will most probably go on to a fatal termination.

In order to prevent the development of encephalic inflammation in the course of the infantile fever, the most assiduous attention should ever be directed to the head. If there be wakefulness

with aversion to light; if there be occasional delirium; if the child be irritable and easily startled by noise; if the pupil contract more sensibly than it ought to do; and if, at the same time, there be much heat of the scalp and forehead; and also occasional vomiting; there is ample reason for believing, that this condition of the patient proceeds from a more alarming cause than mere irritation of the brain; or even, if it should not, that this irritation may pass on to inflammatory action. The same anticipation of cerebral disease ought to be had in view, if several symptoms of an opposite character, such as stupor, drowsiness, and dilatation of the pupils should be present. In all examples of this description, therefore, the head should be kept properly elevated; the scalp should be shaved and cold thereto applied as formerly mentioned; and the bowels ought to be freely acted upon. Then, after a due trial, if these symptoms continue unabated, although there may have hitherto been no complaint of pain in the head, yet, as insidious inflammation of the brain may have been going on for some time; it will, assuredly, be more prudent, by recourse to other decisive measures, among these, the topical detraction of blood, and the constitutional influence of mercury, to take the chance of acting somewhat prematurely, and thus to *anticipate* the more unequivocal

symptoms, *than patiently, in false security, to wait for them.* By thus having a constant regard to the sympathetic relation between the digestive organs and the brain, in all diseases wherein both are notably subject to derangement, the practitioner will best acquit himself to the satisfaction of his own conscience, as well as with the greatest prospect of benefit to his patient.

In regard to the prognosis in this disease,—which, as relating to its origin in particular instances, is connected with the doctrine under discussion,—there has been a difference of opinion among practitioners; no doubt, arising from the different character of the cases, from which they have drawn their conclusions: some thinking that the prospect of success is more favourable in those, of which the progress is slow and gradual; time, according to their view, being thus allowed for the successful operation of remedies; while others, and among these, Dr. Abercrombie, consider, "that * the ground of prognosis in particular cases "depends in a great measure upon the activity of "the symptoms. The more they approach to the "character of active inflammation, our prospect "of cutting them short will be the greater; and

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* Researches on Diseases of the Brain. Third Edition. Page 145.

"the more they partake of the low scrofulous "inflammation such prospect will be the less. "In all of them, the period for active practice is "short, the irremediable mischief being probably "done at an early period of the disease." I may here remark, that such contrariety of opinion may be perhaps explained by the following view of the matter. That, where there exists primary derangement in the chylopoietic organs, by suitable treatment directed to the removal of the retained fœcal contents of the bowels, and of their vitiated secretions, and to the restoration of the healthy functions of the organs which produce these secretions, we may expect to prevent the formation of the disease ; that, by watchful attention to the progress of the case, keeping ever in view the possibility, and as it proceeds, the probability, of the supervention of this encephalic inflammation ; meeting the first symptoms with remedies directed to the head itself, these being regulated both in number and extent by the severity of the symptoms, and the duration of the disease, we may subdue the inflammatory action, which, in all probability, would have otherwise proceeded to a fatal termination : while, in cases which present, at an early period, symptoms of a decidedly active character, approaching to that of ordinary inflammation, and which therefore

call for the vigorous exertion of the powerfully antiphlogistic practice, we have a chance of success, which, in cases of the insidious kind, is not to be expected; where the symptoms of disorder of the chylopoietic viscera have either not appeared at an early period, or have not attracted sufficient notice on the part of the anxious relatives and friends, for the timely guidance of the practitioner, with a view to the anticipation of cerebral disease. Such anticipation in the practitioner's mind, of the development of this encephalic affection, will lead him, by direct remedies, often to arrest its further progress when it does appear; and, when we may reasonably look for it, although it has not yet appeared, to prevent its formation altogether.

As to the question, whether hydrocephalus has ever been cured; I consider that the successful cases, which, in Dr. Abercrombie's language, "have exhibited all the usual symptoms of it," if they are not to be regarded as hydrocephalus in the literal acceptation of the word, I mean serous effusion, *vulgo*, "Water in the Head," are not to be held as being merely remarkable from their singular resemblance to the disease, which, in connection with my subject, I have now been commenting upon; but that they have most decidedly been those of that encephalic inflammation, which, without the treatment that had been

pursued, would have gone on *with* or *without effusion* to the destruction of life. For it ought never to be forgotten, that, although hydropic effusion is very frequently perceived in the fatal cases, it can be regarded as merely a *part*, or perhaps only a *concomitant*, of the process by which the disease terminates in death; and it was sagaciously inferred by the late professor Gregory, that, in those cases wherein it was not observed, it most probably would have taken place, had the patients survived only one or two days longer. Different diseases, with respect to the whole number attacked, are fatal in various proportions. This encephalic inflammation has been long considered, in such relation, as one fatal in a very high proportion. But now, since the principles established by different eminent men, among whom Dr. Abercrombie holds so prominent a place, have become more and more diffused among the generality of practitioners; there are grounds for hoping that the successful cases may become more and more numerous, by active treatment seasonably adopted; while, by following the precepts introduced by Dr. Hamilton, and in this disease peculiarly inculcated by Dr. Cheyne, but, above all, most specially by Dr. Yeats, a prophylactic course may often be instituted with the effect of *preventing* the formation of the disease, in

numerous instances, in which it would otherwise have occurred.

In a former part of this treatise I alluded to cases in which, disease of the brain having immediately followed external injuries of the head, sympathetic disorder of the digestive organs had taken place, and secondarily reacted upon the brain, after all primary symptoms in this organ had been, for a considerable time, removed. The disease, which in relation to my subject I have been considering, though it occasionally is the direct effect of morbid impression of the brain from the external lesion, has also been known to arise from a constitutional derangement originating in disorder of the digestive organs, which had been consecutive to the primary cerebral disease produced by the injury. In such cases, it is quite reasonable to infer, that if no sympathetic disorder in these viscera had taken place, which afterwards reacted on the brain, this organ would have continued free from disease, after the first effects of the injury had been removed; and in all such cases of injuries of the head followed by sympathetic disorder of the digestive organs, in order to prevent the secondary production of disease of the brain, which *may* prove to be this *peculiar* encephalic inflammation, it is of the highest consequence to regulate the functions of these viscera

by the use of alterative aperients, and rigid attention to dietetic management.

IN CHRONIC DISEASE OF THE BRAIN.

I have now to bring under notice, certain disorganizing processes in the brain, these being of particular interest in reference to the wonderful sympathy which forms the subject of this treatise, and of which they present so prominent an illustration; as the most remarkable symptoms in such affections often appear in the stomach, and by reason of the urgency of such symptoms, considerable difficulty is generally experienced in coming to a satisfactory conclusion, in regard to the seat of the malady. In some of these cases, indeed, wherein the sickness and vomiting have been so distressing as to absorb the whole attention of the patient and his friends, as well as of the medical practitioner, although there may have been more or less of headach, with other uneasy feelings in the head, these symptoms have yet been so slight, that the disease has been referred through the greater part of its progress, to the digestive organs; the headach and other sensations in the head being considered altogether symptomatic; still, in the same instances it has been found, on inspection after death, that chronic

disease had been for a long time going forward in the brain, exhibiting the same appearances as in other examples, which had manifested no symptoms whatever of disorder in the stomach; but in which the morbid indications were those of cerebral disease alone; the lesions displayed to view in these last-named cases, corresponding in various degrees to the symptoms which had been perceived. The necroscopic appearances have sometimes been those of softening of one or more portions of the brain, and in other instances have exhibited tubercular induration of this organ. Where the prominent symptoms have appeared in the stomach, in forming our opinion as to the seat of the disease, Dr. Abercrombie, with his wonted sagacity, remarks, that "we* must beware of being "misled by observing that the symptoms are al- "leviated by a strict regimen, or by treatment "directed to the stomach itself." He next makes the highly important remark, "if digestion be "impeded from whatever cause, the uneasy symp- "toms may in this manner be alleviated; but no "inference can be drawn from this fact in regard "to the cause of the derangement." Such are the cases in which, on taking into full consideration

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* Researches on Diseases of the Brain. Third Edition, Pages 321-2.

the sympathy existing between the stomach and the brain, the decision, as to the real seat of the malady, is at times so difficult, as to baffle the discrimination of the most acute and intelligent observers.

I have a strong inclination to insert here, the account of a very remarkable case related by Dr. Abercrombie, (being the 32nd in the third edition of his work on Diseases of the Brain,) which, as having a special reference to the tenor of the preceding observations, I trust, I may, without censure, take the liberty of doing. The marking in *Italics* of portions of the narrative is by myself, for the purpose of directing particular attention to these, as indicating the difficulty, by reason of the sympathy between the stomach and the brain, of determining the real seat of the morbid affection. For it will be perceived, that although well apprised, from the history of the case as described by Dr. Combe and the late Dr. Kellie, of the probable existence of Brain-Disease in the early stage of the affection, this eminent pathologist and physician, at the period of his being called into consultation, *doubted*, from the *slightness of the symptoms in the head* and the *remarkable prominence of those in the stomach*, whether there was *then* any fixed disease of the head. I presume so far as to think, that he was well inclined to believe it had been entirely removed.

"A gentleman, aged 26, of a plethoric habit, had suffered "occasionally for two or three years from headach and "vertigo, which were always relieved by depletion. On "12th April 1827, while walking out, he was seized with "confusion and giddiness, embarrassed speech, and a con- "siderable degree of paralysis of the right leg. He was ra- "ther pale; his pulse was 70 and soft; and he did not com- "plain of any headach. The usual treatment was adopted "with activity by Dr. Combe of Leith, without much relief. "On the contrary, after several days he began to complain "of acute headach, accompanied by vomiting and hiccup; "and the other symptoms continued nearly as before,—his "speech being laboured and slow, and his memory very "defective. After some weeks these symptoms subsided, "so that he was able to walk out; but the headach con- "tinued with *frequent vomiting*. The pain was chiefly "referred to the left side of the head, sometimes to the "occiput, and there was occasional numbness in the right "arm. When I saw him, along with Dr. Combe and Dr. "Kellie in July, *his chief complaint was of frequent and "irregular attacks of vomiting, occurring daily, or repeatedly "during the day. It came on very suddenly, without previ- "ous nausea, and he was often awakened in the night by the "sudden attack of vomiting.* He had now a pale sickly "look; there was no paralytic affection, and little complaint "of headach; though he still had occasional uneasiness in "the head, sometimes referred to one part of it and some- "times to another. When he did refer it to a particular "part as the principal seat of the pain, it was either the "left temple or the occiput. But *the headach at this "time was slight and transient, and the symptoms in the "stomach were so much the more prominent, that it was a "matter of much doubt whether there was now any fixed dis-*

"*ease in the head. The vomiting was much relieved by the* "*subnitrate of bismuth, so that he was free from it for several* "*days. But it soon returned and went on as before, with in-* "*creasing debility, great listlessness, and bad appetite;* pulse "little affected. He had now a peculiar unsteadiness of "his limbs, so that on first getting up into a standing pos- "ture, he staggered very much and required some time and "attention to steady himself. When he had accomplished "this he walked with tolerable firmness. The symptoms "went on in this manner till the 27th of October, when he "was suddenly seized with violent and continued convulsion, "and died in nine hours.—*Inspection.* In the substance of "the middle lobe of the left hemisphere of the brain, about "the level of the lateral ventricle, there was a portion in a "state of complete ramollissement, about an inch and a half "in length, and an inch in its other dimensions, and the "neighbouring parts appeared unusually vascular. The "tuber annulare and pons varolii were softer than usual, "but otherwise healthy. No other morbid appearance "could be discovered in the head, and all the other viscera "were healthy.—*Remarks.* It is unnecessary to point out "the very remarkable features of this case. The sudden "attack so closely resembling the ordinary paralytic attack, "must have been connected with the commencement of the "inflammatory stage. *The remarkable symptoms in the* "*stomach* in the farther progress of the disease, and the "mode of its termination, make it altogether a case of great "value in the pathology of this* remarkable affection."

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* That to which, by adoption from the French, the name of *Ramollissement* has been applied. I think that one of English termination and pronunciation—*Mollescence*—would, in English writings, be preferable.

A case possessing equal interest to the foregoing, in relation to the subject under discussion, has been reported by Dr. Chambers from the records of St. George's Hospital; whither the patient, a woman, was sent by Dr. Johnson who had previously attended her. From the abstract of the case published by the latter,* it appears that the principal symptom on her first application to him, was Hœmoptysis induced by coughing, which was stopped by a few doses of superacetate of lead and opium. "She next complained *of sickness of stomach whenever she* "*took food*, together with pain in the occipital region of "the head. Blisters were applied to both parts, and medi- "cines given to quiet the gastric irritability, but without "success." On account of bad accommodation at her residence, she was now sent to St. George's Hospital. "*There* "*the sickness of stomach and pain of the head were treated* "*with the same want of success as before.* There was no "tenderness of the epigastrium or abdomen—pulse from 80 "to 90—tongue clean—skin cool—bowels constipated. "The intellectual functions were never disturbed. Among "other remedial agents, she was placed under the full in- "fluence of mercury—an issue was inserted in the back "of the head—blisters were applied to the epigastrium— "opium, subnitrate of bismuth, &c. were given internally "—but all to no purpose. At length she died exhausted "by the progressive increase of the symptoms." On in-

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* Medico-Chirurgical Review, vol. v. New Series, Page 584.

spection, "*no diseased appearance was found in the stomach* "*or bowels.* In the centre of the posterior lobe of the right "hemisphere of the brain was a small tumour, the size of "a hazel nut, somewhat softer than the contiguous brain. "A similar mass was found in the posterior lobe of the left "hemisphere. The left lobe of the cerebellum was almost "entirely destroyed by the suppurative softening of a simi- "lar tumour occupying its interior. The surrounding ce- "rebellic substance was softened, and there were three "ounces of water in the ventricles."

"This case," observes the editor, "illustrates "well the sympathetic effects of cerebral disease "on the stomach. *It was of the latter organ that* "*the patient chiefly complained.* With all this or- "ganic disease of the brain, the intellect was un- "impaired to the last."

Had I searched the whole records of medical science, for examples in attestation of the intricacy in which our attempts at diagnosis, in such affections, in consequence of the sympathetic relation between the stomach and the brain, are sometimes involved, I believe I could scarcely have met with any more appropriate than the two above recited. I have thought it right to insert the statements at length, as any condensation of cases so interesting would have been very unsatisfactory. Reflection inclines me here to remark, that, in similar cases, where, on investigating the history, we find, that, at an early stage of the disease, there

have been headach, vertigo, confusion of intellect, embarrassed speech, some paralytic affection of one side, and defective memory; even although these may be entirely removed, and the symptoms of stomach-disorder alone presented to our view; we have some guide to our diagnosis of which we are deprived, in cases were no such symptoms in the head have preceded at some period or other; or where they have been inconsiderable in number and severity, as for instance slight headach, confusion, tinnitus and vertigo, which are often known to arise from mere functional disorder of the stomach. If the head-symptoms above enumerated have been present either at an early or at a later period, notwithstanding the presence and severity *now* of the symptoms in *the stomach alone*, we shall be apt to lapse into error, if we regard the last named organ as the seat of the disease; difficult as the decision may be, where all symptoms of head-affection have been absent, or have been only of trivial amount. But even in these circumstances, we should never lose sight of the sympathy between these important organs; which should induce us to consider at least the possibility, if not the probability, of the source of all these gastric symptoms existing in the brain. And here it may assist our discrimination, in accordance with the suggestion I formerly made, to institute special

enquiries, with a view to ascertain whether any injury had been inflicted on the cranium at an early period of life, even although this may not have been followed by any serious consequence at the time; and further, it will be of great importance in all such doubtful cases, to interrogate very particularly as to the hereditary morbid predisposition. For, if we find that the parents or near relatives of a patient afflicted with obstinate symptoms of stomach-disorder have been subject to certain affections of the brain; apoplexy, paralysis, epilepsy; or, that any brothers and sisters in childhood or in early youth, had been carried off by the disease named hydrocephalus; we have indeed strong grounds for concluding, that the urgent symptoms of stomach-derangement have their origin in the brain.

IN HEADACH.

Of the great error into which some practitioners are apt to fall, of prescribing for the names of diseases or for symptoms, we have a striking instance in this affection, which is well known to be a symptom common to various diseases; for it will be evident, that to treat every example of headach in a manner invariably the same, without due reference to the actual disease of which it is

merely a symptom, and which is in many cases obscure, must place, on certain occasions, the unfortunate patient in the most imminent danger. This is an affection, which at all times demands the most careful and strict investigation; in recent acute, and more especially, in chronic cases; for while, in the former, it may sometimes proceed from a plethora of the vessels of the brain, indicating a tendency to apoplexy, or from inflammation of the brain itself; at others it may arise entirely from sympathy with the stomach, in consequence of the latter organ being more or less disordered; and while, in chronic cases of long standing, it may originate from insidious inflammation of the brain and its membranes, ossification of the membranes, disorganization of the brain itself, such as mollescence of that organ, or indurated tumours therein imbedded or attached to its surface; on the other hand it may proceed altogether from fixed organic disease of the stomach and intestines, the organization of the brain and its membranes remaining entire;—of this, examples have been recorded by Morgagni and others;—or, however distressing the affection, it may be caused by disorder of the functions of the stomach only, without the slightest deviation from its healthy structure. In some cases, wherein organic disease of the brain has

been proved after death to exist, and in which, according to Dr. Abercrombie, the pain of head was intense, being aggravated to perfect torture by the slightest motion, yet* in such "the remis-"sions from this severe suffering are often so re-"markable as to lead a superficial observer into "the belief that it is merely periodical headach, "or headach connected with dyspepsia. This "latter supposition is also countenanced by the "stomach being frequently much disordered, and "by the more violent attacks being often accom-"panied by vomiting."

In regard to that species which has been called the *sick headach*, I must express my accordance with the general opinion of its origin, differing as this does from that of the late distinguished physician, Dr. Caleb Hillier Parry; not because in it the symptoms of stomach-derangement are so strongly marked; but because, on considering its exciting cause, namely, certain dietetic errors, we have just grounds for referring the disease to the stomach and other digestive organs. In the headach which is not attended with those simultaneous symptoms of stomach-disorder, sickness and vo-

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*Researches on Diseases of the Brain, Third Edition, Page 317—in the description of the author's first class of its organic diseases.

miting, it may nevertheless proceed, as I know has often been the case, from irritation in the stomach and other digestive organs; notwithstanding, in regard to this also, the opinion of Dr. Parry, who says, that "the common headach which afflicts "nervous patients without sickness, is usually* "and erroneously attributed to the alimentary "canal," but "that dyspepsia is so far from being "usually a cause of headach, and other affections "which pass under the name of nervous, that they "rarely accompany each other." While, however, I deny the general and sweeping assertion of this eminent individual, as to the *very rare* dependence of headach on the state of the stomach, it must be acknowledged, in the words of another eminent and industrious physician, Dr. Bartholomew Parr, after his "experience of nearly forty years," that at times "the † decision is difficult and precarious."

In all cases of headach, in which we find the determination of its source to be a matter of difficulty, it is morally incumbent upon us on first visiting a patient, to be exceedingly cautious in pronouncing a decided opinion; and unquestionably, rather to risk the imputation of indecision,

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* Elements of Pathology and Therapeutics, Pages 303-4—1815.

† London Medical Dictionary. Vol. 1. Page 388, under the word *Cephalalgia*.

than precipitately to state an opinion which we might see cause afterwards to alter; and, *if we act conscientiously*, to declare this alteration in our views of the case. But this previous consideration will never find favour with persons of weak minds, who are always best pleased with the prompt, instantaneous answer of an ignorant and audacious pretender. And, as in this affection the minds of such patients are still further weakened by the distressing symptoms of pain and heaviness in the seat of thought, this is another reason why, here especially, they will be much dissatisfied, unless they obtain an opinion free from the least semblance of doubt. Sometimes, indeed, when it has been clearly ascertained, that the headach has originated from some primary affection of the brain, an attack has been known to be occasioned by causes acting on the stomach itself, even by the slightest errors in diet, or the presence of acid or otherwise vitiated secretions. Considering the susceptibility of the brain to all morbid impressions transmitted to it through its sympathy with the stomach; increased, as this must be, by the existence of long-continued disorder in itself; this ready excitement from causes acting on the stomach can easily be explained.

It will be at once apparent, of what great importance it is to ascertain the cause of headach,

where this can be done; to refer the affection to the real disease of which it is merely a symptom, previously to the direction of the mode of treatment. For while, in those cases depending on chronic inflammation of the brain, local bleeding, purgatives, the exhibition of mercury, and counter-irritation will be required; in those proceeding from a disordered state of the stomach, with the exception of the purgatives in modified doses and varied combinations, none of these remedies will be indicated. In such cases it will often be proper to administer emetics, as soon after the attack as we may have an opportunity of prescribing; and also on future occasions in the progress of the complaint. Here, then, is an occasion for the exercise of discriminating judgment; because, if the disease proceed from an undue determination of blood to the vessels of the brain; which may take place in inflammation of that organ, a tendency to apoplexy, and in organic disease of the brain; we incur the hazard of exposing the patient to the greatest peril, as the determination of blood will be increased by the efforts of vomiting and retching, involving the probability of rupturing the vessels of the brain; which might terminate either in apoplectic death, or in a state of paralysis, in many instances of which, the prolongation of life is scarcely to be wished for by the patients

and their friends. But in those cases of headach, although severe, yet arising merely from a disordered state of stomach, the free operation of emetics will not only be attended with no danger, but will almost always be followed by the most beneficial results; and the relief is often so speedy as to excite in the minds of the patients, on future attacks, the most urgent desire for their repetition.

It has been objected in such cases to the use of emetics, that their frequent exhibition, like all other acquired habits, creates a necessity for their future repetition; and that, as the cure may be accomplished by a course of aperients, it is better to trust to these than to create this necessity. Doubtless, where this can be done by the aperient plan *effectually* and *without much loss of time*, I allow that it *is* better to adopt this course. But there are cases in which the operation of cathartics is too slow for the urgency of the symptoms; in which a remedy that shall be more speedy and certain in its operation is demanded; in which the stomach has temporarily lost the power of unloading itself thoroughly into the duodenum; and in which bleeding would be attended not only with no benefit, but with actual detriment; but in which the timely exhibition of an emetic, by speedily removing from the stomach the noxious and

irritating cause, will be followed by decided and immediate relief. In less acute cases, where, from long-continued imperfect digestion, part of the aliment remains for days, sometimes even for weeks, in the stomach, the most judicious course of properly selected and combined cathartics will not suffice to remove the offending cause. This organ, therefore, requires a remedy which shall operate especially upon itself; for, in addition to the remains of undigested food taken at different times, it is harassed by the accumulation of its own highly-depraved secretions, the result of a morbid action in its secerning vessels; and an emetic, I conceive, in such cases, acts beneficially not merely by causing the ejection of the imperfectly digested remains of former meals, and of the vitiated secretions of the stomach,—which, while therein, continue to excite the irritation consecutively propagated by nervous sympathy to the brain,—but by changing the action of these vessels, exciting in them a new and healthy tendency, and thus promoting in them a vigorous secretion of the gastric fluid, in an improved condition. Emetics, in such cases, also operate in promoting the other secretions; those of the intestines, as well as those of the other viscera, which flow into the canal. It may sometimes happen, that, before a cure is established, the repetition of the emetic will be

required, not once, but again, and, peradventure, also again; as neither the whole of the irritating matters may be evacuated on the first or even the second exhibition, nor that change in the action of the secerning vessels fully produced, to which I have alluded as an important benefit from their use. They must therefore be repeated several times if necessary, until the good effects which we desiderate are accomplished. But this necessity will be very much obviated, by the subsequent occasional employment of such aperients as may ensure the natural action of the bowels; with mercurial and antimonial alteratives, where these may be requisite, to improve the secretions; and the judicious combination of these with such other means, as the peculiar progress of each case may indicate.

With physicians of a former age, a very general practice prevailed of treating dyspeptic affections, and, among these, the headach arising from disorder of the stomach, by the exhibition of emetics. Up to the time of the publication of Dr. Hamillon's treatise on the use of purgative medicines, the emetic plan, in such cases, was most extensively acted upon; but, after the appearance of this work, which was soon followed by that of Mr. Abernethy on disorders of the digestive organs, the practice almost at once fell into general disuse: I say,

general; because this disuse of emetics in these disorders was by no means universal. Although, to a certain extent, the limitation of their use would have been an improvement in practice, as compared with their former almost indiscriminate employment; yet their subsequent general exclusion was as much to be reprehended, as I am convinced, that from a judicious and discriminate use, (for of course the benefit to arise from their exhibition must always depend upon their *discriminate* use,) the greatest advantage will be obtained in the treatment of this cephalic affection, having its origin in a disordered condition of the stomach. They are now, however, I think, assuming that proper place from which they have been so long excluded.

As to the auxiliary means to which I have alluded, I have in view, medicinally, the various articles of the materia medica possessing the bitter principle united with aromatics, either in the form of infusion or of tincture *largely* diluted, with the addition of alkaline medicines. But I must also, in an especial manner, bear my unequivocal testimony to the virtues of the medicinal hydrocyanic acid; which, in my hands, in the treatment of dyspeptic affections has been,—I confidently declare it,—attended with the most signal success. For this success I claim no merit to my-

self, but that of attention to the daily improvements of the age, in the practice of our scientific art. And I have the highest pleasure in here acknowledging my obligations, (and I doubt not many will join me in acknowledging similar obligations,) to that truly eminent physician Dr. Elliotson, for the encouragement he has held out to the use of this powerful, this important remedy, in his clinical lectures explanatory of his practice in St. Thomas's Hospital; and I freely confess, that had it not been for the repeated proofs of the efficacy of this medicine in these *published clinical remarks*,* its employment in such affections might never have been suggested to my mind. I have sometimes exhibited this medicine in the infusions of calumba and cascarilla, with the addition of a

* These observations were written several years ago, and, of course, long before the diffuser, among the profession, of a knowledge of the benefits of this medicine in certain gastric affections, had betaken himself to what I must, with the great majority of professional men, consider the *delusion* of Mesmerism. They faithfully record my admiration of his talents, industry, and zeal, at the period referred to, which his present attachment cannot in the slightest degree affect. Apart from this delusion, which I deeply deplore, the same admiration still exists. The annals of the profession will prove, how largely Dr. Elliotson has contributed, in his day, towards its *substantial* improvement.

little aromatic tincture, but generally in peppermint water more or less diluted, according to the greater or less degree of flatulence with which the affection is accompanied, adding a portion of the tincture of calumba as recommended by Dr. A. T. Thomson, and I think the mixture has been improved by a small quantity of the compound tincture of cinnamon or cardamoms. I have rarely found it necessary to increase the dose beyond three minims, but generally the dose of two minims thrice a day has been sufficient to produce the benefit I expected from it. I may notice here as entitled to our consideration, the opinion of Dr. Thomson in regard to the principle of action of the hydrocyanic acid in dyspeptic affections,—that by allaying irritation it favours a slower, and consequently a more healthy, secretion of the gastric fluid. This medicinal agent being a most powerful sedative of the nervous system, we can readily understand how efficacious a remedy it must prove, in all those idiopathic affections of the stomach characterized by local irritation of its nerves, as well as those which are purely symptomatic of cerebral disorder; in the first instance allaying the local irritation of the nerves of the stomach, which, when communicated by sympathy to the brain, occasions headach with disturbance, in various ways, of the functions of this

organ, these in their turn reacting upon, and keeping up the affection of the stomach; and in the second instance, by composing the original cerebral excitement, of which the stomach, from its highly nervous structure, and special intercourse with the brain, more largely participates than any other organ. And thus it is that I have found headach depending upon the irritated condition of the nerves of the stomach very much relieved, and often removed by this medicine; and also the affection of the stomach depending on cerebral nervous excitement, of which excitement headach has been a marked and prominent symptom. By relieving or removing the excitement of the brain and nervous system as the first step in the cure, the relief or removal of the dyspeptic affection proceeding from that excitement has been the result, as from the natural sequence of effect to cause was just to be anticipated.

But this and other remedies purely medicinal will be of little avail, unless, at the same time, the strictest attention is given to a due regulation of the diet and drinks. For, although combined with this attention, medicines will have a most beneficial influence, this desirable object is not to be looked for, if a proper and salutary regimen shall not be simultaneously and steadily enforced. By observance however of this important requisite,

the stomach will escape much distressing irritation, not only from the mass of undigested aliment impeding its functions; but from a recurrence of that state of vessels which produces acid and vitiated secretions, to be only relieved for the time by the repetition of the emetics. This repetition will, in rational practice, be unavoidable, unless the experience of the effects of the previous aberration shall have impressed on the mind of the patient, the absolute, the indispensable, necessity of obedience to the precepts of his medical adviser.

The intimate sympathy between the stomach and the brain is in no disease more strongly marked, than in that to which I have already alluded, as known by the name of *sick headach*, which name was applied to it by Dr. Fothergill, and has generally been adopted by authors and practitioners. The most remarkable symptoms of the affection are designated by this name. But I think it would have been more correctly denominated, *combined headach and sickness*. By Dr. Fothergill and most other authors, the state of the stomach, characterized by severe sickness, and occasionally by vomiting also, has been considered to constitute the original disease. But* Dr. Parry, whose doctrine that the greater number of

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*Elements of Pathology and Therapeutics. Page 303.

diseases proceed from undue determination of blood is well known, has referred this morbid affection to such determination of blood to the branches of the internal carotid ; and has regarded the symptoms of disordered stomach as being altogether secondary, or sympathetic of the malady of the head, which the state of the stomach, he says, "*never precedes*, just as sickness and vo- "miting are the consequences, and not the cause, "of the affection of the head produced by a blow "on the cranium." Dr. Copland asserts his conviction that the "dyspeptic headach," (as he designates this species,) depends upon the brain. He says that "particularly when attended by "nausea or vomiting, it is observed chiefly in "persons subject to mental or cerebral excitement, "and in whom the gastric disorder, as well as the "pain in the head, are only effects of that excite "ment." But, although it may be allowed, that it is most apt to occur in persons whose cerebral system is highly susceptible; this excitement can be regarded in no other light, than as *predisposing* these individuals to attacks of the malady, from the operation of causes acting immediately on the nerves of the stomach and other digestive organs. For, when such persons observe strict attention, in adapting the diet to the real powers of the stomach, avoiding every cause of irritation to that

organ, and regulating the functions of the intestines by properly selected eccoprotic medicines, and by this cautious management continue free from future paroxysms of the disease, I can have no hesitation in affirming my opinion to be, that the seat of the disease is the digestive system, more especially the stomach.

There cannot be a more decided instance of the sympathy which I am endeavouring to illustrate, in the causation and cure of diseases, than that which is afforded us by one, respecting the seat of which, this discrepancy of opinion has existed. From a view of the symptoms, indeed, either opinion *appears* sufficiently tenable on rational grounds. But there is one point which cannot admit of any doubt, namely, that, although we may with authors in general—since the first attacks are produced by irritation in the primæ viæ, occasioned by the retention of undigested aliment in the stomach, and of putrescent fœcal accumulations in the bowels,—consider the disease as having its *original* seat in the stomach; yet, after repeated attacks, the first symptoms may, and in fact do, often proceed from the special cause to which it has been attributed by Dr. Parry,—undue determination of blood, on the principle already referred to, that a flow must take place in that direction, where a way has been opened out by

frequently preceding irritation; while the gastric symptoms, though sometimes severe, may then be entirely symptomatic of the affection of the brain; on some occasions in the same individual, these may be of inconsiderable amount, and on others altogether absent; thus clearly demonstrating what I have already advanced, that a disease in either organ, which at the first was merely secondary or symptomatic, may, after repeated invasions, become the principal and primary one. And it is in consequence of this sympathetic causation, that the malady of the head named hydrocephalus occurs in persons of adult age, who, according to Dr. Parry, have been accustomed to headachs, and more especially to that upon which I have now been commenting, as designated, "the sick head-"ach," by authors.

Since, after reiterated paroxysms, the attacks of this disease may be at length occasioned by sanguineous determination to the branches of the internal carotid, the relief, which spontaneous bleeding from the nose produces, suggests, as an appropriate remedy, the application of leeches to the lining of the nasal septum. To each side of this one may be applied with much benefit; the flow of blood thus induced taking place from vessels, which are themselves branches of the internal carotid, ramifying on the schneiderian

membrane, after passing through the cribriform plate of the ethmoid-bone. It is certainly not consistent with my purpose in this treatise, to enter *minutely* into the treatment of this or of any of the other affections, which I have cited in attestation of the doctrine under discussion ; but simply to refer generally to such parts thereof, as may be necessary to elucidate my subject. I shall therefore, in addition, only remark, as a tendency to the disease has been the result of a continued course of dietetic errors, so, nothing short of a steady course of the most resolute self-denial in the regulation of the diet both as to quantity and quality, with proper attention to all the important parts of regimen, including a regular system of daily exercise, will suffice to give future immunity to the individual who has frequently experienced its attacks. The description of the disease, and the observations on its appropriate treatment,* by Dr. Fothergill, are well worthy of attention, and deserving of the perusal of every person, who has the misfortune to be afflicted with repeated paroxysms of this species of headach. The rules of management once understood, it may be left to the patient "therein to minister to himself."

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*Medical Observations and Enquiries. Vol. vi: Page 103

IN DYSPEPTIC AND NERVOUS DISORDER COMBINED.

I come now to consider, as particularly related to the subject of this treatise, those affections of the digestive organs which by nosologists and practitioners have been regarded as idiopathic—as depending entirely upon the state of these, without any primary or preceding affection of other organs; the derangements in the functions of the stomach, and of its subservient viscera being so strongly marked, as to fix the attention upon these exclusively, both in explaining the symptoms and directing the cure. It must, indeed, be acknowledged, that of all the diseases to which the human constitution is liable, none are more generally prevalent than disorders of the digestive organs. From the view, however, which I have taken of the subject, founded on the consideration of the sympathy of the stomach with the brain and nervous system specially and directly, and through these, with all other parts of the body, it is unquestionable that *idiopathic* affections of these organs occur much more rarely than has generally been believed. It therefore becomes an object of importance in deranged states of the digestive viscera of which the local symptoms are peculiarly prominent, to

have a due regard to a healthy condition of the brain and nervous system, these being in numerous examples the seat of the disorder.

Here it will be necessary to bear in mind, that in the brain the nervous influence is generated and developed; and by the course of the nerves is directed to the various organs and members of the body, for the proper performance of their respective functions. That the stomach, having assigned to it an office of the first importance in the economy, is, by reason of its special communication with the brain, and the extensive nervous apparatus distributed upon it, endowed with a large measure of this influence. That when, from general weakness, from certain mental emotions, or from bodily exertions, the requisite portion is subducted from the stomach, a state of disease is induced in this organ, its function is interrupted or destroyed, and in consequence of its extensive sympathy, a general morbid condition pervades the system. In the treatment, therefore, of disorders of the stomach and digestive organs, besides the remedies generally recommended to be applied to the stomach itself, the utmost care should be taken to guard against every cause, which may subduct from these organs any considerable portion of the nervous energy.

In the first place the influence of the debilitat-

ing passions should be carefully avoided. These, by diminishing the action of the brain, and impeding at its source the development of the nervous energy, produce upon the stomach,* as has already been observed, effects of the most distressing kind, such as loss of appetite, flatulence, acidity, sometimes nausea and vomiting. The knowledge of this fact we are called upon to apply, in the treatment of those affections of the digestive organs, which these depressing passions either occasion or aggravate. It will, in like manner, be of the highest consequence in disorders of the nervous system, to attend with great circumspection to the state of the stomach and the other organs associated with it in the process of chylification,

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* The operation of the depressing passions, on the stomach and its auxiliary organs, is in the first instance merely to derange their functions, and to cause Dyspepsia in some of its usual forms; but, when long continued has been known to produce incurable organic disease, particularly of the stomach itself; Schirrus terminating in cancerous ulceration. Of this, one memorable example must be quite familiar to all my readers; that of the wonderful man, who, for a considerable time, possessed unlimited sway over all the continental nations of Europe; but who, by the undaunted and persevering opposition of the Government of the United British Kingdoms, was compelled, through the military skill of a warrior more skilful than himself, to live out the latter years of his ambitious life, in an island far distant from every other shore.

as by the proper regulation of these by medicines and by dietetic regimen, we shall, in a great measure, lessen the future influence of the depressing passions upon these organs.

It is a subject of frequent observation among practitioners, that however rigidly their precepts may be followed as to both the quantity and the quality of the diet, and although the utmost care and attention be given by the patient in regulating the periods of exercise and rest, and although the medicines prescribed may be taken with the most minute obedience to all the directions, yet that regimen and medicines will prove of no avail, if the mind be harrassed by corroding grief or anxiety from any existing cause, such as the loss of fortune or reputation, disappointed ambition, or "hopeless love." It has accordingly been remarked by Dr. Elliotson in his lectures, and most practitioners must have made a similar observation, that young ladies, in whom there existed some anxiety in love affairs, notwithstanding all the precautions and advice of their medical attendants, and their own most scrupulous observance of these, have continued to suffer various dyspeptic affections, but that as soon as all fear of disappointment was removed, the symptoms have entirely vanished, and the healthy operation of the stomach and of the other organs has been restored.

Of the powerful operation of grief combined with ungratified desire, upon the entire economy, and particularly upon the stomach and the hepatic system, we have a most remarkable instance in the disease designated *nostalgia*, so afflicting to the natives of certain countries, but especially the Swiss, when living in a foreign land. The first symptoms of this disorder are, melancholy, silence, love of solitude, loss of appetite, indigestion, flatulence, pain of stomach, nausea and vomiting; which are afterwards followed by great prostration of strength and emaciation. In some extreme cases to all appearance hopeless, which had resisted every medicinal as well as moral agent, a cure has been easily established, by that potent mental remedy, hope, in the near prospect of the certain fulfilment of their heart's desire to return to their natal soil, insomuch that the mere preparations for their journey home have almost, before they had commenced it, accomplished the restoration of the sick to health.

It was formerly noticed that the affections of the mind, which cause a placid, a gentle, but not too great an excitement, by favouring the development of the nervous influence, promote the secretion of the gastric fluid, and thus improve the digestive powers. This naturally suggests the consideration, that the aid of these may be ration-

ally and agreeably employed as a remedial measure, in conducting the treatment of those cases, wherein derangement of the functions of the stomach is combined with depression of the nervous energy. In all other respects, too, the mind ought to be preserved in a state as equable and serene as possible. Hence will be obvious the necessity of avoiding its intense application to those studies, the prosecution of which requires the strong exertion of the mental powers, such as the abstruse sciences of mathematics, metaphysics and the like, and particularly their profound and intricate parts. Literary composition, though less hurtful than the studies now referred to, may yet in some cases be inadmissible, for example, where the subject itself requires deep consideration, and the writer, besides, is anxious respecting the strength, the correctness, and the elegance of his style. It will be requisite to avoid the abstracted engagement of the mind in the mazes of politics, or in serious business of any kind, involving the patient in too great a degree of thought and solicitude ; and even sometimes to withstand the pleasure of a contest in certain games of skill, such as chess, which is well known to be highly ingenious and intricate, most absorbing and trying to the mind ; and from the concentration of the faculties which it demands for carrying

on such contest with the desire of victory, this, though a mere game, is, in persons otherwise predisposed, fully as powerful in causing disturbance of the digestive organs, as if the mind had been deeply immersed in literary, scientific, political or commercial pursuits. All these occupations are exceedingly injurious, both because they engross so much time as to prevent proper exercise from being taken, thus obstructing the development, in the brain, of the nervous influence; and because they detain within the brain for the attention which they require,—withdraw from the digestive organs, so great a portion of this influence, that the gastric fluid is not sufficiently and properly secreted, consequently digestion is impeded, the process of nutrition is interrupted, and by sympathy, the vigour of the brain is depressed, the power of the mental faculties is impaired.

In all dyspeptic affections, the regulation of the diet on many considerations, and especially in strict reference to the sympathy between the stomach and the brain, is a point deserving of the greatest attention. If the food be of an indigestible nature, or if plain food be taken in too great quantity, tasking the stomach beyond its powers, by requiring a larger supply of the gastric fluid, than the measure of nervous energy directed to it will enable it to produce; this organ will be

oppressed, its function will be retarded, and every mark of torpor in the chylopoietic apparatus will be manifest. Hence, it becomes necessary to adjust, with the utmost nicety, the quantity of the food, as well as the quality, to the state of the stomach. Nothing is more obvious than that the nourishment of the body, and the maintenance of a healthy state of the system, depend not so much on the kind and quantity of the food which is ingested, as on the powers of the stomach to convert that food into proper nourishment. To wish, as certain patients and their misjudging friends often do, to put much food of a rich, nourishing nature, into a weak stomach, with the view of imparting strength to a weak frame, is as absurd, as it would be to place a heavy burden, fit only to be carried by a brawny, muscular fellow, upon the shoulders of a slender, delicate person, enfeebled by disease. On the contrary, in all cases of debility of the digestive organs, the food should be light, capable of being easily digested, and taken in such moderate portions, and at such intervals, that the evolution of the nervous influence, requisite for the proper secretion of the gastric fluid, shall be readily adapted to the demand for it.

This enforces upon us as a proper subject of attention, the most seasonable time of the day for the different meals. On this head I must observe, that,

as a general rule for all, no fixed hours can be appointed; as much depends on the rapidity or slowness of the several stages of chylification, which vary considerably in different individuals, in some this process being quickly completed, in others not for several hours; for one thing is clear, that the former meal ought always to be thoroughly digested before the next is taken. It is also impossible to state with precision, for general observance, the quantity of food, which may be allowed to persons in health, who are predisposed to dyspeptic disorder, so as to avert it; or to persons actually labouring under it; as this must also be regulated by certain circumstances in each individual case. But I may say,—the smallest quantity of food, and that of the lightest quality, under which the mind and body can be preserved in a reciprocally cheerful and active state, and, as to which, each man's personal experience is the best instructor,—*that* is the course to be followed with the greatest benefit: as Cicero (de senectute) has wisely observed, "tantum cibi et potionis adhibendum ut "vires reficiantur, non opprimantur." And the inference is not the less plain, that this temperance in the supply of food must not be permitted to go to the extent of improper abstinence, as in that case, the brain will not be supplied with a sufficiency of healthy blood, for the evolution of the

nervous energy; the stomach will thus be enfeebled, the nourishment of the body will be prevented, and general debility of the system will ensue. Here also I may remark, how pernicious, that state of the stomach and of the system which is produced by hunger, is to the moral sensibility; and this may be the reason why poverty, which is the most frequent cause of hunger, disposes so generally to the commission of theft, as it has been said of hunger, that it "breaks through stone walls." So much does this sensation assume the mastery over reason and moral feeling, that Cardinal de Retz has suggested to politicians never to risk a motion in a popular assembly, however wise or just it may be, immediately before dinner. *"That temper," says Dr. Rush, "must be uncommonly guarded, "which is not disturbed by long abstinence from "food. One of the worthiest men I ever knew, "who made his breakfast his principal meal, was "peevish and disagreeable to his friends and family, "from the time he left his bed, till he sat down to "his morning repast, after which, cheerfulness "sparkled in his countenance, and he became the "delight of all around him." In this effect of hunger, and it's removal by the moderate supply

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* Inquiry into the Influence of Physical Causes upon the Moral Faculty.

of wholesome food, we cannot fail at once to recognize the operation of that wonderful sympathy, which is the subject of these pages.

Different individuals have health granted to them on certain conditions, these varying in different cases, to be observed by themselves; most of these conditions, however, having reference to the preservation of the proper balance between the stomach and the brain. Some can with impunity take into their stomachs, because they can easily digest, a quantity of articles of food, which, in others of a different original constitution, would in a material degree injure their health; and yet the latter individuals, by a careful regulation of the quantity of food, and selection of its constituent articles, will preserve, as far as this species of vigilance can contribute to it, the same degree of health and comfortable feeling as those, whom nature permits, for the present, to be considerable latitudinarians in their diet. I say for the present, because the feelings of discomfort, varying in degree, experienced on aberration, by persons whose digestive powers are weak, will induce them, if they have prudence and self-denial, to persevere in the rigid observance of care and attention in this essential point. Of this they will reap the important benefit, in the capability of warding off many occasions of indisposition, which, increasing

in force by every repetition, and at last amounting to serious disease, would in the course of time undermine the constitution, and bring on a premature old age and an untimely death. But the more robustly constituted, if they avail themselves of their present immunity, and indulge to a great extent in the pleasures of the table,—the ingestion of rich and indigestible viands with vinous and spiritous potations,—although they may for a long time escape, at last suffer the heavy penalty of their improper indulgence, by an attack of sudden disease in the head, chest, or abdomen; or are doomed, under chronic disease, to linger out many months of protracted misery, before death comes to their relief.

The same observation is true in regard to the operation of mental stimulants on the brain, such as the passions, or intense study without regular intervals of ease and relaxation. The nervous energy, the product of the brain, is supplied in various proportions to various individuals; and although, for the time, one man may produce intellectual works, in merit equalling or even surpassing those of another; yet in the former, the nervous energy being sooner exhausted, he cannot persevere in his exertions so long as he, whose brain is capable of the continued evolution of the nervous energy for the purposes of study, which

enables him to direct his mind to the intellectual labour for a much longer time. But, if this habit of intense application without intermission be long persevered in, the individual will at last also suffer the penalty, in a grievous deterioration of the general health, of which the first manifestations are displayed in a disordered condition of the digestive organs.

The evils of a sedentary life, in the production of stomach-disorder, must be manifest to every one; but the mode, in which this operates, has not been duly considered by extra-professional persons. From the want of the stimulus which exercise imparts to the brain, it's action is considerably impaired,—it is rendered unfit to prepare and send forth the necessary supply of the nervous influence in a healthy condition. Consequently, from the especial sympathy of the stomach therewith, inability in this organ for the proper performance of the digestion is occasioned; and the brain, still further enfeebled by the deficiency of nourishment from imperfect digestion, cannot transmit, to the other organs, a sufficient measure of the nervous influence; thus every function is improperly performed, and the general system languishes and falls into a cachectic state. If I may be allowed to use the words of the acute and learned Gaubius, "Nimia quies et potentias mo-

" trices, et quæ movendæ sunt partes, in torporem " conjicit." All these bad effects will be still more severely experienced, if this want of exercise be accompanied with solitude; because then is commonly added the pernicious operation of the depressing passions, which has already been commented upon.

It is the design of nature that man, for his health and happiness, should lead an active life, and properly exercise both his corporeal organs and his mental powers; and deviation from nature's laws induces much present discomfort and inconvenience, as well as eventual disease. The advantages of regular exercise, without which, indeed, the most powerful medicines would often be of no avail, are noticed and recommended by every physician in dyspeptic cases. It is far from my intention, (as from the preceding remarks may well be conceived,) to detract from its true, its just merit. But I am desirous of tempering my recommendation of it, with a caution against its abuse. I must, therefore, observe, that it will be of the utmost consequence to adapt the degree of it to the strength of the patient,—which implies the space of time during which it may with propriety be continued,—and to regulate the particular times of the day at which it ought to be taken. Exercise, if carried to the extent of inducing

much fatigue, will be found as hurtful, as a moderate and suitable degree of it will be found beneficial. The former, by abstracting too great a portion of the nervous energy from the stomach, will cause debility and imperfect performance of its function; whilst a moderate degree gives power to the brain; and, the stomach being now supplied with the nervous energy from the brain, digestion is promoted; and in due time, after the assimilation of the chyle, the brain, receiving its proper measure of healthy blood, is enabled to transmit its influence to all other parts of the system.

In all dyspeptic cases, the agreeable occupation of the mind, while the body is engaged in exercise suited to its state, is a matter of the highest importance. Hence exercise ought never to be taken by the invalid, without a companion in his way, to cheer him by agreeable and entertaining, and, if he can bear it, by instructive, mutual conversation, the subject of which is interesting, but not too exciting to the mind. If any particular locality is to be explored in the course of a pleasant forenoon's excursion, he will seldom fail to derive benefit from it. Thus it will be obvious, how much more advantageous, a complete change of scene, travelling, viewing parts of the country never before visited, with all the variety of objects

there presented to his observation, must prove to the melancholic and dyspeptic patient; for then, snatched for the time, from the contemplation of his own affliction, free from cares, troubles, and anxieties of all kinds, he is able to lay down,—to leave behind him,—the greater part of his disease. *Then* the stomach, being relieved from the distressing operation of the depressing affections of the mind, evinces the amendment of its state, by the regular performance of its important function; and, through the all-pervading influence of the brain and nervous system, the entire economy is re-established on the basis of health.

The necessity of exercise having been above demonstrated, the manner how, and the time of day when, it may be most beneficially adopted for the preservation of the healthy balance between the stomach and the brain, are points deserving of serious consideration. Riding on horseback in the middle part of the day, between the breakfast and dinner hours, more nearly approaching to the latter, has generally a very beneficial influence in improving the condition of the digestive organs. In consequence of the gentle stimulus thus imparted to the brain in the first instance, this organ is enabled to receive, with advantage, that impulse from the stomach, which is communicated by the reception of a moderate repast, and to transmit, in

return, to the stomach, a supply of the nervous energy for the due secretion of the gastric fluid, at the time when this powerful agent is required for the process of digestion. This is the mode of exercise, which, it is known, was particularly recommended by Sydenham. But Dr. Parry has recorded his opinion, that it is not the proper exercise for man, and has somewhat jocosely remarked, that it is more beneficial to the horse than to the rider. Walking he states to be the natural exercise for the human animal. Although the action of the *limbs* in locomotion is doubtless the *natural* exercise of man, as well as of all animals of the same class which are possessed of them; neither can it be doubted, I think, that it is ordained by Providence, that man shall avail himself of his power as the lord of the creation, to subject the properties of that noble and useful animal, the horse, to his *wants* and *necessities*,—and experience has proved that equitation has often been of decided advantage, both in preserving the health, and in restoring it when it has been impaired, and especially when impaired by those disorders, to which, in the illustration of my subject, I am here soliciting attention. The occupation of the mind, in directing the course and regulating the speed of the horse, must have considerable influence; and I must agree with Dr.

Paris,* that the shaking which attends it is salutary, that this species of exercise is less fatiguing to the lower limbs, and also that the patients can better regulate its extent, and bring their excursion to a close, as soon as they experience the first feelings of fatigue. That the rapidity with which the air is changed, is another important advantage, is also an observation of Dr. Paris; and for this, original with him, as far as I know, I hold myself indebted to him. It is well worthy of notice, for the successive changes of air, through which the invalid may pass in the course of even a short ride of one or two hours, are often very remarkable; as in that brief time he may sometimes have it in his power to ascend a considerable eminence, where the air in salubrity and temperature is very different from that of the lower grounds; and where the sight may be gratified by the contemplation of a beautiful and extensive prospect, all of which bodily debility would utterly debar the pedestrian dyspeptic from enjoying, as the ascent to him would be impracticable.

The chief objection which can be made to this mode of exercise is, that the blood is not circulated to the lower extremities, and, in all such disorders of the digestive organs, we are aware of what great

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* Treatise on Diet, 4th edition, pages 291—2.

importance it is to preserve the feet in a warm and comfortable state, which can never be the case, if the circulation in them is interrupted. Walking, by the constant action exerted on the different series of vessels, has the effect of directing the arterial circulation to the surface, and particularly to the feet, while it promotes the return of the blood by the veins and favours absorption. If the patient's situation in life, or other causes, should prevent his adoption of horseback exercise, then, it is so far well, that walking only is preferable to riding only, great as are the collateral advantages of horseback exercise, where both can be had recourse to. But I would strongly recommend both, where both can be adopted; riding on horseback in the first place for such a length of time as it can be easily borne, which may be three, or perhaps only two hours, or one hour. But in order to circulate the blood to the surface, and especially to the lower extremities, let the patient then alight, and betake himself to walking at a pretty brisk pace, the quickness of which must no doubt vary in different individuals, according to their strength, and of course, to the degree of fatigue which they are capable of enduring; but it ought to be such as may cause a slight degree of this sensation, and also induce a gentle diaphoresis, and impart to the feet an agreeable glow of warmth.

The bodily feelings of the patient will, from this pedestrian *succeeding* the equestrian exercise, undergo a very pleasing change, and after his return home, it will be prudent to rest for some time, half an hour, or an hour, before he eats his dinner, as this meal ought never to be taken while the body is in a state of fatigue; for, although exercise is so highly necssary to promote the circulation of the blood, and to excite the brain to develope the nervous energy, the lapse of some time is required before this latter salutary effect of the exercise can be experienced by the brain, as the nervous influence has been, in the meantime, exhausted by the necessary action of the muscles which have been exerted; and, as a supply of food has now become necessary for the wants of the system, the stomach cannot receive it with advantage, until the body has been in a quiescent state for the time mentioned, in order that the brain may be restored to that condition, in which it can best develope the nervous influence required by the stomach, for the proper digestion of the food.

After a moderate supply of food, both as to quantity and quality, has been taken, the dyspeptic ought to rest again for at least two, or even three hours. The injurious effect, which *violent* exercise, immediately after repletion of the stomach, produces upon the digestive process, is satisfactorily prov-

ed by the uncomfortable sensations felt by the patient himself, and, I consider, has been proved to ocular demonstration, by the experiment of Dr. Harwood on the two dogs, recited at page 22 of the present treatise. This,* as I formerly observed, throws the brain into such a state of commotion, that the

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* These remarks, on the effect of exercise upon the digestion, were written long before any accounts of Dr. Beaumont's experiments upon this function, in the stomach of St. Martin, appeared in this country. I have, however, neither seen the original, nor the British edition by Dr. Combe. In the Edinburgh Medical and Surgical Journal of July 1839, at page 188, I perceive it stated as follows. "From numerous trials, "Dr. Beaumont is persuaded that moderate exercise contri- "butes considerably to healthy and rapid digestion. This "proposition Dr. Combe is disposed to modify, by saying that, "after a moderate meal, moderate exercise seems to promote "digestion; but that after a meal rather full, such as is taken "at dinner, active exercise is rather prejudicial than favour- "able." The latter part of this remark of Dr. Combe accords with my own observation in other individuals, as well as my own sensations, in both of which I place the greatest confidence. *Violent exercise* after *full repletion* of the stomach, cannot but be injurious to persons even in the best health; and as to *moderate exercise*, after taking *food* in *moderate quantity*, in the person of St. Martin, it must be recollected that his constitutional health was robust, and therefore not likely to suffer therefrom. But in the dyspeptic invalid, or in one predisposed to disorder of this kind, I say that moderate exercise even after a moderate meal is studiously to be avoided, until an interval of two hours, *at least*, has elapsed.

nervous influence is suppressed at its source, and all the organs suffer from the defect of supply. At the end of two or three hours, tea or coffee may be taken, and generally without any thing eaten at the same time. According to my own personal experience, the one or the other may be drunk with most advantage, as promoting digestion, *immediately after dinner*, if taken in such quantity as not to distend the stomach. They materially contribute to comfort by appeasing the irritable state, which, in constitutions of weak digestive powers, so generally accompanies the working of this organ upon its contents. After this quiescence for several hours following the dinner, walking exercise should again be resorted to, and should be continued so long as it can be borne without inducing a greater than a *slight* feeling of fatigue, of which indeed the patient ought always to be sensible, otherwise it can do him no good. Horseback exercise, at any time after dinner, I consider highly injurious to the digestive function of the dyspeptic, on account of the agitation of the contents of the stomach which the jolting occasions, and which is productive of great discomfort to the whole frame. This discomfort is proportionate to the shortness of the time after dinner, at which this mode of exercise is adopted. And while I also oppose, in the treatment of such affections, the exer-

cise of walking *soon* after dinner, yet when the body has been quiescent for two or three hours, and the chymified food has passed the pylorus, it may be taken with great advantage in the evening. From the circulation of the blood which it directs to the surface, and especially to the feet, and from its action in promoting the assimilation of the chyle into the mass of blood, the improvement of power experienced by the brain, and propagated throughout the whole nervous system, is evinced by the agreeable but moderate hilarity, that is now communicated to the mind. A tendency is also thus created towards placid and composing sleep through the night, which is, when thus produced, so admirable a restorer of the nervous power. The dyspeptic invalid, if he unremittingly continue to pursue the plan of regulating the diet, rest, exercise, and sleep here recommended, will find his perseverance well rewarded, in the establishment of the proper balance between the stomach and the brain, and, as its consequence, a healthy state of the entire system. I have now to offer, as intimately connected with the illustration of the subject in dyspeptic and nervous disorder, a few observations

ON THE SYMPATHY BETWEEN THESE ORGANS, IN REFERENCE TO THE EXERCISE OF THE MIND.

As digestion and intellectual labour cannot simultaneously proceed in a satisfactory manner,

the mental faculties are hebetated and obscured, if study be attempted soon after food has been taken in such quantity, as to demand, for the requisite secretion of the gastric fluid, a considerable supply of the nervous influence. Under such circumstances, the result often proves an utter failure, even to a man of the brightest talent; and, should he have the misfortune to be a habitual dyspeptic, although the quantity of food taken has been very moderate. "I know not how it is," said a celebrated writer, "but all my philosophy in which I "am so warmly engaged in the morning, appears "to me like nonsense as soon as I have dined." The current of thought then proceeds slowly; no accurate and free conceptions can be formed upon the subject, in which the mind is engaged, during the uneasy febrile commotion, which, in persons whose digestive power is weak, so generally attends the operation of the stomach upon its contents. On this account, it will be wise in the individual, who experiences those uneasy sensations, at once to abandon, for an interval, the subject of his researches, and to resume it at that time of the day when he feels that his faculties are briskly alive,—in vigorous operation. This time will vary, doubtless, in different individuals, according to original constitution, implying the degree of strength of the digestive powers, and the peculiar aptitude of the

brain to elaborate a greater or less proportion of the nervous influence.

While study, therefore, ought not to be attempted after full repletion of the stomach, it is equally imprudent to enter upon it when the stomach is completely empty; and consequently, the brain, from a deficiency of blood for its healthy excitement, cannot evolve the nervous influence requisite for the mind when engaged in intellectual pursuits; and this is more particularly the case, when, to emptiness of the stomach, are added the temporary exhaustion and fatigue which are felt, after exercise has been taken. If the quantity of food be moderate, and a certain portion of the infusion of tea or coffee be afterwards taken, (the soothing influence of which, upon the irritated nerves of the stomach, I have just stated to be very remarkable,) then, after the walking exercise following the state of quiescence already recommended, when a slight refreshment is generally advantageous to the stomach and the system, the mind is often in a condition well adapted for study; and in some, the productions, which are now sent forth, evince the restoration of the brain to healthy action. But at this time there is generally an irresistible inclination to sleep, indicating that the brain requires repose. Much, no doubt, will depend upon the interest which the studious person

may take in his subject; for if this be considerable, and particularly if it be intense, sleep will be chased from the eyes, and his lucubrations will proceed in a clear and satisfactory manner. But these nocturnal studies cannot be pursued, night after night, for any length of time, without great detriment in the first place to the functions of the brain; and, as an inevitable consequence, to those of the stomach and other digestive organs. Since then, in some, the intellectual current is interrupted by the desire for sleep; in others, by certain dyspeptic sensations, with thirst, and incapability of settling the attention, and other signs of a slightly febrile state of the system; and as those, who are not affected in these ways, cannot long persevere in a course of nocturnal study without much injury to the health; it is evident that this is not the favoured period,—that most fitted for the prosecution of such labour with success. I would therefore, as a general rule, advise, that any peculiarly interesting studies should not be resumed, until the brain has been composed by the soothing, the salutary influence of its entire repose,—*sleep through the night.* The influence of sleep, *at its natural period*, in adapting the organ for the vivid exertion of all its faculties, and the concentration of those required for the prosecution of study, is highly beneficial. But I would also dissuade from

commencing the studies early in the morning, while the stomach is altogether empty, for in this condition, its nervous apparatus, as indicated by the discomfort felt in that region, is in a state of much irritation; and, from the sympathy of the brain, the whole system participates in this feeling to a greater or less extent. A *slight* breakfast, the substantial part consisting of some *stale* bread with a *hard-boiled egg*,* or a *small* portion of cold meat, and the fluid part of the infusion of tea or coffee, will, through its gratifying influence upon the nerves of the stomach, impart to the brain a gentle stimulus, which will enable it to supply for the purposes of study, the requisite portion of the

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* I feel that I may be censured for advising the use of eggs thus prepared as an article of diet, as these have generally been held to be indigestible and therefore to be rejected. That hard-boiled eggs are *slow of digestion* I allow; but if taken in moderation, one, or two only at a time, they are by no means oppressive to the stomach,—in common language, *heavy*—as cheese, pastry, and dried and smoked meats, such as ham, bacon, and tongue, are acknowledged to be, all of which are therefore scrupulously to be avoided. The mere *slowness* of the digestion of hard-boiled eggs, as they are not oppressive to the stomach, is a source of comfort and support to that organ; for when very lightly boiled, they pass from the stomach in a very short time, as is indicated by the sense of craving felt in that region, during the prevalence of which sensation, the nervous influence cannot be directed to the purpose of study.

nervous power. After the daily evacuation of the bowels, for which this is the most proper time, (and which, by habit, may at this time be generally accomplished,) then, from the healthy supply of the nervous influence flowing in a deep, clear and broad stream, the operations of the mind are performed with a vigour, a force, an alacrity, which are absolutely astonishing, when compared with the slow, obtuse, obscure, workings of the same mind in the preceding day, either when the brain has been obstructed from the oppression of the stomach after a full meal,—in the dyspeptic even after a very moderate meal,—thus interrupting the formation and development of the nervous influence; or when this mighty agent has been dissipated after fatiguing exercise, the stomach at the same time being empty.

In the investigation, for example, of a case of disease which is submitted to a physician for his opinion and advice, if it be one which requires much deliberation, comparison, reflection,—the morning is the time, (I speak from my own personal feelings and experience,) when the mind is best fitted for the discharge of his professional duties, with benefit to the patient, and satisfaction to himself. I by no means allude to those cases, of which the symptoms are so striking and so prominent, as to require no particular deliberation and

reflection, and of which a rapid examination, in a few minutes, may be all that is sufficient; but to those obscure, lingering, chronic cases which have existed for a length of time, and which have, perhaps, puzzled various physicians who may have already been consulted, and from whom very different opinions may have been elicited as to the nature of the malady, and of course, as to the appropriate mode of treatment. To a case of this kind a man ought to bring a mind well prepared by the free flow of the nervous influence, for the consideration, attention, and reflection which such demands from every one who desires to act in an upright and conscientious manner; for that man who, in a case like that to which I have now adverted, pretends to an intuitive knowledge of disease, and boldly and inconsiderately pronounces an opinion, must often commit the most grievous blunders.

IN THE OPERATION OF CERTAIN POISONS.

It would be improper to omit in this treatise, a notice of the operation of certain poisons,—those which produce their effects in a rapid manner, as such operation affords unequivocal demonstration of the sympathy between the stomach and the brain, the primary impression being made upon

the nerves of the former organ. It has long been well known that the distilled water of the Prunus Lauro-Cerasus has often proved speedily, and, if taken in large quantity, almost instantaneously fatal. From a small quantity death has been caused in the space of twenty-four hours, cases of this description having sometimes happened, in consequence of the pernicious practice of using laurel water for giving flavour to puddings. The late Dr. Gregory has adduced, in illustration, in his lectures, the cases of two children who died in convulsions, from having, the day before at dinner, partaken of a pudding flavoured in this way. The Prussic Acid, to which the Prunus Lauro-Cerasus and various other vegetable productions owe their deleterious properties, there can be no question, operates upon the brain and nervous system through the primary impression made upon the nerves of the stomach; and certainly not from absorption into the blood, and through mixture therewith reaching, by the vessels of the circulation, the great nervous centre, the brain.

The subject of this treatise receives much confirmation from the fact, that, in many instances, poisons, while in contact with the nerves of the stomach, have produced the most alarming symptoms, which have all disappeared on the discharge of these poisons by vomiting. I may here parti-

cularly refer to a remarkable example quoted by Van Swieten* from Wepfer, who relates that two boys and six girls had eaten some roots of the cicuta aquatica, mistaking them for parsnips; that the two boys died miserably convulsed, having discharged none of the poison; but that all the girls escaped by timely vomiting up these poisonous roots. "Experiments were afterwards made "with the same roots on dogs; by which it ap- "peared that all those direful symptoms conse- "quent on taking them, vanished immediately "upon causing the roots to be vomited up again. "From all this it is evident that the simple con- "tact of the poison with the internal surface of "the stomach produced so many terrible symp- "toms without any mixture of the virulent juice "with the animal fluids in the circulation; other- "wise the symptoms would not have been so soon "removed upon discharging the roots by vo- "miting."

I must notice also the occasional poisonous effects of substances in common use as articles of food. We know that there exists in many persons an idiosyncrasy, which renders them susceptible of peculiar impressions from certain edible matters, that are generally wholesome and nutri-

* Commentaries upon Boerhaave's Aphorisms, § 229.

tious. This susceptibility, however, in some individuals is not always present, but is excited at particular times through an excessive irritability of the nervous system, arising from the sympathy of the brain with the stomach, when the latter organ is highly disordered. Hoffman* briefly describes a case from Forestus, in which a portion of coagulated milk in the stomach produced symptoms strongly resembling those occasioned by the operation of poisonous agents. The person, a woman, was affected with extreme nausea which was not accompanied by vomiting; but she suffered severe pain of stomach followed by syncope and stoppage of the breath, to so great a degree that the bystanders believed that death was impending; all which alarming symptoms, however, at once disappeared, on the coagulated milk being ejected from the stomach by vomiting.

SOME REMARKS ON THE RECENT CENSURES OF DR. HAMILTON'S DOCTRINES AND PRACTICE.

Having, in the course of the preceding observations, on several occasions, mentioned the name of Dr. Hamilton in terms of high estimation of

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* De consensu partium Nervosarum generatim et sigillatim cum Ventriculo. Sect. I. Cap. V. § 18.

his character as a physician, and as the author of the well-known treatise on the utility of purgative medicines, by which he brought this method of treatment into far more extensive use, than had been the case previously to it's publication; it is right that I should take some notice of the censures that have, in these latter years, been levelled at this respected individual and his followers. If I were called upon to say, who, in my opinion, within the last thirty-five years, (the time now elapsed since the date of the treatise,) had conferred the greatest benefit on the human race by his improvement in the practice of the healing art, I should without hesitation pronounce the name above-mentioned. But the terms, which some censorious persons have applied to Dr. Hamilton's doctrines and practice, are by no means justified, truly, because certain indiscriminating and injudicious men have carried the practice to an extent, which was never contemplated by the eminent author himself; to which it was never carried in his own experience; and against which, indeed, in his treatise, he expressly states his cautious admonitions. I have often in meditation wondered, how the treatment of various diseases, in which the exhibition of purgatives has been proved to be so necessary and advantageous, had been conducted before the general introduction of this class

of medicines. I allude especially to fevers, and to all diseases wherein constipation of the bowels and depravity of the secretions of the abdominal organs, either the cause or the result of the constipation, are prominent characteristics. Dr. Stokes refers to the "*spread*," as he calls it, of the doctrines of Hamilton as one cause of the prevalence of gastro-enteritis, which, as I formerly observed, in his opinion, is a very general affection. In the language of vituperation he asserts, "that under the name of "science* was put forward an empiricism easy in "it's application though destructive in its results, "and saving the trouble of thinking and the neces-"sity of study." In the same article he says† "If "they" (the disciples of Broussais) "have killed their "thousands, the followers of Brown and Hamilton have killed their ten thousands;) and it seems to have been with him an after-thought, that in making this last assertion he had gone too far; for in a foot-note he adds, "we must admit that much "of the abuse of purging in fever has originated in a "misconception of the real doctrine of Hamilton." Well, indeed, might he state this qualification of his intemperate censure in the text; and, for a

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* Cyclopædia of Practical Medicine. Vol. II. Page 335 in the article Gastro-Enteritis. † Page 344.

proof how far he must himself have misconceived the doctrine, I must first refer him to the recorded practice of the author in the cases he has detailed, treated in a public hospital before numerous students, and extracted from the register, bearing therefore the stamp of truth and authenticity, seeing that no alteration could be made in them to suit the author's views, as may sometimes be suspected of the details of cases related from private practice. But I need not refer to these cases only, but must request attention to the words of the author, who, be it observed, was *not* an *obtruding* but an *unwilling* author. "The complete "and regular evacuation of the bowels in the course "of fever is the object to be attained. *Within this* "*limit* I have had much satisfaction in prosecut- "ing the practice; nor have I in a single instance, "had occasion to regret any injury proceeding "from it; *for I am not an advocate for exciting un-* "*usual secretion into the cavity of the intestines, and* "*for procuring copious watery stools; these while* "*they are not necessary, might increase the debility* "*so much and so justly dreaded.*"

It is a matter of considerable surprise to me, that the Reviewer in the British and Foreign Medical Review, of the memoir of Dr. Armstrong's life, in reference to the latter's high commendation of Dr. Hamilton and his practice, should, after

stating that Dr. Hamilton's *precepts* concerning the employment of this class of medicines are *eminently judicious*, have asserted that "his *application* "of his purgative doctrine in his Hospital prac- "tice was *indiscriminate*, and attended in many "cases, especially of fever, dysentery, and inflam- "matory diarrhœa, with such palpable fatality as "none but a practitioner devoted to a single idea "could possibly have overlooked." At what time of Dr. Hamilton's life this writer may have witnessed his practice, I cannot be aware. From the terms in which the author's precepts are couched, I could never have supposed that in his own practice he should have so entirely lost sight of these; and that he should have had no regard to the circumstances of each case, and the vires vitæ of the patient. But we are all subject to the doom of frail mortality, to the decay of the mental powers in the decline of years; and it may have been, that this reviewer has witnessed these pernicious effects of the author's employment of purgatives, at a time of his professional course, before which it would have been better for himself that he had retired from his public duties. In all situations of responsibility in whatever profession, the senescent holders should bear in mind and follow the admonition of the Roman poet, to be timely-wise in withdrawing, lest they should at last commit errors,

which in their former years they would not have done. But, in contrast with the assertion of the reviewer, I have it in my power to say of Dr. Hamilton, at a period of his life when his mind was in full vigour, on the authority of a gentleman* of high talent and acute observation, who studied in Edinburgh between the years 1794 and 1798, several years before Dr. Hamilton's treatise was published, and *of course all that time before the practice became generally known*, that it was a common remark among the students of his day, on comparing the results of Dr. Hamilton's practice with those of the practice of the other physicians, "*that "Dr. Hamilton's was by far the most successful.*" That the method of exhibiting purgatives as regards their selection and combination, according to the particular effects which we wish to produce, —namely, gently to stimulate the secerning organs; to counteract the torpor of the colon; to excite copious serous evacuations; to act upon the different portions of the intestinal canal;—has been much improved by practitioners since the publication of the author's treatise, no one will deny. It is certainly impossible to agree with him, in as-

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* Robert Robertson, M.D.; now, from a licensed change of name, known as Robert Glasgow, Esquire.

cribing the same kind of purgative power to every medicine of this class. Such concurrence would indeed be inconsistent with the knowledge which we possess of the fact, that the various medicines composing it produce their effect by reason of their *selecting* influence, if the term is allowable. But I may close these remarks with the observation which Sydenham has applied to opium, that, without this class of medicines, lame and imperfect indeed would the practice of our art be. Their discriminate and judicious use in various diseases is of the highest benefit in restoring the proper balance between the digestive organs and the brain; my reflection on which has led to the consideration of them in the course of this treatise. And ever keeping in view *the due regulations, under which their exhibition is safe and salutary, and as to which let the instructions of Dr. Hamilton himself be our guide,*—and always according to the particular object that we desire to accomplish,—so far from the censures which in these latter years have been thrown upon the practice, I consider the memory of the author entitled to our best feelings of gratitude and respect, esteeming him, as I do, the life-preserver of thousands yet unborn.

POSTSCRIPT TO THE ILLUSTRATION OF THE SUBJECT IN THE DISEASE NAMED HYDROCEPHALUS.

Since the preceding pages were printed I have seen a treatise on acute hydrocephalus by Dr. D. Davis, which, from the reputation of the author as well as the importance of the subject, I have no doubt will be extensively circulated among the profession. But it becomes necessary for me, here to insert a few observations on that part, (page 32) where, in a contemptuous manner he writes of what he considers to have been a "prevailing practice thirty or forty years ago to refer "predisponent tendencies to various diseases to "certain morbid conditions or functional imperfections of the organs of digestion." From the published remarks of one whom he designates "a "pompous writer," *without however indicating the production of the author*, whom he distinguishes by this characteristic appellation, he assumes to make a long quotation in proof of his assertion. As my memory enables me to refer to the original, which is a review of the works of Drs. Cheyne and Yeats, in the eleventh volume of the Edinburgh Medical and Surgical Journal, 1815, (only 25 years ago), page 480, I find that he has more than once both changed, and added to the authors words. The name of the writer whom Dr. Davis has thus

characterized I know not. I should think it not at all improbable that the late highly-gifted Dr. Kellie of Leith was the man. When the acute form of the disease is established, from the still greater attention, which the recent publication of Dr. Davis is very likely to attract to the subject, whatever may have been the causes which have predisposed to it, or actually produced it; whether the first symptoms of disease have been perceived in the digestive organs or in the brain; it may reasonably be expected that the successful cases will become still more numerous, thus realizing the hopes I expressed at page 113 of the present treatise; and I now state my satisfaction at finding, that Dr. Davis has, by his work, augmented the list there referred to of those eminent men, by the promulgation of whose principles, this dire disease was to be more frequently subdued. All, in this view, will depend on the diagnosis being made in due time. If, by proper attention to certain morbid indications in the primæ viæ, without which in precedence,—judging from other examples, which for want of this attention have proved fatal,—the disease would not have been established, it can be prevented; and further, as before observed, when we take into consideration the numerous causes of irritation to which this part of the system is exposed, and the high degree of

susceptibility in the juvenile constitution; we have abundant reason to conclude that often, very often indeed, the brain is excited into morbid action, through it's sympathy with the previous morbid condition of the digestive organs. The work of Dr. Davis presents a strong confirmation of the importance of Dr. Abercrombie's remark, quoted by me at page 110, in regard to the greater prospect of curing the disease in those instances, which approach more nearly to the character of active inflammation. But that those cases, the symptoms of which, in a subacute and insidious form, present externally a character decidedly different from that exhibited by the examples to which I have just referred, can be successfully treated on the principle that the disease is an acute inflammation of the brain, without any distinction whatever from that affection, as it is usually characterized, is yet to be demonstrated by the unbiassed observation and the practice of others.

APPENDIX.

I now take the liberty of adding the following remarks in reference to certain points connected with the treatment of chronic disease, which is often the consequence of a loss of balance between the digestive and the nervous systems.

ON THE INFLUENCE OF MINUTE DOSES OF MERCURY IN THE TREATMENT OF CHRONIC DISEASE.

Of all the *medicinal* methods of practice recommended in recent years, for the treatment of chronic disease, next to the due regulation of the functions of the alimentary canal, the exhibition of that powerful medicine, mercury, in minute doses often repeated and continued for a considerable length of time, varying of course according to the character and persistence of *the* disease, in conformity to the instructions of Dr. Wilson Philip, deserves to be mentioned in terms of the highest commendation. It has, indeed, been a matter of much astonishment to me, who have so frequently experienced it's beneficial results, that

a method so mild, and yet so potent,—if time will only be allowed for it's successful operation,—has not been more extensively adopted. Those who will lay aside all improper prejudice, and *patiently wait, in the chronic cases to which it is suited*, for the favourable results of the plan in the way pointed out by Dr. Wilson Philip, cannot fail, by the testimony of their own experience, to be convinced of the efficacious powers of this mode. Dr. Wilson Philip attributes it's success, not altogether indeed, but principally, to its operation upon the function of the liver. That, in every disorder wherein the secreting organs generally are implicated, the interruption of the important function of this gland of magnitude should exert a most pernicious influence upon the entire system of the patient, is a fact which will not be disputed. But I am inclined to consider that the general disorder has not it's source in this alone, but besides, in a great degree, in the depravation or interruption of the functions of the other secreting organs, proceeding from a failure of the nervous influence; and it is to the restoration of this influence, resulting from the improvement of the function of the brain, the organ which evolves the mighty agent, I conceive that the success of the plan is to be attributed. The condition of the secerning extremities of the arteries is thus improved; the

consequence is the healthy state of the secreted fluids.

The operation of the plan, indeed, is slow and gradual; but with patience and perseverance on the part of the invalids and their friends, an improvement in health will, to their pleasing surprise, in due time be manifested. But how rarely can they be induced to persevere? As, however, perseverance is absolutely one requisite indispensable for the success of the plan, it is unwise, it is unjust, it is unreasonable to expect it otherwise; to expect as many do, after a few doses have been taken, that the disease is to yield, and, finding their unreasonable hopes not fulfilled, to give it up under feelings of impatience and displeasure. They should bear in mind that a chronic disease, which has been slowly forming and gradually gaining strength, until it becomes rivetted in the constitution, is not to be speedily displaced, as acute diseases, in the hands of skilful practitioners, generally are, if their aid has been promptly required. The doses in such a method of cure are too small to effect this, for it is the slow and gradual action of the remedy upon the disease, which is to accomplish it's removal; and it would be precipitate, inconsiderate, unskilful, to attack such *long* diseases with the same powerful therapeutic weapons which it would be proper to wield, when we have to com-

bat the force of acute disease. He who discovers, in a new mode of exhibition, certain efficacious powers, previously unknown, of a well-known medicine, is as great a benefactor of the human race, as if he had added another powerful but hitherto unknown medicine, to the list of remedies already known. In this form of exhibiting mercury, followed out perseveringly according to his special recommendation, Dr. Wilson Philip has in fact discovered, although not a new medicine, yet most unquestionably a *new remedy;* and for a general description of the cases in which it may be employed with the greatest prospect of success, and the mode of it's exhibition to be pursued in detail, I feel myself only doing an act of justice, in contributing as far as I can, to the diffusion of the important information, by referring to the publications of this physician on the subject;—that "On Indigestion," and that "On the operation of minute "doses of mercury in restoring the vital functions."

ON THE NECESSITY OF PERSEVERANCE IN REMEDIAL PLANS FOR THE SUCCESSFUL TREATMENT OF CHRONIC DISEASE.

In the treatment of chronic disease which has existed for a length of time, there is no point of greater importance than a steady perseverance in

the use of remedies, which in such condition of disease often require to be long continued,—for weeks,—months almost without interruption,--and sometimes, with occasional short intervals even for years, in very minute doses, in order to produce the beneficial results, with the view of which they are prescribed; and there is scarcely any point, in which a medical man has more to encounter from his patients; who, not aware of the necessity and importance of a steady and regular perseverance, for gradually undermining and at length radically exterminating a disease, which has attained it's present strong-hold by slow degrees at first almost imperceptible, often manifest a want of faith in the remedies, and of confidence in the skill of their professional attendants, if they do not experience almost immediate relief. Such conduct, in persons whose minds are none of the brightest, is not to be wondered at; but it is sometimes exhibited by those whom, in the ordinary intercourse of life, we regard as possessed of sound and healthy understandings. But the truth is, that chronic disease renders them on the subject of their ailments morbidly impatient; and it is well if the physician can convince them of the necessity of a firm and regular perseverance. This he ought to do by forcibly comparing the necessary treatment in future time, with the

progress of the malady in the past; by shewing them that as this has advanced to it's present state, by a course so slow, that at first they were not aware of labouring under any thing more than a little discomfort, and alteration of their usual feelings; so, in order to root out this long-continued disease, nothing but a determined resolution to persist, to persevere in the remedial plan, opposing and strongly coercing every sensation of impatience which may at times rise up, can have any influence in subduing it. It has been my lot frequently to contend with so many contradictious feelings in patients, on the subject of perseverance in the treatment of chronic disease, that I cannot too strenuously insist on the necessity and paramount importance of endeavouring to impress upon their minds the conviction of it's propriety.

When a disease at length yields, after a long course of medicines exhibited in very minute doses, I know there are those of the profession who say, that nature and time have effected the cure, and that the doses were too small to produce any good effect whatever. But this I do most positively and unequivocally deny. Time, no doubt, has in such cases done a great deal; but time, with no other assistance than nature, would have only allowed nature to do, to a still

greater extent, what she had been too long, already, doing with impunity. It would have enabled her to rivet the disease so firmly in the body of the unfortunate patient, that it's removal would have been impossible, and death would have been the result, either in the time which had been allowed for the curative operation of the medicine, or in the course of a little longer time. In order to the due action of the remedies, time certainly, and a long time too, was necessary; and, in successful cases, it is because time has been given, that the remedies have operated with benefit and ultimate success: because the intervals between the doses being short, each dose comes in aid of the preceding, before it's effects have gone off, and thus by *gradually impressing* the disease, this, gradually but at length permanently, yields, as

"Gutta cavat lapidem non vi sed sæpe cadendo."

ON THE USE OF THE MEDICINES CALLED TONICS IN THE TREATMENT OF THE DEBILITY ATTENDANT ON CHRONIC DISEASE.

As to the employment of the medicines called *tonics*, in convalescence from acute disease, or in the progress of recovery in chronic disease, both of which states of the system are accompanied with debility; many think it necessary to exhibit

medicines of this class, in the confident expectation they say of *strengthening* the system, and with this view give either the bark of cinchona, in substance or in decoction, or large doses of the disulphate of quina, which they seem to consider the first of *tonics*; as if there resided in these the principle of *strength*, which they were to give out on being swallowed. For no sooner does a patient in the states above referred to complain of *weakness*, than he or she must be *dosed* with the disulphate of quina, (which has for the most part superseded the use of the substance or the decoction of cinchona,) without any regard to the principle on which it exerts it's tonic power. When there is a morbid derangement of the powers of the *stomach*, marked by loss of appetite and impaired digestion, in the absence of all chronic inflammation or organic disease, I consider the disulphate of quina, in small doses, an excellent medicine; and so far as, by it's action on the nerves of the stomach communicated by sympathy *to the brain*, the stomach is invigorated, by the transmission, in return, of the nervous influence *from the brain*, and is thus enabled to desire and to digest an additional portion of light and wholesome food, I am very ready to grant it's *tonic* power. But the doses must be

small and continued for a considerable time, for I deem it unsafe,—injudicious,—to exhibit this for such a purpose in doses of two or three grains frequently in the course of the day. One grain thrice a day is a limit which, *with this view*, ought *never* to be exceeded, and from half a grain, or in some cases even a smaller dose, I believe that much more benefit is in general to be expected from this elegant medicine, in the conditions of the system to which I have alluded. In the larger doses of two and three grains often exhibited, instead of the gently invigorating influence which it produces upon the stomach in small doses repeated in the manner now stated, it exerts a stimulant operation on the system, as is manifested in the heat, thirst and restlessness which the patient experiences; and therefore in it's exhibition in convalescence from acute disease, or in the treatment of chronic disease, the regulation of it's doses demands the strictest care and attention. These observations on the doses of the disulphate of quina are not in the remotest degree applicable to it's exhibition in the cure of intermitent fever. For this, larger doses, at proper intervals, I do not forget, are required to arrest the expected paroxysm; for *in this disease* it does not operate by it's *tonic* property either on the stomach or the sys-

tem, but by it's influence, specific—hitherto unexplained,—which in the cure of this, the bark of cinchona has been long known to possess.

From the great desire which patients complaining of weakness generally express for "*strengthening*" medicines, it is evident how great is their faith in the presumed efficacy, for this purpose, of those in medical language designated *tonics*; and it is often almost impossible to satisfy them without a prescription of something of this kind. If such report to me that their appetite and digestion are good, I tell them that they have no need of "strengthening" medicines, as they are already in possession of all the benefit which these are calculated to produce. But I recommend sponging, cold or tepid, as the occasion may indicate, with a mixture of water and vinegar, in various proportions; or with a solution of common salt in water; bathing in the sea, or the tepid sea-water bath, the sponging and bathing to be followed by brisk friction, for a considerable time, with a coarse towel; a regulated nutritious but not stimulating diet, with, if there be nothing to forbid it, a little of the malt liquor called porter; exercise in the open air, in the mode best adapted to their constitution which their circumstances will allow; change of air, particularly if their residence is in

a close or otherwise insalubrious locality; with, at the same time, agreeable and rational occupation of the mind. All these I regard as having a real *tonic* operation. But there are persons who require encouragement, by having some medicines, which they have been accustomed to consider as "strengthening," in order to induce them to follow out the proper plan of regimen, *that* course by which *alone* the restoration of their strength is to be effected.

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