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Lecture 22d

Broussais Theory of Fever

Having in my last discourse considered the theories of Drs. Darwin & Clutterbuck, I shall now proceed to the examination of what has been erroneously called "the new physiological doctrine of Broussais" – or that theory which ascribes the phenomena of fever to a primary affection of the alimentary canal. Those who are conversant with the medical authorities of the previous century, know that the principles advocated by Bichat, Broussais and his followers, are not new. More than 100 years ago Baglivius in his Practice of Medicine, pointed out in express terms, his knowledge of the concern of the stomach in fevers. He says it possesses an exquisite sensibility, to have powerful sympathies, a leading influence in the production of diseases, and is the principal seat of fever. Fever is said by Baglivius to be of an inflammatory nature, principally a phlegmasia of the stomach and intestines, or both, and his treatment was that of bleeding, spare diet & emollient approaches.

His words are "Duo nobis videntur maligna, a viscerum phlegmane, aut crys iselatode flunt, idest a cause evidente et manipota." He made many improvements in pathology by his unwearied industry in autopsical examinations, and by comparing the appearances on dissection with previously observed symptoms.

Baglivius frequently, in his work, insists upon the sensibility of the stomach, and its influence on the

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whole animal economy; its sympathies with other parts; and the milder phenomena of its irritation only.

He also places in the stomach the seat of contagious and epidemic fevers. Of the nature of Typhus, he says, "Typhus febris est ardentis speas, quce hotum ~~occupant~~ [struck through] occupas ventriculum." An observation as much Broussian as was ever uttered by his warmest partizan [partisan]. He likewise devotes nearly two pages to the different states of the tongue, and closes these observations by demanding a close observance of it in the treatment of all fevers. He, in fact, insists as much upon the conditions of the tongue as diagnostic of the intensity of the fever, as did Dr. Rush with the nature of the pulse _ such has been almost always the character of theorists _ they will have hobbies & fortunately, ~~and~~ [struck through] they ride them to death.

Baglivius was a close observer of the reciprocity or sympathy of action between the mucous surfaces of the alimentary canal and the skin, in small pox [smallpox] & scarlet fever. He, likewise distinguished diseases into two classes – one depending upon the irritation of the solids; - the other, on their relaxation. The former and a portion of the latter, are the same with the Broussian diseases of irritation. Baglivius held purgatives, diuretics, and diaphoretics, as irritants; baths, emollients, and anodynes, as relaxants.

From this review it will appear very evident that to Baglivius the credit is one of first directing the profession to the nature of gastric affections, and

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their treatment; which after the lapse of a century have been again revived, and extended, so as to form a basis of pathology and therapeutics, that rank as its admirers and supporters, a great number of the first men of the present day. M. Broussais, however, appears to have been the first who digested the facts collected up to his time, as to local irritations and inflammations, particularly those of the stomach and bowels, into a regular code of doctrinal Pathology.

That we may better understand the supporters of the local origin of fever in the mucous membranes of the stomach & intestines, I shall before proceeding further give a brief abstract of the fundamental principles of Broussais doctrine; expecting that in the course of your medical pursuits, you will give the doctrine [illegible, struck through] an especial and careful survey, so as to enable you to form a more intelligible and just view of it, than I can offer in the limited space of one discourse.

Broussais commences his system, by stating that the human body consists of certain organized parts, and these are the circulating; the respiratory apparatus; the thoracic and abdominal viscera; the muscular apparatus; the secreting & excreting glands; osseous structure etc. The membranous elements of which these different organized structures are composed, he calls tissues_ All these types are subservient to the nervous apparatus, of which he makes, the brain the centre [center] of communication. The

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The tissues of the animal body appear to be composed chemically, of fibrin, gelatine, and of albumen.

The muscular parts are chiefly fibrin; the skin, the mucous membranes, & etc. are chiefly gelatin; the nervous apparatus is albuminous.

The phosphate and carbonate of lime composing the bones, do not seem to have like properties with the other tissues; but these chemical substances in the living body, have not been fully examined.

All of them, except the bones perhaps, says Broussais, are contractile upon the application of certain substances called <u>stimuli</u>; upon this property of contractility, depends the motion and action of the organized parts.

Life, then, according to Broussais, is the aggregate of those functions, which the several organic parts of the body perform, on being stimulated into action, by the natural stimuli of calorie, light, air, atmospheric electricity and food, in the usual and regular proportions and degrees.

The organic actions excited by these natural stimuli in a healthy body, constitute ~~the~~ [struck through] what Broussais terms, the normal, which means the regular, healthy functions of the various parts so stimulated into action; the aggregate of these, he includes in the term <u>life</u>. Now should these tissues from any cause, become irritated more than usual; or should the stimuli applied, be in

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excess as to proportion, or from their unusual character, the natural stimulation of the tissues and organs, becomes increased or exalted into over excitement, or what he calls, over stimulation, technically called irritation.

Stimulation according to Broussais is the term appropriated to what produces normal, that is regular, usual, healthy, actions. Irritation is a term applied to a morbid increase of stimulation; and, is in the language of Dr. Rush, the same as morbid action. This irritation or morbid action may be presented in various shades and degrees; from a very slight excess of stimulation, congestion, ~~and~~ [struck through] up to inflammation and consequently disorganization of the parts affected, terminating in suppuration, gangrene & death.

Irritation with Broussais is abnormal, that is morbid action, and may vary, according to the degree and continuance of the irritant _ it may exist in a tissue or ~~on~~ [struck through] in an organ, or a viscus for a long time; the consequence ~~will~~ [struck through] may be functional derangement, without manifest or appreciable organic lesion or destruction.

After long continuance this functional derangement may assume the character of habit, or may proceed gradually to sub inflammation, inflammation, and disorganization.

Contractility, stimulation, & irritation, [illegible word struck through] as held by Broussais [illegible word struck through] are not entities _ distinct from the tissue itself; which is contractile and irritable; or which is stimulated or irritated: these are words according to Broussais without meaning,

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if the meaning do not strictly include the tissue which was stimulated or irritated; we know nothing of them, says Broussais, but in connexion [connection] with the tissue itself, of which they are properties

All the tissues composing the body, we know, are more or less pervaded with nervous fibres [fibers]. The nervous apparatus consists of the brain and its ramifications; the spinal chord and its ramifications, and are divided by Broussais into two great portions – the one serving for voluntary, and the other instinctive and automatic functions. The brain or enchephalic [encephalic] apparatus serves for the first; the spinal cord and its branches of nerves serving for the second set of functions.

By this arrangement of the brain & nervous system, sensation, perception, feeling, and consciousness, are words denoting that property or function of the enchephalic [encephalic] apparatus by which we have cognizance of objects exterior to us, and also of the visceral affections and wants within us, transmitted to the enchephalic centre [encephalic center] by the internal visceral nerves.

This property or function of the enchephalon [encephalon], in the physiological code of Broussais is termed sensitivity _ This sensitivity connects us with the material world extraneous to our bodies, and with the affections or modifications of our internal organs, destined to instinctive and automatic functions.

Hence it will be perceived that there are here two sources of sensation; vis – one, that of the impressions made on the nerves of our senses by external objects; and the other, the impressions

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made upon our internal visceral nerves, and thence transmitted to the nervous centre [center], the enchephalon [encephalon] or brain.

The nervous apparatus of voluntary motion, is stimulated to action by these transmissions of impressions from without and affections from within us.

The influence, therefore, of the brain centre [center] or enchephalon [encephalon] upon the nervous system in various parts of the body is called by Broussais, Innervation. The nerves, it must be remembered, that transmit to the brain centre [center], information of the internal visceral affections, are not the same as those that transmit from the brain, the resulting voluntary motions_ All the tissues and organs of the body being instruments of, and subservient [multiple illegible words struck through] to the nervous apparatus of the brain, whenever any of these are morbidly irritated, or have suffered lesion, or any other abnormal affection, the nerves of the structure become irritated, and act sooner or later upon the enchephalic [encephalic], as well as on the neighbouring [neighboring] memory apparatus; the nervous system thus becomes gradually irritated, and presents an abnormal or morbid condition, and what is called disease ensues. Disease, then, according to Broussais, is a word only, not an entity or thing_ But like other abstractions it has been personified_ But disease is strikingly nothing else than disordered action of some injured or irritated tissue, producing derangement function; and has no meaning separate from the tissue or organ actually affected; and from this view, the cure of disease, is the restoring the normal or natural, healthy action of the part or organ, in the place of the abnormal, or morbid action, which constituted the disease.

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Hence according to these views of physiology, no man is competent to pronounce on disease who is not well acquainted with the normal, regular, healthy state of the part morbidly affected; so that from the symptoms and indications he can judge of the locality, the kind, and degree of morbid action_ All medicine is, therefore, founded by Broussais & his followers justly, on an accurate knowledge of anatomy, physiology, and on these alone _ they hold all else as empirical.

The amount then of Broussain pathology, from the short abstract just made, resolves itself into a knowledge of gastric or visceral affections_ This system holds that the [illegible word struck through] essential fevers of authors, or as some say fevers of the whole system or idiopathic are referrible [sic, referable] to gastro enteritis [gastroenteritis], simple or complicated; and that the symptoms which have been assigned to distinguish them, are the invariable and constant signs of the inflammation of the internal organs, and consequently there can exist no fever independent of such local affections.

In this doctrine it will be perceived, that all diseases have determinate locations. The stomach & intestines with Braussais, as with Baglivius, are the most important organs, spreads their sympathies over all others, and receives their influence from all parts. Consequently every thing [everything]

appertaining to the stomach is fundamental & with the small intestines, is the chief throne and seat of fevers. The leading feature of this

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doctrine of the etiology of fever is, that every irritation which is capable of producing an impression on the brain, is effected by this organ upon the mucous membrane surfaces of alimentary canal. Broussais himself applies it to other acute diseases; for he enumerates, what are evidently blood diseases, the small pox [smallpox], meazles [sic, measles], the [two illegible words struck through] recuperative excitement of these affections by which they are accompanied, is supposed by him to be first conveyed to the brain, and afterwards reflected in the form of inflammation on the mucous membranes of the small intestines, and that this inflammation, the supposed cause of the fevers is produced. His words are, "It is by gastro-enteritis [gastroenteritis] that small pox [smallpox] begins; by gastro-enteritis [gastroenteritis] that we witness ocular, nasal, guttural or bronchial catarrh, and that meazles [sic, measles] & scarlet fever commence." Besides intermittent & remittent fevers are considered as periodical gastro-enteritis [gastroenteritis]; and every irritation sufficiently intense to produce fever, is inflammation. __ Indeed our author appears to have forgotten the presence of blood, or any other living fluid on the animal system; to ~~be~~ [struck through] have been blind to every thing [everything], but his favourite [favorite] gastro-enteritis [gastroenteritis].

I have thus been particular in my notice of the opinions of Broussais. For, notwithstanding the rapid development [two unintelligible words struck through] of antagonistic facts, by the researcher now being made in animal chemistry & the pathology of the blood, these views of the French pathologists continue to exercise at the present moment a paramount influence on the medical practice of this country.

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Theories, gentlemen, should be viewed by us as important, not so much from the reality and consistency, or the utter~~ly~~ [ly struck through] groundlessness of the facts upon which they appear to rest; as from the positive influence they have at all times exercised, when adopted generally, to the measures by which we endeavor to present, or cure disease.

From my observations both the Essentialists and Localists have taken a much too limited view of the etiology of fever. It appears to me that fever, whatever be its form, depends on some modification or alteration of one or other of the elements which enter into the composition of the human body, or in other words that it follows as a consequence of a morbid condition of the fluids and blood primarily; secondarily operative upon the solid tissues and organs by first deranged functional and afterward organic complications.

I am willing, however, to admit that the doctrines which the antient [ancient] pathologists held concerning the condition and influence of the humours [humors] in fever were crude and in many respects evidently erroneous. But although we may not, at the present time, agree to the humoral

pathology [multiple illegible words struck through] down to the present century, yet we should not reject ~~them~~ [struck through] it from our notice altogether. For in a rational acceptation, the humoral pathology as being established at the present period, differs as widely from the doctrine known to the antients [ancients], as the present pathology of nervous excitement differs from the solidism taught by Themison.

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Indeed, as well might we withhold all belief in the present doctrines of nervous excitement, because Themison taught that diseases depended on a stricture or relaxation of the solids, as to deny the power of the blood to undergo diseased changes, because we do not now speak of fermentation in this fluid, or watch with forbearance for the critical concoction of peccant humours [humors] in the others. But whether we look upon the blood as a vital or dead fluid, its constant influence upon the various organs of the living system, is unquestionable. It cannot be otherwise_ a material, which like the blood, incessantly pervading every portion of the system, thus acquires certain qualities, and loses them again in its current through the body; while in fine, it ~~convey~~ [struck through] conveys the elements of all our secretions, and keeps in play, the very fountain of life ~~itself~~ [struck through] the heart must it is very plain produce a constant though imperceptible impression upon the whole organization. We know that wherever the function of any organ becomes disturbed, more particularly will follow fever or inflammation as a consequence.

It is probably as suggested by writers that the various external causes, terrestrial or atmospherical poisons, for example, induce fever by their morbid operation upon the ~~vital~~ [struck through] healthful constituents of the blood, and deranging the different organic functions, as different poisons are know [sic, known] to affect particular structures.

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To this principle the symptoms peculiar to some epidemics may be explained; for instance a catarrhal fever, on which the mucous membrane of the air passages or bronchea [bronchia] is affected; or a gastritis where the peculiar morbid impression is made on the mucous membrane of the alimentary canal. How much more consistent, then, with the facts of which we are best assured in pathology and therepeutics [sic, therapeutics] is the supposition, that some change must take place in the fluids before fever can be developed.

All that we have hitherto learnt by the study of signs of symptoms; all that we have been taught by dissections of the organs that appeared to suffer during life, confirm the justness of this opinion, and contribute to its developement [sic, development]. Do we not observe that the blood becomes more depraved as the constitutions of the patients, become more generally, and more intensely involved in fever. Do we not see all the organs resume their healthful functions, as the blood throws off by sweat, by hemorrhage, by urine, or by stool, something, which a short time before formed

a part of its stream; but the very source of this stream is the stomach & bowels_ The principle that regulates the proportions, the quality, the relative positions of the molecules, is the nervous energy. That which affords due excitement to this regulating power, is the healthy blood. No one will pretend to say, that their [sic, there] can be fever, when all the fluids are in a healthy condition, because on the one hand, there is due nourishment of the nervous mass, on the other, due to distribution of its influence_ So long

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x. x.

The truth is, that all constitutional diseases are owing to some alteration of the blood, and derangement of its [illegible, struck through] vital properties, which are unpaired by whatever seriously diminishes the functions of respiration, secretion & nutrition"__ (Metcalfe)

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So long as there is a free circulation of good arterial blood, through the lungs, pleures [sic, pleurisy], brachea [sic, brachia], larynx, and Schneiderian membrane, there can be no pthisis [sic, phthisis], pneumonia, pleurisy, croup, laryngitis nor influenza, not even the highest catarrh_ So long as the abdominal viscera are supplied with an abundance of rich arterial blood, there can be no torpor of the stomach, bowels, and liver – no loss of appetite, dyspepsia, cardialgia, colic, gastritis, hepatitis, dysentery, diarrhea, constipation, or any serious derangement of the visceral organs. So long as the brain and nerves are freely supplied with rich arterial blood there can be no stupor, delirium, head-ache, apoplexy, hemiplegia, local paralysis, neuralgia, loss of sensibility, nor any important disorder of the sensorial functions; ; and nothing contributes more to a sound state of mind, than good healthful blood; for the want of it will beget ill temper and selfishness in persons who are at other times both amiable and benevolent.

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But, as the paramount laws of matter, generally, cannot be sacrificed to individual preservation, the very organs, whose office is to prepare, and convey the materials of health to the different parts of the animal machine, must, from the very organization, take up and prepare poisons under certain circumstances, or produce by their influence, when morbidly excited, deleterious changes of combination. To my judgment there is no doubt, that the blood is materially changed by the action of the morbid poison, constituting fever; and that this diseased state of this fluid, frequently, if not universally preceeds [sic, precedes] the attack, and that whatever

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alterations occur, take place in a determinate order.

This view of the influence of morbid alterations of the blood, to the production of fever & its phenomena, you will find sustained in the writings of Dr. Tweedie, Stevens, Andral, Simon, Magendie, and a host of other pathologists who are almost daily adding to its basis, and building its superstructure_ Andral observes that the fever termed inflammatory seems often to arise from no other source than the blood being too rich in fibrine; in the like manner, an impoverished state of the blood, whether accidental or natural, is often connected with mucous fevers, and with those characterized by a sudden sinking of the vital powers; and that the source and primary seat of typhus fevers, properly so called, is proven to be in the blood, inasmuch as they are caused by the introduction of deleterious substances, such as animal & vegetable poisonous effluvia, into that fluid. It is in this way only, by the blood becoming contaminated by morbid poisons either by internal or external introduction, and in this state circulating throughout the whole system, that fever can be supposed to be according to Dr. Fordyce, a general disease which affects the whole system, the head, the heart, the trunk of the body; and the extremities; the circulating; absorbing; and nervous ~~symptoms~~ [struck through] systems; the skin; the muscular fibres [fibers], and the membranes; the body & likewise the mind."

In the experiments of Dr. Tweedie & those made by Magendie & Ancel, when putrid substances

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were injected into the vessels of lower animals, the blood lost its power of coagulating, and acquired a rapid tendency to decomposition; great sensorial disturbance; convulsions, delirium, hurried respirations & bloody exhalations also took place, followed by speedy death; and when the poison injected was highly concentrated, the death of the animal almost immediately followed. The effects which follow from the use of food of an unwholesome quality, or from an insufficient quantity of flood, are probably owing to the changes which the blood undergoes from these causes; hence scarcity may act both as a predisposing and exciting cause of fever. In this way the origin of disease in times of general distress among the poor may be readily explained; and the history of many Epidemic fevers, and the lamentable examples we have lately had recorded of the suffering poor of Ireland, shows the intimate connexion [sic, connection] that has always existed between scarcity and fevers of a low or malignant type.

There can be little doubt that in fevers which are produced by living in an impure atmosphere, the blood is the medium by which the morbific matter is circulated throughout the system_ To prove the effects of putrid emanations on the animal economy, you may remember the well known experiment of Magendie "Where he confined a healthy dog in a situation which he exposed him to putrid miasmata [sic, miasmas]. For the first four days there was no change; he then began to emaciate, and ~~did~~ [struck through] died very much so,

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* He ~~Magendie~~ [struck through] has also shown, that by injecting seven grains of oxalic acid into the jugular vein of a dog, he was attacked with difficulty of breathing, small and frequent pulse, prostration of strength, followed by coma and death in a few hours –

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within six days. Magendie imputed the death of the animal to the effect of the miasmata [sic, miasmas] he respired and took ~~in~~ [struck through] with his food. * [handwritten asterisk appears to reference previous page's discussion of Magendie experiment] On opening the body which was very much emaciated, the mucous membranes of the bowels were found inflammed [sic, inflamed]. The writings of Cabanis [sic, Cabaniss], the published lectures of Magendie, Ancel & within the present year, the lectures published in the London Lancet by Simon, are rich in observations of this kind, and sufficiently satisfactory to prove the great concern which changes of the vital constituents of the blood has to the production of fevers, and an extensive catalogue [catalog] of other diseases. Not one of you should go to the practice of your profession, without attentively studying the papers on General Pathology, in Vol 1 & 2^{d} 1850, London Lancet. From this digression, I shall again make other observations upon this subject, – when, therefore, we consider that the chyle is the immediate product of the assimilation of the aliment, that this fluid, in its turn, furnishes the materials of the blood, and that the blood not only acts unceasingly upon the whole organization, but constitutes the very fountain whence all the materials of the body are immediately drawn, is it not extremely probable that the effects which have been mentioned are produced through the medium of the circulation.

We are told by Professor Chapman of Philadelphia "that the process of assimilation ~~is~~ [struck through] as performed either by the chylopoetic [sic] viscera of by any part of the absorbent apparatus, completely decomposes all substances, and however, discrepant their properties, reduces

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their properties, reduces them to a homogeneous fluid."

That this opinion is unfounded, we have sufficient proof at hand. Indeed, so far from the assimilating process decomposing every thing [everything] which is submitted to it its influence, we have undoubted evidence to prove, that substances do pass into the circulation in an undecomposed state. In the chyle of the thoracic duct, Musgrave, Lister, & Blumenbach detected substances which had been thrown into the intestines of animals. And you may soon satisfy yourselves, individually, in relation to this fact, by swallowing large doses of the Iodide of potash, and by analysis, observe the salt as it passed from the system, through the urinary channels. The experiments of Mayer, Magendie, Hedman, and Gmelin, Ancell [sic, Ancel], & Simon are conclusive upon this point.

The experiments of Gmelin [two illegible words struck through] prove, in the most direct and satisfactory manner, that almost all substances which are usually found in the urine after having been taken in the stomach may be detected by proper management in the serum of the blood of the vena porta [portal vein], splenic and mesenteric veins. These facts have been confirmed by Drs. Harlan, Stevens, & Clanny; and other additional valuable illustrations by Dr. H. Bence Jones in his [illegible word struck through] published lectures on Animal Chemistry, delivered to the present [the word *last* is written above the word *present* in pencil] year & which may be found in the 1st & 2 vol. 1850 London Lancets.

The assertion made by Dr. Chapman and others, that no unassimilated articles can be ever detected in

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in the blood is erroneous, being contradicted by direct and positive experiments of some of the first experimental physiologists of the present period.

The mass of blood is composed of two distinct substances; the one nutritious and destined for the growth and reparation of the system; the other recrementitious, consisting of the effete portions of the system returned into the circulation for elimination_ When the nourishment and waste of the system proceeds regularly, these parts maintain a due proportion. If destructive absorption, however, exceed to any considerable degree the process of assimilation, or if any of the emunctories act without due energy the recrementitious portions of the blood must accumulate, and soon predominate over that which is destined for nutrition. Thus, in persons badly or insufficiently nourished, or where some particular cause prevents the regular formation or absorption of chyle, or where the action of an important emunctory is impeded, the due proportion between the recrementitious and nutritious parts of the blood will soon be destroyed.

Although the accidental defect of one organ may be supplied by the office of another, yet it is certain that what is destined to be cast off by one, cannot so well pass off by another organ_ Hence as every excretory organ is destined to eliminate or throw out something which is no longer serviceable to the animal economy, the accidental obstruction of any important emunctory must induce an

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* “If the vitality of the blood had not been recognized by all antiquity, and sanctions by the universal consent of mankind, down to the time of Harvey & Willis, it would still be evident from the well established fact, that all the organs are formed immediately from it; and that whenever its supply is cut-off, they cease to live. It is therefore evident, that all the phenomena of the animal economy, whether in health or disease, must depend on the conditions of this important fluid_ and that a complete knowledge of its vital properties is essential to any sound or rational system of medical theory & practice_ ” (Metcalf)

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accumulation of recrementitious elements in the blood and impart to it morbid irritating qualities. This will be exemplified more particularly when I come to speak of the blood diseases, rheumatism & gout.

* [handwritten asterisk and doodle appears to reference previous page’s Metcalf quote, to insert here]

[several words struck through] Gentlemen [handwritten addition in pencil]

In our inquiries upon the manner in which diseases are developed, we should, as it becomes us to do, in all our investigations concerning the nature and cause of them, follow step by step, as far as we can, the phenomena of disease in their order of occurrence.

It is only in this way, that we can even, expect to be able to detect their dependencies and bearings.

If perspiration be obstructed, what are the consequences? In the first place their [sic, there] is a torpor of congestion of the cutaneous vessels, the necessary consequence of which is the retention of a substance which the well being of the animal economy requires to be cast off; this being imperfectly done by other emunctories, the blood becomes surcharged with irritating qualities, and this, in connection with loss of balance in the circulation, or in other words the accumulation of blood in the interior organs, and its deficiency in the exterior or cutaneous vessels, is, I conceive, sufficient to produce general disturbance in the circulation and fever with its attendant phenomena.

The truth, however, of the humoral pathology does not depend on facts and experiments of this kind. It is sustained by the more conclusive phenomena

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exhibited in fever and other diseases – phenomena which it is impossible to explain rationally without admitting the direct agency of the fluids.

If these views be correct, every thing [everything] that we do in the treatment of disease ought to tend towards establishing a healthful return of the fluids. ~~When –~~ [struck through] And it is here, ~~where~~ [struck through] we are so much at a loss to select that therapeutic agent or means precisely adapted to the nature of the morbid alteration of the [multiple illegible words struck through] of the circulating current_ And this will continue to be the case until we shall have had such [illegible word struck through] analysis of medicines, with reference to the changes produced by them in the constituents of the urine, the exhalations of the lungs, and the blood. [illegible word struck through] However, humiliating the confession, it is clearly evident how little we really know at present of the intimate nature of the effects of the medicines we are hourly prescribing; we are far from any certainty as to therapeutical principles, and the profession will remain so, until the method of analysis of the effects of each and every medicinal substances ~~shall~~ [struck through] upon the human economy is properly instituted; this method of analysis is the only one that can lead to the improvement of our knowledge of the real effects of medicines, and to the setting aside those doubts as to the proper treatments of diseases, too well known as the torment of every conscientious and scientific practitioner –

turn over.

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The practice of Hippocrates was founded upon these principles; but he had not the advantage of a knowledge of the circulation of the blood, and the numerous advantages arising from the science of animal chemistry, to assist him; yet his practice, arising out of close observation and strong intuitive sense, was founded upon this principle, that he vomited and purged to cleanse the digestive organs, when they appeared to suffer from causes of irritation. He produced direct diminution [sic] of the circulating fluids by bloodletting. He administered demulcents, refrigerants, and corroborants. He attended to diet, and encouraged critical discharges. But above all, he distinguished the causes and stages of disease, in which the adoption of these respective plans of treatment seemed advisable. He

practiced an art that required the highest powers of the mind for its successful exercise. The Broussais, or other localists, on the contrary, like the Brunonians, have reduced their whole ~~materia medica~~ [struck through] science to one or two unchangeable maxims, which they call physiological, to be learnt in a day, and practiced without distinction – viz – that all fevers consist in gastro enteritis [gastroenteritis] and their treatment leeches and gum water.

Gentlemen

But in justice to Broussais & his followers it must be acknowledged, they have rendered an important service to the profession_

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To their investigations we owe the rapid progress that has been made in pathological anatomy; to them, the prudent caution now observed in this country, in the administration of active purgatives and emetics_ From Broussais himself we have learned the full value of that symptom so important in fever – the sensibility of the epigastrium to external pressure. It is by applying to the Etiology of this, and its subordinate functional derangements, the lights of morbid anatomy, that we are sometimes enabled to guide our practice in the commencement of fever, so as by prudent depleting, evacuant, and dietetic measures to shorten their course, and mitigate or prevent their worst symptoms.

This subject might be pursued much more extensively, but, [illegible word struck through] a more minute exposition is not consistent with my present purpose, as it is expected you will all make yourselves acquainted with the works of the writers, I have so cursorily reviewed. It is necessary, however, that I should caution you, and particularly those ~~by gone~~ [struck through] gentlemen who have just commenced their medical studies, against implicitly receiving the arbitrary doctrines of fever which divide the profession in the present day; and especially that opinion, that fever is invariably produced by the inflammation of some one viscus or set of viscera. Recollect, gentlemen,

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In conclusion, “It was nobly said by Lord Bacon, that the highest ambition of man should be to discover some one thing by which all others might be discovered,” and that “science rightly interpreted, is the knowledge of things through their causes.”

Nor can there be a rational doubt, that a complete knowledge of the “blood’s influence in disease,” would afford a key by which to unloose the seals of the book of nature, and open the gates that lead to the inner temple of her most hidden mysteries_ But owing to the parylizing [sic, paralyzing] influence of custom, prejudice of education, and the dread of encountering the throned opinions of the world, few have the boldness to inquire with unreserved freedom into the final cause of phenomena. The consequence of which has been, that the strength of many an intellectual has been wasted in fruitless effort. (Metcalfe)

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Finis

Gentlemen

To morrow [tomorrow], I will review the Theory of Dr. Stevens, to which I invite your attention.

[page 39, handwritten]

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that fever, properly so called in its commencement, is a general [three illegible words struck through] ~~function~~ [struck through] disease, and therefore cannot be referred to any particular organ, and that it presents certain phenomena varying as to cause, localization, effects, duration etc._ And that fever may be followed by inflammation in all the organs of the body, and will require different modes of treatment.

The practitioner who would employ active antiphlogistic measures etc.; or who would direct stimulants etc. exclusively, in every case of fever, knows nothing of the disease, and is a most dangerous practitioner.

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